



ORIGINAL RESEARCH ARTICLE

COMPLEMENTARY FEEDING PRACTICES AMONG THE CARETAKERS OF THE YOUNG CHILDREN AT KATHMANDU

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ABSTRACT

Appropriate complementary feeding practices are very important for proper growth and development of children. The objective of this study was to find out knowledge and practices of complementary feeding among caretakers of young children. A cross sectional descriptive study was conducted by taking 195 caretakers of 6 to 24 months children of randomly selected wards of Ramkot, Sewchatar and Ichangunarayan VDC of Kathmandu district. Descriptive and inferential statistics (Chi square and McNemar test) were used for data analysis. Caretakers having adequate knowledge were 59.5%. Regarding practices, 83.65% had continuing breastfeeding. Only 33.3% of caretakers had started complementary feeding at 6 months even though the 72.3% had knowledge on it. Children having minimum meal frequency were 64.65%, minimum dietary diversity were 72.3% and minimum acceptable diet were 52.30%. Practice of feeding Vitamin A rich fruits and vegetables was only 3.1%. In observation, most of the caretakers were doing as they said the interview showing no statistical significance by McNemar test. Occupation ($p=0.015$), literacy status ($p=0.000$) and economic status ($p=0.000$) have the association with the complementary feeding knowledge. Similarly economic status, literacy status and age of caretakers were significantly associated with most of the feeding practices. The knowledge levels as well as most of the feeding practices were found good in caretakers of young children. But the large gaps were found in the initiation of complementary feeding and feeding vitamin A rich fruits and vegetables.

Key Words: Caretakers, Complementary feeding, Practices, Young children.

INTRODUCTION

Complementary feeding (CF) is the process of starting food when breast milk or infant formula alone is no longer sufficient to meet the nutritional requirements of an infant and when other foods and liquids along with breast milk or a breast milk substitute are needed.¹ Adequate nutrition is critical to the growth and development of each child to the fullest potential. The period from birth to age two is especially important for the optimal physical, mental and cognitive growth, health, development and to prevent chronic degenerative diseases.^{2,3} Nutritional status among children deteriorates after age 9-11 months, when most children (91%) are given complementary foods.²

Under nutrition remains a significant problem among children in the South East Asia along with Nepal, despite more than a decade of interventions aimed at improving it.⁴ An inadequate complementary food and faulty feeding practices among young children are major causes of the very high prevalence of malnutrition in the developing world.⁵ Good complementary feeding practices have been listed as the third preventive measure to reduce under five morbidity and mortality, by this,

6% of deaths per year preventable by good complementary feeding.⁶

In Nepal, 41% of under five are stunted, 11% are wasted and 29% are underweight which reflects the effects of both acute and chronic under nutrition.² Only 69.7% of children have introduced solid, semi-solid or soft food at 6-8 months, only 34.2% have feed using minimum dietary diversity, 82% have minimum meal frequency and only 31.8% have minimum acceptable diet.⁷ Feeding practices such as the too early or too late introduction of complementary foods, low energy and low nutrient density of foods are common even in parts of Southeast Asia and have been identified as among the major causes of malnutrition in young children.^{8,9}

Since the prevalence of malnutrition is still high among the children in Nepal and associated with complementary feeding practices, it is imperative that further research is essential to carryout to find out actual feeding practices and factors associated with it among the caretakers of young child in different geographic areas of Nepal. Thus study has explored

the knowledge and practices of complementary feeding among the caretakers of young children at Kathmandu.

METHODS

A descriptive cross-sectional study was carried out by collecting data during 16th December, 2012 to 14th January, 2013 in the Ramkot, Seuchatar and Ichangunarayan VDC of Kathmandu District. VDCs were selected purposively and 6 out of 27 wards of these VDCs were selected randomly. Total the caretakers of 6 to 24 months child of selected wards who were willing to participate were included in the study. Caretakers of children with congenital and chronic diseases and known reason to failure to thrive were excluded from the study. From 195 caretakers, quantitative data were collected using structured questionnaires by interview method. Observation of feeding practices also done among the 35 caretakers of young children in their home setting. Ethical approval was taken from Institutional Review Board, Institute of Medicine, Tribhuvan University. Permission to carry out the study was taken from each concerned VDCs and verbal consent was taken from each respondent.

Definitions of feeding practices were elicited from manual indicators for assessing infant and young child feeding practices part 1 developed by World Health Organization in 2008.¹⁰ Most of the feeding practices were obtained from caretakers using a 24-hour recall.

Data entry and analysis was done using SPSS version 16. Analysis was done using both descriptive and inferential statistics. The chi square test was done to identify association between different demographic variables and complementary feeding knowledge and practices. McNemar test was applied to identify the association between the certain feeding practices on interview and observation.

RESULTS

Table 1: Socio-demographic Characteristics (n=195)

Characteristics	Number	Percentage	
Age of the caretakers (years)	Less than 20	20	10.3
	20 to 34	152	77.9
	35 and above	23	11.8
	Mean age \pm SD	27.59 \pm 9.06 years	

Educational status of caretakers	Illiterate	31	15.9
	Informal education	8	4.1
	Primary education	29	14.9
	Secondary education	53	27.2
	SLC and above	74	37.9
Occupation of the caretakers	Agriculture	24	12.3
	Services	17	8.7
	Business	16	8.2
	Household work	134	68.7
	Laborer / Daily wages	4	2.1
Age of the young child (months)	Nuclear	98	50.3
	Joint	88	45.1
	Extended	9	4.6
Economic Status	Lower status	26	13.3
	Middle status	92	47.2
	Higher status	77	39.5
Age of the young child (months)	6 to 8	8	4.1
	9 to 11	32	16.4
	12 to 24	155	79.5
	Mean age \pm SD	15.63 \pm 4.58 months	

Majority of the respondents (77.9%) were in age group 20-34 with mean age of 27.59 years. More than one third (37.9%) of the caretakers were having education of SLC and above. Around 69% had engaged in household activities and half (50.3%) belongs to nuclear family. Around 47% have replied of having economic status as middle. Regarding sources of information on complementary feeding, majority (68.7%) has got information from family member and friends followed by television (41%) and health care workers (32.3%). Majority of young children (79.5%) were from age group of 12 to 24 months with mean age of 15.63 months.

Regarding knowledge, 56.4% respondents had knowledge about essential duration of breastfeeding along with complementary feeding is 24 months and 72.3% respondents mentioned age of introduction of CF is 6 months. Regarding the different food

essential for young child, cent percent mentioned that grain is essential followed by dairy products (99.5%), pulses, legumes or nuts (98.5%), meat fish or egg (88.2%), other fruits and vegetables(76.9%), root and tumber (61%) but only 29.7% had mentioned that vitamin A riches fruits and vegetables are essential for child. Out of total knowledge score of 17, the mean was 13.64 with Standard Deviation of 2.50 and the minimum and maximum score ranged from 6 to 17. Majority of respondents (59.5%) had adequate knowledge (above average) and remaining (40.5%) had inadequate knowledge (average or below average).

Table 2: Practices on Complementary Feeding

Characteristics		Number	Percentages
Continuing breast milk to till date (n=195)		163	83.6
Age of the child when started complementary feeding (n=195)	≤5 months	89	45.6
	6 months	65	33.3
	≥7 months	41	21.0
	Mean ± SD	5.43±2.11 months	
First food given to child as complementary feeding (195)	Lito	83	42.6
	Jaulo	38	19.5
	Khira	15	7.7
	Cerelac	59	30.3
	Minimum meal frequency (n=195)	128	64.6
Use of essential diverse food to their children	Grains	194	99.5
	Pulses, legumes and nuts	190	97.4
	Roots and tumbers	81	41.5
	Meat, fish or eggs	69	35.4
	Milk and milk products	162	83.1
	Vitamin A riches fruits and vegetables	6	3.1
	Other fruits and vegetables	119	61.0

Minimum dietary diversity (n=195)	<4 items	54	27.7
	≥ 4 items	141	72.3
	Minimum acceptable diet (n=195)	102	52.3
	Use of oil or ghee in child's food (n=195)	168	86.2
	Hand washing by using soap water (n=160)	107	66.9
	Storing prepared food for next use (n=195)	118	60.5

Most of the respondents (83.6%) had continued breastfeeding to the time of survey while 16.4% had already stopped the breast feeding. One third (33.3%) had started at 6 months of age, 45.6% had started the complementary feeding before 6 months of age and 21% had delayed 7 months or more. The mean age of starting CF was 5.43 months, maximum age of 12 months and minimum age of 1 month. Lito (42.6%) was the most commonly used food followed by Cerelac (30.3%). Sixty four percentages children were given minimum meal frequency. Regarding the use of diverse food to their children, almost all respondents (99.5%) were fed grains to their child followed by pulses, legumes and nuts by 97.4% and use of milk and milk products by 87.9% of respondents. Only 3.1% were fed vitamin A riches fruits and vegetables and 35.4% fed meat, fish or egg to their children. Majority of the caretakers (72.3%) had fed from 4 or more food groups (adequate dietary diversity) to their children and more than half (52.30%) were getting minimum acceptable diet. Most of caretakers (86.2%) used to add fat or oil to food prepared for their child, 82.1% had used to hand wash before feeding to child but only 66.9% had used soap water to wash hand and 60.5% used to store prepared food for next feed for child.

Regarding the practices on observation, 77% of caretakers had added oil or fat while preparing food and less than half (48.6%) had wash hand with soap water before feeding their children. Likewise 27 respondents (77.1%) had been patience, concentrated and not being hurry while feeding to their child. More than half (60.0%) had kept the prepared food for next use of child and majority of participants (71.4) had done verbal interaction and encouragement during feeding. Likewise, 45.7% had feed their child in kitchen or dining table and more than half (57.1) had given congratulation and praise after completion of meal.

Table 3: Association between Socio-demographic Variables and Continuation of Breast Feeding (n=195)

Characteristics		Continued Breast Feeding No (%)	Discontinued Breast Feeding No (%)	Total	p value
Age of caretakers	Below 30 years	127 (88.2)	17 (11.8)	144	0.004*
	30 years and above	36 (70.6)	15 (29.4)	51	
Religion	Hindu	151 (86.2)	24 (13.7)	175	0.003*
	Buddhist, Muslim & Christian	12 (60.0)	8 (40.0)	20	
Type of family	Nuclear	87 (88.7)	11 (11.2)	98	0.049*
	Joint and extended	76 (78.3)	21 (21.6)	97	

The practice of continuation of breastfeeding is the significantly associated with age ($p=0.004$), religion ($p=0.003$) and type of the family ($p=0.049$). Among the respondents having age of below 30 years, most of them (88.2%) have continued the breastfeeding. Similarly among the respondents having Hindu religion, most of them (86.2%) continued the breast feeding to their children.

Table 4: Association between Socio-demographic

Characteristics and Minimum Dietary Diversity (n=195)		Having Minimum Dietary Diversity No (%)	Having less than Minimum Dietary Diversity No (%)	Total	p value
Literacy status	Literate	125 (76.2)	39 (23.7)	164	0.005*
	Illiterate	16 (51.6)	15 (48.3)	31	
Economic Status	Higher status	68 (88.3)	9 (11.6)	77	0.000*
	Middle & lower status	73 (61.9)	45 (38.1)	118	
Type of family	Nuclear	63 (64.2)	35 (35.7)	98	0.012*
	Joint and extended	78 (80.4)	19 (19.5)	97	

There is statistically significant association between literacy

status ($p=0.005$), economic status ($p=0.000$), type of family ($p=0.012$) and having minimum dietary diversity to their child. Among them economic status has shown strongly significant association as the higher percentage of respondents (88.3%) having high economic status had fed the minimum diverse food to their children.

DISCUSSION

Socio-demographic findings of this study revealed that 80% of the caretakers were mother and 5.1% were father showing the little participation of father in caretaking the child. Most of caretakers (77.1%) were from age group of 20 to 34 years, the result is different from another study that only 51% respondents were in 20-34 year age group.¹¹ In this study 15.9% caretakers are illiterate and majorities of respondents (68.7%) have doing household activities which contradicts to the study at Makwanpur that 52.8% were illiterate and 74.0 % having agriculture as main occupation.¹¹

Regarding practices, 83.6% had continued breastfeeding to time of survey. The finding of NDHS in Nepal also supports this finding that 93% children were breastfeeding up to 2 years.² Only 33.3% had started complementary feeding at appropriate age which is contradictory to findings that 66% of children are given timely complementary feeding.² Even though the deleterious health consequences of early weaning have been well documented, 45.6% had started the CF before 6 months and 21% had delayed more than 6 months but in NDHS, only 23% of children were started CF before 6 months.² Age range of starting CF was 1-12 months of age which is supported by a study of that highest age for starting of complementary feeding was 15 months and lowest of 1 months.¹² In this study, the practice of timely initiation of CF is significantly associated with the economic status (0.004) which is consistent with the findings that delayed weaning is statistically significant with family income ($p<0.05$).¹³ Majority of caretakers (42.6%) were used Lito as first food followed by Cerelac (30.3%) which contradicts results of Pokhara that 86% gave Jaulo as the first complementary food to their children.¹⁴

Only 64.65% of children have given minimum meal frequency which is below national coverage that 79% of children having minimum meal frequency.² Almost all respondents (99.5%) were fed grains to their child in yesterday meal followed by pulses, legumes and nuts by 97.4%, milk and milk products by 87.9% of respondents. But only 35.4% of caretakers had fed meat, fish or egg and vitamin A rich fruits and vegetables by only 3.1%. These some findings were supported by NDHS result that children were fed grains by 88% and meat, fish, poultry and egg by only 26% but some findings are distinct that children were fed fruits and vegetables rich in vitamin A by 35%, legumes and nuts by 49%, and milk and milk products by only 9%.² High number of children (72.3%) were fed from 4 or more food groups (adequate dietary diversity) which is higher in comparison to study that, diversity of foods (≥ 4 items) fed to children was only 28%.²

More than half, 52.30% were getting minimum acceptable diet which is higher in percentages than national coverage that only 24% of Nepalese children were having minimum acceptable

diet.²

In observation, most of the respondents are practicing as per they had reported at interview, showing no significant differences ($p>0.05$) in most of the practices in observation.

These findings helps the health workers to develop of the IEC material on complementary feeding to infant and young child and to lunch different health program to improve complementary feeding practices. Similarly, it will also be beneficial for different NGOs and INGOs involving in child health promotion related to nutrition. Furthermore, the findings will serve as a base for future research in large scale or in qualitative approach. However this small scale study with expected some recall bias and possibility of under or over reporting of practices to get more socially desirable behaviours.

CONCLUSIONS

More than half of the respondents had adequate knowledge on the complementary feeding. Caretakers having adequate knowledge had good practices of complementary feeding. They had good practices in continuation of breastfeeding, minimum meal frequency, adequate dietary diversity, minimum acceptable diet and hand washing practices. In observation, practices of responsive feeding like feeding in kitchen or dining table, being patience and giving praise, verbal encouragements and congratulation were present in majority of participants. In spite of these good practices, the large gaps were found in initiation of complementary feeding at 6 months, meal frequency to nonbreastfed child and feeding vitamin A riches fruits and vegetables to children.

Factors like age of the caretakers, literacy status and economic status are associated factors influencing the knowledge and practices of complementary feeding. Caretakers of age below 30 years, literate and having high economic status were having adequate knowledge and good practices.

REFERENCES

1. World Health Organization. Complementary feeding: summary of guiding principles for breastfeed child. Report of the Global Consultation. December, Geneva, Switzerland; 2001: 10-13. ISBN 92 4 154614 X.
2. Ministry of Health and Population, Nepal, New ERA and ICF International Inc. Nepal Demographic and Health Survey 2011. 2012; 171-177. Kathmandu, Nepal.
3. Aggarwal A, Verma S, Faridi MMA, Dayachand D. Complementary feeding reasons for inappropriateness in timing, quantity and consistency. *Indian J Pediatric*. 2008; 75(1): 49-53. PMID: 18245935.
4. United Nations Children's Emergency Fund. Strategy to Reduce maternal and child under nutrition. Health and Nutrition Working Paper for East Asia and Pacific region. 2003. ISBN: 974-685-034-2.
5. Malla S, Shrestha S. Complementary feeding practices and its impact on nutritional status of under two years children in urban areas of the Kathmandu. *J Nepal Health Research Council*. 2004; 2 (1).
6. Jones G, Steketee RW, Black RE, Bhutta ZA, Morris SS. How many child deaths can we prevent this year?.

Lancet. 2003; 362(9377): 65-71. DOI 10/1016S0140-6736(03)13811-1.

7. Senarath U, Agho KE, Akram D, Godakandage S, Hazir T, Jayawickrama H, Dibley M. Comparisons of complementary feeding indicators and associated factors in children aged 6–23 months across five South Asian countries. *Maternal and Child Nutrition*. 2011; 8(1): 5-10. DOI: /10.1111/j.1740-8709.2011.00370.x/full#b7.
8. Pelto G, Levitt E, Thairu L. Improving feeding practices: current patterns, common constraints and the design of interventions. *Food and Nutrition Bulletin*. 2003; 24(1): 45-82.
9. Dewey KG, Brown KH. Update on technical issues concerning complementary feeding of young children in developing countries and implications for intervention programs. *Food and Nutrition Bulletin*. Special Issue. 2003; 24(1): 5-28. DOI 10.4236/fns.2013.49A2004.
10. World Health Organization. Indicators for assessing infant and young child feeding practices Part 1: Definitions. Geneva: Switzerland; 2008. ISBN: 978 92 4 159666 4.
11. Subedi N, Paudel S, Rana T, Poudyal AK. Infant and young child feeding practices in Chepang communities of Nepal. *J Nepal Health Research Council*. 2012; 10 (21): 141-6. PMID: 23034377.
12. Subba S., Chandrashekhar T., Binu V, Joshi H, Rana M, Dixit SB. Infant feeding practices of mothers in an urban area in Nepal. *KUMJ*. 2007; 5(1):42-7.
13. Chaudhry R., Humayun N. Weaning practices and their determinants among mothers of infants. *European Biomedical*; 2007; 23(6). PMID: 18603985.
14. Basnet S, Gauchan E, Malla K, Malla T, Koirala DP, Rao KS, et al. Infant feeding practices in Kaski district, Pokhara. *J Nepal Pediatric Society*. 2012; 32(1): 23-27. DOI: <http://dx.doi.org/10.3126/jnps.v32i1.5339>.