

# Assessment of the services of ASHA workers on antenatal and postnatal care in a district of western Uttar Pradesh, India

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## ABSTRACT

**Context:** India accounts for 17% of the population, contributes to about 19% of maternal deaths, and 21% of childhood deaths of the world. Antenatal and postnatal services were one of the most important works done by ASHA workers. **Aims:** The objective of this study was to assess the services provided by ASHA workers in a district of western Uttar Pradesh to her beneficiaries regarding antenatal and postnatal care. **Settings and Design:** A cross-sectional study was done in four randomly selected blocks of the district with the help of simple random sampling technique. **Subjects and Methods:** A total of 384 study participants (mother having child up to 2 years of age) who availed services from the ASHA of their village. **Statistical Analysis:** Data were analyzed using SPSS-24.0, IBM Corp., Chicago, USA. Differences between the groups were compared using the Chi-square test and Fisher's exact test. *P* value <0.05 was considered statistically significant. **Results:** Out of 384 beneficiaries of ASHA workers regarding antenatal and post-natal services, only 25% educated up to  $\geq$ higher secondary. Most of the beneficiaries (>55%) escorted less than four times for ANC, whereas only 0.5% of beneficiaries received the correct number i.e., 180 or > 180 IFA tablet from the ASHA workers. Only 57.2% of beneficiaries replied  $\geq 6$  times the post natal care home visit done by ASHA. **Conclusion:** Services provided by ASHA workers regarding ANC and PNC were not adequate.

**Keywords:** ANC, ASHA worker, PNC

## Introduction

In India, the National Rural Health Mission (NRHM) was launched on 12th April 2005 in 18 states across the country, including eight Empowered Action Group states. The aim was to provide effective health care to the rural population, especially the disadvantaged groups, with the goal to improve the availability and access to quality health care by people, mainly poor women, and children residing in rural areas.<sup>[1]</sup>

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A primary care physician is involved in the enhancement of the services provided by ASHA workers by giving them time to time training and knowledge. As ASHA worker is directly involved in providing ante-natal and post-natal services to the beneficiaries, it becomes important to evaluate their knowledge and services given in this regard. To achieve the goal and objective of NRHM effectively, there was a need for community health worker (CHW), who can fill the gap, work as a health activist, band between the public health system and community. Therefore, based on needs, the government of India decided to provide a trained female community health activist or Accredited Social Health Activist (ASHA) to every village in the country under the National Rural Health Mission and first introduced in rural

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India in 2005 and extended to urban settings in 2013.<sup>[2]</sup> ASHA workers can play an important role in identifying problems at the earliest and help in improving community health status.<sup>[3]</sup> One of the most important works of ASHA workers was to provide antenatal and postnatal care services to women residing in her field service area. These services enable women to receive important services, such as tetanus vaccinations and screening and treatment for infections, as well as potentially life-saving information on warning signs during pregnancy.<sup>[4]</sup> India accounts for 17% of the population, contributes to about 19% of maternal deaths and 21% of childhood deaths of the world.<sup>[5]</sup> World Health Organization (WHO) puts the target for India under Sustainable Development Goals to achieve maternal mortality rate (MMR) below 70 per lacs live birth by 2030.<sup>[6]</sup> To achieve, the target for MMR and infant mortality rate, time to time the assessment of Antenatal and Postnatal services provided by ASHA workers is very important. The present study was conducted in a district of western Uttar Pradesh (a northern state in India) with the objectives of 1) To assess the services provided by ASHA workers to her beneficiaries regarding antenatal and postnatal care and 2) to study factors regulating the utilization of antenatal and postnatal services by the beneficiaries in the study area.

## Subjects and Methods

### Data analysis

Data were analyzed using Statistical Package for Social Scientists version 24.0 (SPSS-24.0, IBM Corp., Chicago, USA). Differences between the two groups were compared using the Chi-square test and Fisher's exact test.  $P < 0.05$  was considered statistically significant.

### Study participants

Beneficiaries (mother having child up to 2 years of age) who availed services from the ASHA of their village.

### Sample size

The sample size calculated by the following formula

$$N = (Z\alpha/2)^2 PQ/L^2$$

Where  $Z\alpha/2 = 1.96$

$P =$  Prevalence (ANC visit facilitated by ASHA was 54.2%<sup>[10]</sup>)

$L$  is an allowable error, which was taken 5% as absolute

$$Q = (100-P) = 45.8$$

Hence, the minimum required sample size calculated is

$$= (1.96)^2 \times 54.2 \times (100-54.2)/5 \times 5$$

$= 381.29$ . So, a total of 384 participants were included in the present study.

### Sampling method

The multistage sampling method with a random selection technique was used.

### Selection of study participant

#### First stage: The selection of blocks

Out of the eight community development blocks in the district, four blocks were selected by a simple random sampling technique using the lottery method.

#### Second stage: The selection of villages

A list of all the villages in the selected blocks was prepared. With the help of simple random selection by lottery method, eight villages were selected from each block. So, a total of 32 ( $4 \times 8 = 32$ ) villages were selected for conducting the study.

#### Third stage: The selection of Beneficiaries of ASHA

As the effective calculated minimum sample size was 384 for the beneficiaries of ASHA, and the number of selected villages was 32, hence for equal representation from each study area,  $384/32$  equal to 12 beneficiaries, were recruited for each randomly selected village from the list of beneficiaries from ASHA worker.

### Ethical aspects

Ethical clearance was taken from the Ethical Committee of University before the start of the study. Informed written consent was taken from all the study participants.

### Inclusion criteria

1. Beneficiaries from the selected villages of the district.
2. Beneficiaries living continuously in the study area, minimum from the last 24 months.

### Exclusion criteria

1. Beneficiaries suffering from any mental disorder.
2. Beneficiaries who did not give consent.

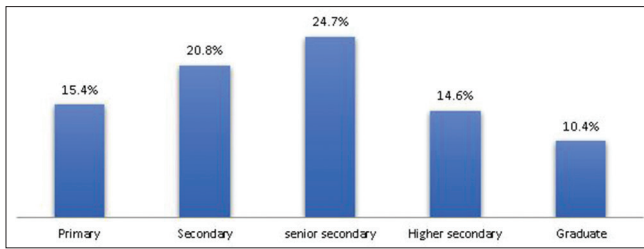
### Study tools

A predesigned, pretested, and a semi-structured questionnaire was used as a study tool.

## Results

Most of the participants (65%) belong to age between 18 and 25 years and only 6% belong to  $>30$  years age group. About 14% of participants were illiterate, whereas 10.4% were educated up to a graduate level [Figure 1]. Most of the participants (96.7%) belong to the Hindu religion. According to Table 1, only 43.5% of beneficiaries escorted by ASHA worker to the hospital/health center for recommended  $\geq 4$  ante-natal care visits. More than one-third (33.6%) of the beneficiaries received  $<100$  tablets of the iron-folic acid (IFA) during the antenatal period. Only 0.5% of beneficiaries received the recommended number i.e.,  $\geq 180$  IFA tablet from the ASHA workers and 0.8%, beneficiaries did not receive any IFA tablet from ASHA workers.

Table 2 showed that in this study most (71.9%) of the institutional deliveries were advised by ASHA workers and also most (91.7%)



**Figure 1:** Distribution of beneficiaries according to their education (n = 384)

**Table 1: Distribution of beneficiaries according to number of ANC visit escorted and number of IFA tablets given to them by ASHA workers (n=384)**

Variable		No. of beneficiaries	Percentage of beneficiaries
Number of ANC visit escorted by ASHA workers	One	007	1.8
	Two	064	16.7
	Three	146	38.0
	≥Four	167	43.5
Total		384	100.0
Number of IFA tablets given to beneficiaries by ASHA workers	<100	129	33.6
	100-179	250	65.1
	≥180	002	0.5
	Not given	003	0.8
Total		384	100.0

of the deliveries were escorted by the ASHA workers. In about 61% cases, ASHA worker stayed with her beneficiaries in hospitals during delivery, whereas 72.1% of beneficiaries responded that ASHA worker informed her about the incentive for institutional delivery under Janani Suraksha Yojna (JSY) scheme.

About 96% of beneficiaries responded that ASHA worker visited her home after delivery for a First PNC visit. About 55% of beneficiaries responded that the First PNC visit by ASHA was made within 3 days, while about 44% and 1.1% responded that she visited within 4-6 days, after 6 days respectively. In 57.2% of ≥6 home visits were done. According to beneficiaries, 11% of them were not advised on any PNC precautions by ASHA workers.

The present study showed that 10.1%, 59.6%, and 30.3% beneficiaries were informed regarding incentive given under JSY among beneficiaries with educational status of illiterate, ≤ secondary and > secondary respectively, and the difference of information given regarding incentive given under JSY and the educational status of beneficiaries was statistically significant (P < 0.001). The table also showed that 4.8%, 63.7%, and 31.5% beneficiaries were escorted by ASHA Worker for

institutional ANC visit among beneficiaries with educational status of illiterate, ≤ secondary and >secondary respectively, and the difference of beneficiaries escorted by ASHA Worker for the institutional ANC visit and the educational status of beneficiaries was statistically significant (p < 0.001) [Table 3].

Table 4 illustrated that 216 beneficiaries were escorted by ASHA for <4 times for institutional antenatal care (ANC) visit out of which 193 beneficiaries were also escorted for institutional delivery but 23 beneficiaries were not escorted for institutional delivery. In this study 168 beneficiaries, escort by ASHA ≥4 for the institutional ANC visit out of which 159 beneficiaries were also escorted for institutional delivery and 32 were not escorted for institutional delivery. The association between both the variables was not statistically significant.

## Discussion

Regarding the sociodemographic profile of beneficiaries of ASHA workers, mostly (65%) belonged to 18 to 25 years, followed by 26-30 years (29%), than >30 years (6%). Reddy *et al.*<sup>[7]</sup> observed that 45%, 40%, and 15% beneficiaries belong to the age group of 19-25 years, 26-30 years, and >30 years, respectively. This difference in the age group was maybe due to that most of the participants in the current study were either mother of only one child or pregnant second time.

About 14% of participants were illiterate, whereas 15.4%, 20.8%, 24.7%, 14.6%, and 10.4% were educated up to primary, secondary, senior secondary, higher secondary, and graduate level respectively. Similarly, Kumar *et al.*<sup>[8]</sup> found that 16.7% of respondents were illiterate, whereas 35.8%, 3.3% were educated up to senior secondary and graduate level respectively. Sinha *et al.*<sup>[9]</sup> observed that 76% of participants were illiterate contrary to the present study showing literacy status in females of the study area.

Most of the participants (96.7%) belonged to the Hindu religion, 2.6% were Muslim, and only 0.8% belonged to other than Hindu or Muslim supported by Ahmad *et al.*<sup>[10]</sup> mentioned 93% Hindu and 6.8% Muslim beneficiaries in their study. Similarly, Roy *et al.*<sup>[11]</sup> found that 91% of beneficiaries were Hindu and the remaining 9% included in other religions. Parul *et al.*<sup>[12]</sup> observed that 86.09% were Hindu and 13% were Muslim in this study.

Most of the participants (43.5%) in the present study responded that they were escorted by ASHA for ANC visit ≥4 times, this observation almost similar as observed by Karol *et al.*<sup>[13]</sup> who showed that about 68% beneficiaries have been motivated by ASHA workers and send them to the nearest health care center to receive ANC.

In the present study, most of the institutional delivery (72%) advised/motivated by ASHA workers, whereas most of the deliveries (92%) were escorted by the ASHA workers, which showed the activeness of the ASHAs. Similarly, Fatima *et al.*<sup>[15]</sup>

**Table 2: Distribution of beneficiaries according to various ANC and PNC services provided to them**

Variables	Response	Number (n)	Percent (%)
Institutional delivery advice by	ASHA	276	71.9
	Others	108	28.1
Beneficiaries were accompanied by ASHA for hospital delivery	Yes	352	91.7
	No	032	8.3
ASHA stayed during delivery in hospital	Yes	234	60.9
	No	150	39.1
Did ASHA tell about JSY scheme incentive	Yes	277	72.1
	No	107	27.9
Did ASHA visit your home after delivery for PNC*(n=384)	Yes	369	96.1
	No	15	3.9
First PNC visit was done by ASHAs within how many days (n=369)	Within 3 days	203	55.0
	Within 4-6 days	162	43.9
	After 6 days	4	1.1
According to beneficiaries number of home visit done by ASHA (n=369)	Equal to or more than 6	211	57.2
	Less than 6	158	42.8
How many precautions ASHA told during PNC visit (n=369)	Less than 3	115	31.2
	Equal to or more than 3	211	57.2
	No precaution advised	43	11.6

PNC\*- Post natal care

**Table 3: Association between qualification and information given to beneficiaries by ASHA workers regarding incentive under Janani Suraksha Yojna (JSY) for hospital delivery (n=384)**

Variables	Response	Qualification of beneficiaries			Total no. (%)	P
		Illiterate no. (%)	≤secondary no. (%)	>secondary no. (%)		
Information was given regarding incentive given under JSY	Yes	28 (10.1)	165 (59.6)	84 (30.3)	277 (100.0)	<0.001
	No	26 (24.3)	69 (64.5)	12 (11.2)	107 (100.0)	
No. of institutional ANC escorted by ASHAs	Less than 4 times	46 (21.3)	127 (58.8)	43 (19.9)	216 (100.0)	<0.001
	Equal to or more than 4 times	8 (4.8)	107 (63.7)	53 (31.5)	168 (100.0)	

observed 60% of beneficiaries motivated for institutional delivery by ASHA workers and 96% beneficiaries escorted for institutional delivery by ASHA workers. A study conducted by Pal *et al.*<sup>[14]</sup> showed almost similar results to the present study that about 60.53% deliveries were escorted by ASHA workers.

In this study, only 0.5% of beneficiaries received a correct number, i.e., 180, or >180 IFA tablet from the ASHA workers. Kaur *et al.*<sup>[15]</sup> observed that only 12.9% of ASHAs had correct

knowledge regarding the dosage of iron tablets for pregnant women.

In the present study, 72% of beneficiaries were informed regarding JSY and incentives under it by ASHA workers, similarly, Bhattacharya *et al.*<sup>[16]</sup> mentioned that 70% of the recently delivered women could avail the JSY benefit and all of them were facilitated by ASHA. In another study by Kumar *et al.*<sup>[8]</sup> 64.8% of beneficiaries were given information and knowledge about JSY by ASHA workers.

**Table 4: Association between beneficiaries escorted by ASHA for Institutional ANC visits and for institutional delivery**

Variable	Beneficiaries escorted by ASHAs for institutional delivery		Total No. (%)	P	
	Yes No. (%)	No No. (%)			
Beneficiaries escorted by ASHA for institutional ANC visit	<4 times	193 (89.4)	23 (10.6)	216 (100.0)	0.066
	≥4 times	159 (94.6)	9 (5.4)		

In the current study, 96% of beneficiaries responded that ASHA workers visited her home after delivery, In 57.2% ≥6 home visits were done and in 42.8% cases <6 home visits were made by ASHA workers. A study conducted by Vimarsh consultancy.<sup>[17]</sup> in the Uttar Pradesh, it was mentioned that all ASHAs (100%) knew about PNC home visit, out of which, only 43% responded that the number of the visit should be ≥6. Kumar *et al.*<sup>[18]</sup> also mentioned that about 92.7% of ASHA workers were performing postnatal visits.

### Conclusion and Recommendation

ASHA workers work as grass root level workers regarding various maternal and child health services. The study revealed that 43.5% of beneficiaries were escorted by ASHA for ANC visit ≥4 times and only 0.5% got a correct number of IFA tablets by ASHA workers. This shows inactiveness toward ANC visits and the adherence to guidelines regarding IFA regime. In most cases, institutional delivery advised and accompanied by ASHAs but in case of hospital stay during delivery, the percent of ASHAs was slightly low. Regarding PNC services, in most (96%) cases ASHAs did a home visit, but only in 57% cases, ASHAs did a correct number of visits according to norms.

The study also revealed that ASHA workers gave better services to beneficiaries who educated up-to or less than secondary as compared to either illiterate or educated > secondary. It was found in this study that ASHA workers were not adherent to new norms related to her services. Most of the ASHA workers showed interest in which ASHA got good incentives like institutional deliveries. Based on observation and results recommend that all ASHA workers should be sensitized for the importance of adherence to guidelines, remuneration for services like those that ANC and PNC for better results.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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