



## UTILIZATION OF MATERNAL AND CHILD HEALTH SERVICES AMONG POSTNATAL WOMEN IN HALDWANI BLOCK OF DISTRICT NAINITAL, UTTARAKHAND

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**ABSTRACT** **Introduction** – Majority of maternal mortality occurs in developing countries. Good adherence to antenatal care services is essential to improve maternal and neonatal outcomes. In India antenatal services are delivered under RMNCH+A under the umbrella of NRHM and delivered by ASHA workers and ANM.  
**Aim** - To assess the levels of MCH service utilization in rural Haldwani  
**Methodology** – Present study was a community based cross sectional study conducted in rural Haldwani.  
**Results** – Among study participants, early registration was seen in 59.5%, MCP card was received by 96.4% participants and 67.6% have had recommended four ANC visits. Recommended 100 IFA tablets were received by 64% consumed by 59.5% women. Presence of institutional delivery was 96.4% and 85.6% women received postnatal visits from ASHA workers.  
**Conclusion** – Results of our study were better than the State average but still far from desired goals.

**KEYWORDS** : Service use, Maternal health, Child health

### INTRODUCTION

Every day, nearly 830 women are dying due to pregnancy and child birth related causes. Most of them occur in developing countries and of these, one-third in South Asia. Majority of these deaths are preventable by giving skilled care before, during and after delivery<sup>1</sup>. It is especially true for women living in rural or poor communities where antenatal and postnatal care services are scarce. Good adherence to antenatal care services is essential to improve maternal and neonatal outcomes<sup>2</sup>. In India, antenatal services are provided via Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) under the umbrella of National Rural Health Mission (NRHM), later named National Health Mission (NHM). These services are being provided with the aid of Accredited Social Health Activist (ASHA) worker and Auxiliary Nurse Midwife (ANM). To ensure the proper nutrition of pregnant and lactating women, Take Home Ration (THR) is being provided under Integrated Child Development Scheme (ICDS) through Anganwadi workers (AWW). ASHA worker connects the community to health care and along with ANM and AWW, ensures registration, antenatal care and institutional delivery of pregnant women under her care<sup>3</sup>.

It has been over ten years from the start of NRHM. Steps had been taken under NRHM to promote institutional delivery by providing cash assistance for delivery and post-delivery care. Since then, ASHA workers along with ANM and AWW had been continuously motivating and helping pregnant women to achieve institutional births. Still, targets are far from being achieved. To bring about any change, the baseline service use needs to be known.

The present study was conducted among postnatal women to find out the level of MCH and ICDS services use during antenatal, natal and postnatal period in rural area of Haldwani, which will give us an idea as to whether the targets for MCH services had been met or not at regional level. No such study has been previously conducted in Kumaon region of Uttarakhand.

### METHODOLOGY

#### Study design and study area

This study was a community based cross sectional survey conducted in the rural area of Haldwani block in district Nainital situated in the Kumaon Mandal of Uttarakhand. Haldwani is one of the eight Blocks of district Nainital which has the largest population and third largest area in the district. The population of Haldwani block is 227,329, out of which 88,808 is in urban and 138,521 in rural areas. Haldwani has a sex

ratio of 926 females per thousand males<sup>4</sup>. Literacy rate among females is 81.72%. Haldwani block is served by five Primary Health Centre (PHC)<sup>5</sup> and 24 Sub-Centres in the rural area. The only tertiary level health facility (Government Medical College) of Kumaon mandal is located in Haldwani.

#### Sample size

Sample size was calculated for availability of Maternal Child Protection (MCP) card among registered pregnant women (93.4%) according to NFHS 4 Uttarakhand data<sup>6</sup>. Taking  $Z_{(1-\alpha)}$  at 95% and 5% absolute error, using the formula  $Z_{(1-\alpha)}(p[1-p])/d^2$ , sample size comes to be 95. Adding 10% non response, final sample size was calculated to be 105.

#### Study period

The study was conducted over a period of 7 months from December 2017 to June 2018.

#### DATA COLLECTION

Sub-Centres were randomly selected by lottery method from the list of 24 Sub-Centres in the Haldwani block and postnatal women in the selected Sub-Centre were enrolled till the sample size was reached. All postnatal women, who had given birth within last one month from date of our first visit to the Sub-Centre, and were registered under the Sub-Centre were approached and after having given consent were enrolled into the study. One hundred and eleven postnatal women were recruited from eight Sub-Centres as study participants. Enrollment and data collection was done with the help of ASHA workers, ANM and AWW of that area through home visits.

Data was collected using pre-designed, pre-tested semi-structured questionnaire regarding socio-demographic profile and MCH and ICDS services use among postnatal women during antenatal, natal and postnatal period. Pre-testing was done in the field practice area of the department and this data was not included in the study.

#### DATA ANALYSIS AND PRESENTATION

Data was coded and entered in Microsoft Excel sheet. Analysis was done using SPSS version 21. Descriptive interpretation of data was done in the form of percentages and mean.

#### ETHICAL CLEARANCE

Ethical clearance was taken from Institutional Ethical Committee of Government Medical Collage of Haldwani.

## RESULTS

Study participants had a mean (SD) age of 25.5 (3.898) years and 69% had ten or more years of formal education (Table 1). Majority was housewives belonging to upper or upper-middle social class. There were no cases of still birth but the single case of early neonatal death was included in the study. Though all the participants were registered, only 80% had been helped by ASHA worker for registration, only 96.4% received MCP card and 87.4% were later on visited at home by ASHA worker (Table 2). Early registration was noticed in only 59.5% but had 100% TT coverage. Sixty-seven percent of participants have had four or more ANC visits.

Pertaining use of IFA tablets, 98.2% participants reported to have received IFA tablets but only 64% received the recommended 100 IFA tablets and only 59.5% reported to have consumed 100 IFA tablets. Eighty two percent of the participants were registered at the Anganwadi in their area and were receiving Take Home Ration (THR), but only 52.3% consumed it completely. Over 96% of participants had institutional delivery and home delivery was only 3.6% which was an improvement over 11.7% home deliveries during previous birth among multipara study participants.

For home based neonatal visits by ASHA worker, 85.6% participants reported to have received visits from ASHA worker after delivery and only 49.5% reported to have taken IFA tablets post delivery.

## DISCUSSION

Presence of home delivery during previous birth was 11.7% which was higher than SRS 2016 data for Uttarakhand stating 9.3% home births<sup>7</sup>. Among study participants, early registration was seen in 59.5% (Table 2) which is slightly above the NFHS 4 Uttarakhand data of 53.5%<sup>6</sup>. Comparatively, a study conducted in 2003 gives a first trimester ANC visit at only 3.6% before NRHM<sup>8</sup>. MCP card was received by 96.4% registered pregnant women in the current study which is similar to 93.8% in Uttarakhand NFHS 4 data<sup>6</sup>. Though the presence of MCP card was high, nearly all of the cards were not properly filled except for the first page. Details of the antenatal examination were not present in the card but could be determined from the OPD slips. Percentage of pregnant women who had recommended four ANC visits was 67.6%, which is way higher than state average of 30.9% according to NFHS 4 data<sup>6</sup>. Haldwani is an area with easy availability of all three levels of health care services available and such as, may be related to higher service use among study participants. This usage was found to be 16.1% in pre NRHM era by Awasthi et al.<sup>8</sup>.

Regarding 100 IFA tablets 64% received and 59.5% consumed 100 IFA tablets during the study (Table 2). Consumption of 100 IFA tablets is higher in our study than the NFHS 4 data of 24.9%<sup>6</sup>. Main reason for not consuming the minimum prophylactic dose of 100 iron-folic acid tablets was that the women had not received 100 iron-folic acid tablets in the first place, which was mostly because they did not even go to take iron-folic acid tablets regularly from hospital. During the survey shortage of the supply of IFA tablets was seen which is another reason for less intake of iron tablets among participants (Figure 1 and 2). This shows lack of motivation among pregnant women regarding 100 iron-folic acid tablets. Kiwanuka et al.<sup>9</sup>

gives the reasons for non compliance to be lack of supply and fear of side effects. Study by Birhanu et al.<sup>10</sup>, state that early registration gives better compliance for iron-folic acid tablets. And as stated earlier early registration was only 59.5% in our study.

For usage of ICDS services, immunization sessions were regularly being held in Anganwadis, with 100% TT immunization coverage, but some women were not receiving Take Home Ration (THR). Main reason for not receiving THR was that there was no Anganwadi in their village. There was no discrepancy in THR distribution between upper or lower socio-economic classes as all women registered at Anganwadi received THR. Kosec et al.<sup>11</sup>, in their study conducted in rural Bihar, states that households with higher socio-economic status had lower odds of getting THR, which is different from our study. Only 52% women were consuming THR completely, mainly because they did like the food items provided under THR.

Presence of institutional delivery was 96.4% among the study participants, which is higher than the SRS 2016 data of 90%<sup>7</sup>. Reason may be because all the participants were registered and thus had knowledge about Janani Suraksha Yojana (JSY) and Janani Shishu

Suraksha Karyakram (JSSK). Also they were in contact with the ASHA worker who had motivated even those women with previous home delivery to go for institutional birth.

Post natal visits among study participants (85.6%) were far better than the NFHS 4 data of 54.8%<sup>6</sup>. Reason may be due to majority having had given birth at a government facility (69.4%) which is higher than 42.3% as stated in the NFHS 4 data<sup>6</sup>. ASHA workers are incentive based and get paid for every case that delivers in government setting, thus they tend to have better relationship with these women. At the same time, the participants themselves were not aware of timing and need for postnatal visits. ASHA workers, themselves were conducting visits according to their convenience. Since the area needed to be covered by ASHA workers is large, it is sometimes not possible for them to visits all postnatal women residing in different areas on the recommended days.

Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) under the umbrella of NHM has set the targets<sup>12</sup> for maternal services as; to increase in institutional birth rate from baseline of 61% to 100%, antenatal care coverage to 100% from the baseline of 53% and 100% postnatal care from baseline of 45% to be achieved till 2017. At the same time National Health Policy puts down the goal for Maternal and Child Health (MCH) services and safe delivery at 90%. Comparing with the targets set under RMNCH+A, 100% service use and institutional delivery is still far from reach. Except 100% TT immunization no other service has met the goal. Although, availability of MCP card and TT immunization, and institutional delivery rate in our study fulfills the criteria for 90% usage of National Health Policy, all the other MCH services leave a lot to be desired towards fulfillment of the said goal.

## RECOMMENDATIONS

Based on the results and observations of the present study, it was clear that usage of IFA tablets was dependent upon availability of IFA tablets. Two main reasons for non availability were shortage of supply and unwillingness of participants to have multiple hospital visits needed to procure IFA tablets. Such as, it is recommended that supply of IFA tablets should be regularized and all pregnant women should to be given 100 IFA tablets at the time of registration to increase IFA tablet use. Regarding MCP card, it is recommended that stress need to paid to complete filling of MCP card as it will help us identify high risk cases early on. Pregnant women must be given information on postnatal visits during antenatal period to increase awareness. ASHA workers are required to cover a population of 1000 despite the area extension compared to their urban counterparts. This factor needs to be considered for rural areas, especially considering the range of activities that need to be covered by them.

## LIMITATIONS

Although we studied the presence of recommended minimum four antenatal visits, the quality of care remains to be measured. National Health Mission aims to provide quality antenatal services to pregnant women including Haemoglobin estimation at all four visits along with reduction in out of pocket charges. Also, due to the timing of visits, receiving of JSY cash incentives remained to be studied as many women had not yet received it till the time of visit. These gaps in service use need further study.

## CONCLUSION

The results of our study were better than those reported for Uttarakhand as a whole, with some even fulfilling the National Health Policy goals. Still, there is a towering shortage regarding usage of MCH services and IFA tablets use. Also, for ICDS services, though all women registered at the Anganwadis were being provided with THR without any discrepancy, there were still women who lacked an Anganwadi in their village. Despite the good performance by health workers, there are still gaps in awareness among antenatal and postnatal women and health functionaries which further need to be addressed.

**Table 1: Socio-demographic profile of study participants**

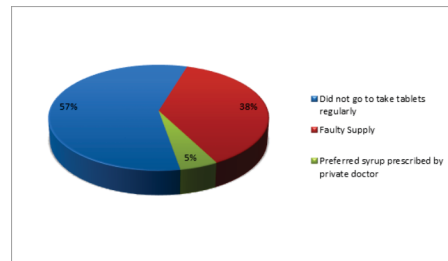
Variable	Frequency	Percent
<b>Age of Participant</b>		
≤ 20	10	9.0
21-25	54	48.6
26-30	37	33.3

≥ 31	10	9.0
<b>Education of Participant</b>		
Illiterate	4	3.6
Primary	13	11.7
Middle	17	15.3
High School/ Inter	30	27.0
Graduate/ Post Graduate	47	42.3
<b>Age at Marriage</b>		
≤ 17	6	5.4
18-20	37	33.3
21-25	60	54.1
≥ 26	8	7.2
<b>Occupation</b>		
Working	10	9.0
Not Working	101	91.0
<b>Social Class</b>		
Upper	20	18.0
Upper-middle	38	34.2
Middle	26	23.4
Lower-middle	19	17.1
Lower	8	7.2
<b>Type of Family</b>		
Joint	81	73.0
Nuclear	30	27.0
<b>Religion</b>		
Hindu	99	89.2
Others	12	10.8
<b>Caste</b>		
General caste	80	72.1
Scheduled Caste and Tribe	15	13.5
Other Backward Class	16	14.4
<b>House Type</b>		
Pucca	90	81.1
Mixed	16	14.4
Kutcha	5	4.5
<b>Ownership of House</b>		
Owned	81	73.0
Provided	5	4.5
Rented	25	22.5
Total	111	100.0

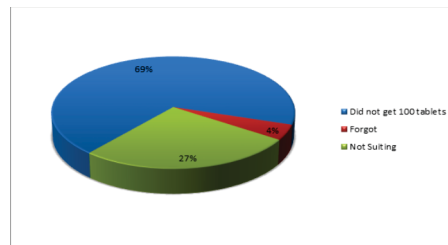
**Table 2: Utilization of Antenatal, natal and postnatal services among study participants**

Variable	Frequency	Percent
<b>Level of MCH service use among study participants</b>		
<b>ASHA helped for Registration</b>		
Yes	89	80.2
No	22	19.8
<b>Early Registration</b>		
≤3months	66	59.5
>3months	45	40.5
<b>ANC card given</b>		
Yes	107	96.4
No	4	3.6
<b>ASHA Visited home</b>		
Yes	97	87.4
No	14	12.6
<b>Received 100 IFA Tablets</b>		
<100	40	36.0
≥100	71	64.0
<b>Consumed 100 IFA Tablets</b>		
<100	45	40.5
≥100	66	59.5
<b>Had 4 ANC Visits</b>		
Yes	75	67.6
No	36	32.4
<b>Level of ICDS service use among study participants</b>		
<b>Registered at Anganwadi</b>		
Yes	89	80.2

No	22	19.8	
<b>Receiving THR</b>			
No Anganwadi	18	16.2	
Not Registered at Anganwadi	4	3.6	
Received	89	80.2	
<b>THR Consumed</b>			
Yes	58	52.3	
Partially	30	27.0	
No	1	0.9	
Not Received	22	19.8	
<b>Level of use of Natal and Post-natal services among study participants</b>			
<b>Place of delivery</b>			
Institutional Delivery	Government setup	77	69.4
	Private setup	30	27.0
Home Delivery		4	3.6
<b>Home based Neonatal Visits</b>			
Yes	95	85.6	
No	16	14.4	
<b>Taking IFA Post-natal</b>			
Yes	55	49.5	
No	56	50.5	
Total	111	100.0	



**Figure 1: Pie chart showing reasons for not acquiring 100 IFA tablets**



**Figure 2: Pie chart showing reasons for not consuming 100 IFA tablets**

**REFERENCES**

1. WHO. Maternal mortality. (n.d.). Retrieved 8 March 2019, from <https://www.who.int/news-room/fact-sheets/detail/maternal-mortality>
2. Amoakoh-Coleman, M., Klipstein-Grobusch, K., Agyepong, I. A., Kayode, G. A., Grobbee, D. E., & Ansah, E. K. (2016). Provider adherence to first antenatal care guidelines and risk of pregnancy complications in public sector facilities: a Ghanaian cohort study. *BMC Pregnancy and Childbirth*, 16. <https://doi.org/10.1186/s12884-016-1167-6>
3. Ministry of Health & Family Welfare. Government of India. Reading Material ASHA English.pdf. (n.d.). Retrieved from <http://nhsrcindia.org/sites/default/files/Reading%20Material%20ASHA%20English.pdf>
4. Census of India 2011. Uttarakhand. Series-06 Part Xii-B. District Census Handbook Nainital. Village and Town Directory. 0511\_PART\_B\_DCHB\_NAINITAL.pdf. (n.d.). Retrieved from [http://censusindia.gov.in/2011census/dchb/0511\\_PART\\_A\\_DCHB\\_NAINITAL.pdf](http://censusindia.gov.in/2011census/dchb/0511_PART_A_DCHB_NAINITAL.pdf)
5. Census of India 2011. Uttarakhand. Series-06 Part Xii-A. District Census Handbook Nainital. Village and Town Directory. 0511\_PART\_A\_DCHB\_NAINITAL.pdf. (n.d.). Retrieved from [http://censusindia.gov.in/2011census/dchb/0511\\_PART\\_A\\_DCHB\\_NAINITAL.pdf](http://censusindia.gov.in/2011census/dchb/0511_PART_A_DCHB_NAINITAL.pdf)
6. International Institute for Population Sciences (IIPS) and ICF. 2018. National Family Health Survey (NFHS-4), India, 2015-16: State Fact Sheet Uttarakhand. Mumbai: IIPS. [UT\\_FactSheet.pdf](http://www.ipsindia.org/pdf/NFHS4_UT_FactSheet.pdf). (n.d.). Retrieved from [http://rchiips.org/nfhs/pdf/NFHS4/UT\\_FactSheet.pdf](http://rchiips.org/nfhs/pdf/NFHS4/UT_FactSheet.pdf)
7. Registrar General & Census Commissioner India. Ministry of Home Affairs. Government of India. Sample registration system (SRS) statistical report 2016. Estimates of Fertility Indicators -2016.pdf. (n.d.). Retrieved from [http://www.censusindia.gov.in/vital\\_statistics/SRS\\_Report\\_2016/7.Chap\\_3-Fertility\\_Indicators-2016.pdf](http://www.censusindia.gov.in/vital_statistics/SRS_Report_2016/7.Chap_3-Fertility_Indicators-2016.pdf)
8. Awasthi, S., Chaturvedi, M., Nandan, D., Jha, S., & Mehrotra, A. K. (2012). Assessment of quality maternity care in Urban slums of district Agra: Population based study Indian Journal of Public Health Research and Development. Vol. 3, 2012. 186 p. 186-190.
9. Kiwanuka, T. S., Ononge, S., Kiondo, P., & Namusoke, F. (2017). Adherence to iron

- supplements among women receiving antenatal care at Mulago National Referral Hospital, Uganda-cross-sectional study. *BMC Research Notes*, 10. <https://doi.org/10.1186/s13104-017-2834-z>
10. Birhanu, T. M., Birarra, M. K., & Mekonnen, F. A. (2018). Compliance to iron and folic acid supplementation in pregnancy, Northwest Ethiopia. *BMC Research Notes*, 11. <https://doi.org/10.1186/s13104-018-3433-3>
  11. Kosec, K., Avula, R., Holtemeyer, B., Tyagi, P., Hausladen, S., & Menon, P. (2015). Predictors of Essential Health and Nutrition Service Delivery in Bihar, India: Results From Household and Frontline Worker Surveys. *Global Health: Science and Practice*, 3(2), 255–273. <https://doi.org/10.9745/GHSP-D-14-00144>
  12. Ministry of Health & Family Welfare. Government of India. A Strategic Approach to Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) in India. *rmncha-strategy.pdf*. (n.d.). Retrieved from <http://nhm.gov.in/images/pdf/programmes/rmncha-strategy.pdf>