Assessment of Nutrition Knowledge of Rural Mothers and Its Effectiveness in Improving Nutritional Status of Their Children

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ABSTRACT

The present study was carried out in villages of Ludhiana district of Punjab state by selecting 120 mothers of children with the age group of 1-3 years. The requisite data were collected using pretested questionnaire. The cut off for malnourished children was taken as -2 SD below the reference median. The mean knowledge level of mothers was found to be maximum in the area of hygiene and sanitation (93.8%) followed by feeding practices (73.7%) and pregnancy (60.1%). The knowledge level regarding anaemia was very low (9.8%). The nutrition knowledge scores of rural mothers were significantly related to age, education, occupation, caste and family income. Maternal nutrition knowledge exerted a significant intervening affect in improving the nutritional status of their children. Awareness of mothers about the nutrition needs to be further improved with special reference to anaemia with basic nutrition and health education, awareness and proper counseling.

Key words: *Anaemia; Children; Nutrition knowledge; Pregnancy; Rural mothers;*

Malnutrition in all its form remains a major public health problem throughout the developing world and is an underlying factor in over 50 per cent of the 10-11 million deaths in children under five years of age. India ranks second in the world for child malnutrition (43.1%) after Timor lest (43.7%), according to World Health Statistics Report (*WHO, 2012*). High malnutrition rates in the country pose a significant obstacle in achieving better child health outcomes (*Ragini, 2014*). India still has the highest number of under-weight children under five in the world and 70 per cent of children are anaemic. The proportion of undernourished people in the overall population has fallen from 21.5 per cent in 2004-06 to 17 per cent in 2011-13 according to International Food Policy Research Institute (IFPRI) estimates (*Rukmini, 2014*). The link between malnutrition and infant feeding has been well established. Poor feeding practices in infant and early childhood resulting in malnutrition contribute to impaired cognitive and social development, poor school performance and reduced productivity in later life. Poor feeding practices are, therefore, a major threat to social and economic development as they are among the most serious obstacles in attaining and maintaining the health of this important age group.

A mother is the principle provider of the primary care that her child needs during the first five years of life. Nutritional awareness of mothers plays an important role in the health of children aged 0-5 years. The type of care she provides depends to a large extent on her knowledge and understanding of some aspects of basic nutrition and health care. Mothers educational level, position, health and nutritional status is central to the quality of life and is a key ingredient of her child's health, nutritional status, behavioral and other aspects of child welfare in developing countries. Nationwide as well as micro studies clearly show that incidence of under nutrition among children fell monotonically with the maternal education. This is of particular concern for India due to a low literacy level of 56 per cent for females (*census 2011*).

Knowledge of mothers has an important role in the maintenance of nutritional status of the children. Adequate knowledge regarding various aspects of feeding practices during pregnancy and during infancy is very essential especially among females as they are going to influence the feeding practices of this vulnerable group. The knowledge of child nutrition and caring practices can be expected to have significant bearing on their children nutritional status but conflicting results have been reported in this regard where as some studies (*Mary, 2013, Daba et al. 2013* and *Shettigar et al. 2013*) have observed a positive relationship between childhood malnutrition and maternal knowledge and beliefs regarding nutrition. The present study attempted to evaluate the nutrition knowledge of the rural mothers and its impact on the nutritional status of their children.

METHODOLOGY

The study was carried out in Mohie, Hissowal and Shehbazpura villages of Ludhiana district of Punjab state. A pre-tested questionnaire was used to collect the information on socio-economic/demographic and nutrition knowledge of 120 mothers. Nutrition knowledge of mothers was assessed regarding various aspects such as anaemia, pregnancy, feeding and hygiene practices using pretested questionnaire. A total of fifty closed and open ended questions were formed. For evaluating the knowledge test, one score was awarded for each correct and zero for each wrong answer. The data on height and weight of children (1 -3 years) of selected mothers were obtained using standard methods. The date of birth of each child for age was recorded from the Mother-Child protection card issued by the hospitals. Based on measurements, data on height and weight were classified according to standard deviation z-scores (height for age, weight for age and weight for height) using WHO standards (*WHO, 2006*). The cut off points for malnourished children was taken as -2SD below the reference median. The child falling between -2SD and -3SD of standard was considered as moderately stunted, underweight or wasted and those below -3SD were classified as being severely malnourished.

The data on the knowledge level were analyzed using statistical tools such mean, standard deviation and percentage. Chi-square values were calculated to determine the association between mother's knowledge and nutritional status of their children. Correlation coefficients were calculated to find out the determinants of mothers nutrition knowledge.

RESULTS AND DISCUSSION

Socio-demographic profile of mothers: Majority (80.8%) of mothers were in the age group of 20-30 years (Table 1) with 46 per cent educated up to primary level followed by 43 per cent matric and above. Only 11 per cent were found to be illiterate. Most of the mothers (95%) were housewives and very few were working as teacher (4%) and staff nurse (1%) and used to spend 6 hours outside their homes in their job for six days in a week. Seventy-two per cent of mothers were married in the age group of 18-25 years, followed by 16 per cent at the age of above 25 and 12 per cent at less than 18 years of age. Majority (77.5%) of the subjects belonged to scheduled caste followed by general (21.7%) and other backward (0.8%) classes. A total of 91 per cent subjects were having joint family system with 81 per cent having middle family size of 4-8 members. The family income of the majority (74.2%) of the subjects ranged between Rs.5000-20000 per month whereas 10 per cent had income more than Rs.35000 per month followed by 8.3 and 7.5 per cent were having less than Rs.5000 per month and between Rs.21000-35000 per month. Average per capita income was computed as Rs.2490 per month. Kaur *et al* (2007) observed in their study that majority of respondents i.e. 60.5 per cent were from joint family and 61.5 per cent were from medium size family. On the contrary, *Sheth et al (2006)* reported that the monthly family income (from all sources) of majority (78.5%) of households ranged between Rs.1000-1500 per month.

Nutrition knowledge profile of mothers : Knowledge level of mothers was assessed on various aspects of nutrition like anaemia, pregnancy, hygiene & sanitation and feeding practices. The findings are presented in Table 2-5.

Mothers knowledge level regarding anaemia : Maternal anaemia is a burning natural public health problem and has been related to poor fetal outcome. Iron deficiency or anaemia is one of the most prevalent nutritional deficiency diseases among women during pregnancy in the developing countries. The findings depicted (Table 2) that there was lack of awareness among majority of the mothers (95.8%) about anaemia and their symptoms, only 4.2 per cent and 3.3 per cent

of mothers were aware of it and their symptoms respectively. Only 5 per cent of mothers knew that worm infestation is the cause of anaemia. About 3.3 per cent of the mothers had correct knowledge that anaemia is a nutritional deficiency disease, results due to deficiency of iron and 4.2 per cent knew that anaemia is a health problem to worry while only 5.8 per cent of mothers had knowledge that risk of anaemia is more in women than in men. About 39 per cent of mothers were aware of the normal levels of haemoglobin in women. Only 18.3 per cent of mothers informed that anaemia can be prevented through diet.

Mothers knowledge level regarding pregnancy : As far as knowledge level of mothers regarding pregnancy is concerned about 38.3 per cent of mothers had correct knowledge that risk of anaemia is more during pregnancy and only 8.3 per cent of mothers knew that anaemia during pregnancy results in low birth weight babies. The data (Table 3) further revealed that 25.8 per cent of mothers had knowledge that gain in body weight during pregnancy should be 10-15 kg. Most of the mothers (85%) knew that more food is required in pregnancy. Majority (95.8%) of mothers were aware that eating green leafy vegetables during pregnancy is good, while 66.7 per cent of mothers had correct knowledge that practicing of drinking tea/coffee immediately after eating is bad. On the contrary, *Kaur et al (2009)* conducted a study on lactating mothers in urban and semi-urban areas at Kurukshetra district and revealed that 60 per cent of respondents avoided vegetables specially cauliflower, green leafy vegetables, potatoes and beans for 1-2 months and chapatti was avoided by 28 per cent of the respondents for first 4 to 5 days due to the belief that it is not digestible.

A higher percentage of mothers (87.5%) had knowledge that taking of iron & folic acid tablets during pregnancy is advisable. However 86.7 per cent of mothers had awareness regarding the vaccination during pregnancy. From above percentage only 10.8 per cent of mothers were aware about the vaccination required during pregnancy. *Rosliza and Muhamad (2011)* reported that majority (94.2%) of the women know that pregnant women need to go for antenatal check-up. However only 73.1 per cent knew that the first antenatal check-up should be done in the first three months. The data in the present study further revealed that 31.7 per cent of mothers were of the view that some foods should

Table 1. Socio-demographic profile of the selected mothers (N=120)

Parameters	Category	No.	%
Age	<20	2	1.7
	20-30	97	80.8
	>30	21	17.5
Education	Nil	13	11.0
	Upto primary	55	46.0
	Matric & above	52	43.0
Occupation	Working	6	5.0
	Housewife	114	95.0
Type of work	Teacher	5	4.0
	Staff nurse	1	1.0
Caste	General	26	21.7
	SC	93	77.5
	OBC	1	0.8
Type of family	Joint	109	91.0
	Nuclear	11	9.0
Size of family	<4 (small)	3	2.4
	4-8 (middle)	97	81.0
	>8 (large)	20	16.6
Family income	<5,000	10	8.3
	5,000-20,000	89	74.2
	21,000-35,000	9	7.5
	>35,000	12	10

Table 2. Knowledge level of selected mothers regarding anaemia (n=120)

Knowledge aspects	No.	%
Awareness about anaemia	5	4.2
Anaemia		
Infectious disease	1	0.8
Nutritional deficiency disease	4	3.3
Don't know	115	95.8
Anaemia is a health problem to worry	5	4.2
Risk of anaemia is more in women than men	7	5.8
Symptoms of anaemia		
Paleness	4	3.3
Fever	1	0.8
Don't know	115	95.8
Causes of anaemia		
Contaminated water	1	0.8
Worm infestation	6	5
Don't know	113	94.2
Anaemia results due to deficiency of		
Iron	4	3.3
Don't know	116	96.7
Normal level of Hb in woman	47	39.2
Anaemia can be prevented through diet	22	18.3

Table 3. Knowledge level of selected mothers regarding pregnancy (n=120)

Knowledge aspects	No.	%
Risk of anaemia is more during pregnancy		
Yes	46	38.3
No	6	5
Don't know	68	56.7
Anaemia during pregnancy results in		
High fever	1	0.8
Low birth weight	10	8.3
Don't know	109	90.8
Gain in body weight		
<10 kg	47	39.2
10-15 kg	31	25.8
>15 kg	1	0.8
Don't know	41	34.2
Require more food in pregnancy		
Yes	102	85
No	2	1.7
Don't know	16	13.3
Eating GLV's during pregnancy is good	115	95.8
Practice of drinking tea/coffee after eating		
Good	40	33.3
Bad	80	66.7
It is advisable to take iron & folic acid tablets		
Yes	105	87.5
No	8	6.7
Don't know	7	5.8
Awareness regarding the vaccination during pregnancy	104	86.7
Name of vaccination		
Tetanus	13	10.8
Don't know	91	75.8
Foods should be avoided during pregnancy	38	31.7
Name the foods be avoided		
Desi ghee	1	0.9
Egg, meat	7	5.8
Dry fruits	1	0.9
Fried food	8	6.7
Kinnow	1	0.8
Papaya	20	16.7
Knowledge about any scheme for adolescent girls, pregnant and lactating mothers run by govt.	20	16.7
Name of scheme run by govt.		
IFA tablets	15	12.5
IFA tablets+Immunization	1	0.8
Free delivery services	1	0.8
Don't know	3	2.5
Boys and girls having equal rights		
Right to education	119	99.2
Right to food	119	99.2
Child that requires more food		
Boy	1	0.8
Both	119	99.2
Age of girl at marriage		
18-21	84	70
22-25	36	30
Did you ever heard any messages on breastfeeding and feeding practices	23	19.2
Where did you hear about messages		
Asha worker	1	4.4
Hospital	1	4.4
Books + T.V.	2	8.6
Newspaper	3	13.0
T.V.	15	65.2
T.V.+ Newspaper	1	4.4
Normal birth weight of child		
<2.5 kg	37	30.8
>2.5 kg	83	69.2

be avoided during pregnancy. Foods avoided by mothers include desi ghee, egg/meat, dry fruits, fried food, kinnow and papaya as 0.9, 5.8, 0.9, 6.7, 0.8 and 16.7 per cent respectively. *Daba et al (2013)* reported that less (34.8%) respondents had the knowledge that inadequate nutrition during pregnancy can be the cause of miscarriage and pre-term birth.

About 16.7 per cent had knowledge about government schemes such as Iron & folic acid tablets, immunization and free delivery services for adolescent girls, pregnant and lactating mothers.

The data further elucidated that the majority of the subjects (99.2%) were of the opinion that both boys and girls have equal rights for food and education. According to 70 per cent of the mothers, the age of girl at marriage should be 18-21 years. About 19.2 per cent had received messages on breastfeeding and other feeding practices through ASHA workers, hospitals, TV, newspaper and magazines. The data further revealed that 69.2 per cent of mothers informed that the normal birth weight of the child should be more than 2.5 kg.

Mothers knowledge level regarding hygiene and sanitation : Majority of mothers (91.7%) understand that it is necessary to wash hands before eating. All the mothers knew that soap should be used to wash hands (Table 4). In line to present findings,

Table 4: Knowledge level of selected mothers regarding hygiene and sanitation (n=120)

Knowledge aspects	No.	%
Is it necessary to wash hands before eating	110	91.7
What should be used to wash hands (Soap)	120	100
Drinking water should be stored in container	120	100
Water should be taken from the container using vessel		
With handle	112	93.3
Without handle	8	6.7
Care taken for cleaning infants feeding utensils		
Washed	19	15.8
Sterilized	101	84.2

Table 5: Knowledge level of selected mothers regarding feeding practices (N=120)

Knowledge aspects	No.	%
Awareness about colostrums	120	100
Importance of colostrums	34	28.3
Colostrum should be given to new born	103	85.8
First food given to child after birth i.e Ghutti	18	15
Mother milk	101	84.2
Water	1	0.8
Time for breast feeding after birth		
Within 1 hour	81	67.5
Within 6 hours	32	26.7
Within 1 day	5	4.2
Beyond second day	2	1.7
Duration of breastfeeding should be		
Below 6 months	1	0.8
Six months	96	80
Above 6 months	21	17.5
Don't know	2	1.7
Duration of breastfeeding should be		
1year	3	2.5
1year 6months	14	11.7
2years	56	46.7
2 year 6 months	34	28.3
3 years	13	10.8
Breastfeeding protect child from illness		
Yes	85	70.8
No	4	3.3
Don't know	31	25.8
Age at which weaning food should be started		
After 6 months	103	85.8
8 months	5	4.2
1 year	12	10
Appropriate weaning food for child		
Top milk	84	70
Semi solid	36	30
Milk should be used to child i.e. Cow	108	90
Buffalo	2	1.7
Goat	10	8.3
Meat, fish, egg added to child's diet	33	27.5
Snacks should be added between meals	112	93.3
Any food that should be avoided for child	23	19.2
Name the foods that should be avoided for child		
Banana in winters	4	3.3
Curd in winters	1	0.8
Egg, meat	7	5.8
Fast food	4	3.3
Fried food	5	4.2
Ice cream/cold things	1	0.8
Kurkure/lays	1	0.8
Stale food should be given to the young child	10	8.3
Proper vaccination	119	99.2
Is it necessary to complete all vaccination	119	99.2
Breastfeeding to be continued during diarrhea	113	94.2
Food can be given to the child during illness	61	50.8
Is it safer to feed baby with bottles, Yes	30	25
No	83	69.2
Don't know	7	5.8

Sheth et al (2006) also reported that all the mothers believed in washing hands with soap after defecation and also know that main reason to wash their hands with soap after defecation was to get rid of pathogenic microbes. They also knew that drinking water should be stored in covered container. Ninety-three per cent of mothers had knowledge that vessel (container) with handle should be used for taking out water for drinking purpose with 84.2 per cent mothers knew that infants feeding utensils especially feeding bottles should be sterilized.

Mothers knowledge level regarding feeding practices: Feeding in the early years of life has a long term effect on an infant's health. Inappropriate feeding practices are often great determinant of inadequate intakes than the availability of foods in the household. Feeding practices pertaining to infants vary not only from one culture to another but also differ within the same culture.

Colostrum is the pale yellow fluid secreted by mother during first few days after delivery. It was rich in antibodies and thus provides immunity to the new born. All the mothers were aware about colostrum. The mothers of 34 infants (28.3%) knew about the importance of colostrum and maximum percentage

(85.8%) of mothers had knowledge about the fact that the colostrum should be given to new born babies. *Kulsum et al (2008)* in a study conducted in urban slums in Mysore city noted that only three per cent of mothers were aware that colostrum is nutritious. Majority (84.2%) of mothers were aware of the practice of giving mother milk as the first food. About 15 per cent mothers were of the view that first food given to the child should be ghutti.

Most of the mothers had a positive attitude towards breast feeding. About 67.5 and 80 per cent of mothers were aware about the initiation of breast feeding within one hour and exclusively breast feeding for six months respectively followed by knowledge about duration of breast feeding up to two years (46.7%).

It is evident from the data (Table 5) that 70.8 per cent of mothers were aware about the fact that breastfeeding protect the child from illness. Majority (85.8%) of mothers had correct knowledge about the recommended time of starting weaning foods. When the mothers were asked about the ideal age for introduction of supplementary feeding, only 59 per cent of women gave an appropriate answer as reported by *Kulsum et al (2008). Khattak et al (2007)* evaluated the nutritional knowledge of the mothers and reported that 76 per cent of infants received ghutti as first feed while colostrums was given to 24 per cent, 93 per cent of mothers did breast feeding, 33 per cent gave cow's milk along with breast milk and 36.6 per cent formula milk along with breast milk. Early weaning was given in 11.4 per cent infant, 39 per cent infants were weaned in 4-6 months and late weaning was introduced in 49.5 per cent infants. Boiled water was used by 46.4 per cent and filter water by 13.3 per cent while 40 per cent mothers used tap water.

It was further observed that 30 per cent of mothers had knowledge about the appropriate weaning food for child i.e. was semi solid. About 90 per cent of the mothers informed that cow milk should be used to feed the child as a weaning food. Further according to 27.5 per cent of the mothers; meat and egg should be added to the child's diet and 93.3 per cent of the mothers informed that nutritious snacks should be fed to the child in between meals. Musaphi *et al* (2008) observed that majority (76%) of mothers had no knowledge that which foods were good for babies while 13.5 per cent had been taught by health workers or nurses about the foods good for babies.

Majority of mothers (80.8%) said that no food should be avoided for child. Only 3.3, 4.2 and 0.8 of mothers responded that the foods like junk & fried foods should be avoided for child because they are unhygienic and spicy. Knowledge about feeding the freshly prepared food was inappropriate. Most of the mothers (92%) had proper knowledge that children should be given only freshly prepared food.

Most of the mothers (99.2%) had knowledge about the importance of immunization which should be given to the child. About 94.2 per cent and 50.8 per cent of mothers had knowledge that breastfeeding should be continued even during diarrhoea and foods should be given to the child during illness. Around 69.2 per cent of mothers were aware that feeding of babies with bottles is not safe.

Mean Nutrition knowledge level of mothers : To assess the knowledge level of mothers, the data on mean scores and the distribution of mothers according to knowledge level regarding anaemia, pregnancy, hygiene & sanitation and feeding practices have been presented in Table 6.Analyzing the various areas of knowledge, it was observed that the mean score of rural mothers in the area of anaemia was 0.9±1.7. The mean knowledge of maximum obtainable score in this area was 9.8 per cent. Table 6 further revealed that mothers had mean score of 10.2±2.2 in the area of pregnancy. The extent of knowledge in this area was 60.1 per cent. The mean score of mothers was found to be 4.7±0.6 in the area of hygiene and sanitation. The extent of knowledge in hygiene and sanitation was 93.8 per cent among the mothers belonging to the rural areas. A perusal of Table 6 further depicted that mothers had mean score of 14.0±2.6 in the areas of feeding practices. The extent of knowledge in feeding practices was 73.7 per cent among the selected rural children. The maximum knowledge of mothers was found in the area of hygiene and sanitation (93.8%) followed by feeding practices (73.7%) and pregnancy (60%). The knowledge regarding anaemia was found to be very poor (9.8%) which need to give top priority. The extra care is required to impart the knowledge to young mothers and adolescent girls in this regard. *Kulsum et al (2008)* revealed that nutritional knowledge of majority of mothers was poor in the urban slums. *Gyawali et al (2013)* reported that mother's nutrition knowledge scores were associated with long term well-being of

the children. The scores had a significant effect on all the indicators of child nutritional status. The study further reported that if mothers have sufficient nutrition knowledge, it is effective in improving nutritional status of their children.

Distribution of mothers according to their nutritional knowledge level : Distribution of mothers according to their knowledge level in the various areas of nutrition showed (Fig.1) that majority of mothers (52.5%) had medium level of knowledge followed by high (41.6%) and very high (3.3%) level. Only 2.5 per cent of mothers had low level of knowledge. Kulsum *et al* (2008) observed that 55 per cent mothers had moderate knowledge followed by low (13.5%) and high (32.5%) knowledge regarding nutrition and feeding practices.

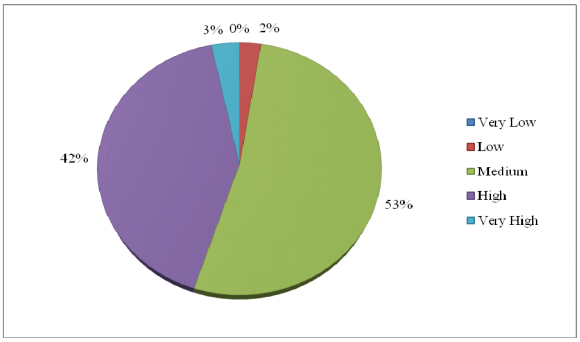

Fig.1: Distribution of mothers according to their knowledge level

Table 6. Mean knowledge level of mothers of selected rural children

Knowledge	Max.scores	MS	%
Anaemia	9	0.9±1.7	9.8
Pregnancy	17	10.2±2.2	60.1
Hygiene and sanitation	5	4.7±0.6	93.8
Feeding practices	19	14.0±2.6	73.7
Overall knowledge	50	29.8±5.4	59.6

Association between mother's nutritional knowledge and nutritional status of children: The nutrition knowledge of the mothers of malnourished children was poor as the mothers with low level of knowledge (scores 11-20) were found to have highest percentage of malnourished children (66.7%). As the knowledge level of mothers increased from low $\rightarrow$ average $\rightarrow$ high $\rightarrow$ very high, the per cent age of malnourished children reduced from $66.7 \rightarrow 28.6 \rightarrow 10 \rightarrow 0$ respectively. It was observed that majority of mothers of normal children i.e. 100 per cent obtained knowledge scores of 41-50 followed by 90 per cent who obtained between 31-40, 71.4 per cent scored between 21-30 and 33.3 per cent score between 11-20 respectively (Table 7). Joseph (2010) revealed that nutrition knowledge of mothers had significant relationship ($P<0.05$) with nutritional status of children and also found that women with low knowledge score recorded high rate (67.3% of malnourished children) while women having highest score recorded low rate (32.7% of malnourished children). Thus it may be concluded that the knowledge of mothers regarding anaemia, pregnancy, hygiene & sanitation and feeding practices bore a significant association with the nutritional status of rural children ($\chi^2=7.81$). This_relationship suggested that with the increase in knowledge level of mothers, there was significant improvement in the nutritional status of children or reducing the malnutrition among children. Good agreement (*Gyawali et al 2013* was seen between the scores and children's weight for age height for age. A significantly higher percentage of children (0.36 months old) whose mothers scores 3 or less were moderately or severely malnourish then of those of mothers with the score of 4 or more. A significant relation was observed between mother's scores and malnutrition as assessed by weight for age in children in all the age group.

Table 7: Association between mother's nutrition knowledge and the nutritional status of children (N=120)

Knowledge score	Level of knowledge	No.	Normal	Malnourished
0-10	Very low	0	0 (0)	0 (0)
11-20	Low	3	1 (33.3)	2 (66.7)
21-30	Average	63	45 (71.4)	18 (28.6)
31-40	High	50	45 (90)	5 (10)
41-50	Very high	4	4 (100)	0 (0)

χ^2 7.80*

*Significant at 5% level of significance

Table 8: Correlation coefficients between SE/demographic variables and nutrition knowledge of mothers

Socio-economic variables	Mothers knowledge
Age of mother	0.36***
Education of mother	0.52***
Occupation of mother	-0.46***
Type of family	0.13NS
Size of family	0.15**
Caste	0.37***
Family income	0.48***

Socio-economic/demographic variables and knowledge level of mothers : The relationship of socio-economic and demographic variables with the nutrition knowledge of mothers regarding anaemia, pregnancy, hygiene & sanitation and feeding practices as tested by computing coefficients (r) has been summarized in Table 8. On the perusal of relationship, it was found that type of family was not significantly correlated with knowledge level while occupation of mother showed significant negative correlation (r= -0.46) with the knowledge regarding anaemia, pregnancy, hygiene & sanitation and feeding practices. In the present investigation, working mothers were given a lower number and therefore, the negative correlation emerged between occupation and knowledge level of mothers. This indicated that working mothers are more knowledgeable than non-working mothers.

Age and education of mother was positively and significantly correlated (r=0.36 and r=0.52) with the knowledge regarding anaemia, pregnancy, hygiene & sanitation and feeding practices. On contrary, *Kumari et al (2007)* observed that age of mother had no correlation with the knowledge of mothers. The results (Table 4.25) further highlighted that family income, caste and size of family were positively and significantly correlated with the knowledge regarding anaemia, pregnancy, hygiene & sanitation and feeding practices. This suggested that economic status had a strong affect on the knowledge level of mothers. Similarly, *Kumari et al (2007)* reported positive and significant correlation between family income and knowledge level of mothers. *Daba et al (2013)* reported that low nutrition knowledge of mothers may be attributed to low income and low educational status. Both literacy and nutrition knowledge scores were significantly related to family income.

CONCLUSION

The mean knowledge level of mothers regarding anaemia, pregnancy, hygiene and sanitation and feeding practices was medium with maximum in hygiene and sanitation followed by feeding practices and pregnancy. The knowledge level regarding anaemia was low. Age, education, occupation, caste and family income were the main determinants of mother's nutrition knowledge. The nutrition knowledge of the mother was found to have a significant bearing on their children nutritional status. Thus, it is an effective measure in reducing the malnutrition among children. The need of nutrition education for women is, therefore, important and urgent in rural areas.

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