

## Original Research Article

# Sickness of neonates of recently delivered women and their referral in Uttar Pradesh, India

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## ABSTRACT

**Background:** The current study done in 2017 explores some of the crucial variables of the type of problems of the newborns as reported by their mothers. The mothers also responded about the type of personnel who referred their newborns. The responses of these mothers or recently delivered women (RDW) (as named for the current study) had a 3 to 6 months old child during the time of survey. They were selected as respondents as they were in a position to recollect the events of their children during their newborn period.

**Methods:** A total of four districts of Uttar Pradesh were selected purposively for the study and the data collection was conducted among the RDWs in the villages of the respective districts with the help of a pre-tested structured interview schedule with both close-ended and open-ended questions. These in-depth interviews were conducted amongst the RDWs and a total 500 respondents participated in the study.

**Results:** The results reflected that more than 97% RDWs reported fever as the problem of their newborn in Banda, Gonda and Barabanki districts except Saharanpur where 82% RDWs reported fever in their newborns. Another major problem of newborn across the 4 districts was 'unable to take feeds. The results as per the response of the RDWs in all the four districts demonstrated that ASHA was the personnel who referred the maximum number of their newborns.

**Conclusions:** To conclude, fever was the leading cause of health problem as identified by the RDWs and mostly ASHAs referred the majority of the newborns.

**Keywords:** ASHA, HBNC, INAP, Neonates, RDW

## INTRODUCTION

The health sector in India is rather intriguing while there was continuous improvement in health indicators; the development was not on par with India's impressive economic growth.<sup>1</sup> Thus, considering the large population size of the country it necessitated involvement and engagement of adequate number of significant primary field staffs, who provided outreach services at the point of care, often in the patient's home. In case of any further need for additional diagnostic and clinical interventions,

the patients are transported or referred to the Primary Health Centers for the evaluation and treatment of a Medical Officer. This is where the ASHAs fit in and the objective of the current study justifiably studied their role and performance regarding Home Based Newborn Care practices through referral of sick newborns.

The problem that the current study identifies is that referrals of sick newborns are not done in time by the ASHAs and the mothers are not sensitized by ASHAs

during their pregnancies on identifying danger signs in newborns.

The current study focused on the responses of RDWs who were selected from the catchment area of ASHAs (accredited social health activist). Health problems of newborn and their referral are the central focus of the study. Hence, it is prudent to mention about basic newborn care as negligence on these activities leads to problems in the newborn. Usually, ASHAs should make planned visits to newborns with normal and low birth weights in their catchment area as per the prescribed schedule mentioned in India Newborn Action Plan (INAP). The visits are critical as they help to maintain warmth, food (colostrum and breast feeding) and security to the newborns. These three comprise the home-based newborn care (HBNC) package in the INAP.<sup>2</sup>

Regarding referrals it is significant that capacity of health personnel like ASHAs are enhanced through training to identify danger signs in newborns. The module 7 of the prescribed training modules for ASHA deals with identification of danger signs in the newborns. Currently, all the ASHAs of Uttar Pradesh are being trained on the 8<sup>th</sup> module.<sup>3</sup> These signs are not able to drink or breastfeed, vomits everything, convulsions, lethargic or unconsciousness, fever, chest indrawing, rapid breathing, stiff neck, diarrhea and more than 10 eruptions on the skin.<sup>4</sup> It is this aspect that the current study deals with where the ASHAs were trained through the Comprehensive Child Survival Program module and not through the 7<sup>th</sup> module of GoI.

The current neonatal mortality rate (NMR) in India is 22 per 1000 live births. In absolute numbers, it stands out at 549227<sup>5</sup>. The causes of these deaths are 'pre maturity, neonatal infections, birth asphyxia, congenital malformations and others'.<sup>5</sup> Pre-maturity leads the cause and here it is related to low birth weight (LBW) babies who needs to be referred. Timely referrals will also help address to reduce other causes like infections and asphyxia. It is here that the relevance of the current article comes into focus.

### ***RDWs and newborns in Uttar Pradesh***

The ASHAs emerged in India's public health system during the launch of NRHM in 2005 in the state of Uttar Pradesh.<sup>6</sup> The ASHAs were in fact inducted to NRHM with the primary aim to roll out the JSY component of NRHM.<sup>6</sup> The selection of 500 RDWs was dependent on the catchment area of 250 ASHAs as two RDWs were selected from each of the selected ASHA's area. As the study dealt with ASHAs in UP, the following paragraphs discusses some studies on ASHAs and newborns.

A study on evaluation of ASHAs in 2013 in UP reflects that 38.3% of ASHAs visited the houses of newborns 6-7 times and only 4.6% of ASHAs visited the houses of newborns more than 7 times. The study does not

categorize the visits separately for normal and low birth weight newborns neither talks about referrals.<sup>7</sup>

The performance of ASHAs in UP was also done in another study involving states of Bihar, Chattisgarh, Rajasthan and Uttar Pradesh in 2011. As per the study, three activities of ASHAs were mentioned for new-borns. It reflected that 99% of ASHAs register births, 98% of ASHAs visit new-borns within one week of birth and 73% of new-borns were visited by ASHAs. The percentage of new-borns visited was a weighted average calculated in the study. Referrals and responses of mothers on sickness of newborns are not discussed in the study. The current study reflects on the actual primary data collected from the RDWs.<sup>8</sup>

The rapid survey on children (RSOC) in Uttar Pradesh mentions about referrals and weight taking of newborns. The study says 28% of newborns were weighed within 24 hours of birth and out of those weighed, 22.3% had birth weight less than 2500 grams meaning they were low birth weight (LBW). Regarding referrals, the study mentions that among all births, 11.5% of newborns received first check up within 24 hours of birth. Further among all births a primary health worker like ASHA/AWW/ANM/visited homes of 19.1% of newborns within a week of delivery.<sup>9</sup>

Here, it is noted that among the above-mentioned studies, only the RSOC study dealt in data that the current article focuses upon. It substantiates the importance of the current study further.

## **METHODS**

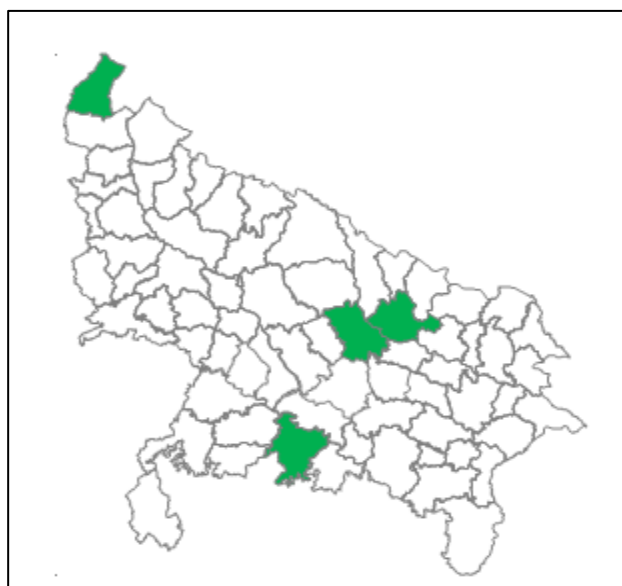
Using purposive sampling technique, four districts were chosen from the four different economic regions of Uttar Pradesh, namely Central, Eastern, Western and Bundelkhand. Further, the Government of Uttar Pradesh in 2009 categorized the districts as per their development status using a composition of 36 indicators. Purposefully, the high developed district chosen for the study was Saharanpur from the western region, the medium developed district chosen for the study was Barabanki from the central region, the low developed district chosen for the study was Gonda from the eastern region and the very low developed district chosen for the study was Banda from the Bundelkhand region.<sup>10</sup>

In the next step, purposefully two blocks were selected from each of the district and all the ASHAs in these blocks were chosen as the universe for the study. From the list of all the ASHAs in each of the two blocks, 31 ASHAs were chosen randomly from each block for the study. In this way, 62 ASHAs were chosen for the study from each of the districts. In Gonda district, 64 ASHAs were selected to make the total number of ASHAs for the study to 250. From the catchment area of each ASHA, two recently delivered women (RDW) were chosen who had a child in the age group of 3-6 months during the

time of the data collection for the study. In this way, 124 RDWs from three districts and 128 RDWs from Gonda district were chosen thus a total of 500 RDWs were selected for the study.

The study design was 'survey'. The approach of the study was explorative in nature. The study was done in 2017 where the pilot testing of the tools was done in the month of January in a village of Lucknow district. Following that, the data collection was done in the eight selected blocks of the four selected districts from February 2017 to December 2017.

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



**Figure 1: Four districts of Uttar Pradesh chosen for the study.<sup>10</sup>**

### Data analysis

The data was analyzed using SPSS software to calculate the percentage of RDWs who gave type of problems on the sickness of their newborn. Further, the percentage of RDWs were also calculated who responded about the

type of personnel who referred their newborns. The quantitative data related to the details of both these type of responses forms the basis of the results and discussions section of this article. The reference period of these responses was the first month of the life of the babies of the RDWs selected as respondents of the current study. Five hundred RDWs were the respondents for the study in 4 selected districts of Uttar Pradesh.

### Research tool

The ASHAs were interviewed using an in-depth, open-ended interview schedule which included a section on the natal and postnatal care. This is the fourth section of the RDW research tool. The article deals with two questions of the tool. There are two aspects here where the first one is the response profile of RDWs about the problems of their newborn and the second response is about the type of personnel who referred the sick newborn. Both these aspects were seen in the first month of the life of the baby of the RDWs. Five hundred research tools were used for the study to interview 500 recently delivered women who had a child in the age group of 3 to 6 months during the survey. The following section details out the results and discussions related to the study.

### RESULTS

This section has two tables. The first table is about the response of RDWs about the type of problems of their newborn while the second is about the action taken thereafter. The second table is about the type of personnel who referred their newborn.

The Table 1 is regarding the problems of the newborns as mentioned by the RDWs who were their mothers. The problems of the newborn were mentioned as they were told by the RDWs. The problem of unable to take feeds was told by 93% RDWs in Banda and 92% in Saharanpur. 88% RDWs reported the problem in Barabanki and 81% RDWs reported in Banda district. Besides this, the other major problem in the newborn reported by RDWs across the 4 districts was fever. More than 97% RDWs reported fever in 3 districts except Saharanpur where 82% RDWs reported fever in their newborns.

**Table 1: Type of problems of newborns of RDWs.**

Percentage of RDWs replying about the type of problems of their newborn				
Names of districts and Number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Unable to take feeds	92.7	88	81	92
Difficulty in breathing	25	4	15.6	17
Lethargic or unconscious	1.6	3.2	2.3	14.5
Fever	99	98.3	97.6	82.2
Cold to touch	25	19.3	35	33.8
Convulsions	1.6	0.8	2.3	17

**Table 2: Type of personnel who referred the newborn.**

Percentage of RDWs replying about the personnel who referred their newborn				
Names of districts and Number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
ASHA	74.14	97.6	80	69.37
AWW	0.0	0.8	1.5	0.0
ANM	0.0	0.0	1.5	0.8
Government doctor	8.06	0.0	0.0	4.03
Private doctor	17	1.6	17	25.8
Traditional birth attendant	0.8	0.0	0.0	0.0

The next major problem across the 4 districts was cold to touch. This problem was reported by 35% RDWs in Gonda, 34% in Saharanpur, 25% in Banda and 19% in Barabanki. 25% RDWs in Banda reported difficulty in breathing in their newborn, 17% in Saharanpur and 16% RDWs in Gonda. Only 4% RDWs reported the problem in Barabanki. 15% RDWs in Saharanpur reported lethargic or unconscious as the problem in their newborn whereas it was just 3% in Barabanki and 2% each in Banda and Gonda. Convulsion was reported by 17% RDWs in Saharanpur, 2% each in Gonda and Banda and 1% in Barabanki district. From here it was clear that the major problem of newborn across the 4 districts was fever and unable to take feeds.

After the messages on problems of the newborns the next section was on the referral of the newborns in case one or more of these problems were seen in the newborn. This is given in Table 2. Here, RDWs had replied about the personnel who referred their newborn. 98% RDWs in Barabanki, 80% in Gonda, 74% in Banda and 70% in Saharanpur told that ASHA referred their newborn. Next to ASHA was the private doctor where 26% RDWs in Saharanpur, 17% each in Gonda and Banda replied that the private doctor referred their newborns. Only 2% RDWs replied for private doctor in Barabanki district. The government doctor referred the newborn of 8% RDWs in Banda and 4% in Saharanpur. 1% RDW in Barabanki and 1.5% RDW in Gonda replied that AWW referred their newborn. ANM was the person who referred the newborn of 1% RDW in Saharanpur and 1.5% in Gonda. Only 1% RDW in Banda replied that the Traditional Birth Attendant referred her newborn.

## DISCUSSION

From the above results, it can be discussed that regarding the problems of newborns as told by RDWs, the problem of 'unable to take feeds' was the major problem followed by 'fever'.

The third major problem was 'cold to touch' while the fourth was 'difficulty in breathing'. The least mentioned problem was 'lethargic or unconsciousness' among newborns. As mentioned above, 'prematurity' was the leading cause of deaths among newborns followed by

'infections'.<sup>5</sup> It was these pre-matured newborns who cannot suck the breast and hence become unable to take feeds. The second cause was infections and the study also elicited 'fever' as the second leading cause where fever was the primary symptom of any infections.

Regarding the second part of the article which is referral of the newborns by the health personnel, most of the mothers replied that ASHA was the personnel who referred their newborns. Among doctors, the private doctors referred more newborns than the doctors of the public health system. The other health personnel like AWW, ANM and TBAs were the personnel who referred lesser number of newborns. As mentioned above in the HBNC package of INAP, ASHAs are supposed to be in the forefront of referring the newborns from grassroots as an outreach worker and the current article only substantiates this aspect of the performance of ASHAs.<sup>2</sup>

## Limitations of the study

This study has certain limitations. The study covered four districts and eight blocks of such a large state like Uttar Pradesh and hence the sample size is not very large to aptly represent the huge state of Uttar Pradesh. The opinion of the mothers is elicited in the article while there are so many other stakeholders involved in the care of newborns. The article does not encompass their opinions. Among the entire package of HBNC, only two attributes of HBNC i.e. cause of death and referrals is included in the study leaving out the preventive and protective aspect of newborn care.

## CONCLUSION

The above results showed that fever was the leading cause of health problem as identified by the RDWs and ASHAs were the type of personnel who referred the majority of the newborns. The major problem is that large scale studies do not focus on the response of the user group. All the deliveries are to be tracked by the ASHAs and following that the newborns are also to be tracked and thereafter all the newborns are visited by the ASHAs at their homes in all the districts. The challenge lies in orientating ASHAs on following up all these home visits with the support of Sanginis (supervisors of ASHAs in UP) and that too it should be preferably an onsite

orientation i.e. during the home visits while accompanying the ASHAs. This strategy would help in buying in of the responses of the mothers of newborns and subsequent referrals by the health personnel. The process would make the referrals effective and timely there by improving the performance level of ASHAs.

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