

Place, Personnel & Recollection- Three Modalities on Antenatal and Newborn Care Messages for Recently Delivered Women in Uttar Pradesh, India

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ABSTRACT

The involvement of CHWs in the state of UP has a long history since the 70s and currently it is the key strategy to percolate primary health care to the masses through the Front-Line Workers like the Accredited Social Health Activists (ASHA) and the Angan Wadi Workers (AWW). Besides the AWWs, the current lot of CHWs in UP are the ASHAs who are the daughters-in-law of a family that resides in the same community that they serve as the grassroots health worker since 2005 when the NRHM was introduced in the EAG states. UP is one such Empowered Action Group (EAG) state. The current study explores three crucial variables of the messages Ante Natal Care (ANC), birth preparedness and newborn care. These three variables are reflected through the role of health personnel through messages in these components provided to the Recently Delivered Women (RDW) or mothers in four districts of UP. From the catchment area of each ASHA, two RDWs were selected who had a child in the age group of 3 to 6 months. Through this profile, the messages on ANC, birth preparedness and newborn care dealt in a triad of modalities consisting of the place, personnel and recollection of these messages. The message profiles of the RDWs on these stages are reflected upon to give a picture that represents the entire state of UP.

The relevance of the study assumes significance as data on the modalities of messages for ANCs, birth preparedness and newborn care for recently delivered mothers are not available even in large scale surveys like National Family Health Survey 4 done in 2015-16. The percentage of women covered for the four ANCs along with coverage of broad areas are given not exclusively but clubbed together. The three modalities like place, recollection and type of health worker who gave the message. The current study gives an insight in to these three modalities exclusively for the messages separately. The current study is basically regarding the message profiles of RDWs during their pregnancies.

The above-mentioned reasons regarding dissemination of messages reflects poorly in the Infant Mortality Rates (IMR) and Maternal Mortality Ratios (MMR) in India and especially in UP. The current IMR in India is 33 where as it is 41 in UP which means 8 points higher per 1000 live births (SRS, May 2019). Similarly, the current MMR in India is 122 where as it is 216 in UP which really reflects poorly for UP in comparison to the data at national level (SRS, November, 2019). These mortalities are the impact indicators and such indicators can be reduced through long drawn a process that includes effective delivery of messages to RDWs during their pregnancies. This is the area that the current study details out.

A total of four districts of Uttar Pradesh were selected purposively for the study and the data collection was conducted 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. In addition, in-depth interviews were also conducted amongst the RDWs and a total 500 respondents had participated in the study.

The results showed that almost all the RDWs in the four districts had received the ante natal care messages at home and by the ASHAs. Gonda district fell behind in recollection of ANC messages among the four districts. Regarding newborn care messages, again Gonda district faltered among the four districts. The newborn care message had a gender issue related message which asked whether the RDW received a message to care of the unborn boy or girl equally. Gonda district performed poorly in this indicator as well.

Regarding the messages on birth preparedness, Saharanpur led the list and Gonda district again lagged behind. This meant that the ASHAs of Gonda district are poor planners among the four districts.

KEYWORDS: RDW, ASHA, NRHM, EAG, CHW, ANC, Newborn

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INTRODUCTION

As RDWs were selected from the catchment area of the ASHAs in the four districts, the following section briefs out the details on ASHAs.

The ASHAs were recruited by the Local Self Governance from their own communities as per the guidelines set by NHM. Subsequent to the roll out of guidelines at the central level, the state of UP also rolled out the recruitment of ASHAs through the setting up of State Program Management Unit of NHM at state level and the District Program Management Unit (DPMU) at district level. These DPMUs helped set up the Block Program Management Unit at the block level. These units got in touch with the Panchayati Raj Institutions which was part of LSGs and these PRIs represented by the Gram Pradhans or the village panchayat head nominated the ASHAs from the respective communities. They attached the ASHAs with the public health system at the block level to work as ASHAs who are incentive based workers. (GOUP, PIP, NHM, 2008).

Like India, UP also went through the CHW scheme in 1970s through the introduction of Village Health Guide in 1977 (5th Plan GOI, 1974-79) and the concept was ratified further in the Alma Ata conference of 1978 on primary health care. On the other hand, with the introduction of Integrated Child Development Services in 1975 (5th Plan GOI, 1974-79) the Angan Wadi Workers were in place as CHWs in phases. Simultaneously, local Traditional Birth Attendants were in place since 1977 as CHWs (5th plan, GOI, 1974-79). Thereafter, the multipurpose male and female health workers came in to place through the Child survival and Safe Motherhood program in 1992 (Yearly Plan, GOI, 1992). Besides the sporadic efforts of NGOs putting in place CHWs through their small efforts in definite geographic areas, the cadre of Basic Health Workers were put in by the health system from 1992 till 2005 (GOI, 2005). Gradually the CHWs came here to stay with the introduction of ASHAs in 2005 through the introduction of NRHM (GOI, 2005). As per GOUP, there were 1,50,000 ASHAs in UP in 2019. The selection of RDWs in this study is dependent on the ASHAs.

Studies on RDWs in UP have not covered on aspects like place, personnel and recollection of ANC, birth preparedness and newborn care messages through health visits and details of the components of these stages covered during these visits. The current study reflects on these aspects in detail including the recollection of messages given by the health workers to the RDWs.

ANC, Birth preparedness & Newborn care messages for RDWs during pregnancy in UP

The ASHAs emerged in India's public health system during the launch of NRHM in 2005 in the state of Uttar Pradesh (GOI, 2005). The ASHAs were in fact inducted to NRHM with the primary aim to roll out the JSY component of NRHM (GOI, 2005).

A study done in UP regarding the performance of ASHA mentions that 96% of ASHAs mobilized the community for ANC. The mention of messages on birth preparedness and newborn care needed further analysis. Further, the analysis of the individual components of messages on ANC mentions that all the pregnant women registered in UP were mobilized on birth preparedness and newborn care but the data is

embedded in ANC mobilization. It also mentions that 98% mobilized on exclusive breast feeding and complementary feeding, 99% on infant immunization, 93% on family planning and 98% on health, hygiene and nutrition (Bajpai N, Dholakia R, 2011). It is significant to note that here the providers were the source of information unlike the receivers that are mentioned in the study.

The project close-out report of Vistaar project of United States Agency for International Development (USAID) that was operational in the state of UP from 2006-2012 stresses that nutrition and anemia related knowledge among pregnant women and recently delivered women improved. It also mentions that the project implementation increased the reach of nutritional counselling to the recently delivered women. The report also mentions increased receipt and consumption levels of iron and folic acid tablets. The report mentions achievements qualitatively unlike the current study that quantifies the data (EOP report, Vistaar project, 2013).

Another evaluation study of ASHA scheme in UP states that ANC is a support service. Regarding awareness, the study mentions awareness generation is one of the components of the support service combined with other services. Birth preparedness and escort services constitute 6.8% as told by the eligible women. There is no mention about the place and recollection of these messages by the women. Regarding motivation, 95.3% of eligible women were motivated by the ASHAs while 44.21% of eligible women reported that they have received support three times by the ASHAs (GOUP, 2013). Here again, we can see the clubbing of information under messages on ANC and not exclusively as done in the current study.

The National Family Health Survey report written in 2017 for UP states that 24% of mothers in UP did not receive any ANC. On the message aspect, the report states that among the women with a live birth in the five years preceding the survey who met with a community health worker in the last three months of pregnancy for their most recent live birth, the advices were better percolated. The report details that at least two-fifths of these women received advice on five different areas in UP. Here, 63% of these two-fifths received on importance of institutional delivery, 56% on breast feeding, 48% on cord care, 47% on keeping the baby warm and 43% on family planning. The ANC coverage for the selected districts of the current study shows that in Saharanpur district 42% of mothers received at least 4 ANC visits followed by Barabanki at 24% coverage. Gonda district with 14% and Banda district at 6.4% coverage were poorly covered (NFHS 4, 2015-16).

Besides the content of messages, ways to disseminate the messages are also crucial. The importance of short messaging is reinforced in a study that mentions "a short messaging service targeting pregnant women is an invaluable and affordable intervention to improve maternal health care seeking behaviors (Wagnew F, et.al, 2018). In the current study, the method to percolate the message is through use of IEC materials by the health workers. Surprisingly, unlike other indicators, Gonda district leads among the four districts where 41% of AWWs used picture book to deliver the messages.

To percolate messages, contacts among RDWs and health personnel either at home or outreach points are crucial. This aspect is mentioned in another study in UP. It was revealed that contacts with health worker during pregnancy, marginalization, at least three ANC visits & institutional delivery were the strong determinants for utilization of Post Natal Services (Singh, R, et.al, 2019). In the current study, most of the RDWs replied through recollection that they have received these messages at home.

The current study done in 2017 examines the profile of RDWs in the catchment area of ASHAs regarding ANC, birth preparedness and newborn care messages during any contact with health personnel. The study also delves into the place where the messages were given and who gave the message and whether the RDWs could recollect the given message to them.

Research Methodology

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

In the next step, purposefully two blocks were selected from each of the district and all the ASHAs in these blocks were chosen as the universe for the study. From the list of all the ASHAs in each of the two blocks, 31 ASHAs were chosen randomly from each block for the study. In this way, 62 ASHAs were chosen for the study from each of the districts. In Gonda district, 64 ASHAs were selected to make the total number of ASHAs for the study to 250. From the catchment area of each ASHA, two Recently Delivered Women (RDW) were chosen who had a child in the age group of 3-6 months during the time of the data collection for the study. In this way, 124 RDWs from three districts and 128 RDWs from Gonda district were chosen thus a total of 500 RDWs were selected for the study.

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

Results and discussions

As mentioned above, there are messages on antenatal care, newborn care and birth preparedness and therefore there are 24 tables in this section. 19 tables on messages, 4 tables on descriptive and analytical statistics on the data related to these messages and one table on the use of IEC materials by the health workers to give these messages. Besides these, there are two figures in the study where the first one shows the districts through an outline map of UP and the second regarding the descriptive analysis through a graph showing the mean level of awareness on these messages.

Figure 1



The data was analyzed using SPSS software to calculate the percentage and absolute values of RDWs using the detail profiles of the ANC, birth preparedness and newborn care as per the data in the four study districts. The quantitative data related to the profiles was seen for RDWs that forms the basis of the ensuing results and discussion.

Research tools

The RDWs were interviewed using an in-depth, open-ended interview schedule which included a section on various components of ANC, newborn care and birth preparedness. Under the services of ASHAs section of the tool, the RDWs were asked on their ANC, birth preparedness and newborn care messages. They were asked whether they were aware or whether any one told them about ante natal, birth preparedness and newborn care. They were asked about each message and replies were collected if they replied spontaneously or after prompting. There were 7 messages on antenatal care, 5 on birth preparedness and 10 on newborn care. Next, they were asked if ASHA, AWW, ANM/LHV told them these messages or if they knew already. Information was also collected if anyone else told them the message other than the above-mentioned four personnel. Regarding place, it was elicited if they received the messages at home, VHND sessions or anywhere else. All these questions/messages were under one descriptive question that had multiple exclusive and exhaustive variables. In this way, 500 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.

Table 1

Consumption of 100 IFA tablets/3 bottles of syrup				
Names of districts & number of RDWs surveyed	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect the message	99	93.6	74.7	100
Percentage of RDWs who received this message from ASHA	99.2	85.5	75	100
Percentage of RDWs who received this message at home	99.2	82.3	68.8	100

Similarly, Gonda district again faltered for the message on consumption of 100 IFA tablets or three bottles of syrup. In Gonda, the percentage for recollect, from ASHA and at home for this message stood at 75, 75 and 69 respectively. It was more than 82% in rest of the three districts.

Table 2

Side effects of taking IFA tablets				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect the message	81.1	46	80.2	63.2
Percentage of RDWs who received this message from ASHA	82.3	35.5	64.8	66.9
Percentage of RDWs who received this message at home	79	32.3	62.5	66.9

Following this message was the message on side effects of taking these tablets. Only 43% in Barabanki and 63% in Saharanpur could recollect this message where as it was more than 80% in the other two districts. Only 35%, 65% and 67% of RDWs received this message from ASHAs in Barabanki, Gonda and Saharanpur respectively but 82% of RDWs received the message from ASHA in Banda.

At home, this message was received by 32% in Barabanki, 62% in Gonda and 67% in Saharanpur. The percentage for Banda was 79% for this aspect of the message.

Table 3

Consumption of nutritious foods during pregnancy				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect the message	93.4	92.6	83.2	100
Percentage of RDWs who received this message from ASHA	96.8	83.1	75	100
Percentage of RDWs who received this message at home	96.8	79.8	70.3	100

The message for consumption of nutritious foods during pregnancy was recollected by 83% of RDWs in Gonda and more than 93% of RDWs in the other three districts. 75% in Gonda and 83% in Barabanki received the message from ASHA whereas almost all the RDWs received from ASHA in the other two districts.

At home, 70% in Gonda and 80% in Barabanki received the message and in the other two districts, almost all the RDWs received the message at home.

Table 4

Rest for 2 hours in a day				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect the message	95.4	93.4	89.3	98.3
Percentage of RDWs who received this message from ASHA	96	83.9	78.1	99.2
Percentage of RDWs who received this message at home	96	79.8	75	98.4

More than 75% of RDWs in all the 4 districts replied that the message for rest for 2 hours in a day was recollected, was received from ASHA and received at home.

Table 5

Percentage of RDWs who were aware or received messages about birth preparedness during their pregnancy by health personnel during their pregnancy				
Identification of place of delivery (hospital/home)				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect the message	96.4	94.3	95	99.1
Percentage of RDWs who received this message from ASHA	96.8	84.7	85.2	99.2
Percentage of RDWs who received this message at home	96	79.8	81.3	98.4

Next was regarding the messages on birth preparedness. The message on identification of a place of delivery- hospital/home was recollected, received from ASHA and received at home by more than 81% across the 4 districts with Saharanpur leading the list with almost all the RDWs in all the three aspects of the message.

Table 6

Informed about JSY				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect the message	96.7	100	94.8	100
Percentage of RDWs who received this message from ASHA	96.8	91.1	85.9	100
Percentage of RDWs who received this message at home	96.8	86.3	83.6	99.2

The data regarding information on JSY in the 4 districts showed that in all the three aspects of the message we had more than 85% of RDWs replying on the three aspects. Only in Gonda, 84% of RDWs replied that they received the message at home.

Table 7

Saving or arranging money for delivery				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect the message	97.7	100	94.9	100
Percentage of RDWs who received this message from ASHA	96.8	91.1	89.8	100
Percentage of RDWs who received this message at home	96.8	86.3	84.4	99.2

Similar was the case for the message on saving or arranging money for delivery where 84% of RDWs in Gonda replied that they received the message at home. In rest of the 3 districts, more than 85% of RDWs replied on the three aspects of the message.

Table 8

Using DDK for home delivery				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect the message	96.5	100	93.5	98.3
Percentage of RDWs who received this message from ASHA	96.8	91.1	86.7	98.4
Percentage of RDWs who received this message at home	96.8	86.3	83.6	97.6

For the message on using DDK for home delivery, we saw that the minimum percentage was for Gonda among the 4 districts. In Gonda, 87% of RDWs received the message but 84% received the message at home.

Table 9

Arranging mode of transport to travel to institution				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect the message	96	100	91.4	99.1
Percentage of RDWs who received this message from ASHA	96.8	91.1	82.8	99.2
Percentage of RDWs who received this message at home	96.8	87.1	79.7	98.4

Gonda again lagged behind among the 4 districts in dissemination of message on arranging mode of transport to travel to institution. In all the three aspects of the message, the other 3 districts had more than 87% of RDWs replying on the three aspects of the message but Gonda had 83% of RDWs receiving the message from ASHA and 80% of RDWs receiving the message at home.

Table 10

Percentage of RDWs who were aware or received various types of newborn care messages during their pregnancy from health personnel				
Initiate breastfeeding within an hour of birth				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect the message	95.9	95.9	82.1	99.1
Percentage of RDWs who received this message from ASHA	96.8	87.1	78.9	99.2
Percentage of RDWs who received this message at home	96.8	83.9	75	98.4

The next aspect was the newborn care messages which the RDWs knew or received from health personnel during their pregnancy. More than 84% of RDWs replied on the three aspects of the message on initiating breastfeeding within an hour of birth in 3 districts except Gonda where 82% of RDWs could recollect the message, 79% received the message from ASHA and 75% of RDWs received the message at home.

Table 11

Benefits of colostrum feeding (figures in percentages)				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
RDWs who could recollect the message	95.9	99.1	97.7	98.9
RDWs who received this message from ASHA	96.8	91.1	93.8	99.2
RDWs who received this message at home	96.8	87.9	88.3	99.2

About 88% of RDWs in Barabanki and Gonda districts received the message on benefits of colostrum feeding at home and in all the three aspects of this message more than 88% of RDWs replied in the 4 districts.

Table 12

Feed only breast milk to the newborn up to 6 months (figures in percentage)				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
RDWs who could recollect this message	95.8	98.1	83	97.7
RDWs who received this message from ASHA	96.8	88.7	86.7	98.4
RDWs who received this message at home	96.8	86.3	83.6	98.4

In Gonda, 83% of RDWs could recollect and 84% received the message at home about feeding only breast milk to the newborn up to 6 months. In the rest of the aspects of the message in the 4 districts more than 87% of RDWs replied on this message.

Table 13

Do not apply anything on the cord				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect this message	95.9	98.2	79.8	98.8
Percentage of RDWs who received this message from ASHA	96.8	88.7	82.8	99.2
Percentage of RDWs who received this message at home	96.8	88.7	80.5	99.2

The message on not to apply anything on the cord was recollect by 80% of RDWs, 83% received from ASHA and 81% received at home in Gonda district but in all the aspects of the message in the 4 districts more than 89% of RDWs replied regarding the message.

Table 14

Dry and wrap the newborn immediately after birth				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect this message	96.1	100	84	95.3
Percentage of RDWs who received this message from ASHA	96.8	84.7	78.9	96
Percentage of RDWs who received this message at home	96.8	84.7	78.1	96

Regarding the message on drying and wrapping the newborn immediately after birth, in Gonda 79% received the message from ASHA and 78% at home. It was more than 84% in all the aspects of the message in the four districts.

Table 15

Continue to keep the newborn warm				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect this message	96.1	100	84.3	98.8
Percentage of RDWs who received this message from ASHA	96.8	85.5	81.3	98.4
Percentage of RDWs who received this message at home	96.8	84.7	78.9	98.4

The next message on the warmth component was to continue to keep the newborn warm. Here Gonda district showed that 81% of RDWs received the message from ASHA and 79% at home. In all the rest aspects of the message at least 85% or more than 85% of RDWs replied on this message across the 4 districts.

Table 16

Do not bathe the newborn till 7 days (figures in percentage)				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
RDWs who could recollect this message	96.1	100	87.5	98.8
RDWs who received this message from ASHA	96.8	86.3	81.3	99.2
RDWs who received this message at home	96.8	86.3	80.5	99.2

At least 81% and more than 81% of RDWs in the 4 districts replied on the three aspects of the message on not to bathe the newborn till 7 days. Gonda was the district with the minimum percentage for this message also.

Table 17

Weighing the newborn (figures in percentage)				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
RDWs who could recollect this message	95.3	100	84	98.9
RDWs who received this message from ASHA	96	88.7	73.4	99.2
RDWs who received this message at home	96	88.7	71.1	99.2

The message of weighing the newborn was received by 73% of RDWs by ASHA and 71% of RDWs received at home in Gonda district. The other aspect of the same message was replied by more than 84% of RDWs in the 4 districts.

Table 18

Getting the newborn immunized				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
Percentage of RDWs who could recollect this message	95.3	100	94.7	94.3
Percentage of RDWs who received this message from ASHA	96	78.2	71.9	81.5
Percentage of RDWs who received this message at home	96	73.4	69.5	83.1

About 95% of RDWs in the 4 districts could recollect the message on getting the newborn immunized. 72% received the message from ASHA in Gonda, 78% in Barabanki and 82% in Saharanpur and 96% of RDWs in Banda. Only 70% of RDWs in Gonda, 73% in Barabanki and 83% of RDWs in Saharanpur received this message at home while it is 96% in Banda district.

Table 19

Caring equally for boy or girl (figures in percentages)				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
RDWs who could recollect this message	96.3	100	96.6	98.9
RDWs who received this message from ASHA	96.8	87.9	74.2	98.4
RDWs who received this message at home	96.8	88.7	80.5	96.8

The message on caring equally for a boy/girl addressing gender equality was recollected by more than 96% of RDWs in all the 4 districts. 74% in Gonda and 88% in Barabanki received this message from ASHA but more than 96% of RDWs in the rest 2 districts. 81% in Gonda and 89% in Barabanki received the message at home where as it was more than 96% in the other 2 districts.

The table below gave the descriptive statistics such as mean, standard deviation, standard error, minimum and maximum values as per tables 10 to 19.

Table 19.1.0

Districts	N	Mean	Standard deviation	Standard Error	Mean (lower bound) at 95% CI	Mean (upper bound) at 95% CI
Banda	124	21.0887	3.66041	0.32871	20.4380	21.7394
Barabanki	124	21.1048	1.29300	0.11611	20.8750	21.3347
Gonda	128	20.3516	4.51348	0.39894	19.5621	21.1410
Saharanpur	124	21.4194	1.31345	0.11795	21.1859	21.6528
Total	500	20.9860	3.07909	0.13770	20.7155	21.2565

The table below gave the minimum and maximum value for the variables on awareness level from table 10 to 19.

Table 19.1.1

Districts	Minimum value	Maximum value
Banda	0.00	23.00
Barabanki	16.00	23.00
Gonda	0.00	23.00
Saharnpur	11.00	23.00
Total	0.00	23.00

The table below gave the Analysis of Variance (ANOVA) values for the variables from table 10 to 19. A one-way ANOVA was conducted to determine the awareness level of RDWs among between groups of RDWs in the four districts and within groups of RDWs in each of the district. The difference between the groups of RDWs in the four districts was statistically significant, $F(3, 496) = 2.767, P < 0.05$.

Table 19.1.2 ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	77.867	3	25.956	2.767	.041
Within Groups	4653.035	496	9.381		
Total	4730.902	499			

The table below gave the descriptive statistics like mean difference, standard error, significance, lower and upper values for the variables from table 10 to 19.

Table 19.1.3

(I) QA_D	(J) QA_D	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1 Banda	2 Barabanki	-.01613	.38898	1.000	-1.0465	1.0142
	3 Gonda	.73715	.38593	.340	-.2851	1.7594
	4 Saharanpur	-.33065	.38898	1.000	-1.3610	.6997
2 Barabanki	1 Banda	.01613	.38898	1.000	-1.0142	1.0465
	3 Gonda	.75328	.38593	.309	-.2690	1.7756
	4 Saharanpur	-.31452	.38898	1.000	-1.3449	.7159
3 Gonda	1 Banda	-.73715	.38593	.340	-1.7594	.2851
	2 Barabanki	-.75328	.38593	.309	-1.7756	.2690
	4 Saharanpur	-1.06779*	.38593	.035	-2.0901	-.0455
4 Saharanpur	1 Banda	.33065	.38898	1.000	-.6997	1.3610
	2 Barabanki	.31452	.38898	1.000	-.7159	1.3449
	3 Gonda	1.06779*	.38593	.035	.0455	2.0901

*. The mean difference is significant at the 0.05 level.

The figure below showed the graph of the mean of the variables from table 19.1. It showed that Gonda district had the lowest mean among the four districts. As it dealt with question number 309 of the research tool where the messages were subsets of the said question, the figure mentions mean of q309 from option A to W.

Figure 2

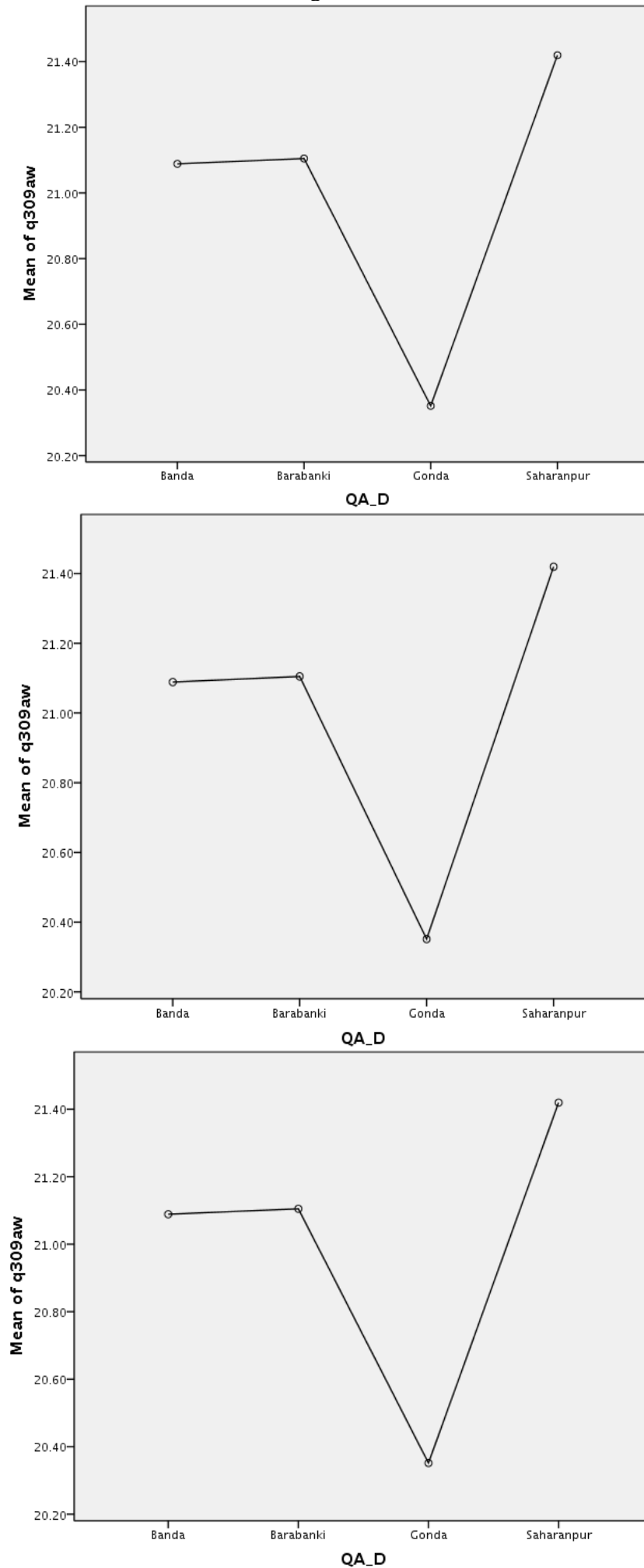


Table 20

Percentage of RDWs with whom ASHA/AWW used any picture book to deliver the above-mentioned newborn care messages				
Names of districts & number of RDWs surveyed (n=500)	Banda (n=124)	Barabanki (n=124)	Gonda (n=128)	Saharanpur (n=124)
ASHA has used	0.0	0.8	10	16
AWW has used	0.0	0.0	41.4	0.0

The messages were best delivered when IEC was used to disseminate the messages. Here we found that only 16%, 10% and 1% of ASHAs in Saharanpur, Gonda and Barabanki used the IEC material respectively. In Banda, the RDWs replied that none of the ASHAs used the materials. Besides ASHA, the RDWs replied that 41% of AWWs used IEC material in Gonda and none of the AWWs used it in the rest of the 3 districts.

Conclusions

The above results showed that the profile of the messages on ANC, birth preparedness and newborn care services of RDWs vary a lot across the districts. The process of percolating the message is also done poorly as shown through the data of use of IEC materials in this study. The dissemination process either at home or at an outreach center should also focus on involving all the stake holders. The messages on ANC, birth preparedness and newborn care services of RDWs should represent not only three modalities as mentioned in this study but also all the various modalities optimally so that the heterogeneity of messages regarding these cares are better accepted and understood by the communities. This will help RDWs to be in focus so that maternal health also get priority. Data should be collected in large scale surveys on these parameters of ANC, birth preparedness and newborn care services of RDWs exclusively as they can give crucial information regarding maternal health. The inclusion of role of not only ASHA but any type of health personnel regarding messages on these three services will help in designing better outreach services regarding maternal health. All these efforts would lead to reduction in the level of impact indicators mentioned above for maternal & child health through MMR, IMR in UP & as a result in India as well.

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