



A CROSS-SECTIONAL STUDY TO ESTIMATE THE LEVEL OF AWARENESS REGARDING 'HOME BASED NEW BORN CARE' AMONG ASHAs AND MOTHERS OF YOUNG INFANT IN RURAL JAIPUR, RAJASTHAN

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ABSTRACT

Background: Home Based New Born Care (HBNC) scheme has been implemented for reduction of neonatal mortality through ASHAs along with the care being provided by mother and her family. The aim of this study was to estimate level of awareness in mothers of young infant and ASHAs involved in Home based New born Care. **Aim and Objectives:** To find out the level of awareness among mothers and ASHAs regarding Home Based New born Care of recently delivered mothers of infant 6-14 weeks age. **Materials and Methods:** Jaipur district has 13 blocks. The study was conducted in rural areas of two blocks of Jaipur which were Amber and Sanganer from which 30 villages were selected randomly (15 villages from each block) for a duration of 1 year to complete sample size of 350 mothers of young infant 6-14 weeks age and 67 available ASHAs in these villages. A pre-designed and pretested questionnaire was used to collect the information where the first part included information regarding sociodemographic profile and HBNC knowledge related questions among mothers and the second part comprised of sociodemographic profile and HBNC knowledge related questions among ASHAs. **Results:** Mean age of mothers was 25.04 years with standard deviation 3.61 years and 89.43% mothers were Hindu and remaining 10.57% mothers were Muslims. Majority of mothers had knowledge about danger signs of fever (97.72%) and fast breathing (85.72%) followed by not taking feed (18.85%), hypothermia (13.42%), grunting (4%) and pustules (3.72%). Majority of ASHAs had knowledge about danger signs of fever (85.07%), fast breathing (41.79%), not taking feed (47.76%), while poor knowledge for pustule and grunting. 98.28% institutional deliveries but 20.57% mothers were aware about the HBNC provision for home visits. Majority of ASHA (97.02%) had HBNC home visit form, 94.03% have functional weighing scale with sling, 97.02% have digital thermometer and only 14.92% have Syrup Paracetamol with her on home visit. **Conclusions:** The awareness amongst mothers and ASHAs related to danger signs in newborn is still low so they should be counselled and made aware of these signs so that timely referral be made and hence appropriate treatment be given which can prevent neonatal mortality.

KEYWORDS : HBNC, Cross-Sectional, ASHA, Mothers.

INTRODUCTION

A mother plays an unmatched role in the life of her child right from the birth to his growth and development. The first month of life, the post-natal period, for the mother and the newborn is the most critical time in the life.¹ Home Based Newborn Care Programme (HBNC) under National Rural Health Mission involving ASHAs (health care workers chosen from the community itself) was implemented in 2011.² It works toward reduction of neonatal mortality, by incentivizing Accredited Social Health Activist (ASHA) for making visits to all newborns and their mothers according to specified schedule up to 42 days of life. Rajasthan is also one of the states with HBNC program in full action since its inception.²

The IMR for India (2011-12) was 44/1000 live births³ and in 2017 was 32⁴ and 30 in 2019⁵ and 27.6 in 2022⁶. IMR for Rajasthan (2011-12) was 52/1000 live births³ and in 2017 was 37⁴ and 35 in 2019⁵ with the coverage of institutional deliveries in Rajasthan around 84%⁴ as per NFHS-4 and 94.9% in NFHS-5⁵.

Providing timely education in the form of intervention to the mothers could fill these gaps in knowledge of child care⁸. For improving the newborn health, we must first assess the status of functionality of the care providers' namely ASHAs and mothers of newborns.

There are still considerable IMR and NMR in Rajasthan despite significant increase in rate of institutional deliveries in Rajasthan. This present study was aimed at finding the status of the level of awareness regarding 'Home Based New Born Care' among ASHA and mothers of young infant (6-14 weeks of age) in Rural Jaipur District, Rajasthan during 2021-22.

AIM AND OBJECTIVES

- 1) To find out level of awareness among mothers and ASHAs regarding Home Based New born Care of recently delivered mothers
- 2) To estimate the proportion of support from husband and other family members for HBNC

MATERIALS AND METHODS

This study was done as a community based Cross-sectional Descriptive type of Observational study. It was done in Jaipur district, located in the east-central part of Rajasthan which has 13 blocks. The study was conducted in rural areas of two blocks of Jaipur which were Amber and Sanganer from which 30 villages were selected randomly (15 villages from each block) for a duration of 1 year. The Study Population included Mothers of children aged 6 weeks to 14 weeks and ASHAs of 30 randomly selected villages of Jaipur district.

Sample Size

A sample of 264 mothers of young infant (6-14 weeks of age) was taken at 95% confidence level and 4% absolute error to verify an expected HBNC gap of 11.9% in recently delivered women (as per seed article), this will cover all other variables. Sample size was expanded and rounded off to 350 considering 20% drop-outs. Amongst all, available ASHAs from 30 randomly selected villages were taken.

Sampling Technique

First Stage: Two blocks were randomly selected out of 13 blocks in Jaipur district.

Second Stage: Fifteen villages per block were selected by SRS (Simple Random Sampling) from the frame of all villages per block (approximately each block has 150 villages) and hence a total of 30 villages were selected. To get 350 mothers,

atleast 11 mothers were selected from each village. In case 11 mothers were not available in a selected village, then mothers from the neighbouring village were included for the study.

Inclusion Criteria:

1. Mothers of children between the age group of 6-14 weeks infant residing in the study area since from at least six months before the child birth and who consented to be a part of the study were included in the study.
2. All available ASHAs of the selected villages who consented to be a part of the study were included in the study.

Exclusion Criteria:

- 1) Mother /caregiver / ASHA not available at the time of visit (at least twice).

Method of data collection

Sample for this study was collected after approval from Institutional Research Review Board (IRB) and ethics committee. After obtaining informed consent from the study subjects, they were interviewed and the data was collected on socio-demographic factors that include age, education, occupation, using a pre-designed and pre-tested questionnaire. The proposed study duration was one year from April 2021 to June 2022. Additional 2-month time was utilised for data compilation, statistical analysis processing and report writing.

RESULTS

Socio-Demographic Profile of Mothers:

This community based cross sectional study involved recently delivered mothers of young infant between the age group of 6-14 weeks and all available ASHAs of the randomly selected villages with the aim to find out level of awareness of mothers as well as of ASHAs regarding Home Based Newborn Care programme. Mean age of mothers was 25.04 years with standard deviation 3.61 years and 89.43% mothers were Hindu and remaining 10.57% mothers were Muslims. The other characteristics of socio-demographic profile of mothers are depicted in Table no. 1. Maximum proportion of the newborns (49.72%) were in the age group of 6-9 weeks followed by 10-12 weeks (32.57%) while least (17.71%) were in the age group of 13-15 weeks. Mean age of the newborns was 9.40 weeks with standard deviation 2.17 weeks. 52.57% were male newborns and remaining 47.43% newborns were Female. 87.15% newborns weighed ≥ 2500 grams at birth while the remaining 12.85% newborns weighed < 2500 grams at birth. 81.15% were term babies followed by 13.15% newborns who were delivered Post-term and 5.72% were Pre-term babies. Out of 350 mothers, 98.28% mothers delivered in a health facility and remaining 1.72% mothers delivered at Home.

Maximum of mothers (96.28%) have knowledge about importance of hand hygiene followed by knowledge of importance of Kangaroo Mother Care which was present in 94.85% subjects, cord care (93.43%), eye care (92.57%) and early initiation of breast feeding (89.43%). The least proportion of mothers (80.57%) have knowledge about Preventive measures of Hypothermia. (Figure 1) 98.28% institutional deliveries took place but only 20.57% mothers were aware about the HBNC provision for home visits.

Maximum proportion of mothers had knowledge about danger signs of fever (97.72%) followed by fast breathing 85.71%, not taking feed 18.85%, Bleeding or oozing Stump 15.42%, hypothermia 13.42%, Chest Indrawing 11.42%, Convulsion 9.72%. The knowledge related to Jaundice being danger sign was seen in 9.14% mothers followed by Flaring of Nostrils which was seen in 5.72% mothers. The least known danger signs were Grunting, of which 4% mothers had

knowledge and Pustules, of which 3.72% had knowledge as being a danger sign in new born. (Figure 2)

Table 1: Socio-Demographic Profile of Mothers

| Characteristics | Number of mothers (N=350) | Proportion of mothers (%) |
|----------------------|---------------------------|---------------------------|
| Age Group (in years) | ≤ 20 | 6 |
| | 21-30 | 86.85 |
| | > 30 | 7.15 |
| Caste | General | 25.43 |
| | OBC | 30.00 |
| | SC | 22.86 |
| | ST | 21.71 |
| Socio-Economic Class | Class I | 5.71 |
| | Class II | 44.57 |
| | Class III | 37.43 |
| | Class IV | 10.57 |
| | Class V | 1.72 |
| Education | Illiterate | 10.00 |
| | Primary | 25.43 |
| | Middle | 20.29 |
| | High school | 20.00 |
| | Intermediate | 06.28 |
| | Graduate | 11.15 |
| | Post Graduate | 06.85 |
| Occupation | Housewife | 92.85 |
| | Unskilled | 1.71 |
| | Semi-Skilled | 1.43 |
| | Skilled | 3.43 |
| | Professional | 0.58 |

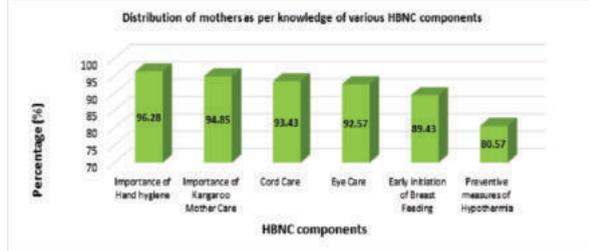


Figure 1.

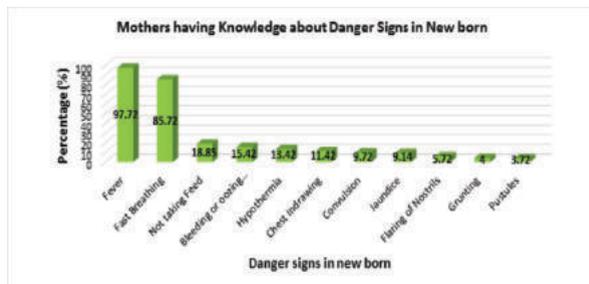


Figure 2.

Table 2: Socio-Demographic Profile of ASHAs Socio-Demographic Profile of ASHAs-

| Characteristics | Number of ASHAs (N=67) | Proportion of ASHAs |
|-----------------|------------------------|---------------------|
| Religion | Hindu | 95.52 |
| | Muslim | 4.48 |
| Education | Primary | 8.95 |
| | Middle | 16.42 |
| | High school | 49.25 |
| | Graduate | 17.92 |
| | Post graduate | 7.46 |
| Marital Status | Married | 94.03 |
| | Widow | 4.48 |
| | Divorced | 1.49 |

Maximum proportion of the ASHAs (29.86%) were in the 34-38 years age group. Maximum (95.52%) ASHAs belonged to Hindu religion and 49.25% ASHAs were educated up to High School level. Other socio-demographic characteristics are given in Table 2.

Maximum proportion (15.42%) of ASHAs had knowledge about Bleeding or oozing Stump being danger sign in new born followed fever which was considered as a danger sign by 85.07% ASHAs and Chest Indrawing by 64.17% ASHAs. The least known danger signs were Flaring of Nostrils, of which 11.94% ASHAs had knowledge and, Grunting, of which 5.97% ASHAs had knowledge as being a danger sign in new born. Details about the knowledge related to dangers signs in newborn among ASHAs is given in Table 3. Table 4 depicts Knowledge among ASHAs related to various HBNC components. Out of the total 67 ASHAs, 82.09% ASHAs knew about the correct schedule of Home Visits under HBNC Programme. 91.05% ASHAs knew about the correct timing of initiation of Breast Feeding after delivery. 95.52% ASHAs knew that colostrum should be given to the baby after birth. 76.12% ASHAs knew the correct schedule of home visits in case of LBW newborn.

Table 3: Knowledge related to danger signs in newborn among ASHAs

| S.No. | Danger Signs in New born | No. of ASHAs that have knowledge (N=67) | Percentage (%) of ASHAs that have knowledge |
|-------|--------------------------|---|---|
| 1 | Fever | 57 | 85.07 |
| 2 | Fast Breathing | 28 | 41.79 |
| 3 | Not taking Feed | 32 | 47.76 |
| 4 | Bleeding or oozing Stump | 59 | 88.05 |
| 5 | Hypothermia | 36 | 53.73 |
| 6 | Chest Indrawing | 43 | 64.17 |
| 7 | Convulsion | 11 | 16.42 |
| 8 | Jaundice | 17 | 25.38 |
| 9 | Flaring of Nostrils | 8 | 11.94 |
| 10 | Grunting | 4 | 5.97 |
| 11 | Pustules | 10 | 14.92 |

Table 4: Knowledge among ASHAs related to various HBNC components

| HBNC Component | No. of ASHAs with correct Knowledge (N=67) | Proportion (%) of ASHAs with correct Knowledge |
|---|--|--|
| Schedule of Home Visit | 55 | 82.09 |
| Early Initiation of Breast Feeding | 61 | 91.05 |
| Colostrum to be given to newborn | 64 | 95.52 |
| Frequency of Breast Feeding | 33 | 49.25 |
| Cut-off Weight for LBW New born | 59 | 88.06 |
| Correct no. of Home Visits to be done in LBW New born | 51 | 76.12 |

Status of logistics availability with ASHAs -

97.02% of ASHAs have HBNC visit form on her home visit with her, 97.02% ASHAs have digital thermometer and 94.03% ASHAs have Salter's Weighing scale and only 14.92% ASHAs have Syrup Paracetamol with her on home visit. None of the ASHAs have other items like blankets, syrup amoxicillin, etc.

with her on her home visit.

Out of 67 ASHAs, 88.05% ASHAs said that the families are supportive during Home visit while the remaining 11.95% ASHAs said that the families are unsupportive during Home visit. (Figure 3)



DISCUSSION

In the present study, maximum number of mothers 96.28% have knowledge about importance of hand hygiene followed by Knowledge about cord care which was present in 93.43% mothers followed by knowledge on eye care which was seen in 92.57%, knowledge of importance of Kangaroo Mother Care which was present in 92% subjects. Knowledge about Early initiation of Breast Feeding which was present in 89.43%. The least number of mothers 80.57% have knowledge about Preventive measures of Hypothermia. In a study done by Devi RS et al⁹ 93.66% mothers were aware of keeping umbilical cord clean and dry. In a study done by Rama R et al¹⁰ 15% mothers have adequate knowledge on newborn care. 25% mothers knew providing warmth was an important precautionary measure of newborn care, 48% mothers had knowledge about early initiation of breast feeding while none of the mother had knowledge related to cord care. In a study done by Castalino F et al⁸ overall 76.7% of mothers had good knowledge and only 23.3% had excellent knowledge on newborn care.

In the present study, majority of mothers had knowledge about danger signs of fever 97.72% followed by fast breathing 85.71%, not taking feed 18.85%, Bleeding or oozing Stump 15.42%, hypothermia 13.42%, Chest indrawing 11.42%, Convulsion 9.72%. The knowledge related to Jaundice being danger sign was seen in 9.14% followed by Flaring of Nostrils which was seen in 5.72%. The least known danger signs were Grunting, of which 4% mothers had knowledge and Pustules, of which 13 3.72% had knowledge as being a danger sign in new born. In a study done by Chaudhary K et al¹¹, majority of the mothers had knowledge about the danger signs of fever 86.7% and fast breathing 78.6% followed by not taking feed 6.7%, chest indrawing 4.8%, hypothermia 3.8%, bleeding/oozing stump 3.8%, convulsion and jaundice 2.4%. None of the mothers have knowledge about pustules, grunting and flaring of nostrils. In a study done by Jemberia MM et al¹² majority of mothers 88.3% had a low level of knowledge and 11.7% of mothers had good levels of knowledge about neonatal danger sign similar to the present study where knowledge related to all danger signs was poor except fever and fast breathing. The hotness of the body was the commonly recognized neonatal danger sign by 53.8% postnatal mothers. Out of 197 mothers, 34%, 30.5%, 28.4%, 22%, 21.8%, 20.3%, 17.8%, 11.2%, 10.7%, 10.2%, 8.6% identified unable to breastfeeding, convulsion, lethargy, difficulty in breathing, persistent vomiting, diarrhea, coldness, umbilical bleeding, abdominal distention, and yellowness of palms and soles as newborn danger signs, respectively.

In the present study, maximum 15.42% of ASHAs had knowledge about Bleeding or oozing Stump being danger sign in new born followed fever which was considered as a danger sign by 85.07% ASHAs, Chest In drawing by 64.17% ASHAs, hypothermia by 53.73% ASHAs, not taking feed by 47.76% ASHAs, fast breathing by 41.79% ASHAs. The

knowledge related to Jaundice being danger sign was seen in 25.38% ASHAs followed by Convulsion which was considered as a danger sign by 16.42% ASHAs. The least known danger signs were Pustules which was considered as a danger sign by 14.92% ASHAs, Flaring of Nostrils, of which 11.94% ASHAs had knowledge and, Grunting, of which 5.97% ASHAs had knowledge as being a danger sign in new born. In a study done by Chaudhary K et al¹¹, majority of the ASHAs had knowledge about the danger signs of bleeding/oozing stump 90.9% and fever 59.7% followed by chest in drawing 58.4%, not taking feed 44.2%, fast breathing 36.4%, lethargy/unconsciousness 26.0%, jaundice 16.9%, pustules 10.4%, flaring of nostrils 7.8% and grunting 1.3%.

In the present study, majority of the ASHAs 82.09% have knowledge about correct schedule of Home Visits under HBNC. In a study done by Mahanta TG et al¹³ 81.8% ASHAs knew about importance of Home Visit. In a study done by Pathak, et al¹⁴, 100% ASHAs knew about the correct schedule of home visit in home delivery as well as in case of institutional delivery. In a study done by Chaudhary K et al¹¹, 67.5% of ASHAs know correctly about no. of visits. In a study done by Baghel A et al¹⁵, 52.5% ASHAs had knowledge about HBNC visits and 41.7% ASHAs have knowledge about advice given to mother of newborn. In the present study, 91.05% ASHAs knew about the correct timing of initiation of Breast Feeding after delivery. In a study done by Phatak, et al¹⁶ 100% ASHAs have knowledge on when to start breastfeeding. In a study done by Pathak, et al¹⁴, 60.4% ASHAs said that breastfeeding should be initiated within 1 hour of birth.

In the present study, majority of the ASHAs 95.52% knew that colostrum should be given to new born. In a study done by Pathak, et al¹⁴, 100% ASHAs said that colostrum should be given to the baby.

In the present study, 97.02% of ASHAs have HBNC visit form on her home visit with her, 97.02% ASHAs have Digital thermometer and 94.03% ASHAs have Salter's Weighing scale and only 14.92% ASHAs have Syrup Paracetamol with her on her Home visit. In a study done by Chaudhary K et al¹⁴, majority of ASHA 98.7% had HBNC home visit form, 93.5% have functional and balanced weighing scale with sling, 92.2% have digital thermometer and 93.5% have blankets. All ASHAs were not found with complete drug kit. Only 11.3% of ASHAs have syrup paracetamol and 1.3% have syrup amoxicillin in their drug kit. 59.7% of ASHAs have consumables and 57.1% have soap with case.

CONCLUSION AND RECOMMENDATIONS

On the basis of results of the present study following measures are recommended to improve the knowledge and practice regarding Home based newborn care in Mothers and ASHAs: The awareness amongst mother related to danger signs in neonatal period was low so there is a greater need to emphasize the importance of danger signs in the neonatal period and mothers should be counselled and must be made aware of these signs in antenatal and postnatal period so that the timely referral be made and neonatal mortality can be averted.

The complete home visits were not done by all ASHAs and neither complete examination of mother nor newborn care was done. This problem can be solved only by doing random supportive supervision at household level so overall system should be strengthened right from the level of Medical Officer to Additional Director level.

Since none of the ASHA have complete HBNC kit necessary action and efforts should be taken regarding availability of all logistics provided to ASHAs for HBNC care this should be reviewed at monthly meeting at district as well as commissioner level.

As awareness regarding HBNC was low in mothers so there is a greater need to provide more financial assistance for the use IEC activities delivered via mass media regarding home based newborn care as any programme which is based on felt need of community is bound to be successful

This will help in creation of demand which is very poor at present, so the demand gap must be fulfilled.

Timely reimbursement of ASHA incentive and improving the reporting system to improve the coverage and quality of the HBNC program.

Deepen the community participation processes for maternal, newborn and child health by involving the women's groups more systematically.

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