

## ORIGINAL ARTICLE

# Infant and Young Child Feeding – Knowledge and Practices of ASHA workers of Doiwala Block, Dehradun District

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## Abstract

**Introduction:** Promotion and support of breastfeeding is a global priority and an important child-survival intervention. Accredited Social Health Activists (ASHAs) can play a significant role in the promotion of breast-feeding. Present research paper reviews their knowledge & practices with respect to Infant and Young Child Feeding (IYCF) issues. Further, it also analyzes difficulties being faced by them in promoting positive IYCF practices so that necessary support can be provided for carrying out their desired role. **Material and Methods:** It was a descriptive, cross-sectional study conducted in the block Doiwala of Dehradun district, Uttarakhand. All 168 ASHAs were included in the study for the assessment of knowledge and practices by interview technique based on predesigned and pre-tested questionnaire. **Results:** 98% ASHAs had complete and correct information about exclusive breast feeding, however only 38% ASHAs were aware that breastfeeding should be started within 4 hours in children delivered by caesarean section. Only 18% ASHAs reported to be able to motivate mothers to practice exclusive breast feeding. Insufficient mother's milk (55.4%), Caesarean sections (20.2%), coercion from elders in the family to start top milk were among the important factors attributed for failure of exclusive breastfeeding. Regarding complementary feeding, only 45% ASHAs knew the correct timing of initiation of complementary feeding; however 58% ASHAs had introduced the complementary feeding at 7th month in their children. 83.9% ASHAs knew that complementary food should be semisolid in consistency, while 87.5% and 32.7% ASHAs were aware that egg and non-vegetarian food items can be given as complementary food to the child. Bottle feeding had been practiced by about 33% of ASHAs in the past; however no ASHA had reported bottle feeding currently. **Conclusion:** Present research paper concludes that although knowledge level of ASHAs is high regarding IYCF practices but it does not match with the actual practices. They require skill building especially in the area of breastfeeding options for working women as well as complementary feeding.

## Key Words

Infant & Young child feeding; ASHA; Breastfeeding; Complementary feeding

## Introduction

Breastfeeding has been accepted as the most vital intervention for reducing infant mortality and ensuring optimal growth and development of children (1). This holds even more importance in the context of infant and young child feeding (IYCF) in developing countries like India, where breast milk is the safest, most easily available and most economical form of feeding options for the infant. More than 15% of 24 lakh child deaths could be averted in India by optimal breastfeeding practices (2). Reviews of studies from developing countries show that infants who are not breastfed are

6 to 10 times more likely to die in the first months of life than infants who are breastfed (3,4). More than one-third of under-five children are malnourished – whether stunted, wasted, or deficient in vitamin A, iron or other micronutrients – and malnutrition contributes to about one third of the 8.1 million deaths each year among young children in developing countries (5). The percentage of children breastfed within one hour of birth in district Dehradun was reported to be between 30 and 49% according to DLHS-3 data, whereas it was 32.9% in Uttarakhand on the whole (6). The percentage of exclusive breastfeeding was reported to be 31.2%, while only 51.6% children aged 6-9 months

were given appropriate complementary feeding in Uttarakhand (7).

The promotion and support of breastfeeding is a global priority and an important child-survival intervention. The World Health Organization and UNICEF developed the Global Strategy for Infant and Young Child Feeding in 2002 to revitalize world attention to the impact that feeding practices have on the nutritional status, growth, development, health, and survival of infants and young children. However, in reality many mothers are unable to practice exclusive breastfeeding as advocated (8). Information on how to feed young children comes from family beliefs, community practices and information from health workers. Inadequate knowledge about the technique of breastfeeding, the appropriate complementary foods, and good feeding practices are often a greater determinant of malnutrition than the availability of food.

National Rural Health Mission (NRHM) is flagship programme of the country, started in 2005 for ensuring health for all. Accredited Social Health Activists (ASHAs) have been recruited under NRHM as key resource personnel for awareness creation and demand generation for health. ASHAs can play a pivotal role in the promotion of breast-feeding. In this regard, it is expected from them to be torch bearers of correct practices in the community, which can be emulated by rest of the society. In the state of Uttarakhand, recruitment and training of ASHAs started in the year 2005. ASHAs have been provided training on breast feeding and complementary feeding practices as per the Government of India modules.

## Aims & Objectives

Present research paper reviews the knowledge & practices of ASHAs about IYCF issues. Further, it also analyzes difficulties being faced by them in promoting positive IYCF practices so that necessary support can be provided for carrying out their desired roles.

## Material and Methods

**Study population:** Dehradun district in the state of Uttarakhand is divided in six blocks viz Chakrata, Kalsi, Vikas Nagar, Sahaspur, Raipur and Doiwala. The present study was conducted among ASHAs of Doiwala Block, Dehradun, Uttarakhand. Data collection was done from February to May 2012.

**Study design:** It was a descriptive cross sectional study.

**Operational definitions:** All the ASHAs who had a child were included in the study and assessed for their

knowledge and practices about IYCF. Out of the 168 ASHAs, "Current IYCF practices" were assessed in those ASHAs (n=11) who had the youngest child in the age group of two years or below. Observations about "Current IYCF practices" have been reported separately. Assessment of socioeconomic status was done according to possession of Above Poverty Line (APL) or Below Poverty Line (BPL) card provided by Government of Uttarakhand.

**Sample size and Sampling procedure:** All ASHAs in Doiwala block who consented to participate and had a child were included in the study.

**Data collection:** Data was gathered by trained field investigators who were provided two days training prior to the start of data collection process through the use of a predesigned & pretested questionnaire. Questionnaire included information related to the bio-social profile, time of initiation of breastfeeding, exclusive breastfeeding, bottle feeding, time of starting complementary feeding, usual problems for working women and common barriers for promoting exclusive breastfeeding and complementary feeding.

**Analysis:** Data was tabulated and analysed using the statistical software (SPSS 17 version). Results were stated in numbers and percentages. Association of categorical variables was assessed by applying chi-square test for proportions and p value <0.05 was considered significant. The means were compared by a t test.

**Ethical Consideration:** The ethical clearance for the study was obtained from the institutional ethical committee of HIHT University, Dehradun.

## Results

**Socio-demographic profile of ASHAs:** Total 168 ASHAs participated in the study. 98% of them were inducted in the NRHM programme 7 years back and had taken up complete 23 days training, with 1-3 days special training on breastfeeding which was provided by state ASHA resource centre and by other local NGOs.

Almost all the ASHAs (98.2%) were above 25 years of age and had the youngest child with an average age of 5-10 years. About three-fifth of the ASHAs were in the age group of 31-40 years, while about one fifth each were in the age group of 20-30 years and more than forty year age group. Only 11 ASHAs who had children aged 2 years and below at the time of survey were assessed for current IYCF practices.

Majority of the ASHAs were Hindu by religion (93.5%) and 64.3% belonged to the general caste. About 90% of

ASHAs had completed high school or higher education, and 23.8% were graduates or postgraduates also. More than two third ASHAs belonged to families below the poverty line and three fourth of them had a nuclear family. 94% of the ASHAs were housewives and were not engaged in any other job besides the work of ASHA. ([Table 1](#))

**Knowledge and Practices of ASHAs about IYCF:** The observations about knowledge and practices shown in [Table 2](#) and 3, are with reference to all the ASHAs included in the study and includes the “current” IYCF practices of 11 ASHAs who had a child equal to or less than 2 years of age. Knowledge about the correct definition of exclusive breast feeding (98%), avoidance of even water during initial six months (97%), and frequency of breastfeeds during day and night (99.4%) and continued feeding of children during illness (96.4%) was exceptionally high in the ASHAs. However, the correct time of initiation of breastfeeding after a caesarean section was known to only 39%.

Exclusive breastfeeding was reported to be practiced by about three fourths of the ASHAs and the most common reason for inability to exclusively breastfeed was reported to be inadequate breast milk (55.4%) and caesarean section (20.2%). About 5% of them also stated the lack of knowledge to be the cause of inability to breastfeed exclusively. Besides these, pressure from elders in the family was also cited to be a reason by some.

Although the correct age of weaning was known to only 45% of ASHAs, yet a higher proportion (58%) of ASHAs had weaned their child at the correct age i.e. from 7th month. Three-fourth of the ASHAs found packed milk to be the right substitute of breast milk, while others stated cow or buffalo’s milk with water to be appropriate. The knowledge about correct method of top feeding was reported to be through a katori and spoon by 94% ASHAs, but about 33% ASHAs had bottle fed their children. The knowledge about the semisolid nature of complementary food was reasonably high (83.9%) and about 87% and 33% of ASHAs were aware of feeding their children with eggs and non-vegetarian food items respectively as a part of complementary feed. The most common reason reported by ASHAs for not giving non vegetarian food items to children were the religious barriers of vegetarianism (35.1%) and its non-suitability for the children (31.5%). Elders in some of the families also prohibited the feeding of children with non-vegetarian food items. The mean duration of breastfeeding was reported to be  $27 \pm 17.9$  months.

An analysis was done to see the association of knowledge and practices of breastfeeding and

complementary feeding with the educational status of the mothers. We could not observe any significant association between the educational status and the various aspects of breastfeeding except for a higher percentage (100%) of exclusive breastfeeding in ASHAs less than 10th pass as compared to those with higher qualification. ([Table 2](#) and [Table 3](#))

**Current IYCF practices:** Current IYCF practices were assessed in 11 ASHAs who had a child less than 2 years of age at the time of data collection. 7 out of 11 ASHAs had initiated breastfeeding within half an hour of birth, 2 within one day and rest two had started it the next day and only 2 had exclusively breastfed their child for 6 months. 2 ASHAs had given pre-lacteal feed but none had bottle fed their children. 2 out of 11 ASHAs had started complementary feeding from seventh month, while 9 had started it prematurely. (Not shown in table)

**Problems faced by ASHAs with respect to promotion of IYCF in community:** An enquiry into the problems encountered by ASHAs in the community with respect to advocacy of breastfeeding was also made as shown in [Table 4](#). The biggest hurdle reported was the attitude of the people which was resistant to a change in the behaviour. This was further compounded by the lack of knowledge about various aspects of breastfeeding and the opposition by elders in the family against accepting any new practices which would impinge on their traditional beliefs and practices.

Regarding problems faced by working women in continuation of breastfeeding, it was reported that majority of them have to shift their babies on top milk (60%) in order to join back their work outside the home. Many of them face breast discomforts (25.0%) and remain separated from their young babies for long hours as there is no provision of crèches at the work places (18%).

When asked about the situation of non-vegetarian food as a part of complementary feeding in the community, majority of the ASHAs informed that egg is given by 25-50% families whereas Meat/ fish/ chicken etc. are given by less than 25% families only. 5% ASHAs reported that none of the mothers, in the area that they served, gave non vegetarian food items to their children in the age group of 6m to 2 years; rest all reported the feeding of children with non-vegetarian food.

## Discussion

ASHAs represent the cornerstone of NRHM’s strategy to address the Millennium Development Goals (MDG) on health related indicators, especially those related to the mother and child health. They are expected to

create awareness on health and its determinants and also mobilize the community towards better health practices. An assessment of their knowledge and practices regarding IYCF, which has been attempted in the present study, would help us identify the gaps in their knowledge as well as the gaps in the translation of knowledge to practice.

Exclusive breastfeeding is an indispensable component of IYCF and the present study demonstrates that the knowledge about its correct definition which entails the avoidance of even water during initial 6 months was exceptionally high. The knowledge about exclusive breastfeeding amongst anganwadi supervisors in Wardha has also been reported to be 100% (9). Similar findings have also been reported by other researchers in studies conducted on health workers or working women (10,11). However, the finer details of exclusive breastfeeding such as the correct time of initiation of breastfeeding in a caesarean section were known to only 38.7%. Caesarean section was also cited as the second important reason for the inability to exclusively breastfeed the child, indicating the gap in knowledge about the facts related to breastfeeding. Murray et al (12) also showed that caesarean section was a significant barrier for initiation of breastfeeding in his study.

The problem of working women with respect to breastfeeding their babies has been a major concern area. Shifting of the baby to top milk so that the mother can resume their job responsibilities is the commonest and biggest hurdle that working women face in their efforts to continue exclusive breastfeeding and was reported by 61% ASHAs in the present study. This finding has been substantiated by reports from other researchers such as Dearden KA et al (13) & Noble S (14). Provision of maternity leaves, provision of crèches at place of work and teaching the mothers, the use of expressed milk would provide viable solutions to address this issue.

Another issue that needs to be addressed is the perception of mothers about inadequate breast milk, which has been cited as the most common reason for their inability to breastfeed. This perception usually emanates from the lack of knowledge about the frequency of feed, correct technique of breastfeeding, signs of inadequate breast milk and on demand feeding. These cases usually require patient listening, observation and reassurance apart from detecting any genuine cause of inadequate milk. ASHAs must be skilled to counsel such cases for reassuring the mothers as well as other family members.

Complementary feeding is another crucial component of IYCF and timely and appropriate introduction of complementary foods play a significant role in preventing growth faltering of the child. It also prevents the child from the risks of micronutrient deficiencies and malnutrition. ASHA's knowledge about the correct age of weaning in the present study was found to be lower (44.6%) than that reported by Aggrawal A et al (15) in their study in Delhi (54%). Also the knowledge about breast milk substitutes was inappropriate in the present study where ASHAs recommended the use of diluted cow's or buffalo's milk. However, the knowledge about the semisolid nature of complementary food was higher than that reported by another study done on mothers (25.5%) (15). A knowledge-practice mismatch that was discovered in the present study was in relation to the mode of top feeding, where 33% of ASHAs had bottle fed their babies against only 6% of those who quoted it as a means of top feeding. The mismatch was probably because the practices that were assessed were the past practices whereas the knowledge was that of present. The feeding of child with eggs and especially meat as a part of complementary feeding was also found to be inadequate and were supported with the myth about their non- suitability for the young child. All these issues related to complementary feeding require a meticulous discussion to remove the misconceptions and beliefs of the ASHAs, who in turn would disseminate it to the general public. The knowledge and practices of ASHA's did not vary significantly with their educational status except for a higher percentage of exclusive breastfeeding in ASHAs less than 10<sup>th</sup> pass as compared to those with higher qualification, which seems to be due to the confounding effect of some other variable, since education has been found to have a strong impact on the positive health practices generally. Also non association of other variables with educational qualification indicates that the interventions designed for improving the knowledge of the ASHAs would be universally effective. However, if this effect is not confounded by other factors, it would be an area of concern because education would be negatively associated with the practice of exclusive breastfeeding and it would require thorough discussion with the mothers to clarify the issues related to exclusive breast feeding.

Current IYCF practices among ASHAs were encouraging and seemed to be reflective of the training of ASHAs on IYCF. Women in India have a very positive attitude about breast feeding their children and it has been reported in other studies conducted in rural areas also (16-18). However, the time of initiation of breastfeeding, which is recommended to be within 30 minutes of birth for proper establishment of oxytocic

reflexes<sup>19</sup>, was adhered to by a lesser percentage of ASHAs in the present study as compared to 100% in another study by Madhu et al (17). However, this proportion was higher than the state average of 32.9% and could be due to the differences in sample size and sampling population characteristics. (7)

Exclusive breast feeding which should be done for six months, for protecting the child from malnutrition and infection and for ensuring the overall development (20,21) was reported to be 77.4% in the present study, which was much better than that reported by Madhu et al (40%) (17) in study from a rural area of India as well as that of Turkey, where 41.1% of the health workers exclusively nursed their children for less than 4 months and 34.4% nursed beyond 6 months (22). The proportion of exclusively breastfed babies was about 2.5 times that of the state of Uttarakhand (31.2%) (6) and the difference could be attributed to the differences in the study population. The average age of the youngest child was  $116 \pm 71$  months, meaning thereby that the practices reported in [Table 4](#) about the IYCF are reflective of a period about 5-10 years ago. However, when we assess the current situation in the study, only 2 ASHAs (18%) had reported to be able to practice exclusive breast feeding and timely introduction of complementary feeds, which is similar to that reported by Aggrawal A(2008) (15) (17.5% complementary feeding). Although the sample size in the present study to assess current IYCF practices (n=11) is not sufficient to generalize the statement, yet it is still indicative of the fact that knowledge does not directly translate into positive practices.

Working women without a support system at work places (Unavailability of crèches, flexi-hours for breastfeed etc.) have no option except to shift their babies on top milk. Also, in majority of such cases complementary feeding is started prematurely, as indicated in our study which showed that 9 out of 11 ASHAs, reported premature complementary feeding. It is therefore imperative to educate ASHAs and through them to the community, about the detrimental effects of premature complementary feeding on the overall health of the child.

32.5% ASHAs had reported bottle feeding in the past but none of the ASHAs with a child less than 2 years of age had been practicing it currently, which indicates a very positive trend for avoiding the infections. No use of bottle for feeding the child currently is quite encouraging and was in accordance with the recommendations of WHO, which prohibits the use of a bottle with nipple at any stage (23).

Breastfeeding practices as a part of child rearing are largely determined by the community norms and beliefs which are very intricately woven, and are resistant to change by mere sharing of information. It necessitates a well-planned and consistent behaviour change communication strategy to overcome this barrier.

## Conclusion

Present research paper draws very important conclusions that although knowledge level of ASHA worker is very high regarding breast feeding practices but their knowledge regarding complementary feeding practices requires further improvement. It is also important to improve their knowledge and counselling skills about options available for working mothers for breast milk feeding by expression of milk and its proper storage.

## Recommendation

Study findings also show that inadequate amount of milk is the commonest problem for failure of exclusive breast feeding hence ASHAs need to be trained on differentiating the real cases of “not enough milk” from false perception so that community can be appropriately counselled. There is also a need to sensitize obstetricians and other health practitioners for ensuring timely initiation of breastfeeding after caesarean section. Further, there is a need for building positive environment for adopting correct IYCF practices through mass media.

## Authors Contribution

VS has conceptualized, planned and conducted the research work. She drafted and edited current research paper. RK has reviewed the research paper and provided inputs for finalization of research paper.

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## Tables

**TABLE NO. 1 SOCIO-DEMOGRAPHIC PROFILE OF ASHAS IN THE STUDY**

Socio-demographic characteristics		No.(n=168)	%
Age Groups	20-25	3	1.8
	26-30	34	20.3
	31-35	55	32.7
	36-40	44	26.3
	>40	29	19.0
Religion	Hindu	157	93.5
	Muslim	4	2.4
	Sikh	7	4.2

Socio-demographic characteristics		No.(n=168)	%
Education	Illiterate	1	0.6
	Junior High School	16	9.5
	High School	49	29.2
	Intermediate	62	36.9
	Graduate or above	40	23.8
Type of Card	APL	52	31.0
	BPL	116	69.0
Caste	General	108	64.3
	SC/ST	21	12.5
	OBC	39	23.2
Type of family	Nuclear	129	76.8
	Joint	37	22.0
Other job	Housewife	158	94.0
	Agriculture	2	1.2
	Private Service	1	0.6
	Shop owner	2	1.2
	Others	3	1.8
Mean years of working as ASHA		4.6 ± 2	
Age of youngest child (in months)		116 ± 71	

TABLE NO. 2 KNOWLEDGE AND PRACTICES OF ASHAS ABOUT IYCF

Knowledge about different variables		No.	%
Exclusive breast feeding	Correct definition	165	98
	No water requirement during summer season	163	97
BF in illness	Continued BF	162	96.4
	Stopped	3	1.8
	Decreased	3	1.8
Initiation of breast feeding after caesarean section	<4 hrs	65	38.7
	4 hrs – 1day	59	35.1
	>1 day	43	25.6
Age of weaning	< 6m	92	54.8
	At 6 month	75	44.6
	After 6 month	1	0.6
Other items given if not breast fed	Packed milk	126	75
	Cow/ Buffalo’s milk with water	30	17.9
	Water and sugar or honey	1	0.6
	Others	10	6
Reasons for inability to breast feed exclusively	Inadequate mother’s milk	94	55.4
	Caesarean section	34	20.2
	Pressure from elders of the family	11	6.5
	Lack of knowledge	8	4.8
	Advice of doctor/ health worker	1	0.6
	Others	6	3.6
Reasons for not giving egg/non-vegetarian food items	Families are vegetarian	59	35.1
	Not suitable for children	53	31.5
	Denied by elders of the family	10	6.0
	Others	2	1.2

TABLE NO. 3 KNOWLEDGE AND PRACTICES OF ASHA ABOUT IYCF ACCORDING TO EDUCATION

Knowledge about various Variables	<10 <sup>th</sup> pass (17)		≥10 <sup>th</sup> Pass (151)		Total (168)		Chi square, p value
	No	%	No	%	No.	%	
Exclusive BF							

Knowledge about various Variables		<10 <sup>th</sup> pass (17)		≥10 <sup>th</sup> Pass (151)		Total (168)		Chi square, p value
		No	%	No	%	No.	%	
Exclusive BF in summers	No water till 6 m*	17	100	146	96.7	163	97	0.00, 0.99
	Water should be given	0	0	3	2	3	1.8	
	Don't know	0	0	1	0.7	1	0.5	
	Others	0	0	1	0.7	1	0.5	
Frequency of BF during day	<6	0	0	1	0.7	1	0.5	0.04, 0.84
	6-8*	4	23.5	57	37.7	61	36.3	
	8-10*	10	58.8	80	53	90	53.5	
	>10*	3	17.6	13	8.6	16	9.5	
Frequency of BF during night	1	0	0	1	0.7	1	0.5	1.75, 0.18
	≥2*	17	100	150	8.6	167	99.4	
Mode of giving top feed	Bottle	1	5.9	9	6	10	5.9	0.27, 0.59
	Katori and spoon*	16	94.1	142	94	158	94.0	
<b>Complementary feeding</b>								
Consistency	Solid	0	0	1	0.7	1	0.5	0.73, 0.39
	Semisolid*	16	94.1	125	82.8	141	83.9	
	Liquid	1	5.9	25	16.6	26	15.4	
Non vegetarian food item to child		9	52.9	46	30.5	55	32.7	2.5, 0.11
Egg to child		16	94.1	131	86.8	147	87.5	0.23, 0.62
<b>Practices</b>								
Exclusive BF		17	100	113	74.8	130	77.4	4.18, 0.04
Complementary feeding from 7 <sup>th</sup> month		12	70.6	85	56.3	97	57.7	0.76, 0.38
Bottle feeding		3	17.6	52	34.4	55	32.7	1.26, 0.26
Mean duration of BF (months)		34.9 ± 16.5		22.6 ± 18.0		27 ± 17.9		0.74

p value <0.05 is considered significant, \* Association of proportions is analyzed between the group marked with \* (which indicates the right practice) versus others.

**TABLE NO. 4 DESCRIPTION OF PROBLEMS FACED BY ASHAS WITH RESPECT TO BREASTFEEDING IN THE COMMUNITY**

Variables	No.	%	
<b>Hurdles faced by ASHAS in promoting IYCF practices*</b>	People are not ready to change	76	45.2
	Lack of Knowledge	52	30.9
	Opposition by elders for accepting the newer practices	39	23.2
	Working women have no alternatives	24	14.3
<b>Problems of working mothers</b>	Require to start top feeding	102	60.7
	Breast Discomfort	42	25
	No crèches at work place	18	10.2
	Don't know	1	0.6
	Others	4	2.4
<b>Mothers giving non vegetarian food items to 6-2 yrs old in their service area</b>	0%	8	4.8
	1-25%	34	20.2
	25- 50 %	57	33.9
	50-75%	43	25.6
	75%	25	14.9

\* Multiple responses