CHAPTER - 4

RESULTS

This chapter is about analyzing and interpreting the data gathered during the research study. The analysis was done by using several statistical approaches in accordance with the study's objectives. The study data were collected from 110 ASHAs and 205 postnatal mothers.

The study results are organized under the following two headings:

1. Results of Qualitative data
2. Results of Quantitative data

4.1 Results of Qualitative Data

4.1.1 Description of factors affecting implementation of HBNC by ASHA with help of Focus Group Discussion (FGD):

Focus Group Content Analysis:

This section deals with the analysis based on statements provided by subjects during Focus Group Discussion (FGD). Hence the data presented here is in descriptive approach and verbatim statements expressed by ASHA workers as mentioned by them. The same items were used for observation in all the three groups during discussion (FGDs went on for 50-60 minutes in each session). Participants' responses ranged from one word to a couple of phrases.

The transcripts were generated by the investigator from video recordings. The collected materials were read multiple times in order to build an understanding of each content area. Under the major themes, different codes were identified and the common codes were grouped into categories.[67]

The FGDs brought out different views about the ASHA and HBNC implemented by them.

Major themes identified from FGDs regarding implementation of Home Based Newborn Care (HBNC)

A. **Contributing factors**
B. **Hindering factors**

Content analysis regarding contributing factors:

Sub-themes / Categories of contributing factors were identified as follows:

1. As a source of earning
2. People recognized us as ASHA and accepted
3. As ASHA I gained knowledge in this area
4. Felt benefit to newborns and health of the people
5. As ASHA gained self confidence

1. **As a source of earning**

   Participant No.17 (P17) – "I started working as ASHA with a motive to help and support my family members particularly the education of my children".

   P11 – "I started this job as a means of income".

P91 – "I became an ASHA as a means of financial support and to fulfill my own needs. Now I love this job and people love me for my work. They call me 'ASHA Madam'. It makes me happy and motivates me to work more".

P3, P8, P18, P22, P29, P35, P37, P41, P51, P56, P64, P86 & P109 also supported**.**

During the FGD, most of the ASHAs made the argument that they were able to earn from being an ASHA worker. This helped them to be self sufficient and independent on others for expenditure. They were able to assist with the needs of the family. Their growing financial independence was also linked to their self-confidence.

2. **People recognized us as ASHA and accepted**

These women felt being ASHA workers as a wonderful opportunity to strengthen themselves socially, personally, and financially. Because of their work, the people of the community recognized and embraced them. In general, people in the community followed their advice and access their services.

P3 – "40-60% of mothers accept our teaching".

P8, P11, P16, P17, P18, P21, P22, P29, P35, P41, P51, P56, P64, P86 & P91 also supported.

P16 – "I joined ASHA with a motive of service towards society. People have recognized and accepted me because of this job. I earned respect from the people and now I love this work".

P3, P11, P18, P21, P22, P29, P35, P37, P41, P51, P56, P64, P86 & P91 supported this above statement.

P37 – "I am more confident now and happy to be an ASHA".

- Supported by all participants.

P38 – "Mothers who were even reluctant to follow the advice of other healthcare workers do have confidence in me. They turn up at the health center whenever I inform them for immunization or checkups".

- Supported by all participants.

3. As ASHA I gained knowledge in this area

According to many of the ASHAs, this program provides an opportunity to study and develop their personal skills and expertise. Indeed, the majority of ASHAs have remarked that the benefits of their personal development can be seen in their capacity to promote good family behavior, particularly in their own child-rearing practices. Furthermore, the training has aided in the development of their knowledge and competence regarding maternal and child care as well as other health programs.

P16 – "Most of the villagers don't have adequate knowledge about HBNC or newborn care practices. We (ASHAs) need to educate them from the basics to the vitals of newborn care practices including hygienic feeding, inadequate breast milk production, other available milk products in the market, personal hygiene and nutritious diet of the mother".

P3, P17, P22, P35, P37, P41, P51, P56, P64, P86, P91 & P109 also supported.

P35 – "I wanted to learn regarding healthcare particularly about illnesses and their preventive measures. Being an ASHA could gain adequate information".

P29 also affirmed the same.

P29 – She also added, “After learning and sharing the right information at least I could save the lives of many people”.

P37 – “We couldn’t access any information regarding postnatal mother and newborn care in our time. After becoming an ASHA, I came to know about this important aspect and could help mothers now. People respect me for my work and I am happy to be an ASHA”.

When sharing their experiences as community health workers, many of the ASHAs have made reference to their own experience of pregnancy or as a young mother. Many of them had adverse experiences or lacked proper knowledge of caring for themselves and their newborn babies. They felt that such conditions should not be happened in other women's lives. This served as one of the driving force for community services. The training they received and their daily contact with the community and the health system improved their awareness about different problems and changed their views of life.

4. **Felt benefits to newborns and health of the people**

P11 – “After initiation of the HBNC program, the importance of regular weighing of the babies, maintenance of their body temperature, selection of clothes according to season, exclusive breastfeeding, care during illness, postnatal diet, regular immunization, etc. have been teaching to the villagers”.

P16 – “Villagers lack knowledge about how to take care of newborn babies. Some mothers even don’t know how to feed their babies. So we need to teach them regarding feeding with hygiene, exclusive breastfeeding, care of breast and breast problems, etc”.

P3, P8, P17, P18, P22, P29, P35, P37, P41, P51, P56, P64, & P86 also supported.

P17 – "Mothers in the labor colony did not know anything about newborn care. I had to go to them and bring them to the PHC for immunization. Some mothers either didn't know or were unaware of their pregnancy. They reported about their pregnancy after feeling movements of the baby in the womb during 5 to 6 months of pregnancy by the time she missed all the medications of 1st trimester".

P3, P8, P17, P18, P22, P29, P35, P37, P41, P51, P56, P64, P91, P86 & P109 also supported.

P22 – "Some antenatal mothers denied for antenatal check-ups and said the baby is not yet moving. Once the baby starts moving, I will come for a check-up as well as TT injections". She further added, "In most of the cases, after delivery newborn babies are just left without proper care. It's very difficult to convince or mobilize Gujjar colony people to go to the hospital for check-ups and delivery".

P21 – "Many mothers didn't have an idea regarding the quality and quantity of food they need to eat during the postnatal period. They tried to eat very little. I had to explain them about the importance of adequate nutritious diet intake particularly for sufficient breast milk production".

P3 – "In my area, people were mostly educated, aware and cooperative. They accepted and practiced essential information or education given to them regarding postnatal and newborn care".

P109 – "Some parents did not know anything. They just left the newborn as it is without appropriate care".

Most of the ASHAs considered their work as a type of social service towards the community. They enjoyed the feeling of saving lives and improving the health of their community members. This was repeatedly pointed out by the ASHAs as one of the main reason for continuing their job as community health workers in the focus group discussions. This feeling made them responsible for the welfare of the society in which they worked.

5. **As ASHA gained self confidence**

P41 – "Generally I used to stay at home all the time, but after becoming an ASHA, interaction with the community people has increased and I explored more about life. Now people accept me and my self-confidence has improved. I am enjoying my work".

P38 – "Many of the mother who are unwilling to follow the advice of other healthcare workers, trust me and turn up to the health center whenever I informed them of immunization or checkups. My confidence in providing services to the mothers and babies has improved".

- Supported by all participants.

ASHA mentioned improved familiarity and social acceptance as a consequence of the CHW's position. ASHAs referred their incentives as a motivating factor and they became more independent. Besides, they earned respect from the society. An identity has been made in the society because of their

work that was never felt when they were confined to their homes. Now, they are more productive and contribute to the household income.

Content analysis regarding hindering factors for implementation of HBNC program:

Sub-themes/Categories are as follows:

1. Not getting adequate incentive (Less incentive)
2. Too much work (Surveys, DOTS program, AYUSHMAN yojna etc.)
3. Lack of cooperation from people, mother and family
4. Difficulty to recollect the appropriate skill while practicing
5. Provided kits do not have required instruments and medicines

1. Not getting adequate incentive (Less incentive)

P16 – "Our incentives were supposed to be hiked in 2007 but not happened till date".

- Supported by all participants.

P17 – "Villagers think that we are earning so much but not providing services/working as supposed to be".

- Supported by all participants.

P37 – "We have not been provided incentives for all the services carried out by us".

- Supported by all participants.

Although incentives play a key role in motivation, self-confidence and financial assistance of ASHA, the timely remuneration and the amount of money paid for their activities have been a subject of concern. They find it insufficient and better incentives may promote their commitment to their responsibilities. Irregular

payments certainly caused a negative impact directly or indirectly on the ASHA's performance, their family, and relationship with the community. Most of them have been facing financial insecurity in the family, trying to meet the basic needs of their family and education for their children.

2. **Too much work (Surveys, DOTS program, AYUSHMAN Yojna etc.)**

P17 – "Sometimes I couldn't give enough attention to the babies due to overloading work. E.g. Surveys"

- Supported by all participants.

P16 – "We have been assigned to conduct surveys every 2-3 months. In such conditions, we can't pay enough attention to the mothers and newborn babies".

P17 – "We were visiting the LBW babies every 3 days, but due to an excessive work schedule unable to visit now".

- Supported by all participants.

P37 – "Most of the govt. surveys are conducted by us. We have to keep aside HBNC activities. Finally, we fail to complete the target set by supervisors. This sometimes leads to compromise the quality of newborn care".

- Supported by all participants.

P35 – "We are involved in DOTS, dengue, malaria, diarrhea programs, etc. In the initial phase of AYUSHMAN yojna, every individual in the community were asked to contact ASHA for more information".

P64 – "We are supposed to work for mother and baby care, but we are involved in many other activities due to which we have forgotten some aspects of HBNC. I think we need regular training".

- Supported by all participants.

ASHA had some disappointment with some aspects of the health system that hindered their enthusiasm for success in both personal and public level. Their personal time has been taken away by excessive workloads, regular refresher training and meetings at health care facilities, and going to distant homes. Often they felt minimal freedom at work to carry out their social obligations outside the guidelines.

3. **Lack of cooperation from people, mother and family**

P17 – "People migrated from other states especially UP and Bihar are more rigid and non-cooperative".

P18 – "Some mothers even requested to mark the baby's nail without giving polio drops. They said the cold temperature of the vaccine may cause pneumonia to the child".

- **P3, P17, P16, P21, P44, P64 & P109**

P21 – "Some antenatal mothers denied for the antenatal visit. It is very difficult to convince them for hospital checkups".

- Supported by all participants.

P44 – "Some mothers started breastfeeding after giving prelacteal feeds (e.g. Ghutti, water, sugar water, etc.) to the baby by grandmother or paternal aunt".

- Supported by all participants.

P35 – "Gujjar groups are reluctant to follow our teachings or advice. They prefer home delivery instead of delivery in hospitals. Once I experienced a home delivery in which they cut the umbilical cord with a piece of broken glass".

P91 – "Once, a local Dai delivered a baby at home and cut the cord completely. The baby was bleeding profusely and Dai ran away from the place out of fear. Then I was informed and managed to stop bleeding with a sterile tight dressing. The child could be saved".

ASHA stated that the community people generally follow their advice and receive care. However, some households resisted to their activities during health promotion. They were disappointed by the uncooperative nature of some of the people especially the Gujjars, because of their poor knowledge and cultural norms.

4. Difficulty to recollect the appropriate skill

P3 – "Particularly major topics such as jaundice, sepsis, heartbeat recording, and fever management need to be more elaborated to augment the efficiency of our practices".

- Supported by all participants.

ASHAs were confident that they would carry out the tasks, but wanted enhancement of their knowledge and skills to ensure acceptance and trust of the community. They were seemed to less familiar with the newborn diseases, and were expecting more training in this aspect. Therefore, good quality teaching and training are imperative to promote the efficiency of forefront health providers. Empowerment of ASHA through regular training should be an ongoing process.

5. Provided kit do not have required instruments & medicines

During a FGD, necessary items as reported by ASHA for proper functioning include BP monitor, flashlights, and cell phones apart from the medical set (that include drug supply such as paracetamol, chloroquine zinc, iron folic acid tablets, condoms, ORS, and the delivery kit). They stated that these equipments make them resourceful, improve their productivity and make them more acceptable and demanding. Inadequate supply of drugs and equipments are the major problems of ASHA.

P17 – "Kit contents have not been supplied since the last few years. That's affecting our practices".

- Supported by all participants.

P37 – "We have been advised to give paracetamol syrup whenever the baby has fever, similarly tetracycline ointment for eye infection. But we have not been supplied with the medicines that compromised our service for newborns".

She further added, "I don't have a thermometer and adequate HBNC forms to keep records of the required information. The forms were provided once a year and I had to make copies to avoid shortage".

P54 – She added, "I have been working for the last 13 years, but equipment and medicines were supplied only three times".

- Supported by all participants.

P38 – "Villagers also complained about our visit to them and also for not providing necessary medicinal support".

- Supported by all participants.

In brief, misconceptions, marginalization, cultural and religious beliefs regarding newborn and maternal care practices discouraged some families from using health facilities and prevented the ASHAs from performing their duties. In order to overcome misconception about the healthcare system and the health care staff, ASHAs encouraged pregnant women and their families to visit health care facilities. Despite this endeavor, ASHAs were unable to convince some families in the community. They tried to persuade these people about the importance of medical care through frequent visits.

4.2 Results of Quantitative Data

4.2.1 Description of baseline data of ASHAs:

This section includes the description of demographic and other variables detail of ASHA workers.

Table 1: Baseline information of ASHA in frequency and percentage distribution (N = 102)

Sl. No.	Variables	Frequency (f)	Percentage (%)
1.	**Age of ASHA (in years)**		
	a) 28 -40	50	49.0
	b) 41-50	47	46.1
	c) 51-56	05	4.9
2.	**Highest academic qualification**		
	a) High school	46	45.1
	b) Higher secondary	33	32.4
	c) Degree & above	23	22.5
3.	**Marital status**		
	a) Married	94	92.16
	b) Widow	06	5.88
	c) Separated	02	1.96
4.	**Family type**		
	a) Joint	42	41.18
	b) Nuclear	59	57.84
	c) Extended	01	0.98
5.	**Number of children**		
	a) No child	05	4.9
	b) 1-2	69	67.65
	c) 3-5	28	27.45
6.	**Religion**		
	a) Hindu	93	91.18
	b) Muslim	4	3.92
	c) Christian	01	0.98
	d) Sikh	4	3.92
7.	**Work experience (in years)**		
	a) < 5	13	12.75
	b) 5-10	29	28.43
	c) 10-14	60	58.82
8.	**Attended any training related to HBNC in the last 6 months**		
	a) Yes	67	65.7
	b) No	35	34.3

All the ASHA workers were female and their ages ranged between 28-56 years. 49% of them are aged between 28-40 years. Most of them were married (92.16%) and educated up to high school (45.10%). About 91.18% of ASHA workers were Hindu and belonged to nuclear families (57.84). Many of the ASHA workers (58.82%) had more than 10 years of experience in the field and about 65.70% of ASHAs have received training on HBNC in the last six months (Table 1).

4.2.2 Effectiveness of HBNC provided by ASHA in terms of gain in knowledge, attitude and practice scores

Table 2: Knowledge and practices level of ASHA after HBNC training (N = 102)

Variables	Category	Score range	Pretest		Posttest 1 (Day 30)		Posttest 2 (Day 60)		Posttest 3 (Day 90)	
			f	%	f	%	f	%	f	%
Knowledge	Poor	12-18	6	5.89	1	0.98	1	0.98	1	0.98
	Average	19-29	92	90.19	85	83.33	48	47.06	15	14.71
	Good	30-36	4	3.92	16	15.69	53	51.96	86	84.31
Practice	Poor	30-45	1	0.98	0	0	0	0	0	0
	Average	46-72	20	19.61	15	14.71	13	12.75	7	6.86
	Good	73-90	81	79.41	87	85.29	89	87.25	95	93.14

Table 3: Domain wise knowledge gain of ASHA on HBNC post re-education (N = 102)

Domains	Max Score	Range	Pretest	Mean %	Posttest 1 (Day 30)	Posttest 2 (Day 60)	Posttest 3 (Day 90)	Mean %	Friedman Test Value	P value
			Mean ± SD		Mean ± SD	Mean ± SD	Mean ± SD			
Hygiene and prevention of infection (HPI)	5	1-5	4.12 ±0.859	82.35	4.38 ±0.718	4.28 ±0.916	4.75 ±0.557	94.90	45.36*	<0.001
General information about High risk newborn (GIHRN)	9	4-9	6.38 ±1.126	70.92	6.88 ±1.120	7.87 ±1.123	8.47 ±0.875	94.12	156.73*	<0.001
Prevention of hypothermia (PH)	7	0-7	4.19 ±1.447	59.80	5±1.152	6.11 ±1.062	6.44 ±0.907	92.02	181.69*	<0.001
Breast feeding care (BFC)	8	2-7	4.85 ±1.038	60.66	5.62 ±1.152	6.23 ±1.274	7.01±1.094	87.62	144.94*	<0.001
Eye & Umbilical cord care (EUCC)	7	2-7	4.11 ±1.177	58.68	4.57 ±1.048	5.02 ±1.024	5.85 ±1.028	83.61	108.67*	<0.001

df=3, P<0.05,*Significant

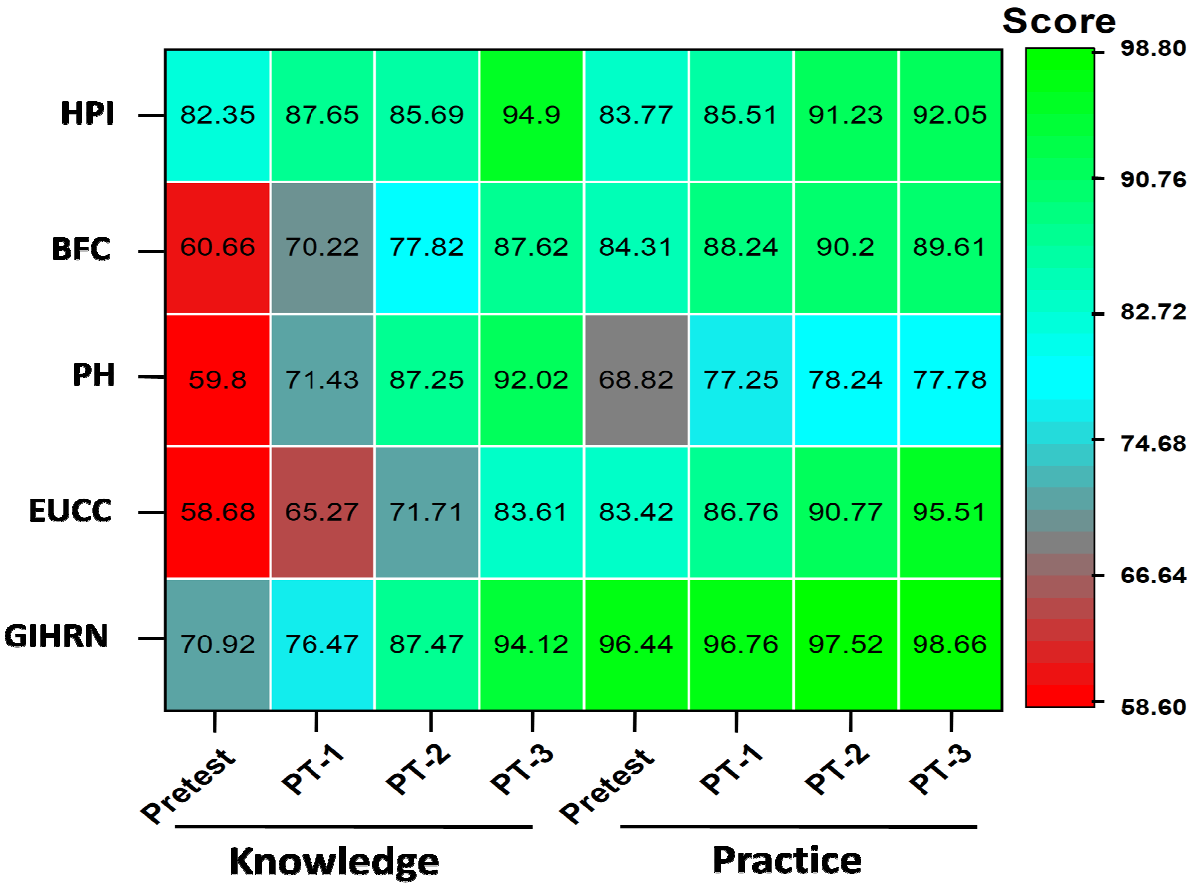

Figure 6: Comparison of pretest, posttest-1, posttest-2 and posttest-3 mean percentage of knowledge and practice of ASHA

HPI - Hygiene and prevention of infection
BFC - Breast feeding care
PH - Prevention of hypothermia
EUCC - Eye & Umbilical cord care
GIHRN - General information about High risk newborn

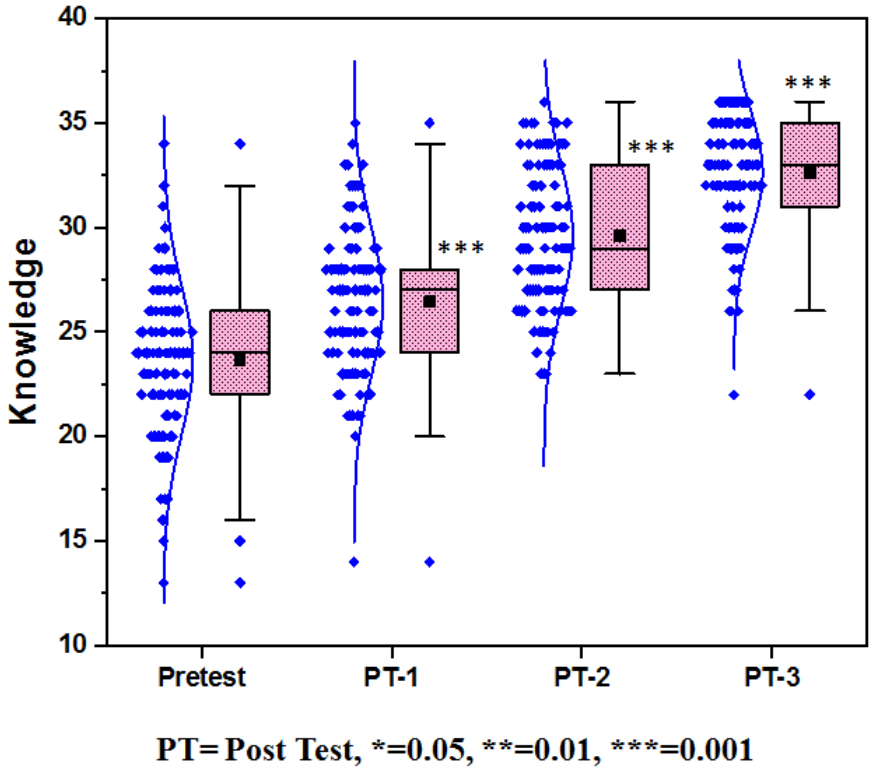

Figure 7: Comparison of pretest and post test mean knowledge score of ASHA

Initial assessment (pretest) reported 90.19% of ASHA workers with average knowledge of HBNC. Significant improvement of knowledge of ASHA workers was observed in the subsequent reinforcements ($p<0.001$) (Table 5; Table 6). The mean scores of knowledge of ASHAs was progressively increased in the successive assessments (a) pretest (23.64±3.59) (b) posttest 1 (26.45±3.54) (c) posttest 2 (29.51±3.58) and (d) posttest 3 (32.52±3.20). At the end of the 3rd post-test evaluation, the knowledge level of the majority of the ASHA workers (84.31%) was improved to good category (Table 2). Further assessment revealed significant improvement of knowledge of the ASHA workers in all domains after the reinforcements ($p<0.001$)

(Fig. 7). Briefly, the baseline and end-line data of various domains of knowledge of the ASHA workers were (a) general information about High-risk newborns (70.92% and 94.12%), (b) Eye & Umbilical cord care (58.68% and 83.61%), (c) Prevention of hypothermia (59.80% and 92.02%), (d) Breastfeeding care (60.66% and 87.62%), and (e) hygiene and prevention of infection (82.35% and 94.90%) respectively. (Table 3) (Fig. 6)

Table 4: Domain wise practice improvement of ASHA on HBNC post re-education (N=102)

Domains	Max Score	Range	Pretest	Mean %	Posttest 1 (Day 30)	Posttest 2 (Day 60)	Posttest 3 (Day 90)	Mean %	Friedman Test Value	P value
			Mean ± SD		Mean ± SD	Mean ± SD	Mean ± SD			
General information about High risk newborn (GIHRN)	30	18-30	28.93 ± 2.177	96.44	29.03 ±2.168	29.25 ±2.165	29.60 ±1.444	98.66	32.20*	<0.001
Eye & Umbilical cord care (EUCC)	12	0-12	10.01 ± 1.917	83.42	10.41 ±1.900	10.89 ±1.604	11.46 ±1.295	95.51	55.41*	<0.001
Hygiene and prevention of infection (HPI)	18	9-18	15.08 ± 2.654	83.77	15.39 ±2.808	16.42 ±2.431	16.57 ±2.310	92.05	26.49*	<0.001
Breast feeding care (BFC)	15	0-15	12.65 ± 2.298	84.31	13.24 ±1.920	13.53 ±1.817	13.44 ±1.816	89.61	11.21*	<0.01
Prevention of hypothermia (PH)	15	3-15	10.32 ± 2.908	68.82	11.59 ±2.240	11.74± 2.469	11.67 ±2.356	77.78	17.81*	<0.001

df=3, P<0.05,*Significant

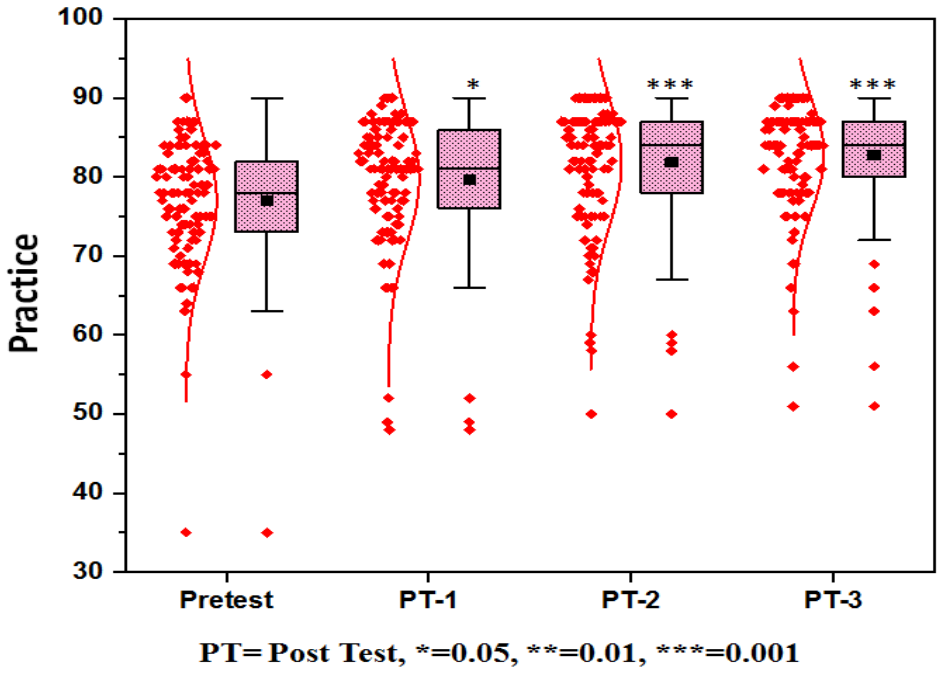

Figure 8: Comparison of pretest and post test mean practices score of ASHA

Similarly, significant development of practice scores of ASHA workers was observed after subsequent reinforcements ($p<0.001$) (Table 5 & Table 8). The mean scores of the practices of ASHAs was also progressively increased in the successive assessments (a) pretest (76.99±7.80) (b) posttest 1 (79.69±8.04) (c) posttest 2 (81.83±8.05) and (d) posttest 3 (81.83±8.05). A significant improvement in practice score was detected in all domains ($p<0.05$) (Fig. 8). The baseline and end-line practice scores of the ASHA workers in the respective domains were (a) general information about High-risk newborns (96.44% and 98.66%), (b) Eye & Umbilical cord care (83.42% and 95.51%), (c) Prevention of hypothermia (68.82% and 77.78%), (d) Breastfeeding care (86.67% and 89.61%), and (e) hygiene and prevention of infection (83.77% and 92.22%) (Table 4) (Fig.6). The improvement of practice scores of ASHA workers was positively correlated to the enhancement of their knowledge on HBNC ($r=0.32$) (Fig. 11).

Table 5: Improvement of knowledge, attitude and practices scores of ASHA after HBNC re-education (N = 102)

Variables	Pretest	Posttest-1 (Day 30)	Posttest-2 (Day 60)	Posttest-3 (Day 90)	Friedman Test Value	P value
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD		
Knowledge	23.64±3.59	26.45±3.54	29.51±3.58	32.52±3.20	**217.21***	<0.001
Attitude	84.07±9.59	87.74±8.85	87.30±7.04	86.85±7.90	**12.46***	<0.01
Practice	76.99±7.80	79.69±8.04	81.83±8.05	81.83±8.05	**40.65***	<0.001

df=3, p<0.05,*Significant

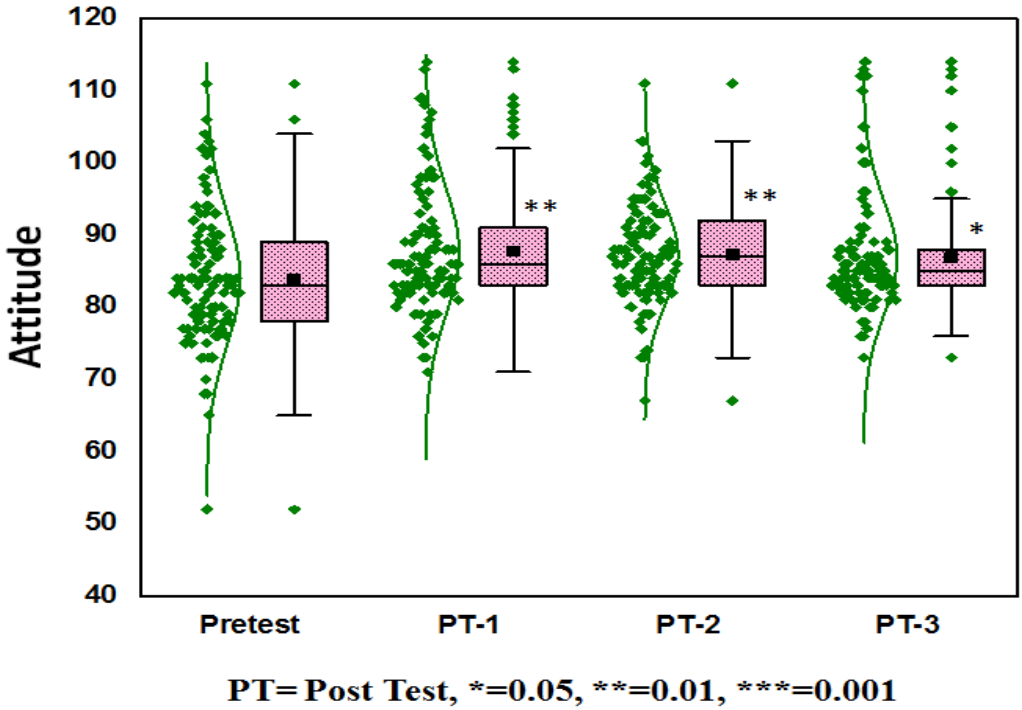

Figure 9: Comparison of pretest and posttest mean attitude score of ASHA

Moreover, the attitude of ASHA was also improved significantly with subsequent reinforcements ($p<0.01$) (Table 5 & Table 7). The mean scores of the attitude of the ASHA workers in the successive assessments were (a) pretest (84.07±9.59), (b) posttest 1 (87.74±8.85), (c) posttest 2 (87.30±7.04), and (d) posttest 3 (86.85±7.90) respectively (Table 5) (Fig. 9). The development of an attitude of the ASHA workers was positively correlated with improvement of their knowledge ($r=0.32$) (Fig. 10) and practice ($r=0.30$) (Fig. 12).

Table 6: The pair wise comparison of knowledge of ASHA (within the group) before and after implementation of HBNC re-education using Post Hoc Bonferroni test

Knowledge scores of ASHA		**Mean difference (I-J)***	**Std. Error**	**P value#**	**95% confidence interval**	
Variable (I)	**Variable (J)**				**Lower Bound**	**Upper Bound**
Pretest knowledge score	Posttest -1 (30 days)	-2.804*	0.383	<0.001	-3.836	-1.772
	Posttest -2 (60 days)	-5.863*	0.373	<0.001	-6.867	-4.859
	Posttest -3 (90 days)	-8.873*	0.392	<0.001	-9.928	-7.817
Posttest -1 (30 days)	Posttest -2 (60 days)	-3.059*	0.357	<0.001	-4.021	-2.097
	Posttest -3 (90 days)	-6.069*	0.393	<0.001	-7.127	-5.010
Posttest -2 (60 days)	Posttest -3 (90 days)	-3.010*	0.331	<0.001	-3.902	-2.118

*** Significant, p<0.05, #Adjustment for multiple comparisons: Bonferroni**

Table 7: The pair wise comparison of attitude of ASHA (within the group) before and after implementation of HBNC re-education using Post Hoc Bonferroni test

Attitude Scores		Mean difference (I-J)*	Std. Error	P value#	95% confidence interval	
Variable (I)	Variable (J)				Lower Bound	Upper Bound
Pretest attitude score	Posttest -1 (30 days)	-3.667*	1.030	<0.01	-6.439	-.895
	Posttest -2 (60 days)	-3.235*	0.936	<0.01	-5.754	-.717
	Posttest -3 (90 days)	-2.784*	0.965	<0.05	-5.382	-.187
Posttest -1 (30 days)	Posttest -2 (60 days)	0.431	0.764	1.000	-1.625	2.488
	Posttest -3 (90 days)	0.882	0.847	1.000	-1.396	3.161
Posttest -2 (60 days)	Posttest -3 (90 days)	0.451	0.703	1.000	-1.442	2.344

*** Significant, p<0.05, #Adjustment for multiple comparisons: Bonferroni**

Table 8: The pair wise comparison of practices of ASHA (within the group) before and after implementation of HBNC re-education using Post Hoc Bonferroni test

Practice scores		Mean difference (I-J)*	Std. Error	P value#	95% confidence interval	
Variable (I)	Variable (J)				Lower Bound	Upper Bound
Pretest practice score	Posttest -1 (30 days)	-2.696*	0.989	<0.05	-5.356	-.036
	Posttest -2 (60 days)	-4.843*	0.984	<0.001	-7.490	-2.196
	Posttest -3 (90 days)	-5.745*	0.955	<0.001	-8.316	-3.174
Posttest -1 (30 days)	Posttest -2 (60 days)	-2.147	0.868	0.090	-4.483	0.188
	Posttest -3 (90 days)	-3.049*	0.925	<0.01	-5.539	-.559
Posttest -2 (60 days)	Posttest -3 (90 days)	-.902	0.789	1.000	-3.025	1.221

*** Significant, p<0.05, #Adjustment for multiple comparisons: Bonferroni**

The data presented in Table 6 to Table 8 show within the group comparison of knowledge, attitude, and practices of ASHA workers using the Bonferroni Post Hoc test. The comparisons of knowledge of ASHA workers showed significant improvement from pretest assessment to posttest-1, posttest-2 and posttest-3, posttest-1 to posttest-2 and posttest-3, and posttest-2 to posttest-3 ($p<0.001$) respectively (Table 6). The comparison of pretest attitude and practices of ASHAs to the posttest-1, posttest-2 and posttest-3 ($P<0.001$) shared significant improvement but no significant improvement were observed in attitude and practices of ASHAs from posttest-1 to posttest-2 and posttest-3 respectively (Table 7 and Table 8).

ASHA workers responses regarding HBNC on Attitude assessment scale

Table 9: Identification of high risk newborn and Thermoregulation (N = 102)

Sl. No.	Statement	Pretest (Baseline)		Posttest (Endline)		P value
		D f (%)	A f (%)	D f (%)	A f (%)	
1.	First newborn examination can be conducted anytime	55 (53.92%)	47 (46.08%)	80 (78.43%)	22 (21.57%)	**<0.001***
2.	Regular weighing of newborn is important	15 (14.71%)	87 (85.29%)	4 (3.92%)	98 (96.08%)	**<0.05 ***
3.	Frequent visit to newborn's house is not important	75 (73.53%)	27 (26.47%)	75 (73.53%)	27 (26.47%)	1.000
4.	Delaying bath of baby can keep baby warm	25 (24.51%)	77 (75.49%)	15 (14.71%)	87 (85.29%)	0.52
5.	Wrapping the newborn with multiple layers of clothes can cause fever	71 (69.61%)	31 (30.39%)	59 (57.84%)	43 (42.16%)	0.127
6.	Newborn can't self maintain body temperature	54 (52.94%)	48 (47.06%)	36 (35.29%)	66 (64.71%)	**<0.05***
7.	Low birth weight baby has tendency to lose heat faster than baby with normal weight	23 (22.55%)	79 (77.45%)	8 (7.84%)	94 (92.16%)	**<0.01***
8.	Baby can be given bath with tap water	67 (65.69%)	35 (34.31%)	67 (65.69%)	35 (34.31%)	1.000
9.	Kangaroo Mother Care (KMC) is only for preterm babies	53 (51.96%)	49 (48.04%)	72 (70.59%)	30 (29.41%)	**<0.01***
10.	KMC can be provided only by the mother	45 (44.12%)	57 (55.88%)	89 (87.25%)	13 (12.75%)	**<0.001***
11.	KMC can be given to sick newborns	42 (41.18%)	60 (58.82%)	42 (41.18%)	60 (58.82%)	1.000
12.	A potential benefit of KMC is overstated	29 (28.43%)	73 (71.57%)	42 (41.18%)	60 (58.82%)	0.093
13.	Parents should be encouraged to practice KMC	10 (9.80%)	92 (90.20%)	4 (3.92%)	98 (96.08%)	0.109

A- Agree, D- Disagree, McNemar Test, p<0.05, *Significant

Table 10: Breastfeeding care practices (N = 102)

Sl. No.	Statement	Pretest (Baseline)		Posttest (Endline)		P value
		D f (%)	A f (%)	D f (%)	A f (%)	
1.	Feeding first breast milk protects the baby from diseases	4 (3.92%)	98 (96.08%)	2 (1.96%)	100 (98.04%)	0.687
2.	Baby shouldn't be given gripe water/ ghutti	53 (51.96%)	49 (48.04%)	33 (32.35%)	69 (67.65%)	**<0.01***
3.	Frequent feeding reduces the milk production	92 (90.20%)	10 (9.80%)	96 (94.12%)	6 (5.88%)	0.424
4.	Baby should be fed breast milk with other feeds	38 (37.25%)	64 (62.75%)	56 (54.90%)	46 (45.10%)	**<0.05***
5.	The mother should breastfeed the baby within an hour of delivery	4 (3.92%)	98 (96.08%)	4 (3.92%)	98 (96.08%)	1.000
6.	Breastfeeding improves bonding between mother and the baby	8 (7.84%)	94 (92.16%)	4 (3.92%)	98 (96.08%)	0.289
7.	Breast milk can cause allergies to baby	93 (91.18%)	9 (8.82%)	93 (91.18%)	9 (8.82%)	1.000
8.	Baby requires extra water in summer along with breastfeeding	68 (66.67%)	34 (33.33%)	85 (83.33%)	17 (16.67%)	**<0.01***
9.	Breastfed newborns are healthier than those who are formula-fed	35 (34.31%)	67 (65.69%)	34 (33.33%)	68 (66.67%)	1.000
10.	Inexperienced mothers don't have the ability to breastfeed	41 (40.20%)	61 (59.80%)	43 (42.16%)	59 (57.84%)	0.885

A- Agree, D- Disagree, McNemar Test, p<0.05, *Significant

Table 11: Infection control practices (N = 102)

Sl. No.	Statement	Pretest (Baseline)		Posttest (Endline)		P value
		D f (%)	A f (%)	D f (%)	A f (%)	
1.	Immunization is not required in newborns	83 (81.37%)	19 (18.63%)	93 (91.18%)	9 (8.82%)	0.064
2.	Cord stump falls automatically without any care	32 (31.37%)	70 (68.63%)	19 (18.63%)	83 (81.37%)	<0.05
3.	Newborn shouldn't be taken to family gatherings	42 (41.18%)	60 (58.82%)	27 (26.47%)	75 (73.53%)	**<0.05***
4.	A dirty umbilical cord can cause infection to baby	25 (24.51%)	77 (75.49%)	7 (6.86%)	95 (93.14%)	**<0.001***
5.	A used razor blade shouldn't be utilized to cut the umbilical cord	51 (50.00%)	51 (50%)	26 (25.49%)	76 (74.51%)	**<0.001***
6.	Hand washing before touching the baby is not always required	72 (70.59%)	30 (29.41%)	78 (76.47%)	24 (23.53%)	0.391
7.	A newborn baby can get infection from anyone who has infection	24 (23.53%)	78 (76.47%)	7 (6.86%)	95 (93.14%)	**<0.001***

A- Agree, D- Disagree, McNemar Test, p<0.05, *Significant

Significant improvement of attitude scale of the ASHA workers in many aspects of HBNC was observed following subsequent reinforcements as compared to baseline data (Table 9 to Table 11). The number of ASHA workers who did not agree to "the first examination of newborns at any time" during pretest (54.90%) was increased to 78.43% at posttest assessment. The majority of ASHAs (85.29%) agreed "delaying bath of the baby helps to keep the baby warm" and about 64.71% of ASHAs understood the inability of newborns to self maintain body temperature during the post-test assessment. The misleading concepts "KMC is only for preterm babies" and "it can only be provided by the mothers" were disagreed by 70.59% and 87.25% of ASHA workers respectively after reinforcement. Initially, 71.57% of ASHAs believed that "the benefit of KMC is hyped",

however, the endline number was reduced to 58.82% of ASHAs. Thus "encouragement of parents to practice KMC" was supported by 96.08% of ASHAs during posttest assessment. Nearly all the ASHA workers (98.04%) believed that feeding newborns with breast milk increases immunity and protects them from diseases. Thus 67.65% of ASHAs came up against the administration of gripe water to the newborns during posttest assessment. The majority of the ASHA workers (94.12%) understood that frequent breastfeeding of babies doesn't compromise milk production. During posttest assessment, more than half of the ASHAs (54.90%) disagreed with "feeding of breast milk along with other feeds to the babies". The utmost need for "Breastfeeding of babies within an hour of delivery" was supported by 96.08% of ASHAs. They also appreciated the improvement of bonding between the mother and the baby through breastfeeding. The majority of ASHA workers (92.16%) supported a higher tendency of low birth weight babies to lose heat than normal babies during the post-test assessment. During the pretest, only half of the ASHA workers (50%) disagreed with the concept of utilization of used razor blades for cord-cutting and the number increased to 74.51% during the post-test assessment. The number of ASHAs who disagree with the idea of providing water in addition to breast milk particularly in summer to the babies was increased from 66.67% (baseline) to 83.33% (endline). Most of the ASHAs (91.18%) disagreed with the concept of the possibility of causing allergy to the babies by breast milk. The need for immunization in newborns was accepted by 91.18% of ASHAs. The number of ASHAs who agreed "a dirty umbilical cord can cause infection to baby" was increased from 75.49% to 93.14% after reinforcement. About 73.53% of ASHA workers were not in support of taking newborns to family gatherings. The number of ASHAs who believed

that “Inexperienced mothers don’t have the ability to breastfeed” was reduced from 59.80% (baseline) to 57.84% (endline). During the pretest, about 70.59% of ASHAs accepted the need of washing hands every time before touching the babies and the number was increased to 76.47% during the posttest assessment. About 66.67% of ASHAs were in agreement with the better health condition of babies fed with mother’s milk as compared to babies fed with formula feed. Initially, 76.47% of ASHAs agreed with the possibility of getting an infection of newborns from other infected people, and the number was increased to 93.14% after posttest assessment.

Table 12: Association between levels of knowledge with selected baseline data of ASHA (N = 102)

Sl. No.	Variables	Level of Knowledge			χ^2	df	P value
		Poor	Average	Good			
1.	**Age of ASHA (in years)**						
	a) 28 -40	3	44	4			
	b) 41-50	2	44	0	6.175	4	0.186
	c) 51-56	1	4	0			
2.	**Highest academic qualification**						
	a) High school	0	44	2			
	b) Higher secondary	4	29	0	8.169	4	0.086
	c) Degree & above	2	19	2			
3.	**Marital status**						
	a) Married	6	84	4			0.918
	b) Widow	0	6	0	0.944	4	
	c) Separated	0	2	0			
4.	**Family type**						
	a) Joint	3	38	1	0.745	4	0.946
	b) Nuclear	3	53	3			
	c) Extended	0	1	0			
5.	**Number of children**						
	a) No child	0	4	1	5.395	4	0.249
	b) 1-2	5	61	3			
	c) 3 -5	1	27	0			
6.	**Work experience (in year)**						
	a) < 5	2	12	0	3.167	4	0.530
	b) 5-10	2	26	1			
	c) 10-14	2	54	3			
7.	**Attended any training related to HBNC in last 6 months**						
	a) Yes	5	58	4	3.204	2	0.202
	b) No	1	34	0			

χ^2 = Goodness of fit, P<0.05, *Significant at χ^2 = 5.99, 9.49, 12.592, df=2, 4

The knowledge level of ASHA workers was not significantly associated with their selected baseline data (Table 12). The knowledge regarding HBNC of the ASHAs was not influenced by any of the demographic and other variables.

Table 13: Association between levels of attitude with selected baseline data of ASHA (N = 102)

Sl. No.	Variables	Level of attitude		χ^2	df	P value
		+ve attitude	-ve attitude			
1.	**Age of ASHA (in year)**					
	a) 28 -40	1	50			
	b) 41-50	0	46	1.010	2	0.604
	c) 51-56	0	5			
2.	**Highest academic qualification**					
	a) High school	0	46			
	b) Higher secondary	1	32	2.112	2	0.348
	c) Degree & above	0	23			
3.	**Marital status**					
	a) Married	1	93			0.958
	b) Widow	0	6	0.086	2	
	c) Separated	0	2			
4.	**Family type**					
	a) Joint	1	41			
	b) Nuclear	0	59	1.443	2	0.486
	c) Extended	0	1			
5.	**Number of children**					
	a) No child	0	5			
	b) 1-2	1	68	0.483	2	0.785
	c) 3 -5	0	28			
6.	**Work experience (in year)**					
	a) < 5	0	14			
	b) 5-10	1	28	2.542	2	0.281
	c) 10-14	0	59			
7.	**Attended any training related to HBNC in last 6 months**					
	a) Yes	1	66	0.528		
	b) No	0	35	#	1	0.468

χ^2 = Goodness of fit, # Yates's correction, P<0.05, *Significant at χ^2 =3.84, 5.99, 7.82, df=1, 2

The attitude level of ASHA workers was not significantly associated with their selected baseline data (Table 13). The attitude regarding HBNC of the ASHAs was not influenced by any of the demographic and other variables.

Table 14: Association between levels of practice with selected baseline data of ASHA (N = 102)

Sl. No.	Variables	Level of Practice			χ^2	df	P value
		Poor	Average	Good			
1.	**Age of ASHA (in year)**						
	a) 28 -40	0	10	41	3.401	4	0.493
	b) 41-50	1	12	33			
	c) 51-56	0	0	5			
2.	**Highest academic qualification**						
	a) High school	0	12	34			
	b) Higher secondary	1	8	24	5.142	4	0.273
	c) Degree & above	0	2	21			
3.	**Marital status**						
	a) Married	1	21	72	0.776	4	0.942
	b) Widow	0	1	5			
	c) Separated	0	0	2			
4.	**Family type**						
	a) Joint	0	13	29	4.437	4	0.350
	b) Nuclear	1	9	49			
	c) Extended	0	0	1			
5.	**Number of children**						
	a) No child	0	0	5	4.573	4	0.334
	b) 1-2	0	17	52			
	c) 3 -5	1	5	22			
6.	**Work experience (in year)**						
	a) < 5	0	3	11	0.771	4	0.942
	b) 5-10	0	6	23			
	c) 10-14	1	13	45			
7.	**Attended any training related to HBNC in last 6 months**						
	a) Yes	1	17	49	2.302	2	0.316
	b) No	0	5	30			

χ^2 = Goodness of fit, # Yates's correction, P<0.05, *Significant at χ^2 = 5.99, 9.49, 12.592, df= 2, 4

The level of practices of ASHA workers was not significantly associated with their selected baseline data (Table 14). The practices regarding HBNC of the ASHAs was not influenced by any of the demographic and other variables.

Table 15: Correlation between knowledge, attitude and practices of ASHA (N = 102)

Variable 1	Variable 2	r value	P value
Knowledge of ASHA	Attitude of ASHA	0.32**	0.001
Knowledge of ASHA	Practice of ASHA	0.27**	0.006
Practice of ASHA	Attitude of ASHA	0.29**	0.004

**** Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed)**

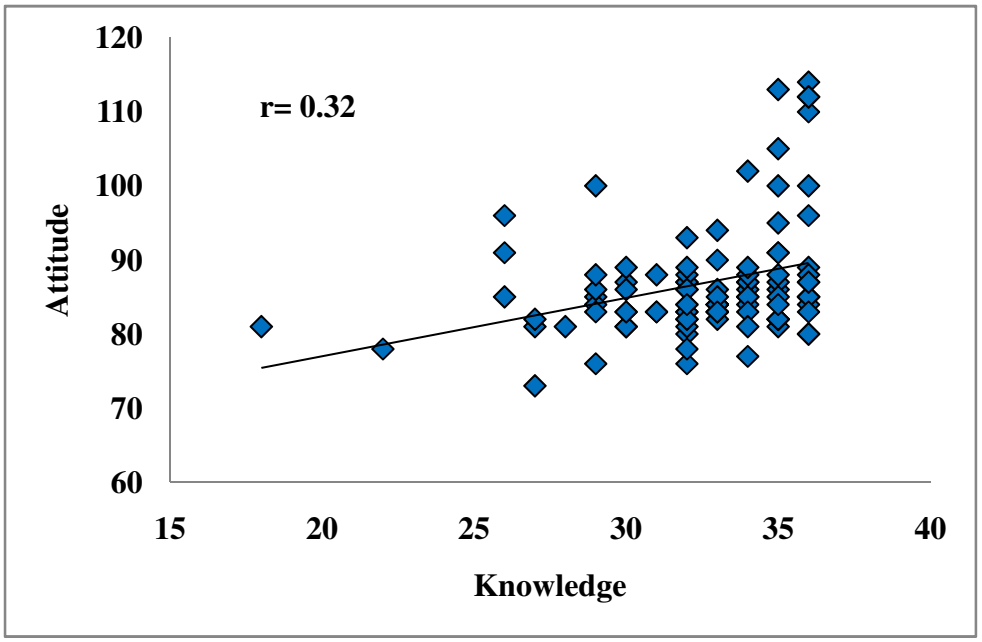

Figure 10: Correlation between knowledge and attitude of ASHA

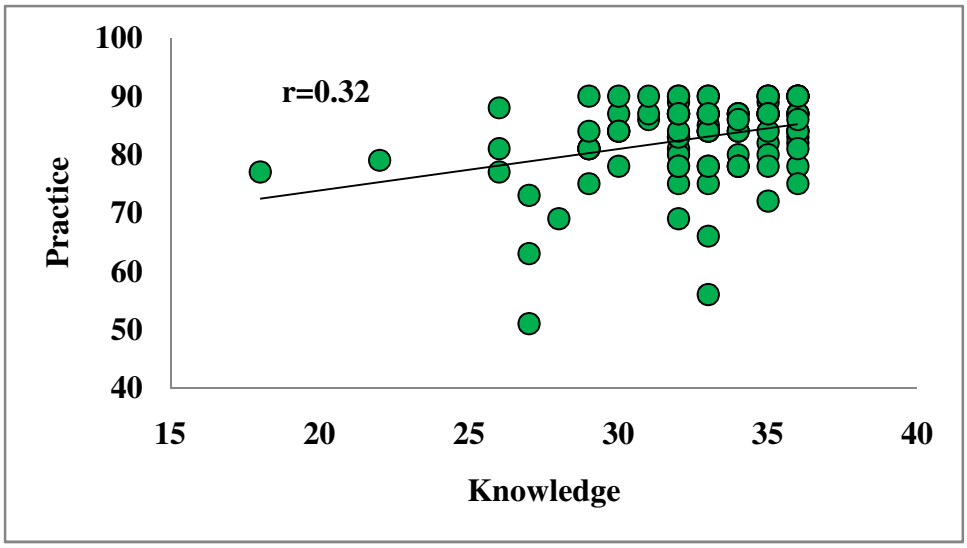

Figure 11: Correlation between knowledge and practice of ASHA

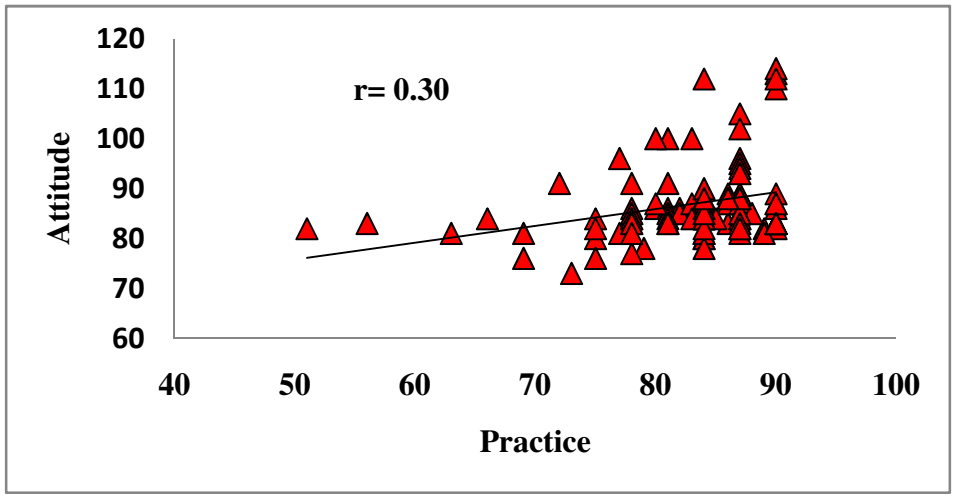

Figure 12: Correlation between practice and attitude of ASHA

A moderate correlation was found between the knowledge and the attitude ($r = 0.32$ at $p<0.01$), and the knowledge and the practices of ASHAs ($r = 0.27$ at $p<0.01$). Similarly, the correlation between the practices and the attitude of ASHAs was also found to be moderate ($r = 0.29$ at $p<0.01$).

4.2.3 Evaluation of ongoing HBNC practices by mothers of newborn

Table 16: Frequency and percentage distribution profile of mother and baby (N = 205)

Sl. No.	Variables	Frequency (f)	Percentage %
Profile of the mother			
1.	**Age of mother (in year)**		
	a) 19-24	70	34.15
	b) 25-30	108	52.68
	c) 31-36	27	13.17
2.	**Education**		
	a) No formal education	20	9.76
	b) Secondary school	87	42.44
	c) Higher secondary school	52	25.36
	d) Graduation and higher study	46	22.44
3.	**Occupation**		
	a) House wife	132	64.4
	b) Working	27	13.17
	c) Self employed	22	10.73
	d) Laborer	24	11.70
4.	**Religion**		
	a) Hindu	172	83.9
	b) Muslim	27	13.17
	c) Others	6	2.93
5.	**Any antenatal visit for recent pregnancy**		
	a) Yes	199	97.07
	b) No	6	2.93
6.	**Visited obstetrician for antenatal check up**		
	a) Yes	12	5.85
	b) No	193	94.15
7.	**Tetanus Toxoid vaccination taken**		
	a) Single dose	7	3.41
	b) Double doses	192	93.66
	c) Non-vaccinated	6	2.93
8.	**Iron (Fe), calcium (Ca) and folic acid intake**	195	95.12
	a) Taken	10	4.88
	b) Not taken		
9.	**Child delivery**		
	a) Home	12	5.85
	b) Health centers	193	94.15

9.a	**If home delivery, carried out by (n=12)**		
	a) Family members/ relatives	5	41.70
	b) Local Dais	7	58.30
10.	**Counseled on HBNC**		
	a) Yes	179	87.32
	b) No	26	12.68
10.a.	**If yes, counseled by (n=179)**		
	a) ASHA or ASHA facilitators	31	17.32
	b) Doctor or ANM	7	03.91
	c) Not responded	141	78.77
11.	**Number of children**		
	a) Single	96	46.83
	b) Two	82	40.00
	c) Between three to five	27	13.17
12.	**Birth Spacing in years (n=109)**		
	a) 1	10	9.17
	b) 2	28	25.69
	c) 3	30	27.52
	d) 4-6	41	37.62
13.	**Length of stay in health centers after delivery (n=193)**		
	a) 24 h	18	9.33
	b) 48 h	88	45.60
	c) 72 h	41	21.24
	d) > 72 h	46	23.83
Profile of the baby			
14.	**Child's birth order**		
	a) First	93	45.36
	b) Second	80	39.03
	c) Third	24	11.71
	d) Fourth – Fifth	8	3.90
15.	**Gestational age**		
	a) Full-term	195	95.12
	b) Pre-term	10	4.88
16.	**Baby's birth weight (in gram)**		
	a) 1000	1	0.49
	b) > 1000-1800	4	1.95
	c) > 1800-2499	16	7.80
	d) > 2499-3800	184	89.76
17.	**Immediate baby cry at birth**		
	a) Yes	204	99.51
	b) No	1	0.49
18.	**Vaccination administered to the baby**		
	a) Yes	198	96.59
	b) No	7	3.41

18.a.	**If yes, list the vaccinations (n=198)**		
	a) BCG	27	13.64
	b) BCG and HEP-B	2	01.01
	c) BCG, OPV and HEP-B	28	14.14
	d) BCG and Penta-I	2	01.01
	e) Not responded	139	70.20
19.	**History of the child's health issue**		
	a) Yes	10	4.88
	b) No	195	95.12
19.a.	**If yes, specify the health issue (n=10)**		
	a) Fever	1	10
	b) Jaundice	4	40
	c) Respiratory Distress Syndrome	2	20
	(RDS)	3	30
	d) Not responded		
20.	**Breastfeeding problem**		
	a) Yes	19	9.27
	b) No	186	90.73
20.a.	**If yes, specify the issue (n=19)**		
	a) Breast feed refusal	3	15.79
	b) Maternal fever	1	5.26
	c) Flat nipple	2	10.53
	d) Low breast milk production owing to	6	31.58
	LSCS	7	36.84
	e) Not responded		

The demographic status of the mothers is presented in Table 16. About half (52.68 percent) of the 205 mothers in the study were in the 25-30 age range. The maximum (46.83%) of them were having one child and nearly half (42.44%) of mothers attended high school. The majority (87.32%) of mothers were largely taken care of by ASHA. Most of the mothers (93.66%) had received complete doses of Tetanus Toxoid vaccination and 95.12% of them received iron (Fe), calcium (Ca) and folic acid supplements during pregnancy. Altogether 94.15% of deliveries were conducted in health facilities, amongst the majority (78.05%) of delivery occurred in the higher centers. The majority of the mothers (45.60%) stayed in hospitals for at least 48 hours post-delivery. About home deliveries, (5.85%) deliveries happened at home and 58.30% of deliveries at

home were carried out by Dais and the remaining was conducted by their relatives. About 95.12% of the newborns were full-term. The majority of them (78.05%) were between birth weights of 2.5-3.8 kg. 87.32% of mothers were given newborn care counseling, and the majority (81.58%) of the counseling was given by ASHA.

Further, 86.83% of parents had only one or two child/children. The majority of them (45.70%) kept a gap of 1-2 years between deliveries. 97% of babies had been immunized, amongst about half (47.40%) of newborns were immunized with HEP-B, BCG, and OPV vaccines while few babies (3.40%) received Penta-I (DPT, Hepatitis and Haemophilus) vaccine. Some mothers (4.88%) reported about the illness of their babies from jaundice, fever, and RDS. Amongst them Jaundice (57.10%) was the most common. The majority (90%) of mothers did not have any feeding problem; but, 10% of them experienced feeding difficulties due to less or no production of breast milk secondary to lower segment cesarean section (LSCS).

Description of self reported newborn care practices by mothers

Table 17: Responses of mother regarding newborn care practices (N = 205)

Sl. No.	Postnatal Newborn Care Practices	f	%
Breast Feeding Practices			
1.	Initiation of breast feeding		
	a. Within the first hour of delivery	160	78.05
	b. After first hour	45	21.95
	Reasons for delay initiation of breastfeeding (n=45)		
	LSCS delivery	19	42.22
	Baby being treated on machine	04	8.89
	First feed given by grandmother/paternal aunt	03	6.67
	Delay in milk production	01	2.22
	Not responded	18	40
2.	Wash and clean the breast before feeding		
	Yes	192	93.66
	No	13	6.34
	Reasons for not practicing (n=13)		
	Did not feel it necessary	04	30.77
	Not responded	09	69.23
3.	Exclusive breastfeeding to the newborns		
	Yes	181	88.29
	No	24	11.71
4.	Given gripe water/ghutti to newborn baby		
	Yes	24	11.71
	No	181	88.29
	Reason for giving ghutti to newborn baby (n=24)		
	Cultural Practices (Prelacteal feed)	03	12.5
	Relieved abdominal cramps	21	87.5
5.	Fed colostrum to the newborn baby		
	Yes	193	94.15
	No	12	5.85
	Reasons for not feeding colostrum (n=12)		
	LSCS delivery	09	75
	Baby on machine	03	25
6.	Feed the baby whenever cries or 7-8 times in a day		
	Yes	201	98.05
	No	4	1.95
7.	Changes self clothes every day after taking bath		
	Yes	200	97.56
	No	5	2.44
	Reasons for not practicing (n=5)		
	Did not feel it necessary	03	60

	Not responded	02	40
Hypothermia Prevention			
8.	Wrap the baby in multilayer of clothes		
	Yes	202	98.54
	No	3	1.46
9.	First bath of newborns		
	Delay bath till 48 hours after birth	149	72.68
	Bath before completion of 48 hours after birth	56	27.32
	Reasons for bathing within 48 hours of delivery (n=56)		
	Cultural Practice	24	42.86
	Not responded	32	57.14
10.	Practiced the kangaroo mother care method		
	Yes	153	74.63
	No	52	25.37
	Reasons for not practicing (n=52)		
	No knowledge	52	100
11.	Cover the baby's head and whole body to prevent low body temperature		
	Yes	203	99.02
	No	2	0.98
Cord & eye care practices			
12.	Avoid applying anything on the cord stump		
	Yes	192	93.66
	No	13	6.34
	Reasons for applying local application (n=13)		
	Turmeric powder and ghee helps in healing	08	61.54
	Not responded	05	38.46
13.	Keep the umbilical cord stump dry		
	Yes	202	98.54
	No	3	1.46
14.	Clean the umbilical stump first followed by base of the umbilicus		
	Yes	167	81.46
	No	38	18.54
	Reasons for not practicing (n=38)		
	Do not know correct technique	16	42.11
	Not responded	22	57.89
15.	Keep the baby`s eyes clean		
	Yes	201	98.05
	No	4	1.95
16.	Clean the eyes with clean cloth and warm water		
	Yes	193	94.15
	No	12	5.85
	Reasons for not practicing (n=12)		
	Do not know correct technique of cleaning	05	41.67

	Not responded	07	58.33
17.	Wash hands using soap every time before handling the newborn		
	Yes	193	94.15
	No	12	5.85
18.	Baby has been taken to hospital for routine immunization		
	Yes	201	98.05
	No	4	1.95
19.	Change newborn diaper whenever it is wet & soiled		
	Yes	202	98.54
	No	3	1.46
20.	Used pacifier to comfort the baby		
	Yes	26	12.68
	No	179	87.32
	If Yes, Reasons for giving pacifier (n=26)		
	To calm the child & cultural practice	05	19.23
	Not responded	21	80.77

Mothers' responses regarding newborn care practices were also assessed (Table 17). Early breastfeeding within 1h after delivery was possible for most mothers (78.05%); the rest of mothers (21.95%) were reported to delay initiation of breastfeeding due to various reasons. Amongst, 42.22% of mothers have to delay breastfeeding due to delivery through LSCS. However, 93.66% of mothers know the importance of washing and cleaning the breasts prior to feeding.

Exclusive breastfeeding to the newborns was reported by 88.29% of the mothers; but, the rest of mothers (11.71%) used to provide ghutti to their newborns predominantly to get rid of cramp abdomen. Majority of mothers (94.15%) gave colostrum to babies, however, the others did not give due to either cesarean section delivery or the babies being on machines for treatment. Most (97.56%) of the mothers felt the necessity to change their dress after bath every day for hygiene.

Almost all the postnatal mothers felt the necessity to cover the whole body of newborn babies with multiple layers of clothes to prevent them from hypothermia. Similarly, 72.68% of mothers supported delaying the bath of the babies for 48 hours after delivery. However, the remaining 42.86% of mothers had given baths to the newborn before the completion of 48 hours of birth adopting their traditional practices. The KMC was performed by most (74.63%) of mothers; while, due to lack of knowledge, rest were not practicing.

The majority (93.66%) of mothers kept umbilical cords dry and clean, but, some (6.34%) of mothers were found to exercise the traditional practices of applying ghee and turmeric powder to enhance healing of cord. Moreover, most of the mothers (94.15%) also followed the correct method of caring for the eyes of babies with a clean cloth and warm water. Every time mothers properly wash hands with soap and water before handling their babies. About 96.59% of the mothers took their babies to hospitals for routine immunization. They also changed the diapers of the babies whenever it was wet or soiled. Amongst 12.68% of them used pacifiers to maintain calm and comfort for their babies.

Table 18: Unsafe newborn care practices of mothers (N = 205)

Rank	Unsafe Newborn Care Practices	Percentage (%)
1	Bathed baby before 48 h after delivery	**27.32**
2	Not practicing KMC	**25.37**
3	Delay initiation of breastfeeding	**21.95**
4	Improper umbilical cord cleaning	**18.54**
5	Use of pacifiers to calm the babies	**12.68**
6	No exclusive breastfeeding of newborns	**11.71**
7	Given gripe water or ghutti to newborns	**11.71**
8	Not washing and cleaning the breast before feeding	**6.34**
9	Application local preparations to the cord	**6.34**
10	Not washing hands properly	**5.85**
11	Not feeding colostrum to the newborns	**5.85**
12	Not following right cleaning technique of the eyes	**5.85**

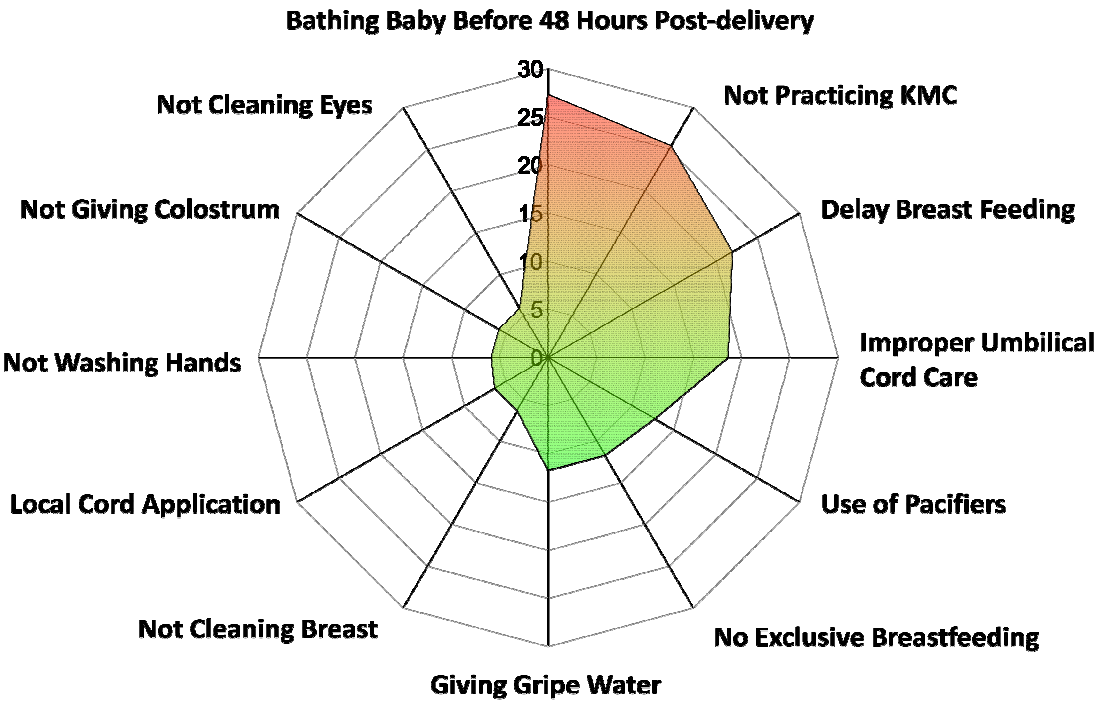

Figure 13: The most unsafe newborn care practices of the mothers (in %)

Description of opinions of mothers on HBNC provided by ASHA

Table 19: Response of mother regarding HBNC provided by ASHA (N = 205)

Sl. No.	Mother's response to ASHA's advice related to HBNC activities	Yes		No	
		f	%	f	%
1.	Did you feel ASHA's visit to your home is useful?	204	99.51	1	0.49
2.	Did you feel ASHA's regular advice to you is helpful?	204	99.51	1	0.49
3.	Did you feel ASHA's advice regarding newborn care is appropriate for your child?	197	96.10	8	3.90
4.	Did you get ASHA's advice regarding hand hygiene during baby care?	198	96.59	7	3.41
5.	Did you get ASHA's advice regarding newborn eye care practices?	198	96.59	7	3.41
6.	Did you get ASHA's advice regarding exclusive breastfeeding and colostrum feeding of the newborn?	202	98.54	3	1.46
7.	Did you get ASHA's advice regarding breast feeding techniques?	204	99.51	1	0.49
8.	Have you been informed regarding breast feeding problems and necessary care by ASHA?	204	99.51	1	0.49
9.	Did you get ASHA's advice when the child is sick?	202	98.54	3	1.46
10.	Did you get ASHA's advice on care of newborn diapers and diaper rash?	197	96.10	8	3.90
11.	Did you get ASHA's advice regarding the need for routine immunization of the newborn?	202	98.54	3	1.46
12.	Did you get ASHA's advice regarding the symptoms after immunization of the newborn?	197	96.10	8	3.90
13.	Did you get ASHA's advice regarding proper covering of the child to prevent low body temperature?	198	96.59	7	3.41
14.	Did you get ASHA's advice regarding kangaroo mother care?	194	94.63	11	5.37
15.	Did you get ASHA's advice regarding the 48	177	86.34	28	13.66

	hours delay of bath after delivery?				
16.	Did you get ASHA's advice regarding family planning?	195	95.12	10	4.88
17.	Did you get ASHA's advice regarding growth and development of newborns?	198	96.59	7	3.41
18.	Did you get ASHA's advice regarding weaning diet of newborns?	195	95.12	10	4.88
19.	Did you get ASHA's advice regarding the prevention of infection?	196	95.61	9	4.39
20.	Did you get ASHA's advice regarding prevention of possible home accidents?	194	94.63	11	5.37

Opinion of mothers on HBNC services as educated by ASHA were also collected (Table 19). Majority of the mothers (99%) felt regular visits of ASHA to their houses and advice on hand hygiene and immunization to be useful. Most of them (96.59 %) agreed that teachings and instructions of ASHA on newborn care were suitable and adequate. About 94% of mothers received teachings on various aspects of HBNC from ASHA including eye care, exclusive breastfeeding, colostrum feeding, breastfeeding techniques, healthcare and proper covering of the baby, KMC, family planning, weaning diet, home care and prevention of infection etc. However, 13.66% of mothers reportedly didn't obtain counseling regarding 48 h delay of bath following delivery of the child from ASHA.