

ORIGINAL ARTICLE

**A cross sectional study on the evaluation of MCH services provided by “ASHA”
working at Urban Health Centers of Ahmedabad City, Gujarat**

Asha K Solanki¹, Viral R Dave², Bhavik M Rana³

ABSTRACT

Introduction: National Rural Health Mission (NRHM) was launched by Indian Government with key feature of introduction of a new designated health care worker – “Accredited Social Health Activist” (ASHA) who acts as interface between community and public health system. **Objectives:** To assess knowledge about MCH related functions and to estimate status of support to beneficiaries by “ASHAs”, To Assess Quality of Home Based New Borne Care performed by ASHA and to find out impact of number of modular training rounds on knowledge and practices of ASHAs. **Methodology:** A cross-sectional study was conducted during February 2019 to December 2020 using a mixed approach, with a combination of quantitative and qualitative research methods after approval of institutional Ethics committee. All Urban Health Centres (UHC) under Municipal Corporation in Ahmedabad were covered. From each UHC, 2 ASHAs were selected by lottery method. So, total 144 ASHAs were selected from 72 UHCs. Performance assessment was done by direct interview with ASHA and their beneficiaries. **Results:** All 144 ASHAs were aware about responsibilities of Antenatal-women registration and Immunization. Nearly all ASHAs (99.3%) knew about task of PNC registration. Escorting to delivery and tertiary care centre, if complications arise was facilitated by 61.8% and 29.2% ASHAs respectively. **Conclusion:** All ASHAs were aware of their major responsibilities related to MCH and also providing same in their field area. Statistically significant association was observed between number of rounds for modular training undertaken by ASHAs and knowledge and practice of ASHAs in context to various components of MCH care.

Key-words: ASHA, Home-Based Newborn Care, Modular training, Urban Health Centre

Introduction

The grass-root level workers, working in remote areas and difficult terrain are the lamp of hope for life and good health to the underprivileged people living there. The basic guidance, timely referral and moral support in decision making provided by ASHAs (Accredited Social Health Activist) or any grass root level health-workers can be proved as “life saving”. In any country, the tremendous support of these cadres of health-workers in upgrading the level of community health is precious. Besides medical fraternity; they are the unsung soldiers against the battle with ill-health. The National Rural Health Mission (NRHM) was launched by the Government of India (GoI) in 2005 to strengthen the health care delivery system. One of the most important initiatives in NRHM was the introduction of a new designated health care worker – “Accredited Social Health Activist” (ASHA) who acts as interface between community and public health system.¹

1. Tutor, Dept. of Community Medicine, GCS Medical College, Ahmedabad, Gujarat, India, **Email:** drasha_solanki@yahoo.co.in
2. Professor & Head, Dept. of Community Medicine, GCS Medical College, Ahmedabad, Gujarat, India, **Email:** dr.vdave@gmail.com
3. Associate Professor, Dept. of Community Medicine, GCS Medical College, Ahmedabad, Gujarat, India, **Email:** dr.bhavikrana@hotmail.com

Corresponding Author: Viral R Dave, Professor & Head, Department of Community Medicine, GCS Medical College, Ahmedabad, Gujarat, India, **Email:** dr.vdave@gmail.com

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GoI has launched National Urban Health Mission (NUHM) with main objective of providing quality health-care services to urban poor especially vulnerable population like migrants, construction workers, etc. Under NUHM, Community Process activities will be implemented through ASHA and Mahila Arogya Samiti².

ASHA is looked at as a change agent who will bring the reforms in improving health status of oppressed community in rural / urban areas. ASHA will mobilize the community and facilitate them in accessing health and health related services like Immunization, Antenatal check-up, post-natal check-up, sanitation and other services.³ The objective of the ASHA is to develop the first port of call within the community for any health related demands of deprived sections of the population, especially women and children, who find it difficult to access health services.⁴

With this background the present study was conducted with following **objectives**:

1. To assess the knowledge about Maternal and Child Health (MCH) related functions of “ASHA”
2. To estimate the status of support given by ASHA to beneficiaries at time of delivering various health related services to mothers and children under-five,
3. Assessment of Quality of HBNC (Home Based New Borne Care) performed by ASHA,
4. To find out impact of number of rounds of modular training on knowledge and practice of ASHAs in context to various components of MCH care.

Methodology

A cross-sectional study was conducted during February 2019 to December 2020 using a mixed-methods approach, with a combination of quantitative and qualitative research methods after necessary permissions from appropriate authority of Ahmadabad Municipal Corporation and Institutional Ethics committee.

There are total 72 Urban Health Centres (UHC) under Municipal Corporation in Ahmedabad City⁵, all 72 UHCs were taken for study purpose. From each UHC, list of total ASHAs having >1 year of job experience was obtained. (As per the guidelines from government, an ASHA is provided 6 months of field based training initially after recruitment to familiarize her with health status of the community. After completion of 6 months she is provided other trainings including HIV/AIDS, RTI etc. Therefore, it was decided by the authors to include only those ASHA who have completed at least 1 year of service following recruitment so that they received all the training as per eligibility and they are well familiar with their functions as ASHA. This could also help in the removal of bias arising from newly recruited ASHA). From the list, Two ASHAs were selected by lottery method. So, total 144 ASHA were selected from 72 UHCs. Performance assessment was done by direct interview with ASHA and also their beneficiaries.

Two types of beneficiaries (Category A & B) were interviewed in the selected UHC for study. “Category A” beneficiaries (The beneficiaries were selected as per convenience and feasibility in line with the available resources) included any one recently delivered mother with infant aged 0-2 months, to study utilization of antenatal & intra-partum services from service area of each ASHA. “Category B” beneficiaries included any two mothers with children aged 2-24 months, with any illness in the preceding month, to study utilization of childcare services per ASHA studied. So, Total, 144 and 288 beneficiaries were taken in “Category A” and “Category B” respectively. So, total 432 beneficiaries were included in study. The assessment in qualitative component included observation of Home-Based Newborn Care (HBNC) performed by ASHA. A pre- designed questionnaire was utilized to assess the HBNC provided by ASHA. The questionnaire included close ended as well as open ended questions. Data were entered and analyzed in MS Excel. Appropriate statistical test were applied to find association between various variables where found necessary.

Results

The mean age of surveyed ASHAs was 41.19 ± 6.58 years (Mean \pm SD) while education pertinent to public health i.e., Diploma in Sanitary Inspector was pursued by 3.5% of ASHAs. Major part of cohort 130 (90.3%) was married; almost all ASHAs (137) were Hindu and majority of them belonged to scheduled caste (53.5%). All the studied ASHAs were serving the population more than as per the norms and around four fifth 116 (80.6%) ASHAs were serving more than double the population than suggested norms (**Table-1**).

On assessing the knowledge about MCH care components related duties and responsibilities among ASHAs (n=144), it was found that All 144 (100%) ASHAs were aware of their responsibilities about Antenatal-women registration and Immunization sessions in their field area. Nearly all ASHAs (99.3%) knew about task of PNC registration. The tasks which scarcely known to them were: escort beneficiary to facilitate delivery (5.6%), IEC for exclusive breast-feeding (3.5%) and registration of birth and death (6.9%). One-fourth and one-eighth proportions of ASHAs knew respectively about IFA supplementation and facilitation of diagnosis and management of malnutrition. On asking about tangible services they provide to their beneficiaries, the findings were: All ASHAs provide antenatal care, immunization and family planning related services. Majority 141 (97.9%) used to work for IFA supplementation. Comparatively very few 46 (31.9%) were providing services during complication at the time of pregnancy/delivery.

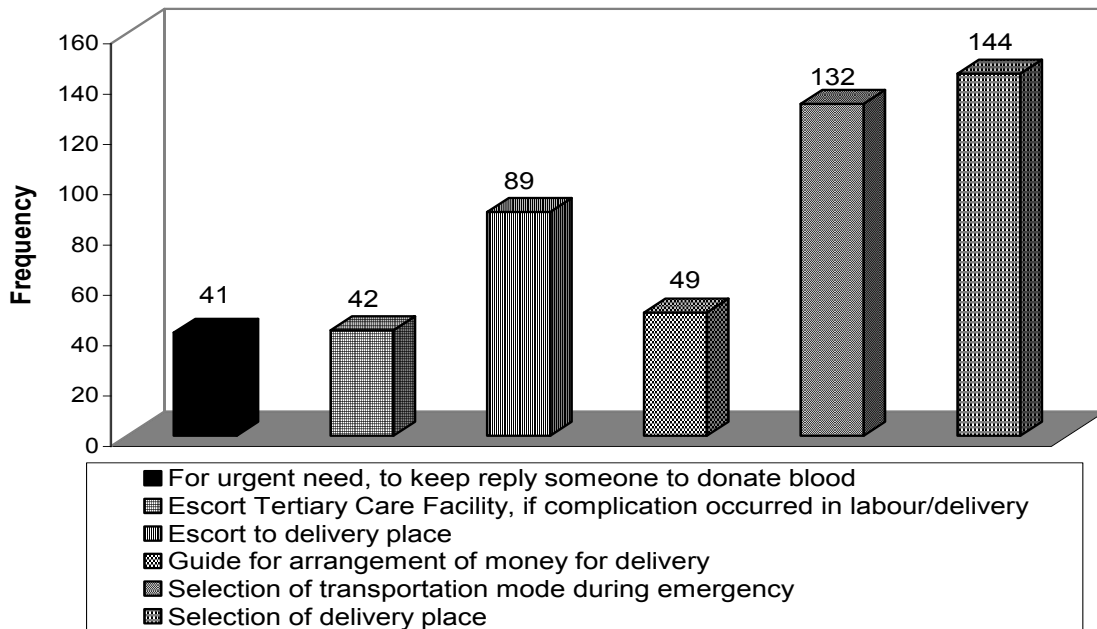
Table- 1: Socio-Demographic Profile of Surveyed ASHA's (n=144)

	Variables	No.	%
Age-wise (In Completed Years) Distribution	26-30	12	8.3
	31-35	17	11.8
	36-40	30	20.8
	41-45	44	30.6
	46-50	36	25.0
	51-55	5	3.5
Educational Status	Primary	6	4.2
	Secondary	38	26.4
	Higher Secondary	64	44.5
	Graduate	31	21.5
	Diploma in SI [#] course	5	3.5
Marital status	Married	130	90.3
	Unmarried	5	3.5
	Widow	6	4.2
	Separated	3	2.1
Religion	Hindu	137	95.1
	Muslim	7	4.9
Caste	General	51	35.4
	Other Backward Class (OBC)	15	10.4
	Scheduled Caste (SC)	77	53.5
	Scheduled Tribe (ST)	01	0.7

All ASHAs informed authority about maternal death and also registered birth and death in health information register. Of total, 139 (96.5%) ASHAs knew that maternal death is to be reported within 24 hours of the incidence. On asking about designated authorities to inform about maternal death, around three-fourth (75.7%) ASHAs selected to inform MO of the respective UHC while 36.1% opted to inform supervisor and MPHWS and three ASHAs selected to

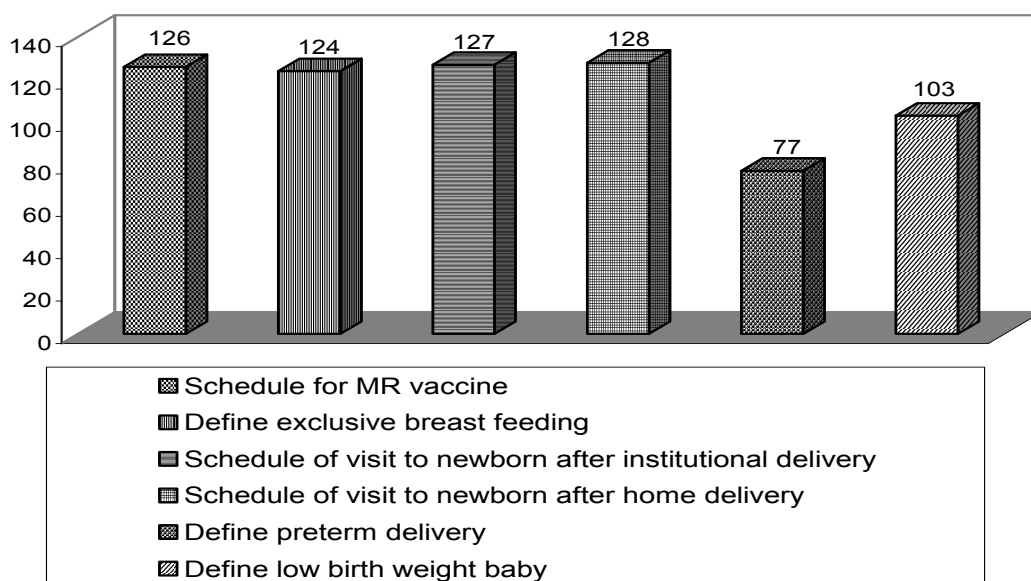
inform the Health Visitor (**Multiple Responses**). The help of ASHAs to the antenatal women in pre-planning of delivery related preparation is utmost important. The details of same are depicted in **Figure 1**. None of surveyed ASHAs facilitated assistance during labor.

Figure-1: Tasks facilitated by ASHAs in Planning of Delivery



In context to knowledge about vaccination at birth, 132 (91.7%), 104 (72.2%) and 101 (70.1%) correctly knew about BCG, Hepatitis B and “zero” dose polio vaccine respectively to be given at birth.

Figure 2: Assessment of Knowledge about various aspects of New-born Care* (*Multiple responses)



The result of assessment of Knowledge about various aspects of New-born Care among ASHAs is depicted in Figure- 2.

Findings in “category A” beneficiaries:

Majority of ASHAs (95, 66%) conducted 6-10 times home-visits to category “A” beneficiaries, while nine and forty ASHAs conducted 1-5 and ≥ 10 visits respectively. Of total, 46 (31.9%) ASHAs escorted to pregnant women for routine ANC visits at-least 4 times while 98 (68.1%) escorted the same for more than suggested norms. Some of reasons for inadequate visits given by ASHAs were refusal by antenatal woman, Area of ASHAs changed, not informed about the pregnancy, beneficiary was at mother’s home and religious belief etc.

Table-2: Association between numbers of rounds of modular training undertaken by ASHA and Knowledge about Danger Signs of High-Risk Pregnancy (n=142)

Variables of knowledge about Danger signs of pregnancy	Participants with knowledge about variable (Know/Yes Component)				χ^2 Test	P value
	ROUNDS					
	First (N=18)	Second (N=18)	Third (N=57)	Fourth (N=49)		
Anaemia	9	14	56	49	34.687	0.000
Hypertension	6	9	53	42	35.147	0.000
Diabetes	9	11	41	33	3.775	0.430
Short Stature	8	9	38	37	8.156	0.068
Age < 18 Years	7	8	36	27	4.479	0.335
Elderly-Primi	6	9	32	38	13.781	0.005
Jaundice	0	0	10	28	39.222	0.000
Obesity	6	10	28	28	4.728	0.298
Bad Obstetric History	11	11	50	46	16.126	0.001
Ante-partum Haemorrhage	2	5	12	30	24.662	0.000
Thyroid Dysfunction	6	4	27	25	6.641	0.133
Multiple Pregnancy	6	8	32	30	5.064	0.260
Grand Multi-Para	9	8	32	29	1.683	0.840
Oligo Hydramnios	0	0	2	28	55.446	0.000
Smoking	1	0	1	7	7.497	0.077
Thalassemia	0	0	1	9	11.742	0.011

*df=4, #Where applicable Fisher’s Exact Test applied

Of total 106 category “A” beneficiaries who had some complications during their pregnancy, 60 (56.6%) beneficiaries took ASHAs’ advice for any complications while of total 73 sick infants, 72 beneficiaries had taken ASHAs’ advice. From total 144 beneficiaries, ASHA escorted 42(29.2%) to hospital at time of delivery while remaining answered that they did not informed ASHA. ASHAs provided “zero” day visit to newborns were also 42 (29.2%). These includes home-deliveries (n=28) as well few of hospital deliveries, as some ASHAs waited till delivery during escort service. Of total, 141 (97.9%) ASHAs conducted regular weighing of infants while for remaining 3 (2.1%) newborns, the mother did not allow ASHAs to weigh. All “category A” beneficiaries-Newborns were visited by ASHAs within 3 days of birth and later on as per schedule of HBNC. Almost all (142) beneficiaries were advised by ASHAs regarding early

initiation of breast feeding. Most of 134 (93.1%) newborns received breast feeding within first hour of birth while remaining 10 (6.9%) did not received due to social taboos and no one was given pre-lacteal feed.

Findings in “Category B” Beneficiaries:

Of total beneficiaries in category “B”, 256 had faced one or more episodes of diarrhea. ASHAs helped them all in treatment of diarrhea. Out of these, 252 beneficiaries were given ORS for treatment of diarrhea while remaining 4 children were referred to UHC for further management as they had severe dehydration. Total 113 children had one or more episodes of ARIs. Of these, ASHAs helped to 91(80.5%) while remaining refused to take help. Medicines for ARIs were provided to 17 (18.7%) while other children with severe symptoms were referred to UHC. ASHAs had facilitated 266 (92.4%) beneficiaries for immunization; the rest denied ASHAs’ help. Of total 263 eligible candidates from category “B” beneficiaries, 262 (99.6%) were vaccinated for measles-rubella (age appropriate), of these, 240 were assisted by ASHAs for the same. In case of one child, it was lagged behind due to refusal by mother on account of repeated illnesses in child. Majority 283 (98.3%) beneficiaries were counseled by ASHAs regarding the nutrition while for remaining 5 (1.7%), there was an issue of language barrier as they were migrants from southern states. Of total 272 infants with > 6 months’ age, 99.3% (270) had already started weaning.

Of total, 18 (12.5%) ASHAs had one or more home deliveries (Total 25) in their field practice area. Total 5645 new-born were registered (both institutional and home deliveries) in last six months from the date of interview for all surveyed ASHAs. Of these, ASHAs had completed/ongoing home visits for HBNC and other services for 4626 (81.9%) beneficiaries. Of all, 5338 (94.6%) new-born were weighed during almost all visits.

On observing ASHAs performing HBNC, it was found that around half 73 (50.7%) of ASHAs were washing hands with soap & water before touching the baby. The non-complying counterpart suggested “Non-provision of soap” from UHC as reason. Majority ASHAs examined the mothers and babies 120 (83.3%) & 138 (95.8%), respectively) during HBNC visit. The reason given by remaining ASHAs for not examining the mother was “forgotten” the same while for newborns’ - mothers didn’t allow the ASHAs. Two ASHAs reported that newborn weighing scale and thermometer were non- functional. Around one-fifth 25 (17.4%) ASHAs did not check for signs of sepsis while examining the baby during home visits. Out of 132 ASHAs, provided with HBNC Cards, only 1 (0.8%) ASHA didn’t mention the dates of HBNC visit on it. Around two-fifth, 58 (40.3%) ASHAs conducted complete examinations of mother and newborn at the time of HBNC visit during actual observation. The examinations conducted by other ASHAs were incomplete or incorrect.

A significant non-homogeneity was found between of modular rounds of training undergone by ASHA and knowledge about various danger signs of high-risk pregnancy namely Anaemia, Hypertension, Jaundice, Ante-partum Hemorrhage ($p<0.001$) and for bad obstetric history ($p<0.05$) and Thalassemia ($p<0.05$) (**Table 3**).

A significant non-homogeneity was found between number of rounds of modular training undertaken by ASHA with knowledge about all evaluated variables of vaccination schedule and all evaluated variables of New Born care. No statistical significant difference was found between same variable with knowledge about defining pre-term delivery and any component of knowledge about danger signs to suspect pneumonia.

Table-3: Association between Numbers of Rounds of Modular Training undertaken by ASHA and Knowledge about various components of child health (n=142)

Variables		Participants with knowledge about variable (Know/Yes Component)				χ^2 Test	P value
		ROUNDS					
		First (N=18)	Second (N=18)	Third (N=57)	Fourth (N=49)		
Knowledge about Vaccine Schedule	BCG Vaccine	13	14	55	48	17.33	0.001
	Hepatitis B Vaccine	5	9	39	48	41.73	0.000
	"0" dose Oral Polio Vaccine	7	9	44	44	22.12	0.000
	Measles Vaccine	9	9	57	49	52.53	0.000
Knowledge about Danger Signs to suspect Pneumonia	Fast Breathing	5	6	27	32	4.19	0.200
	Strider	1	4	13	11	1.81	0.627
	Chest In drawing	3	6	19	20	0.65	0.903
Knowledge about New Born Care	Define Low Birth Baby	9	8	47	37	13.59	0.003
	Define Pre-Term Delivery	8	11	31	25	1.14	0.774
	Schedule of visiting Newborn after Home Delivery	10	11	56	49	37.93	0.000
	Schedule of visiting Newborn after Institutional Delivery	9	9	57	49	41.57	0.000
	Define Exclusive Breast feeding	8	10	55	49	45.32 0	0.000
*df=4, # Where applicable Fisher's Exact Test applied							

Discussion

Total 144 ASHAs were interviewed from 72 Urban Health Centers (UHCs) in Ahmadabad. For each ASHA 3 beneficiaries (Total 432) were interviewed. It was revealed that 69.4% of surveyed ASHAs had education of higher secondary or more and almost similar findings were observed by Kansal et al⁶ (68.9%) in a study conducted at Uttar Pradesh. Of total, 5 (3.5%) ASHAs were unmarried and were selected due to unavailability of suitable ASHAs in respective UHC area in current research. Goswami VP et al⁷ and by Baishya et al⁸ in their research reported 7% and 11.6% unmarried ASHAs respectively. Caste distribution reported among ASHAs in this study was: 53.5% SC and 35.4 % from general caste, while in a study conducted by Nagraj et al,⁹ and Bhandari et al¹⁰ 43.5% and 16% ASHAs belonged to SC respectively while in a study of Karol et al¹¹ 34% ASHAs belonged to general caste. India being a large country with wide socio-cultural differences, different villages/town/cities may have variable proportion of caste distribution, which shall be responsible for reported differences. Nearly two-third (97, 67.4%) ASHAs were residing in same respective UHC area where they were working in current study, while different findings were revealed by Panda M et al¹² in his study at Odisha where only 39.12% ASHAs were working in the same area where she resides.

Nearly all (142, 98.6 %) ASHAs have received modular training; majority 112 (78.9%) had received training of both phases (Induction Module (1 to 5) and Module 6 & 7) in present study. Similar finding was observed in study conducted by Mavelil SJ et al¹³ (86%). It was observed that all 144 (100%) ASHAs were very well aware of the responsibilities about registration of Antenatal women and Immunization sessions in their field area while 63%

Antenatal women got their registration through the ASHAs in a study conducted by Nandan et al¹⁴ in Uttar Pradesh. Around three-fifth (89, 61.8%) ASHAs escorted antenatal women to the facility for delivery, similar finding was found in study by Guha et al¹⁵ conducted at Wardha.

All 144 (100%) studied ASHAs were practicing to give ORS Packets to the children suffering from diarrhoea when required and also agreed about more fluid intake and continuing breast feeding to the child who had diarrhoea, in contrast only 27 (42.1%) advised to continue food, water and breastfeeding during diarrhoea in a study conducted by Saxena S et al¹⁶ at Bhojipura Block District Bareilly.

More than half (80, 56.3%) of ASHAs cited that they knew danger signs to suspect pneumonia, while more promising result was seen in study by Waskel et al¹⁷ where 79.69% participants knew the same. About 85.2% ASHAs responded Fast Breathing rate (age-appropriate) as one of the danger sign of pneumonia in current study while 76% ASHAs responded same in a study conducted by Shrivastava et al¹⁸ at Palghar district of Maharashtra. In present research, ASHAs helped around 80.5% of beneficiaries in management of ARI of their children aged 2-24 months (Category "B" beneficiaries) while parallel result was described by Guha et al¹⁵ at Wardha in their research.

In present study, it was observed that 100% ASHAs were giving advice to pregnant women and their families about promoting institutional deliveries while in similar research carried out by Nandan et al¹⁴ in Uttar Pradesh, 70% beneficiaries were motivated and facilitated by ASHAs for same while Kochukuttan S et al¹⁹ reported that 99% ASHAs supported institutional deliveries.

Majority (240, 91.2%) of the beneficiaries were assisted by ASHAs for the completion of vaccination of their children in current study, similar finding (94.5%) was revealed by Fathima et al.²⁰ Majority (126, 87.5%) of ASHAs had correct knowledge about age for Measles-Rubella vaccine and similar finding was noted by Chaudary et al²¹ (90.7%) in their study at Saurashtra region of Gujarat.

Out of total 25 home deliveries in last 6 months of visiting individual ASHA, 24 (96%) new-borne delivered at home were visited by ASHAs on the same day of their birth, while Sinha et al²² reported that 30% ASHAs followed same practice. In present research, around half (73, 50.7 %) of ASHAs were washing hands with soap & water before touching the baby during HBNC visit while Goswami et al⁷ in their research found that 93% ASHAs were washing their hands while Sinha et al²² at Mewat, Haryana found that 32% ASHAs were following same in their research.

Conclusion

All ASHAs were aware of their responsibilities about registration of Antenatal women and Immunization sessions and also providing the same in their field area. Statistically significant non-homogeneity was observed between number of rounds for modular training undertaken by ASHAs and knowledge and practice of ASHAs in context to various components of MCH care, i.e., various danger signs of high-risk pregnancy namely Anaemia, Hypertension, Jaundice and Ante-partum Haemorrhage (for all four component, $p < 0.001$), for bad obstetric history ($p < 0.005$) and Thalassemia ($p < 0.005$). The association between number of rounds of training and knowledge about all evaluated variables of New Born care except knowledge about defining pre-term delivery and all evaluated variables about vaccination schedule were also found highly significant.

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