ORIGINAL ARTICLE
pISSN 0976 3325 | eISSN 2229 6816
Open Access Article
www.njcmindia.org

# A Cross Sectional Study on Factors Influencing Utilization of Antenatal Health Services in Bhojipura Block, District Bareilly

**Sumit Saxena[1], Atul Kumar Singh[2], Sonam Maheshwari[3], Shyam Bihari Gupta[4]**

**Financial Support:** None declared
**Conflict of Interest:** None declared


**How to cite this article:**
Saxena S, Singh AK, Maheshwari S, Gupta SB. A Cross Sectional Study on Factors Influencing Utilization of Antenatal Health Services in Bhojipura Block, District Bareilly. Natl J Community Med 2017; 8(11):658-665.

**Author's Affiliation:**
[1]Asst Prof, Dept of Community Medicine, TS MISRA Medical College & Hospital, Lucknow; [2]Asso Prof, Dept of Community Medicine, SRMSIMS, Bareilly; [3]Asst Prof, Dept of Community Medicine, Govt Medical College, Dehradhun; [4]Prof, Dept of Community Medicine, SRMSIMS, Bareilly

**Correspondence**
Dr Sumit Saxena
drsumitsaxena22@gmail.com

**Date of Submission:** 01-08-17
**Date of Acceptance:** 20-11-17
**Date of Publication:** 30-11-17

## ABSTRACT

**Background:** Antenatal care is the care of the woman during pregnancy. The primary aim of antenatal care is to achieve at the end of a pregnancy a healthy mother and a healthy baby. In order to increase the utilization of antenatal care facility and thereby reducing the maternal morbidity and mortality, there is a need to understand the factors acting as barriers in the utilization of ANC among women.

**Material & Methods:** A community based cross-sectional study was conducted in Bhojipura Block, rural field practice area of department of Community Medicine, Shri Ram Murti Samarak Institute of Medical Sciences, Bareilly India. Total 480 Recently Delivered Women (RDW) were interviewed.

**Result:** Majority 419 (87.3%) of RDW were registered for pregnancy and out of 419 RDW, 255 (60.8%) pregnant women registered in second trimester. Most of the ANC services were facilitated by ASHA 267 (55.6%) to RDW and maximum 369 (76.9%) RDW received only two antenatal check-up.

**Conclusion:** It needs to be emphasized here that early registration should be utilized for continuum of care and institutional delivery. The age, education, religion, type of family, birth order and socioeconomic status of RDW significantly influence in ANC service utilization.

**Keywords:** Antenatal care, RDW, Utilization

## INTRODUCTION

Pregnancy is an important stage in a woman's life. It is a period of expectant waiting and one that all women aspire to experience at least once in their lifetime. It is a fervent hope of all mothers-to-be to have a safe and healthy pregnancy.[1] While most pregnancies and births are uneventful, all pregnancies are at risk. This risk can be reduced by combination of care. One of them is Antenatal Care.

Antenatal care is the care of the woman during pregnancy. The primary aim of antenatal care is to achieve at the end of a pregnancy a healthy mother and a healthy baby. Ideally this care should begin soon after conception and continue throughout pregnancy.[2] ANC is a critical element for reducing maternal mortality and for providing pregnant women with a broad range of promotive and preventive health services.

Essential components of ANC include early registration of pregnancy, at least four antenatal checkups (including the first visit for registration), administer two doses of TT injection and consume at least 100 tablets of IFA. [3] ANC is also an opportunity to inform women about the dietary needs, intra-natal care, danger signs and symptoms for which immediate assistance should be sought from a health care provider.[4]

The current scenario depicts increased availability and easy accessibility of health care services both

in the rural and urban areas.[5] The content and quality of antenatal care and the availability of effective referral with essential obstetric care are important for antenatal care to be effective. However many studies have revealed low utilization of antenatal health care services for varying reasons.[6]

While antenatal care is considered essential for the health of both the mother and the child, it is important to analyze the possible factors contributing to its utilization. In order to increase the utilization of antenatal care facility and thereby reduce the maternal morbidity and mortality, there is a need to understand the factors acting as barriers in the utilization of ANC among women. Therefore this study was conducted with the objective of studying the factors affecting the utilization of antenatal health care services.

## MATERIAL AND METHODS

A community based cross- sectional study was conducted in Bhojipura block, rural field practice area of department of Community Medicine, Shri Ram Murti Samarak Institute of Medical Sciences, Bareilly India. The study was conducted from May 2014 to Sept 2014.

**Sample Size:** As per NFHS III (2005-06)[7] utilization of any antenatal care services was 64.2 percent for rural Uttar Pradesh. The sample size was calculated assuming a minimum of any antenatal care service utilization of 64.2 percent using the formula n= 3.8416 pq/d² Where p = Positive character (64.2%); q= 100 –P = (35.8 %); and d= Allowable error (5%). The calculated sample size was 353**.**

Assuming 10 percent loss to sample because of non-response, final sample size was calculated 392 recently delivered women. The final analysis was conducted on 480 RDW. From every village, 10 RDW were selected randomly and were interviewed for the study. A total of 480 RDW (48 villages x 10 RDW= 480 RDW) were interviewed.

ANC women with recently delivered women who gave birth to live new-born (age of infant less than 6 months); residing in the village of block Bhojipura; and RDW who were willing to participate in the study and ready to give consent.

**Sampling Technique:** A multi-stage sampling design with a mix of purposive and random approaches was used. **First stage: Selection of Block:** Out of the 15 blocks of Bareilly district, Bhojipura block selected purposively for the study purpose. Bhojipura block have a population of 1,91,181 (population of Town area: 20784, Rural population: 1,70,397) according to census 2011 and has 100 villages & 24 Sub centre. **Second stage: Selection of Sub centre and Villages:** Out of 100 villages, all twenty four villages having sub centre were selected purposively for the study. Sub centre is the most peripheral unit for providing Reproductive and Child Health (RCH) services by ANM. List of villages which were situated at the distance of **3-5 km** of their respective sub-centre obtained from block and 24 villages selected randomly for the study. Thus total of 48 villages were included in the study. **Third stage: Selection of RDW:** From each village, 10 RDW were interviewed by house to house visits knowing the fact that any women who gave birth to live new-born (age of infant less than 6 month) by villagers.

Primary data were collected by face-to-face interviews from RDW of the respective villages. Visits were made to all selected 48 villages with the help of Medico social worker. After explaining the purpose of the study and obtaining oral consent, the study was conducted using predesigned semi-structured questionnaire including brief socio-demographic information and utilization of Antenatal services. The information collected was critically analyzed and tabulated using SPSS- 20 version software. Appropriate statistical tests of significance (Logistic regression) were applied to test and validate the findings of the stud**y.**

**Ethical approval**: The study was approved by the Institutional Ethics Committee.

## RESULT

Predominantly 178 (37.1%) RDW belonged to age group of 21-25 years, 280 (58.3%) were Hindu by religion, 183 (38.1%) were educated up to middle class, 316 (65.8%) were living in joint family, 139 (29.0%) were of birth order two and 311 (64.8%) were from social class V (lower). **(Table 1)**

Majority 419 (87.3%) of RDW were registered for pregnancy and out of 419 RDW, 255 (60.8%) pregnant women registered in second trimester. Most of the ANC services facilitated by ASHA 267 (55.6%) to RDW and maximum 369 (76.9%) RDW received only two antenatal check-up. Approximately 400 (95.5%) RDW received 2 doses of Tetanus Toxoid or a Booster. Motivation by ASHA in receiving TT immunization was done to 284 (67.8%) RDW. Mostly 209 (68.3%) women received IFA tablets by ASHA. **(Table 2)**

Utilization of services of ASHA for early registration was found that as age of RDW was increasing, chances of registration for pregnancy also increased with respect to the reference except in the age-group of 26-30 years, where there were only 9% chances to register for pregnancy . This was due to the fact that increasing age is one of the risk factors for pregnancy. Educational status showed

**Table 1: Distribution of Recently Delivered Women according to their biosocial characteristics (n=480)**

| Bio- Social characteristics | Number (%) |
|---|---|
| **Age(years)** | |
| < 20 | 52(10.8) |
| 21-25 | 178(37.1) |
| 26-30 | 163(34.0) |
| 31-35 | 64(13.3) |
| 36-40 | 23(4.8) |
| **Religion** | |
| Hindu | 280(58.3) |
| Muslim | 200(41.7) |
| **Education** | |
| Illiterate | 163(34.0) |
| Primary | 183(38.1) |
| Middle | 117(24.4) |
| High School | 17(3.5) |
| **Type of Family** | |
| Nuclear | 164(34.2) |
| Joint | 316(65.8) |
| **Birth order(last birth)** | |
| One | 138(28.8) |
| Two | 139(29.0) |
| Third | 99(20.6) |
| Fourth | 53(11.0) |
| Fifth | 27(5.6) |
| More than five | 24(5.0) |
| **Socio Economic Status*** | |
| Class II (upper middle) | 2(0.4) |
| Class III (middle) | 2(0.4) |
| Class IV (upper lower) | 165(34.4) |
| Class V (lower) | 311(64.8) |

*Modified B.G Prasad Classification 1961 AICPI APRIL 2014

**Table 2: Utilization of antenatal services by Recently Delivered Women**

| Antenatal care | Number (%) |
|---|---|
| **Registered for pregnancy** | |
| Yes | 419(87.3) |
| No | 61(12.7) |
| **Trimester for registration (n=419)** | |
| First trimester | 19(4.5) |
| Second trimester | 255(60.8) |
| Third trimester | 145(34.6) |
| **Facilitation for registration done by (n=419)** | |
| ASHA | 267(55.6) |
| AWW | 43(9.0) |
| ANM | 50(10.4) |
| MSW of medical college (SRMSIMS) | 59(12.3) |
| **Number of ANC check-ups received (n=419)** | |
| One | 13(2.7) |
| Two | 369(76.9) |
| Three | 37(7.7) |
| **Received TT immunization** | |
| One | 19(4.5) |
| Two/booster | 400(95.5) |
| **Motivation by ASHA in receiving TT immunization** | |
| Yes | 284(67.8) |
| No | 135(32.2) |
| **Number of IFA tablets received** | |
| 100 | 183(43.7) |
| <100 | 123(29.3) |
| None | 113(27.0.) |
| **Number of IFA tablets Consumed (n=306)** | |
| 100 | 152(49.6) |
| <100 | 81(26.5) |
| None | 73(23.9) |
| **Provided or helped in receiving IFA tablets by** | |
| ASHA | 209(68.3) |
| AWW | 28(9.2) |
| ANM | 29(9.5) |
| MSW of medical college (SRMSIMS) | 40(13.0) |

that those women who completed their education till high-school showed more chance to register as compare to illiterate women because education is one of the prime factors for any success. When we focus on birth order, around 76% more chances of registration were observed in RDW with birth order two while in RDW with birth order three, the chances of registration dropped to only 18%. But further as birth-order was increasing, chances for registration also increased. Muslim religion, Joint family & Lower class RDW had higher chances of early registration. Religion, type of family, birth order & socioeconomic status of RDW was found to be significantly associated with registration of pregnancy with respect to the reference. **(Table 3)**

In **table 4** while applying logistic regression, ANC visit one and two category was merged. Out of 419 recently delivered women, age lies between 21-25 years RDW were 29% less likely to receive 3 ANC in comparison to women whose age is less than 20 years but in the age-group of 26-30 years, there were 41% more chances to receive three ANC check-up. While in the age-group of 36-40 years, 67% more chances were observed to have three ANC check-up. Among educated women, two times more chances were seen for three ANC check-up in the primary and high-school educated women while in the middle 17% more chances were seen for three ANC check-up as compared to Illiterate women. It was found that there were 45% less chances for three ANC check-up in joint family as compared to nuclear family. Muslim RDW had higher odds of utilization of ASHA services. In birth order, 52% more chances were observed for three ANC check-up in birth-order two women but in birth-order three chances for three ANC check-up of pregnancy were 72%. But further as birth-order was increasing chances for three ANC check-up also increased. It was found that in Class V (lower class), chances for three ANC check-up were 29% more than upper lower class. None of the predictors were found to have a significant association with utilization of ASHA services for three ANC. **(Table 4)**

**Table 3: Logistic regression analysis of factors affecting registration of pregnancy**

| Factors | Registered (n=419) | Not Registered (n=61) | P Value | OR | 95% CI for OR |
|---|---|---|---|---|---|
| Age(years) | | | | | |
| <20 | 47 (11.2) | 5(8.1) | | Ref | |
| 21-25 | 154(36.7) | 24(39.3) | 0.462 | **1.47** | 0.53 - 4.05 |
| 26-30 | 146(34.8) | 17(27.8) | 0.866 | **1.1** | 0.38 - 3.13 |
| 31-35 | 53(12.6) | 11(18.0) | 0.245 | **1.95** | 0.63 - 6.03 |
| 36-40 | 19(4.53) | 4(6.5) | 0.346 | **1.98** | 0.48 - 8.18 |
| Education | | | | | |
| Illiterate | 144(34.3) | 19(31.1) | | Ref | |
| Primary | 160(38.1) | 23(37.7) | 0.795 | **1.09** | 0.57 - 2.08 |
| Middle | 102(24.3) | 15(24.5) | 0.769 | **1.12** | 0.54 - 2.3 |
| High-school | 13(3.1) | 4(6.5) | 0.173 | **2.33** | 0.69 - 7.89 |
| Religion | | | | | |
| Hindu | 246(58.7) | 34(55.7) | | Ref | |
| Muslim | 173(41.2) | 27(44.2) | **0.035** | **1.79** | 1.04 - 3.08 |
| Type of Family | | | | | |
| Nuclear | 150(35.7) | 14(22.9) | | Ref | |
| Joint | 269(64.2) | 47(77.0) | **0.051** | **1.87** | 1 - 3.51 |
| Birth order | | | | | |
| One | 126(30.0) | 12(19.6) | | Ref | |
| Two | 119(28.4) | 20(32.7) | 0.142 | **1.77** | 0.83 - 3.77 |
| Three | 89(21.2) | 10(16.3) | 0.713 | **1.18** | 0.49 - 2.85 |
| Fourth | 48(11.4) | 5(8.1) | 0.873 | **1.09** | 0.37 - 3.27 |
| Fifth | 20(4.7) | 7(11.4) | **0.015** | **3.68** | 1.29 - 10.45 |
| More than five | 17(4.0) | 7(11.4) | **0.007** | **4.32** | 1.5 - 12.49 |
| Socioeconomic status | | | | | |
| Upper lower | 156(37.2) | 13(21.3) | | Ref | |
| Lower class | 263(62.7) | 48(78.6) | **0.017** | **2.19** | 1.15 - 4.17 |

**Table 4: Logistic regression analysis of factors affecting number of ANC check-up**

| Factors | >3 ANC check-up (n=37) | <3 ANC check-up (n=382) | P value | OR | 95% CI for OR |
|---|---|---|---|---|---|
| Age(years) | | | | | |
| <20 | 4(10.8%) | 43(11.2%) | | Ref | |
| 21-25 | 18(48.6%) | 136(35.6%) | 0.543 | 0.7 | 0.23 - 2.19 |
| 26-30 | 9(24.3%) | 137(35.8%) | 0.578 | 1.42 | 0.42 - 4.83 |
| 31-35 | 5(13.5%) | 48(12.5%) | 0.872 | 0.89 | 0.23 - 3.54 |
| 36-40 | 1(2.7%) | 18(4.7%) | 0.655 | 1.67 | 0.18 - 16.04 |
| Education | | | | | |
| Illiterate | 17(45.9%) | 127(33.2%) | | Ref | |
| Primary | 9(24.3%) | 151(39.5%) | 0.094 | 2.25 | 0.89 - 4.54 |
| Middle | 10(27.0%) | 88(23.0%) | 0.621 | 1.18 | 0.54 - 2.81 |
| High-school | 1(2.70%) | 16(4.1%) | 0.173 | 2.14 | 0.69 - 7.89 |
| Religion | | | | | |
| Hindu | 26(70.2%) | 220(57.5%) | | Ref | |
| Muslim | 11(29.7%) | 162(42.4%) | 0.139 | 1.74 | 0.84 - 3.63 |
| Type of Family | | | | | |
| Nuclear | 9(24.3%) | 141(36.9%) | | Ref | |
| Joint | 28(75.6%) | 241(63.0%) | 0.132 | 0.55 | 0.25 - 1.2 |
| Birth order | | | | | |
| One | 14(37.8%) | 112(29.3%) | | Ref | |
| Two | 9(24.3%) | 110(28.7%) | 0.344 | 1.53 | 0.64 - 3.68 |
| Three | 6(16.2%) | 83(21.7%) | 0.282 | 1.73 | 0.64 - 4.69 |
| Fourth | 6(16.2%) | 42(10.9%) | 0.797 | 0.88 | 0.32 - 2.43 |
| Fifth | 1(2.7%) | 19(4.9%) | 0.416 | 2.38 | 0.3 - 19.13 |
| More than five | 1(2.7%) | 16(4.1%) | 0.517 | 2 | 0.25 - 16.26 |
| Socioeconomic status | | | | | |
| Upper-lower | 14(37.8%) | 142(37.1%) | | Ref | |
| Lower class | 23(62.1%) | 240(62.8%) | 0.936 | 1.03 | 0.51 - 2.06 |

**Table 5: Logistic regression on predictors influencing utilization of TT immunization by RDW**

| Factors | Two dose of TT immunization (n=400) | One dose of TT immunization (n=19) | P Value | OR | 95% CI for OR |
|---|---|---|---|---|---|
| Age(years) | | | | | |
| <20 | 45(11.2%) | 2(10.5%) | Ref | | |
| 21-25 | 149(37.2%) | 7(36.8%) | 0.946 | 1.06 | 0.21 - 5.27 |
| 26-30 | 141(35.2%) | 5(26.3%) | 0.791 | 0.8 | 0.15 - 4.26 |
| 31-35 | 48(12.0%) | 3(15.7%) | 0.716 | 1.41 | 0.22 - 8.81 |
| 36-40 | 17(4.25%) | 2(10.5%) | 0.349 | 2.65 | 0.35 - 20.31 |
| Education | | | | | |
| Illiterate | 136(34.0%) | 8(42.1%) | Ref | | |
| Primary | 157(39.2%) | 3(15.7%) | 0.212 | 0.32 | 0.16 - 1.5 |
| Middle | 94(23.5%) | 4(21.0%) | 0.621 | 0.72 | 0.54 - 2.81 |
| High-school | 13(3.25%) | 4(21.0%) | 0.173 | 5.23 | 0.69 - 7.89 |
| Religion | | | Ref | | |
| Hindu | 237(59.2%) | 11(57.8%) | | | |
| Muslim | 163(40.7%) | 8(42.1%) | 0.907 | 1.06 | 0.42 - 2.69 |
| Type of Family | | | | | |
| Nuclear | 143(35.7%) | 7(36.8%) | Ref | | |
| Joint | 257(64.2%) | 12(63.1%) | 0.923 | 0.95 | 0.37 - 2.48 |
| Birth order | | | | | |
| One | 121(30.2%) | 5(26.3%) | Ref | | |
| Two | 117(29.2%) | 5(26.3%) | 0.958 | 1.03 | 0.29 - 3.67 |
| Three | 84(21.0%) | 4(21.0%) | 0.836 | 1.15 | 0.3 - 4.42 |
| Fourth | 44(11.0%) | 3(15.7%) | 0.505 | 1.65 | 0.38 - 7.19 |
| Fifth | 18(4.5%) | 1(5.2%) | 0.232 | 1.34 | 0.51 - 15.85 |
| More than five | 16(4.0%) | 1(5.2%) | 0.517 | 1.51 | 0.25 - 16.26 |
| Socioeconomic status | | | | | |
| Upper lower | 148(39.0%) | 8(42.1%) | Ref | | |
| Lower class | 252(63.0%) | 11(87.8%) | 0.653 | 0.81 | 0.32 - 2.05 |

**Table 6: Logistic regression analysis of factors affecting IFA consumption**

| Factors | Consumed IFA tablets (N=233) | Not consumed IF (n=73)A | P value | OR | 95% CI for OR |
|---|---|---|---|---|---|
| Age(years) | | | | | |
| <20 | 16(6.8%) | 16(21.9%) | | Ref | |
| 21-25 | 97(41.6%) | 22(30.1%) | **0** | 0.23 | 0.1 - 0.52 |
| 26-30 | 80(34.3%) | 20(27.3%) | **0.001** | 0.25 | 0.11 - 0.58 |
| 31-35 | 32(13.7%) | 9(12.3%) | **0.014** | 0.28 | 0.1 - 0.78 |
| 36-40 | 8(3.4%) | 6(8.2%) | 0.656 | 0.75 | 0.21 - 2.66 |
| Education | | | | | |
| Illiterate | 89(38.1%) | 22(30.1%) | | Ref | |
| Primary | 84(36.0%) | 25(34.2%) | 0.573 | 1.2 | 0.63 - 2.3 |
| Middle | 54(23.1%) | 23(31.5%) | 0.114 | 1.72 | 0.88 - 3.39 |
| High-school | 6(2.5%) | 3(4.1%) | 0.345 | 2.02 | 0.47 - 8.73 |
| Religion | | | | | |
| Hindu | 143(61.3%) | 46(63.0%) | | Ref | |
| Muslim | 90(38.6%) | 27(36.9%) | 0.801 | 0.93 | 0.54 - 1.61 |
| Type of Family | | | | | |
| Nuclear | 92(39.4%) | 22(30.1%) | | Ref | |
| Joint | 141(60.5%) | 51(69.8%) | 0.151 | 1.51 | 0.86 - 2.66 |
| Birth order | | | | | |
| One | 68(29.1%) | 25(34.2%) | | Ref | |
| Two | 68(29.1%) | 19(26.0%) | 0.432 | 0.76 | 0.38 - 1.51 |
| Three | 48(20.6%) | 11(15.0%) | 0.247 | 0.62 | 0.28 - 1.39 |
| Fourth | 29(12.4%) | 9(12.3%) | 0.705 | 0.84 | 0.35 - 2.03 |
| Fifth | 11(4.7%) | 5(6.8%) | 0.718 | 1.24 | 0.39 - 3.91 |
| More than five | 9(3.86%) | 4(5.4%) | 0.769 | 1.21 | 0.34 - 4.28 |
| Socioeconomic status | | | | | |
| Upper lower | 94(40.3%) | 21(28.7%) | | Ref | |
| Lower class | 139(59.6%) | 52(71.2%) | 0.076 | 1.68 | 0.95 - 2.96 |

Out of 419 RDW, there were 5% more chances of receiving two dose of TT in women between 21-25 years of age as compared to women less than 20 years of age and 20% less chances were observed in women of age group between 26-30 years. Among educated women, 67% less chances were seen for receiving two doses of TT in primary educated women and in the middle 27% while in high-school women five times more chances were seen for receiving two doses of TT. It was found that in Muslim religion RDW, there were 5% more chances to receive two doses of TT as compared to Hindu religion RDW. When we looked at the type of family, joint family was 4% behind nuclear family in receiving two doses of TT. In context to birth order, as birth-order was increasing chances for receiving two TT dose were also increasing except birth order five and more than five. In socioeconomic status it was found that in Class V (lower class), 19% less chances of receiving two TT doses was seen than in upper lower class of RDW. None of the predictor was found to have a significant association with utilization of ASHA services for TT immunization. (Table 5)

Out of 419 RDW, 306 RDW received IFA tablets but was consumed by only 233 (76.1%) RDW. While applying the logistic regression on factors affecting IFA consumption, as age was increasing chance of consuming IFA was decreasing with respect to reference category. (p value was found statistically significant) In category of education, as education of women was increasing, chances of consuming IFA were also increasing as compare to reference category. In religion, 6% less chance to consume IFA in Muslim women as compare to Hindu religion RDW. In type of family, 51% more chance were seen for consuming IFA tablets in joint family as compare to nuclear family of RDW. In birth order, 24% less chances of consuming IFA in birth-order two RDW but birth-order three, 37% less chances were there for IFA consumption. But further as birth-order were increased chances for consuming IFA tablets were more in fourth and fifth birth-order i.e. 23% and 20% respectively. In socioeconomic status, Class V (lower class), chances for IFA consumptions were 67% more than upper lower class of RDW. None of the predictors except age group were found to have a significant association with consumption of IFA tablets. (Table 6)

## DISCUSSION

Biosocial characteristics of Recently Delivered Women (RDW) (Table 1): A total of 480 RDW were interviewed. Predominantly the RDW belonged to age group of 21-25 years 178 (37.1%) followed by 26-30 years 163 (34.0%) in the present study. The findings of the present study were similar to the findings of Gogoi and Ahmed[8] where most of the RDW 86 (72%) were in the age group of 20-30 and Singh K.M[9] where most of the RDW 224 (64%) were in the age group of 25-29 years.

In the present study, 163 (34.0%) RDW were illiterate and only 17 (3.5%) RDW were educated up to primary level. Our findings were quite similar to the findings of Singh K.M[9] where majority of RDW 198 (56.6%) were illiterate and only 39 (11.1%) were high-school educated.

Most of the RDW 316 (65.8%) were from joint family in the present study but study done by Khan Z[10] in peri-urban slums of Aligarh where out of 92 mothers, only 36 (39.1%) were from joint family. This may be because of different setting of the study area.

Most of the RDW had birth order two 139 (29.0%) followed by one 138 (29.0%).The findings of our study is similar to the findings of the Gogoi and Ahmed[8] where out of 120 mothers, 48(40%) were primipara and 72 (60%) were multipara mothers.

Out of 480 RDW, more than half 280 (58.3%) women were from Hindu religion in our study. Our findings were similar to the findings of Haider et al[11] where out of 360 women, 285 (79.1%) women from Hindu religion.

In the present study, none of the RDW as per modified B.G. Prasad socio-economic class scale belonged to class I. Majority of RDW 311 (64.8%) belonged to class V followed by class IV 165 (34.4%). This is in accordance with the findings of previous study done by Singh K.M[9] where none of the RDW belonged to class I socioeconomic status. Majority of RDW 59.1% belonged to class IV households followed by class V.

Utilization of antenatal services by Recently Delivered Women (Table 2): In the present study majority 419 (87.3%) of the total RDW interviewed were registered for the current pregnancy. In-spite of having a goal of 100% antenatal registration, 61 (12.7%) RDW had not done antenatal registration.

In the present study while applying logistic regression analysis on factors affecting registration of pregnancy age in years, education, religion, type of family, birth order and socioeconomic status are the prime factors which affects antenatal registration of RDW. Significant association was found on religion, type of family, birth-order of five and more than five and socioeconomic status of RDW. (Table 3)

The findings of the present study are however, not in accordance with the previous DLHS III[12] where early registration is only 25.1% in Uttar Pradesh and in the study of Singh K.M.[9] where out of 350

RDW, early registration within 16 weeks was reported by 249 (71.1%) RDW. Mostly 255 (60.8%) women registered in second trimester followed by third trimester 145 (34.6%) and only 19 (4.5%) registered in first trimester in the present study. Our findings were similar to the findings of Metgud C.S[13] where out of 130 pregnant women, only 39 (30.00%) women had done registration in first trimester and 74 (56.93%) in 2nd trimester. Late registration in 3rd trimester was noted in 7 (5.38%) pregnant women.

Out of 480 RDW, 369(76.9%) had made two antenatal visits followed by three antenatal visits by 37(7.7%) and one visit by 13(2.7%) RDW and 61 (12.7%) RDW had made no visits. (Table 2) In the present study while applying logistic regression analysis on factors affecting number of ANC check-up, age in years, education, religion, birth order and socioeconomic status are the prime factors which affects number of ANC check-up of RDW. (Table 4)

On the other hand DLHS-III Uttar Pradesh[12] revealed that the mothers who had antenatal check-up in first trimester was 23.2% in rural and 35.4% in urban area of Uttar Pradesh and mothers who had three or more ANC was only 20.2% in rural and 31.3% in urban.

In the present study out of 419 women, 400 (95.5%) RDW received 2 doses of TT & 19 (4.5%) received one dose of TT. (Table 2) In the present study while applying logistic regression analysis on factors affecting TT immunization, age in years, education, religion and birth order are the prime factors which affects TT immunization of RDW. (Table 5)

Our study findings is similar to the findings of Dabade. K[14] where out of the 216 women, mostly 192 (88.9%) had received two doses of TT while 6 (2.8%) did not receive TT dose. But on the contrary, Singh J.P.[15] found in his study that out of 566 pregnant women, 307 (54.2%) pregnant females received 2 doses of Tetanus Toxoid or a Booster. 83 (14.7%) received partial-immunization while 176 (31.1%) were unimmunized.

Regarding IFA tablets in the present study, out of 419 women, 183 (43.7%) received 100 IFA tablets, 123 (29.3%) received <100 IFA and 113 (27.0%) did not received even a single tablet of IFA. But only 83 (27.1%) women consumed 100 IFA tablets. (Table 2) In the present study while applying logistic regression analysis on factors affecting IFA consumption education, type of family, birth order and socioeconomic status are the prime factors which affects IFA consumption of RDW. Significant association was found on age in years of recently delivered women. (Table 6)

On the contrary study done by Roy M.P[16] found that that out of 352 RDW, 294 (83.5%) women had received at least 100 IFA while only one third 130 (36.9%) consumed them. The findings are however not in accordance with Singh J.P[15] which reported that out of 566 pregnant women complete course of IFA intake was recorded for 559 (98.7%), while nearly 1% had partial and only nearly half percent had IFA intake of the antenatal females.

## CONCLUSION

Approximately 87% RDW had registered for ANC and most of them did so in the second and third trimesters. It needs to be emphasized here that early registration should be utilized for continuum of care and institutional delivery. The factors like Age, Education, Religion, Type of Family, Birth-order and Socioeconomic status of RDW significantly influenced in ANC service utilization.

## RECOMMENDATION

Increasing awareness among mothers about the early registration for pregnancy and further emphasizing the importance of ANC. Promotion of female literacy and empowerment are required to improve utilization of maternal health services. To improve effective utilization of ANC services, we need to bring behavior change communication along with effective monitoring and evaluation

## REFERENCE


1. Gogoi M, Unisa S, Kumar A. Utilization of Maternal Health Care Services and Reproductive Health Complications in Assam, India. Paper presented at: Annual meeting program of Population association of America; 2013 April 11; New Orleans, USA.
2. Park K. Park's Text book of Preventive and Social Medicine. 23nd ed. Jabalpur: M/s Banarsidas Bhanot; 2015. p. 523-528.
3. Ministry of Health & Family Welfare, Government of India. Guidelines for Antenatal Care and Skilled Attendance at Birth by ANMs/LHVs/SN, New-Delhi, India: 20th Dec 2016.
4. Jani YK, Shukla AA, Bala DV. Practices Related to pregnancy and child birth: a cross sectional study among women of Ahmedabad district. National Journal of Community Medicine. 2013; 4(3):381- 385.
5. Venkatesh RR, Umakanth AG, Yuvaraj J. Safe motherhood status in the urban slums of Davangere City. Indian J Community Med 2005; 30(1):6-8.
6. Rani M, Bonu S, Harvey S. Differentials in the quality of antenatal care in India. Int J Qual Health Care. 2008;20(1):62-71.
7. International Institute of Population Sciences (IIPS).National Family Health Survey, III. Uttar Pradesh (2005-2006).
8. Gogoi G, Ahmed FU. Effect of maternal nutritional status on the birth weight among women of tea tribe in Dibrugarh

district. Indian Journal of Community Health 2007 April; 32(2): 120-22.

9. Singh KM, Singh JV, Ahmad N, Kumari R, Khanna. Factors Influencing utilization of ASHA Services under NRHM in relation to maternal health in rural Lucknow. Indian Journal of Community Medicine 2010 Jul; 35(3): 414-19.
10. Khan Z, Mehnaz S, Khalique N, Ansari MA, Siddiqui AR. Poor Perinatal Care Practices in Urban Slums: Possible Role of Social Mobilization Networks. Indian Journal of Community Medicine 2009 April; 34(2): 102-07.
11. Haider S, Adhisih VS, Gupta S, Dhar N, Datta U, Menon S, et al. A rapid appraisal of SAHIYA (ASHA) in Jharkhand. Health and Population: Perspectives and Issues. 2008 April-June; 31(2): 80-84
12. District Level Household and Facility Survey 2007-08, Fact Sheets Uttar Pradesh. International Institute for Population Sciences, Mumbai. Available from http://www.rchiips.org/pdf/ rch3/state/India.pdf. Accessed on 10/06/2014.
13. Metgud CS, Katti SM, Mallapur MD, Wantamutte AS. Utilization patterns of antenatal services among pregnant women: a longitudinal study in rural area of North Karnataka. Al Ameen Journal Medical Science 2009; 2(1):58-62.
14. Dabade K, Dabade J, Kuldeep S, Madhekar NS, Khadilkar HA. A Study of utilization of maternal health care services in urban slums of Aurangabad city, Maharashtra. Journal of Evolution of Medical and Dental Sciences 2013 December 23; 2(51): 9907-15.
15. Singh JP, Kariwal P, Gupta SB, Shrotriya VP, Singh PN. Utilization of antenatal care services in a rural area of Bareilly. International J. of Healthcare and Biomedical Research 2014 April; 2(3): 120-26.
16. Roy MP, Mohan U, Singh SK, Singh VK, Srivastava AK. Socio-Economic Determinants of adherence to Iron and Folic Acid tablets among rural ante-natal mothers in Lucknow, India. National Journal of Community Medicine 2013 July-Sept; 4(3): 386-391.