

Exclusive Breast Feeding of Infants of Recently Delivered Women of Uttar Pradesh, India

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Abstract: When ASHAs were introduced in NRHM in 2005, their primary aim was to visit homes of newborns as the first program in Uttar Pradesh (UP) operated through the ASHAs was the Comprehensive Child Survival Program in 2008. Since then, tracking of all deliveries and all the newborns are an integral part of the work of ASHAs in all the primary health care programs operated by the NHM in UP (GoI, 2005, GoUP, 2013). The current article examines the role & work of ASHAs through the responses of the mothers of newborns & infants at district level. Evaluation studies on the performance of ASHAs was done since 2011 as by then ASHAs had actually worked in the field for a minimum period of 5 years. It is to be noted that National Rural Health Mission was rolled out in April 2005 but it took about one to two years for the states to hire ASHAs and put things in place right from the state to the village level (Goup, 2013). In this article, a comprehensive feedback is elicited from the Recently Delivered Women on the Exclusive Breast Feeding (EBF) practices of their infants as part of newborn & infant care program at the district level. The current study explores some of the crucial variables on the home-based newborn care activities like the ideal practice of EBF of the newborn & infants through the response of mothers of newborns & infants on newborn care. The ideal practice of EBF in newborn & infants in child health programs is a critical facilitator in breastfeeding practices. The current article follows up the role of ASHAs in Home Based Newborn Care & child care program through the response of the mothers on EBF & the type of fluids they gave to their children on the day prior to the survey. The mothers were selected as respondents as they were the selected mothers from the list of mothers available with their ASHAs at the time of survey. The relevance of the study assumes significance as data on the details of EBF in actual months & the type of fluid other than breastmilk given to newborns & infants in the first 6 months of age that act as a barrier component of child health & newborn programs are not included in many surveys. Further, response details from the mothers on types/contents of fluids that are discussed in the current article are usually not collected in many studies/surveys. Such information collection there by indirectly assess the work & approach of ASHAs including the awareness of ASHAs & mothers on the programs related to Exclusive Breastfeeding (EBF) are not the focus in very large-scale health surveys. Similarly, such response on the barriers on EBF related activities of newborn & infant care through the work of ASHAs in the current implemented programs do not come under the ambit of many socio-economic studies either. The surveys gain more valencies when the response is solicited from the mother's mouth like the current article where the mothers have responded. A total of four districts of Uttar Pradesh were selected purposively for the study and the data collection was conducted among the mothers in the respective districts. A pre-tested structured & in-depth interview schedule was used with close-ended questions. These in-depth interview schedule collected descriptive details as responded by mothers. The quantitative data were conducted amongst the mothers and a total of 500 respondents participated in the study. The results reflected that majority of the RDWs across the four districts exclusively breastfed their child up to 6 months which was the right thing to do. The descriptive statistics table related to this response clearly shows the mean to be 6 months. Further, almost half of the RDWs in Banda, one-third of all the RDWs in Barabanki, almost half of all the RDWs in Gonda and more than one fourth of RDWs in Saharanpur replied that they had given some fluid other than breastmilk to their child yesterday or last night prior to the survey thus contradicting their first response on EBF in months & thereby defeating the purpose of EBF. Last part of the response of RDWs was on the type of fluid other than breastmilk given to the child yesterday or last night prior to the survey. Any animal milk was the most preferred choice of RDWs across the four selected districts.

Keywords: ASHA, NBCC, HBNC, EBF, Immunoglobulins

INTRODUCTION

The current study focused on the responses of mothers of the four selected districts. Response of the mothers were on the ideal practice of exclusive breastfeeding of their newborns. The responses were based upon their current knowledge about the breastfeeding messages in child health & newborn care programs. The responses included one ideal practice & one barrier on EBF of newborn care. The ideal practice

was the number of months that the mothers breastfed their children exclusively. The barrier to EBF was the type of fluid that the mother gave to their children the day prior to the survey. EBF practice for the newborns & infants is a must & especially a big 'yes' for the Low Birth Weight (LBW) babies. These babies have weight less than 2500 grams & fluids other than milk leads to less suckling power & hypothermia in the newborn. Hypothermia leads to infections. Hence, it is prudent to

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mention about studies that mention about causes of deaths in newborns out of which infections are a leading cause. This aspect is discussed in the next section. The following paragraphs deal with the mortality figures in children for which infections in newborns is a cause. The basics on Home Based New Born Care (HBNC) program are also discussed subsequently. EBF is a component of HBNC package.

The HBNC components addresses the three basic needs of the newborns. The three needs are warmth, food & security. The warmth component includes activities like drying & wrapping the child immediately after birth followed by giving Skin to Skin Contact (STSC) by the mothers so that the child gets the warmth of the mother through the skin of the mother. The mother should not have put any cloth between the newborn & herself. Both of them should be covered from the top & the child should be kept in frog position between the breasts with the mouth & nose sideways so that the child can respire/breathe. Human beings learnt this technique from the Kangaroo where the newborn of the Kangaroo is in the pouch of the mother deriving warmth from the skin of the mother. The newborn of the Kangaroo breastfeeds within the pouch. Thus, the newborn safely travels the first month of life. The mother is the best warmer for the child which no Radiant Warmer that is available at the New Born Care Corners (NBCC) can substitute. The next activity on thermal care is to delay the bathing of the child at least for a week after birth so that the Vernix Caseosa or the natural blanket that the child has on the skin since birth is not removed & hypothermia in the child is prevented. Next basic need is food which is the colostrum or Early Initiation of Breast Feeding (EIBF) & Exclusive Breast Feeding (EBF) of the child. The EBF practices demand that other than ORS in case of diarrhea, oral vaccines & prescribed medicines in case of sickness, the child should not be given anything through the mouth till 6 months of age. Water is also not allowed as the breast milk has enough water for the child. The third basic need is security where the child should not be left alone

in any case for the first month of life. The KMC package includes STSC & EBF activities. As all these activities can be done at home without any intervention or support from the health system, so the package is called as HBNC package (GoI, INAP, 2014). To ensure that all these activities takes place at home, the outreach worker like ASHA should visit the mother during pregnancy to plan for HBNC & during postnatal stage to ensure implementation of these activities. The following paragraph deals with the reality that occurs if all these activities do not happen during the neonatal stage of life.

The current Neonatal Mortality Rate (NMR) in India is 22 per 1000 live births & the same data hold good for UP as NMR is only calculated at the national level & not at state level. In absolute numbers, it stands out at 549227 (UNIGME, 2019). Similarly, EIBF & EBF practices reduce the chances of Maternal Mortality as it eases the placental delivery & reduces the chances of Post- Partum Haemorrhage (PPH). EBF practices fail when maternal mortality happens. The importance of colostrum feeding & EBF is felt when the Maternal Mortality Rate & Ratio (MMR) of UP is examined as a barrier. The MM Rate in UP is 20.1 & the MM Ratio is 216. Further, the Life Time Risk (LTR) of a mother in UP is 0.7% (SRS,2019). All these high mortality & risk factors can be reduced with promotion of EBF in UP & removal of the barrier as mentioned in this article. The causes of these deaths are mentioned in the figure given below. Prematurity is the leading cause category where the low Birth Weight (LBW) babies fall & the current article deals in a barrier of the new-born care where these LBW babies find it difficult to suck the breast of the mother. Neonatal infection is the second leading cause and here it is related to poor thermal care & EBF is a component of thermal care. Timely referrals will also help address to reduce other causes like infections & asphyxia for which hypothermia is a contributing factor. It is here that the relevance of the current article comes into focus.

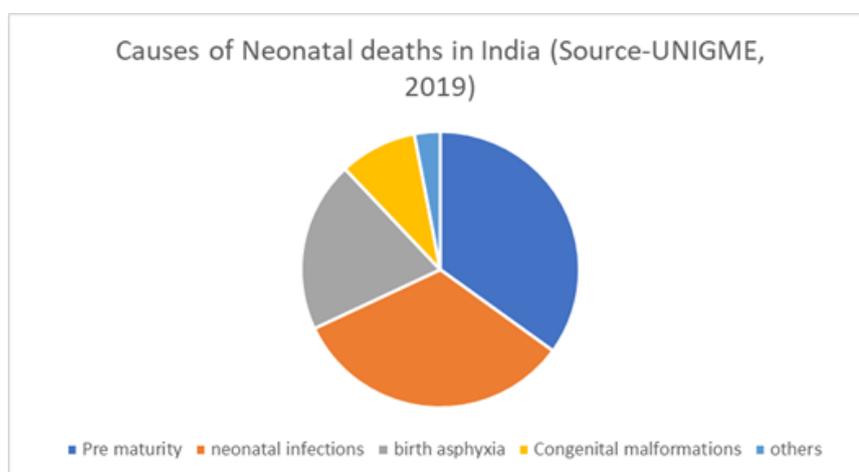


Figure 1- Causes of Neonatal deaths

A newborn is a boy or girl in the age group of 0-28 days. The care of the newborn had taken a paradigm shift since the introduction of NRHM in 2005 as the focus had moved from only facility-based care to a mix of home based and facility based. In fact, the WHO bulletin of 2012 stated that India’s Home-Based Newborn Care (HBNC) model launched in 2011 can be touted as a global policy. The foundation stone of these efforts were through the experiences in Gadchiroli region of Maharashtra where since last 14 years it has been demonstrated that there was 62% reduction in neonatal mortality through multiple home visits by community level workers (Bang A, 2005). On the same lines, in NRHM, the ASHAs needed to visit the new mothers and newborns six times in case of an institutional delivery and seven times in case of a home delivery. The days of visits in case of institutional delivery were on the 3,7,14,21,28 and 42 days after birth and 1,3,7,14,21,28 and 42 days after birth in case of a home delivery (GOI, 2011). The mortality pattern

of newborns showed that 72.9% die in the first week and only 13.5% die in the 2nd, 3rd and 4th weeks after birth. Similarly, 36.9% die on day 0, 7.4% on day 1, 10.1% on day 2, 6.6% on day 3, 5.1% on day 4, 3.4% on day 5 and 3.5% on day 6 (Sankar, MJ. *et al.*, 2016). This showed that first week was extremely critical for the newborn to be visited by the ASHA. The current study that is being pursued focuses on the HBNC model & EBF component as per the India Newborn Action Plan only & the activities related to the current article has to take place in the first week of birth (INAP, GOI, 2014). Incentivized Home-Based Newborn Care program was launched in 2011. More than 10 lakhs ASHAs had been trained to improve newborn care (GoI, 2019). The figure below depicted the critical 1st year, 1st month, 1st week, 1st day and 1st hour in an infant’s life and re-emphasized that intervening on 1st day and 1st hour is critical. EBF practices & removal of the said barrier will further enhance the newborn & infant survival.

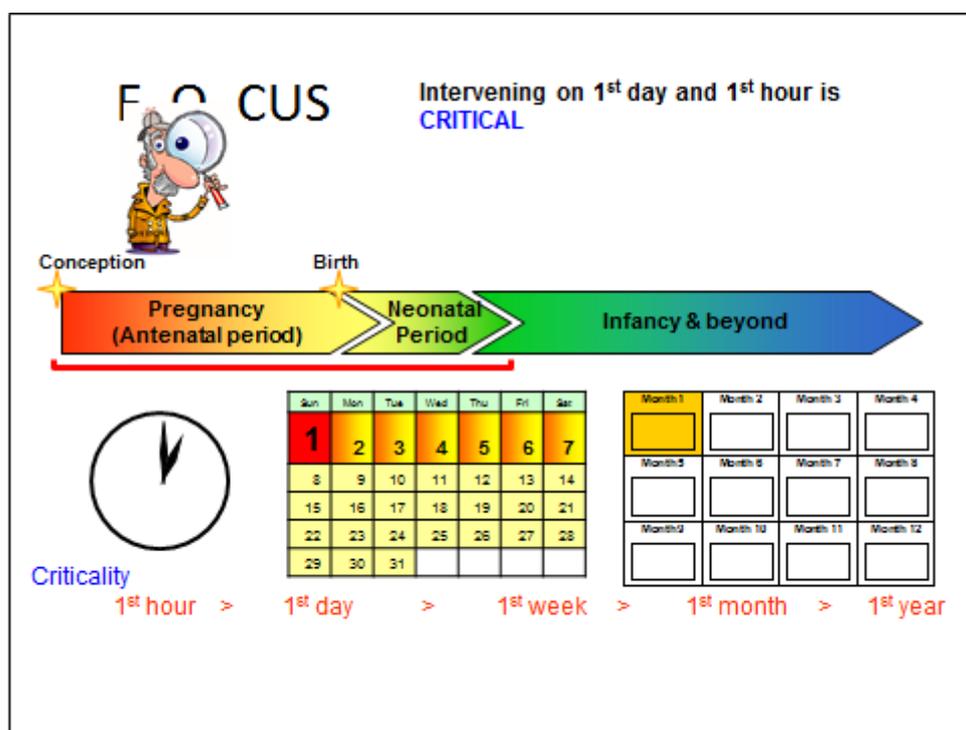


Figure 2- Critical times of the infancy stage (Source- Sankar, MJ. *et al.*, 2016)

Thus, it was critical to note that 40% of all still births and neonatal deaths occurred within first 48 hours. About three fourths of the total neonatal deaths occur in the first week of life. 37% of these deaths occur within first 24 hours. It was significant to note that during this period, half of all maternal deaths also took place (Sankar, MJ. *et al.*, 2016). These deaths are a great contributor to the poor practices of giving some kind of fluid to newborns leading to poor EBF practices.

Among the HBNC, warmth component was very critical. A newborn baby is homoeothermic. A low birth weight baby has decreased thermal insulation because of reduced amount of brown fat. Newborn loses heat by evaporation (amniotic fluid by surface), conduction (touch with cold object), convection (fan, window) where cold air replaces warm air. The warm and pink feet of the baby indicate thermal comfort. The behaviors like delayed bathing, delayed weighing and kangarooing in case of low birth weight babies contribute to warmth of the baby (NNFI, 2015s). It further summarized to address three components which

were clean airway, breathing and temperature. EBF practices are critical to maintain this warmth component.

The warmth component is extremely critical for low weight babies because if they are not kept warm, they would not feed and will not gain weight in early neonatal period. Timely visit by ASHAs are critical to ensure proper care leading to weight gain in these babies. Low weight neonates were more prone to communicable diseases like diabetes, hypertension and heart disease in later life (Blencowe *et al.*, 2010).

About Human Breast Milk

Human milk contains more tryptophan, Sulphur containing Amino Acids especially cysteine, linoleic acid, oleic acid, sugar in the form of lactose & water as compared to animal milk. The constituents of 100 grams or 100 ml of human breast milk contains 65 Kilocalories energy, 7.4 grams of carbohydrate, 3.4 grams of fat & 1.1 grams of protein (Singh M, Saini S, PSM Book, 2020).

Colostrum is the first milk after delivery 7 usually available within first 3 days of delivery. The milk is rich in immunoglobulins like IgA, IgM, IgG, essential amino acids & maternal antibodies. It appears yellow & thick. It also has more antibodies and White Blood Corpuscles (WBC), has anti infective agents like Lactoferrin, Lysozyme, Lacto-peroxidase, Complements, Proline rich Polypeptides. It is also rich in vitamins A, D, E, & K. It has less fats & is rich in growth factors. It is sweet to taste & protects against infection while having a mild laxative effect that helps to pass early stools (Singh M, Saini S, PSM Book, 2020).

If the baby is a pre-term baby, the mother secretes preterm milk that has more calories, fat, proteins, sodium, Immunoglobulins, Lactoferrin, Zinc, Macrophages, Less Lactose, Calcium & Phosphorus. It supplies more energy which is needed for rapid growth (Singh M, Saini S, PSM Book, 2020).

After the colostrum that stays for 3 to 4 days, the transitional milk flows from the fourth day to the fourteenth day. It appears thinner & is lighter in color. It has more fat, sugar, calories, vitamins, less immunoglobulins & proteins. It supplies adequate calories needed by the baby (Singh M, Saini S, PSM Book, 2020).

After two weeks of delivery, mature milk begins to flow which looks thinner. It has more fat, protein, water, lactose, energy @ 71 calories per 100ml. It supplies all the nutrients needed for normal growth (Singh M, Saini S, PSM Book, 2020).

Foremilk flows at the start of the feed & looks watery. It is rich in proteins, sugar, vitamins, minerals

& water. It satisfies baby's thirst. The hind milk flows at the end of the feed 7 looks thick. It is richer in fat content. It provides energy, satisfies baby's hunger & nutritional demands (Singh M, Saini S, PSM Book, 2020).

Nutrients in breast milk may have a significant effect on neurological development in infants (Anderson *et al.*, 1999). Compared to formula milk, nutrients in breast milk may confer better cognitive & motor development in infants (Bernard *et al.*, 2013). This benefit may extend in to intelligence in adulthood (Mortensen *et al.*, 2003). Thus, it is seen that breastfed children will develop mentally as well as physically while animal milk fed children will grow physically only. Perhaps the rapid physical growth in animal milk fed children lures mothers to go for animal milk.

This brings us to the conclusion that each ASHA should advise the mothers to empty one breast completely before switching to the other breast. If the mother switches the breast on seeing that milk flows from the other while feeding from one, then the child would only get hind milk & only his or her thirst would be satiated & not the hunger as the child only drank foremilk from both the breasts. The poor practice of switching breast quickly during breast feeding leads to malnutrition as the child does not gain weight in the absence of hind milk (GoI, 2016).

Brief history on EBF

The concept of wet nursing has been in practice till the 18th century as the affluent classes preferred wet nursing rather than feeding their children their own breastmilk. Gradually from 19th century society's negative view of wet nursing combined with improvements of the feeding bottle & the availability of animal milk gradually led to the substitution of artificial feeding for wet nursing. Infant formula has a profound effect on the number of mothers who breastfeed their infants as these are heavily advertised & considered a safe alternative (Emily E S *et al.*, 2009). This substantiates the strong cultural belief that leads to the preference of animal milk to breast milk. Further related studies advocate that breastfeeding mothers who are not allergic to milk should drink cow's milk as the cow's milk may protect the nursing infant (Danielle L, 2003). Such dissemination again leads to the belief that animal or cow's milk is beneficial both to the mother & infant.

EBF of newborns in UP

As per WHO recommendation, for the first 6 months of life, the child should be fed only breast milk. The allowed substances other than breast milk that can be given orally are Oral Rehydration Solution (ORS) in case of diarrhea, Oral vaccines & prescribed medicines if the child is sick.

Studies done in early Nineties in UP also demonstrate that pre-lacteal feeding was almost

universal & it was common to delay breastfeeding initiation for several days. Women commonly wait for several days after birth to begin breastfeeding, avoid giving colostrum or supplement breastfeeding with other foods or liquids (Singh R *et al.*, 1992; Srivastava S P *et al.*, 1994). This shows that EBF was poorly practiced in UP 30 years ago. Mentioned below are other related studies related to UP on the issue of EBF.

The Maternal & Child Health Nutrition report of UP mentions that only 2.1% of total 1580 children surveyed were exclusively breastfed (Go UP, MCHN report, 2006). The report does not mention about other modalities of EBF like frequency of feeding or EBF given to the child in months.

In another study in UP, breastfeeding practices are seen in detail under selected newborn care practices where the exclusively breastfed related data mentions that 81.8% of mothers gave exclusive breastfeeding to their newborns during first month (Baqui A H *et al.*, 2007). Thus, the report shows that majority of the mothers adhered to the ideal practice of breastfeeding in the first month. The study does not talk about EBF of infants.

The Comprehensive Child Survival Program evaluation report mentions that as per the responses of Eligible Women (EW), 79.3% of them exclusively breastfed their child for first 6 months which implies that the remaining 20.7% did not breastfeed their children exclusively (Go UP, CCSP, 2013). The report also has a section on wrong practices of the community where the ASHAs had listed the wrong practices. Among the ASHAs, 67.8% listed no breastfeeding or colostrum feeding immediately after birth and 7.3% of ASHAs had listed no breastfeeding or food up to 7 days (Go UP, CCSP, 2013). Here also, a conclusion can be drawn that these mothers would have given some fluids to their newborns & infants thereby putting the babies at risk.

The NFHS 4 report of UP under the indicator of nutritional practices of children who received EBF mentions that 42% of children under 6 months are exclusively breastfed (NFHS 4,2016). The report also mentions although breastfeeding is universal in UP, 58% are still not exclusively breastfed. These are the issues that the current article deals with.

The Rapid Survey Report of Children of UP mentions that 73.7% of children aged 0-5 months were exclusively breastfed (RSOC, UP,2014). This is the same age group that the current article deals with.

Here, it is noted that among the above-mentioned studies, the studies talk about EBF but do not break down the responses of the mothers in number of months that they exclusively breastfed. Similarly, the studies do not mention about the type of fluid that the

mothers gave just a day before so that accurate information on barriers to EBF is elicited from the mothers. As it is a cultural practice, the current study done in the end of 2017 could bring out this issue to augment that poor EBF practices for newborn & infants still prevail in UP. The current article focuses upon the aspects of exclusive breastfeeding indicator of newborn & infants. The above-said reasoning further substantiates the importance of the current article.

RESEARCH METHODOLOGY

Using purposive sampling technique, four districts were chosen from the four different economic regions of UP, namely Central, Eastern, Western and Bundelkhand. Further, the Government of UP in 2009 categorized the districts as per their development status using a composition of 36 indicators. Purposefully, the high developed district chosen for the study is Saharanpur from the western region, the medium developed district chosen for the study is Barabanki from the central region, the low developed district chosen for the study is Gonda from the eastern region and the very low developed district chosen for the study is Banda from the Bundelkhand region (GOUP, 2009).

In the next step, purposefully two blocks were selected from each of the district and all the ASHAs in these blocks were chosen as the universe for the study. From the list of all the ASHAs in each of the two blocks, 31 ASHAs were chosen randomly from each block for the study. In this way, 62 ASHAs were chosen for the study from each of the districts. In Gonda district, 64 ASHAs were selected to make the total number of ASHAs for the study to 250. From the catchment area of each ASHA, two Recently Delivered Women (RDW) were chosen who had a child in the age group of 3-6 months during the time of the data collection for the study. In this way, 124 RDWs from three districts and 128 RDWs from Gonda district were chosen thus a total of 500 RDWs were selected for the study. In order to include the category of caste & inclusion issue in to the domain of the study, 5 Scheduled Caste (SC) mothers from each district were selected from the existing list of ASHAs. As each district has two selected blocks, three mothers were selected randomly from one block & the other two from the other block. The existing list of Recently Delivered Women (RDW) available with the ASHAs at the time of the survey was the universe for selecting the respondents. In this way, a total of 20 SC mothers were selected from the study. The criteria for choosing these mothers were that they had a 3 to 6 months old baby at the time of survey to fulfill the inclusion criteria of being an RDW for the current study or article.

The study had a last stage of the sampling as well. In the last stage, the four program managers looking after the program at the four selected districts and the state level manager were selected as respondents to include the perspective of the personnel

of the public health system. In this way, 5 managers were selected in the study & the study also dealt with the responses of these 5 program managers.

The current article deals with the sampling stage till the selection of 500 RDWs from the four districts.

The following figure shows the four districts of UP in the map of the state of UP.

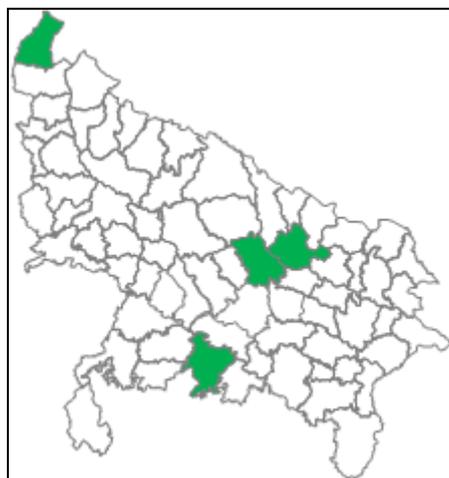


Figure 3- Selected districts of the study

Data Analysis

The data was analyzed using SPSS software to calculate the percentage of RDWs giving responses for each of the indicators on the ideal practice of giving only breastmilk to their child for the number of months during the time of survey. Descriptive statistics like mean and standard deviation were also calculated on the response of mothers regarding the number of months they exclusively breastfed their children. The next responses saw whether the mothers gave any fluid & if they gave, what was the type of fluid other than breastmilk on the day prior to the survey. The quantitative data related to the details of all these type of responses through the three questions of the RDW research tool for the four districts forms the basis of the results & discussions section of this article. The reference period of these responses was their entire experience with the health system & contacts with the ASHAs since their last delivery. These mothers were selected as respondents of the current study or article. Five hundred mothers or RDWs (as they are called for the current article) were selected from the four selected districts of UP.

Research Tool

The RDWs were interviewed using a close-ended detailed & in-depth interview schedule which included five sections. The article deals with the fifth section of the schedule. The response of the mothers was on the detailed description of their actions regarding exclusive breastfeeding given to their newborns & infants in their recent delivery. These descriptions included the fluid & the type of fluid that the mothers gave to their children on the day prior to the survey. The responses are based on three questions of the schedule indirectly seeing the role of ASHAs in

newborn & infant care programs through the response of the mothers. All these aspects were seen in the context of the RDW's entire experience & contacts with the health system & ASHAs with respect to their recent delivery. The responses included RDWs who had either institutional or home deliveries. Five hundred in-depth interview schedules were used for the study to interview 500 mothers at the four selected districts. The following section details out the results and discussions related to the study.

RESULTS AND DISCUSSIONS

It is significant to note that more than 80% of RDWs across the four districts had received the message on EBF during their pregnancy while more than 60% of RDWs across the four districts had received the message on EBF during the first month period after their deliveries. The current section deals with the outcome of these messages as the actual actions done by the RDWs on EBF are discussed in detail.

There are three tables and two figures in this section that mention three different activities regarding EIBF component of HBNC and the activities are in sequence. It starts with the response of the Recently Delivered Women (RDW) about the number of months they exclusively breastfed their child. The second response is a cross check on the first response as the mothers were asked whether they gave any fluid other than breastmilk to their children followed by the type of fluid other than breast milk, they had given to their child the day prior to the survey. The fourth figure is the graph related to the first table. There is a table also on the descriptive statistics related to the first table. The

fifth figure is the graph related to the third table. The responses revolve around whether their children were breastfed exclusively. The three activities through the three tables deal with identification of high-risk

newborns & infants as early & untimely weaning foods are harbingers of malnutrition & infections especially for Low Birth Weight babies.

Table 1- EBF in months

Percentage of RDWs replying about the number of months they exclusively breastfed their child				
Names of districts & Number of RDWs surveyed (N=500)	Banda (N=124)	Barabanki (N=124)	Gonda (N=128)	Saharanpur (N=124)
2 months	0.0	0.0	0.8	0.0
4 months	0.0	0.0	0.8	0.0
5 months	0.8	0.0	0.0	0.0
6 months	98.4	98.4	94.5	99.2
7 months	0.8	0.0	0.0	0.8
8 months	0.0	0.8	2.3	0.0
12 months	0.0	0.0	1.6	0.0
15 months	0.0	0.8	0.0	0.0
Average number of months	6.0	6.09	6.09	6.01

Regarding the number of months, the RDWs exclusively breast fed their child, the data showed that the average duration was 6 months in Banda, 6.09 months in Barabanki and Gonda, 6.01 months in Saharanpur. On further analysis, it was seen that only 1% RDW in Gonda breastfed the child exclusively for 2 months only. In Gonda district again only 1% RDW breastfed the child up to 4 months. In Barabanki district only 1% RDW breastfed the child up to 5 months. 98% RDWs in Banda and Barabanki, 95% in Gonda and

99% in Saharanpur said that they exclusively breastfed their child up to 6 months. On the other side some RDWs had replied that they exclusively breastfed their child beyond 6 months also. 1% RDW each in Banda and Saharanpur fed up to 7 months. 1% in Barabanki and 2.3% in Gonda fed up to 8 months. 2% in Gonda fed up to one year. 1% in Barabanki fed up to 15 months. Here the data told us that majority of the RDWs exclusively breastfed their child up to 6 months which was the right thing to do.

Table 1.1.0- Mean and standard deviation of the variable in table 1.0.

QA_D	Mean	N	Std. Deviation
1 Banda	6.00	124	.128
2 Barabanki	6.09	124	.827
3 Gonda	6.09	128	.900
4 Saharanpur	6.01	124	.090
Total	6.05	500	.618

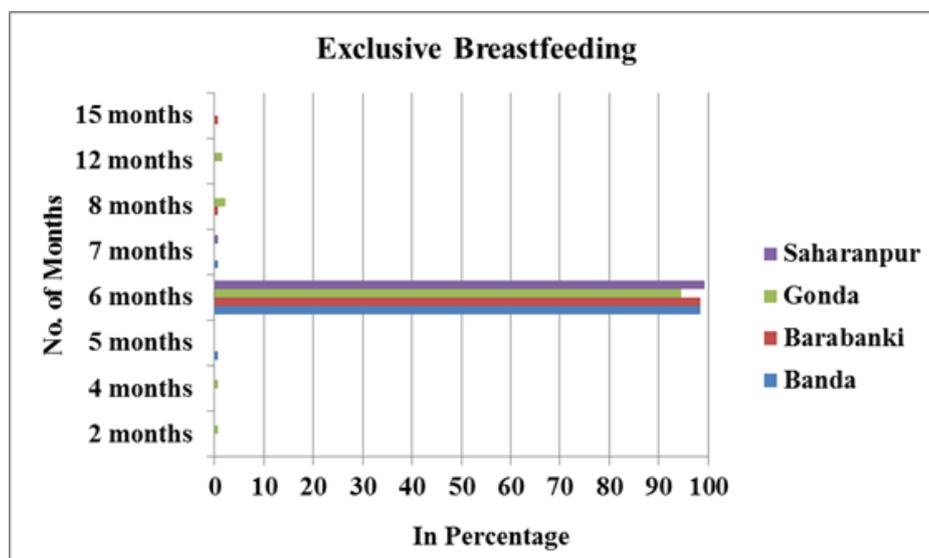


Figure 4- variables and results of table 1.0.

Table 2- Fluids other than breast milk

Percentage of RDWs replying about any fluid other than breast milk they gave to their child yesterday or last night				
Names of districts & Number of RDWs surveyed (N=500)	Banda (N=124)	Barabanki (N=124)	Gonda (N=128)	Saharanpur (N=124)
Fluid was given to drink	48.4 (N=60)	71.8 (N=89)	41.4 (N=53)	30.6 (N=38)
Fluid not given	51.6 (N=64)	28.2 (N=35)	58.6 (N=75)	69.4 (N=86)

The next part was about the RDWs giving any fluid other than breastmilk to their child yesterday or last night. Here, 48% in Banda, 72% in Barabanki, 41% in Gonda and 31% in Saharanpur replied that they had given fluid other than breastmilk to their child yesterday or last night. This behavior completely contradicted what they said in the above paragraph.

The medium developed district of Barabanki has only 28% RDWs who said that they had not given any fluid. More than 50% RDWs in the rest 3 districts had not given fluid to their child. In the most developed district of Saharanpur, 70% had not given any fluid to their child. As a whole the purpose of exclusive breastfeeding message had not been followed up actively by the ASHAs at the houses of RDWs.

Table 3- Type of fluid other than breast milk

Percentage of RDWs replying on the type of fluid other than breastmilk given to the child yesterday or last night				
Names of districts & Number of RDWs surveyed (N=500)	Banda (N=124) ('Yes' category from table 2 is N=60)	Barabanki (N=124) ('Yes' category from table 2 is N=89)	Gonda (N=128) ('Yes' category from table 2 is N=53)	Saharanpur (N=124) ('Yes' category from table 2 is N=38)
Plain water	1.7 (N=1)	3.4 (N=3)	1.9 (N=1)	0.0 (N=0)
Infant powdered milk	0 (N=0)	4.5 (N=4)	17 (N=9)	0.0 (N=0)
Any animal milk	96.7 (N=58)	97.8 (N=87)	79.2 (N=42)	92.1 (N=35)
Fruit juice	1.7 (N=1)	2.2 (N=2)	0.0 (N=0)	7.9 (N=3)
Tea/coffee	0.0	0.0	0.0	0.0
Sugar or glucose water	0.0	0.0	0.0	0.0
Sugar and salt water solution	0.0	0.0	0.0	0.0
Ghutti	13.3 (N=8)	1.1(N=1)	1.9 (N=1)	0.0 (N=0)
Any other liquid	0.0	0.0	0.0	0.0

Last part of the response of the RDWs showed the type of fluid other than breastmilk given to the child yesterday or last night. Here, the percentage for each of the types of fluid is derived separately from the 'N' of 'Yes' category of table 2. Out of this 'N' of each district in 'Yes' category, the 'N' of each category of fluid is mentioned. Hence, the total percentage of all the categories will not add to 100% for each district.

Analysis from the table shows that any animal milk was the most preferred choice of RDWs. 97% in Banda, 98% in Barabanki, 80% in Gonda and 92% in

Saharanpur had given any animal milk to their child. The second preferred choice was infant powdered milk where 17% in Gonda and 5% in Barabanki had given this milk to their child. Ghutti was given by 13% in Banda, 2% in Gonda and 1% in Barabanki. Plain water was given by 3% in Barabanki and 2% each in Gonda and Banda. Fruit juice was given by 8% in Saharanpur and 2% each in Banda and Barabanki.

The following figure detailed the data of the table in a graph.

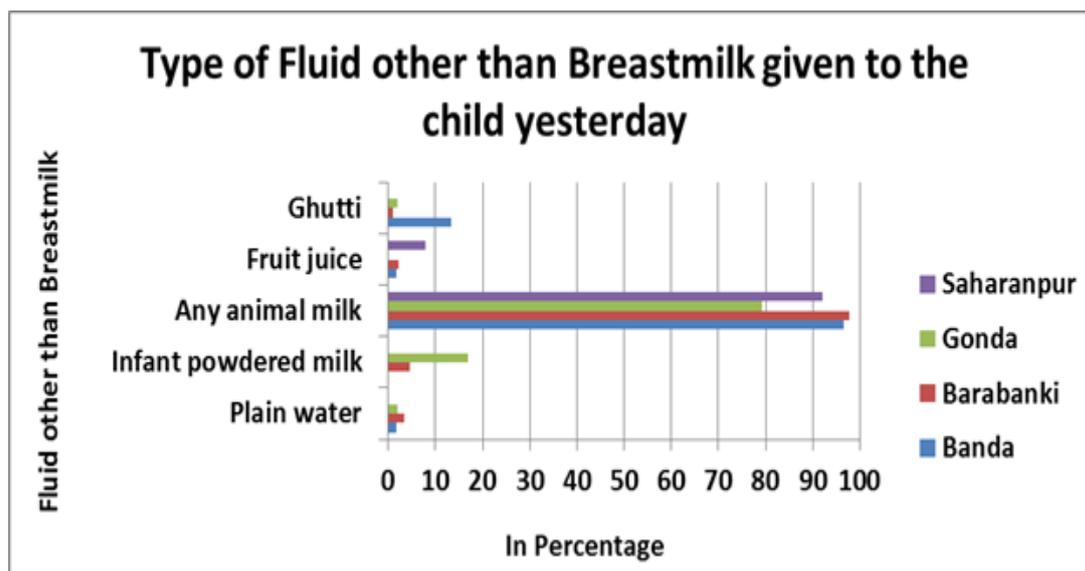


Figure 5. Type of fluid other than breast milk

CONCLUSIONS

The above results showed that the response of the RDWs is in favor of poor practice of EBF. The major problem is that culturally people still believe that animal milk is equally potent like the human breast milk. The reasons are mentioned in the section on breast milk. Large scale studies do not focus on the details of this aspect any more as institutional delivery focus has reduced the focus on home deliveries. The opportunities, challenges & the future plans in newborn & infant care programs should focus on identification of the barrier of giving any fluid other than breast milk as home deliveries still happen in spite of the scale up of the Janani Surakhya Yojana that promotes institutional deliveries.

The removal of barriers like giving fluids other than breastmilk in the programs like newborn & child health would only be achieved if the ASHAs & AWWs make home visits & follow up on the progress of the newborn & infants after each delivery. All the deliveries are not visited by an ASHA, AWW or ANM as public hospitals usually function way over their capacity & front-line workers lack supervision & support (Gopalan *et al.*, 2012) Therefore the strategy to follow up all deliveries would help in prevention of the barrier in all the deliveries & especially among cases of home deliveries. The follow up process would identify the Low Birth Weight (LBW) babies & make the high-risk newborn referrals of the ASHAs effective & timely there by improving the program progress through the eyes of the community & the public health system.

The current efforts of the public health system like human milk banks in selected institutions is a step to enhance the practice of Exclusive Breast Feeding as there is no substitution to the mother's milk for the newborn & infants.

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