

**ORIGINAL RESEARCH ARTICLE****FACTORS AFFECTING COMPLEMENTARY FEEDING AMONG MOTHERS OF UNDER TWO YEARS CHILDREN IN DARAI AND KUMAL COMMUNITIES OF MANGALPUR, CHITWAN**KP Kandel ^{1*}, BK Sah ², S Kafle ³, S Khanal ⁴, B Adhikari ⁵¹ Health Department, Kalika Medical & Technical Institute, Nawalparasi² Department of Public Health, SMTC Bharatpur, Chitwan³ Kalika Medical & Technical Institute, Nawalparasi⁴ Birendra Multiple Campus, Bharatpur, Chitwan⁵ National City Hospital, Bharatpur, Chitwan***Correspondence to:** Mr. Kamal Prasad Kandel, Program Chief, Health Department, Kalika Medical & Technical Institute, Gaindakot, Nawalparasi.Email: Pariwortan2060@gmail.com**ABSTRACT**

Complementary feeding for an infant refers to timely introduction of safe and nutritional foods in addition to breast-feeding i.e. clean and nutritionally rich additional foods introduced at about six months of infant age. Complementary feeding strategies encompass a wide variety of interventions designed to improve not only the quality and quantity of these foods but also improve the feeding behaviors. The objective of the study is to assess the factors affecting complementary feeding practices among mothers in Mangalpur, Chitwan. A cross sectional study was carried out to find out the factors affecting complimentary feeding practices among mothers of under two years children in Darai and Kumal Communities in Mangalpur, Chitwan. Altogether 84 respondents were included in this study. Data analysis was done by descriptive statistics and Inferential statistics and those data was analyzed by using the software SPSS (version 20.0). The percentage of Knowledge on complimentary feeding was found as 96.40 and correct practice was 73.80% in the study area. In this study, more than half (58.3%) of the respondent had first child at the age of nineteen or more. 86.90 % of the respondents had knowledge of complementary food and mostly (87.70) practiced lito as complimentary food. Almost all (98.80%) mothers had the knowledge of sarbottam pitho and 79.50% had correct knowledge of preparation. Complementary feeding was practiced correctly by 73.80% mothers.

Key words: Darai, Feeding practice, Kumal, Mangalpur.**INTRODUCTION**

Complementary feeding is defined as the process starting when breast milk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breast milk. Malnutrition is responsible, directly or indirectly, for over half of all childhood deaths. Infants and young children are at increased risk of malnutrition from six months of age onwards, when breast milk alone is no longer sufficient to meet all nutritional requirements and complementary feeding needs to be started. Complementary feeding is safe and nutritional foods in addition to breast-feeding [BF] i.e. clean and nutritionally rich additional foods introduced at about six months of infant age. Complementary feeding strategies

encompass a wide variety of interventions designed to improve not only the quality and quantity of these foods but also improve the feeding behaviors.¹

Complementary foods are often of lesser nutritional quality than breast milk. In addition, they are often given in insufficient amounts and, if given too early or too frequently, they displace breast milk. Gastric capacity limits the amount of food that a young child can consume during each meal. Repeated infections reduce appetite and increase the risk of inadequate intakes. Infants and young children need a caring adult or other responsible person who not only selects and offers appropriate foods but assists and encourages them to consume these foods in sufficient quantity.²

World Health Organization (WHO) recommends exclusive breast-feeding (BF) for the first six months of age, addition of complementary feeds (CF) at six months with continued BF till two years which if followed appropriately can decrease infant mortality by 19 percent and prevent malnutrition especially in developing countries like ours. Weaning an infant from breast feeding to complementary food is a common cultural practice followed by Nepalese people, which plays vital role in the child's milestone for growth and development. The right practice of weaning is necessary to prevent from various health related complications like allergy, diarrhoea and choking further more delayed weaning may result in nutritional deficiency, protein energy malnutrition and, childhood illness, developmental delay stunting and sometimes even death. Weaning is often advantageous in reducing early infant mortality death. Although timing of weaning varies across societies but is always determined by the mother's characteristics, choices, knowledge and perceptions about child's health or cultural beliefs related to feeding. Additionally, mothers hold the overall responsibilities for the child's health and mothers' knowledge can be the barrier for weaning practice.³

Childhood under nutrition is prevalent in low and middle income countries. It is an important indirect cause of child mortality in these countries. According to an estimate, stunting (height for age Z score < -2) and wasting (weight for height Z score < -2) along with intrauterine growth restriction are responsible for about 2.1 million deaths worldwide in children < 5 years of age. This comprises 21 % of all deaths in this age group worldwide. The incidence of stunting is the highest in the first two years of life especially after six months of life when exclusive breastfeeding alone cannot fulfill the energy needs of a rapidly growing child.⁴

Childhood mortality is a very tragic phenomenon of the world. It is still high in most of the developing countries. United Nations (UN) set Millennium Development Goals (MDG) to reduce the childhood mortality by two thirds by 2015. Nepal has been trying its best to achieve these goals though it has a long way to go.⁵

According to WHO, hunger and malnutrition are the biggest cause of child mortality in developing

countries, in all most all cases of child mortality malnutrition is present in majority of the cases. One child die every second as a result of hunger and malnutrition, while 700 children die in every hour and 16000 children die in each day. Ten million children under 5 die each year. More than half of death occurs because of malnutrition. Adequate health system can prevent 2/3 of deaths. Part of the health system picture is to promote appropriate feeding practice for infant and young children. More than 50,000 children die in Nepal each year and malnutrition contributes to more than 60 percent of these deaths.⁴

Poor nutrition increases the risk of illness, & is responsible directly or indirectly, for one third of the estimated 9.5 million deaths that occurred in 2006 under 5 years children.⁶

Magnitude of the malnutrition problems is very high in Nepal. Child nutrition problem is widely observed in many parts of the country. Faulty feeding practice among the young children was the one of the major cause of malnutrition in Nepal. Complementary feeding practices among the young children also have been found very critical in the urban cities of the country. Nutritionally unbalanced food may cause nutrition deficiency disease as leads to nutritional deficiencies of Iron, Zinc, Calcium, Vitamin A. Timely initiation of Weaning practices among young children helps to promote their Nutritional status minimizing the chances of nutrition deficiency diseases. Nutrition has a great impact in child's life and feeding practices has direct impact on the nutritional status and well being of a child. It was indicated that nutrition has direct impact in social educational, mental and physical development of young children.⁷

Even in today's societies there are many different complementary feeding practices dependent upon history, religious taboos, and the availability of nourishing foods suitable for infants. Continuation of breastfeeding during the complementary feeding contributes a degree of protection to the infant gastrointestinal tract whilst new foods and potentially infectious materials are introduced during the weaning processes. The introduction of complementary food feeding is difficulty period in the infant's life, because if the child food supplements are not adequate quantity or quality,

the child becomes malnourished, unhygienic feeding practices may result enteric infection and diarrhea.

According to the WHO report, mothers are not aware of the special needs of the infant in the developing countries as Nepal, and may not know how to prepare weaning food. Scarcity of suitable food, lack of purchasing power of the family as well as traditional beliefs and taboos about what the baby should eat often lead to malnutrition.²

METHODOLOGY

Community based cross-sectional analytical study was conducted to assess the factors affecting complementary feeding practices among mothers having children under 2 years of age in Mangalpur area of Chitwan district in specific ethnic group that is in Darai and Kumal communities.

Non probability purposive sampling technique was used. The total sample size was 84. Health post of Mangalpur, Chitwan was visited and total number of mothers having children under 2 years of age and their address was found by the help of Vitamin A register. By the help of FCHV, Mothers having children under 2 years of age were identified and a meeting was arranged and, then interview of mother were taken. After the completion of interview health education was given to the respondents about complementary feeding.

Ethical approval was taken from institutional review committee. Before including the respondent in the study, verbal or written consent was obtained. Interview schedule was used to collect the data via the structured questionnaire. Content validity was maintained by consultation with the research guide and experts and making necessary changes as per suggestions; peer review Pre-testing of the questionnaire was done prior to the study. The tool was translated in Nepali language so that the respondents could understand it.

Administrative approval was obtained from the concern authorities. Verbal informed consent were obtained from the participants to ensure the right of subject. The researcher herself was collected the data through self administered questionnaire. The subject was assured for the anonymity and confidentiality of the information and allowed to

refuse participate in the study at any time if they wish. Privacy was maintained throughout the procedure.

Data collection was done & those data was be revised before entry. Data analysis was done by descriptive statistics and inferential statistics and those data was analyzed via the software SPSS (version 20.0) frequency and percentage distribution.

RESULTS

The demographic characteristics of study sample are shown in table 1. It shows majority (54.80%) of the respondent were in the age group of more than 27 years followed by age group below and equal to 27 years (45.20%). The mean age of the respondents was 27.2 years. About 83 % of the respondents were Darai and rests were Kumal. Regarding to the occupation of the respondent, 48.80% were Agriculture followed by Housewife (35.70%) and 15.50 % were Business and government job. Majority (41.70%) of respondent had lower secondary level education. 57.10% families were from Nuclear family whereas remaining (42.90%) were from Joint family. Majority (58.30%) of the respondent have get marriage in 19 years whereas (41.70%) were from above nineteen years. About (82.10%) respondent have first child at below and equal to 19 years whereas (17.90%) have at more than 19 years.

Table 1: Socio-demographic characteristics of study population

Characteristics (n=84)	Freq.	%
Age of mother		
≤27	38	45.20
>27	46	54.80
Caste		
Darai	70	83.30
Kumal	14	16.70
Religion		
Hindu	84	100.00
Occupation		

Agriculture	41	48.80
House wife	30	35.70
Business and Gov. office	13	15.50
Educational status		
Illiterate	12	14.30
Primary	21	25.00
Secondary	35	41.70
Higher secondary and above	16	19.00
Monthly income		
≤15000	43	51.20
>15000	41	48.80
Age at First Child		
≤19	69	58.30
>19	15	41.70
Birth order of child		
≤2 nd	69	82.10
>2 nd	15	17.90

In practice of mother about complimentary feeding, Majority (73.80%) had initiate complimentary feeding in right time (at six month) while (15.50%) mothers introduced early (at 5 months) and (11%) were late to introduce. Not having enough mother milk was the only reason to introduce early complimentary feeding. Lito (84.60%), followed by Cow or Buffalo milk (38.50%), cerelacs (23.10%), Daal Bhat (15.40%) were food items introduced at early age. while at six months, Lito (91.90%) was main complimentary feeding followed by Daal Bhat (46.80%), Cerelacs (33.90%) and Cow/ Buffalo Milk (21%). Most of the (86.90%) mothers had knowledge to feed commercial complimentary food. Majority (87.70%) mothers found that lito introduced as a complimentary feeding where as (42.50%) Biscuits, Cerelacs (39.70%), Horlicks (34.20%) and Powder milk (8.20%).

Table 2: Respondents Practice about complementary feeding

Characteristics	Freq.	%
Initiation of complimentary Feeding (n=84)		
5 month	13	15.50
6 month*	62	73.80
7 month	5	6.00
8 month	3	3.60
9 month or more	1	1.20
Introducing before six month, what are the reason(n=13)		
Lack of mother milk	13	100
Items introduced before 6 months as a complimentary feeding(n=13)		
Lito	11	84.60
Cerelacs	3	23.10
Dal-bhaat	2	15.40
Cow milk and buffalo milk	5	38.50
Complimentary feeding at right time(n=62)		
Lito	57	91.90
Cerelacs	21	33.90
Dal and bhat	29	46.80
Cow milk	13	21.00
Respondents' knowledge about commercial food		
Yes	73	86.90
No	11	13.10
Types of commercial food introduced		
Lito	64	87.70
Horlicks	25	34.20
Cerelax	29	39.70
Powder milk	6	8.20
Biscuits	31	42.50
Times of feeding per day		
1-2 times	1	1.20
2-3times	43	51.20
3-4times	32	38.10
4-5 times	8	9.50

Table 3 shows feeding practice during illness. Majority (94%) mothers had fed their children during illness. Types of food given were Lito (77.20%), Daal-Bhat (60.80%), Cerelacs (22.20%). Majority

(51.90%) mothers were given food less than usual during illness. Some (6%) mothers were not given food during illness, Reasons not feeding were vomiting(80%), not accepting food (40%) and fear of feeding during illness(20%).

Table 3: Feeding complimentary food during illness

Characteristics	Freq. (n=84)	%
Offer complementary foods to your child during illness		
Yes	79	94.00
No	5	6.0
Types of food introduced in illness(n=79)		
Lito	61	77.20
Daal, Bhat	14	60.80
Cerelecs	18	22.20
How many time they used		
More than usual	10	12.70
Same as usual	28	35.40
Less than usual	41	51.90
If not feed reasons		
Didn't accept foods	2	40.00
Vomits everything	4	80.00
Fear of feeding during illness	1	20.00

Table 4 shows that the relationship between socio-demographic variable and feeding practice of the mother. Correct and incorrect practice was found higher in age group below 27 years which is not statistically significant. There was no association between educational status of mother and feeding practice, higher correct and incorrect practice both seen among Secondary level education of mother which was statistically not significant (p value 0.923).

Table 4: Association between Practice and demographic variables

Characteristics	Correct practice	Incorrect practice	p-value
Age of mother			
≤27	32(38.10)	14(16.70)	0.330
>27	30(35.70)	8(9.50)	
Cast of mother (३)			
Darai	52(61.90)	18(21.40)	1.000
Kumal	10(11.90)	4(4.80)	
Occupation			
Agriculture	12(14.30)	29(34.50)	0.061
House wife	20(23.80)	10(11.90)	
Business and Gov. office	13(15.50)	0(0.00)	
Educational Status (३)			
Illiterate	9(10.70)	3(3.60)	0.923
Primary	15(17.90)	6(7.10)	
Secondary	27(32.10)	8(9.50)	
Higher secondary and above	11(13.10)	5(6.00)	
Monthly income			
≤15000	33(39.30)	10(11.90)	0.531
>15000	29(34.50)	12(14.30)	
Age at marriage			
≤19	22(26.20)	13(15.50)	0.204
>19	40(47.6)	9(10.70)	
Age at first child			
≤19	9(10.70)	6(7.10)	0.204
>19	53(63.10)	16(19.00)	
Birth order of child (३)			
≤2 nd	50(59.50)	19(22.60)	0.749
>2 nd	12(14.30)	3(3.60)	

३ Fisher Exact test *significant at 0.05

DISCUSSION

Malnutrition is responsible, directly or indirectly, for over half of all childhood deaths. Infants and young children are at increased risk of malnutrition from six months of age onwards, when breast milk alone is no longer sufficient to meet all nutritional requirements and complementary feeding needs to be started.

Infant and young child feeding (IYCF) practices include early initiation of breastfeeding within one hour of life, timely introduction of solid/semi solid foods from the age of six months increasing in amount and frequency over time along with breast feeding as demanded by child. The National demographic health survey 2011 concluded that complementary foods are not introduced in a timely fashion for all children in Nepal. Seventy percent of infant have been given complementary food by age 6-9 months (NDHS, 2011).⁸

This cross-sectional study was designed to find out the factors affecting complementary feeding practice among mothers of under two year children in Mangalpur, Chitwan. The finding of this study is similar to studies from other settings, some variations were also observed. The present study found that 73.80% mothers practiced complementary feeding at right time which was comparatively low compared to study by NDHS 2011 i.e. 92%. Mothers who reported giving weaning by 3 months were 9.9%, which rise to 29.6% by 5 months and 38% of the mothers reported starting at 6 months.⁹

A study in the tertiary hospital in India has shown that 17.5% of mothers started CF at the recommended time (Aggrawal A, 2008).¹⁰ A study in a tertiary hospital in Pakistan reported that an undesirable early and late introduction of CF was also practiced.¹¹

In another study in Delhi slums, 16.6% of mothers started CF at the right time (Sethi V, 2003)¹² though in our study among non-EBF mothers, similar percentage was found in late introduction of CF (Alina, R, 2014).⁴

This study showed that all mother said that not enough mother milk was the reason to introduced early complimentary feeding. Majority (91.90%) mothers initiated fed Lito as a complimentary feeding in six months where as Daal Bhat (46.80%)

Crelacs (33.90%), Cow/ Buffalo Milk (21%) before six months as complementary feeding. This findings is comparing with the result of the previous study conducted by (Khan S) found that 69.2% of mothers started complementary feeding before 6 month.¹³

Suji was most common complementary food 40.8% followed by Khichiri 22.5%, milk 16.7% & mashed rice 13.3%. This study revealed that 70% mothers initiated complementary feeding with either cow's milk or goat milk or formula milk.

It was found in our study that reasons for late starting of complementary feeding were Milk is enough, child didn't accept other food, elder told to do so. Similar type of findings was observed in another study done in india.¹⁴

This study found that 86.90% participants had knowledge on commercial food and practiced as a complimentary food. They have been practiced commercial complementary food as Lito, Horlicks, Cerelacs, powder milk, Biscuits etc. It seems that the trend of using marketed weaning food is increasing. Similar phenomenon was observed by Aggarwal et al, India. Chapagain RH¹⁵ reported that 19% of mothers used marketed weaning food.

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