

Antenatal care utilization in recently delivered rural females: A hospital-based cross-sectional study

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ABSTRACT

Background: Adequate antenatal care (ANC) services hold the key for the health of both the pregnant mother and her newborn. Utilization of ANC services is of paramount importance for reducing maternal mortality in India where maternal mortality rate remains a cause of concern despite several measures undertaken in this regard. **Objectives:** The study aimed to assess the utilization of ANC services in the recently delivered rural females. **Materials and Methods:** The current study was a hospital-based cross-sectional study. A predesigned and pretested questionnaire was administered to the rural females who had delivered in tertiary care teaching hospital in Jammu, Jammu and Kashmir, India. The data were tabulated, analyzed, and presented in proportions. Chi-square was the test of significance with $P < 0.05$ considered statistically significant. **Results:** During the study, 310 rural recently delivered females were interviewed. One-third of them were receiving ANC from subhealth centre and 58.70% of the total had registered before 12 weeks of gestation. Only one-third had taken >100 iron-folic acid tablets during pregnancy. Among various variables, age, religion, literacy, type of family, and occupation of mother were found to be statistically significant in relation to ANC visits ($P < 0.05$). **Conclusion:** Despite best efforts of Government of India in context to maternal and child health services in the rural areas of the country, the results show that there remain a few areas of concern. The need is to upgrade the quality of services as well as public health infrastructure, especially in the vast hinterlands of the nation.


KEY WORDS: Antenatal Care; Utilization Pattern; Recently Married Rural Females

INTRODUCTION

Maternal mortality continues to be a major health problem. About 830 women die from pregnancy or pregnancy-related complications around the world every day. It was estimated that in 2015, roughly 303,000 women died during and following pregnancy and childbirth.^[1] Most of these deaths occurred in low-income countries.^[2] About 88–98% of these

maternal deaths could be prevented by proper care and handling during pregnancy and labor.^[3]

Maternal care includes care during pregnancy and should begin from the early stages of pregnancy. Antenatal care (ANC) refers to pregnancy-related care, which can be provided by a doctor, an auxiliary nurse midwife, or other healthcare professional. Women can access ANC services either by visiting a healthcare center where such services are provided or from home visits by health care workers. As per the World Health Organization recommendations, there should be minimum of four ANC visits for lowering the risk during pregnancy. ANC services are considered to be the key elements in the prolong healthcare delivery system of a country, which aim at a healthy society. Key elements of ideal ANC include monitoring a pregnancy for

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signs of complications, identifying high-risk pregnancies, detect and treat preexisting and concurrent problems of pregnancy, and provide counseling and advice on diet during pregnancy, personal hygiene, delivery care, postnatal care, care of newborn, and related issues. Providing ANC during pregnancy is one of the most important factors in reducing maternal mortality and morbidity.^[4] Furthermore, routine antenatal visits may raise the awareness about the need for care at delivery and give women and their families, familiarity with healthcare facilities that enable them to seek help more efficiently during time of crisis.^[5]

ANC has a tremendous impact on the health of both mother and child. In India, the Reproductive and Child Health Programme aims at providing antenatal checkups which include weight and blood pressure check, immunization, and iron and folic acid prophylaxis.^[6] In India, these services are provided by the government through the health centers at various levels as well as through home visits by health care workers. The former gives an idea about the voluntary utilization of services by mothers and later about quality aspect of the services. However, ANC services are not uniformly distributed in the society.^[7] The gap between the rich and poor underserved communities is increasing.^[8,9] Furthermore, there is sharp distinction between different states and between rural and urban areas in the same state. This could be related to several factors, an important, one being non-utilization or underutilization of maternal healthcare services, especially among the marginalized population due to inaccessibility, affordability, illiteracy, social, and cultural factors which have significant relationship as a determinant of maternal and child health in the general population.^[10,11]

Knowledge, awareness, and motivation regarding the utilization of ANC services are very much essential to improve the scenario of maternal health. While going through the literature, the authors observed paucity of studies on utilization of ANC by recently delivered females (RDFs). Therefore, the present study was conducted to assess the utilization of ANC services in the recently delivered rural females.

MATERIALS AND METHODS

The present cross-sectional study was conducted in a tertiary care teaching hospital in Jammu city of Jammu and Kashmir state, India. Due permission was sought from Institutional Ethics Committee, Government Medical College, Jammu, before the commencement of study. The study subjects for the present study were rural RDFs in the Gynae-Obs ward of the tertiary care teaching hospital.

The study was conducted from September to November 2017 over a period of 3 months. During the study period, the authors used to visit the delivery wards on alternate day of the week. On each working day, a minimum of 10 rural RDFs

were interviewed. The purpose of the study was explained to each of them and informed verbal consent taken before the initiation of the interview. The females not giving consent and not willing to cooperate were excluded.

The authors designed a questionnaire for the current study with help from literature review. The questionnaire was pilot tested on a sample of 20 RDFs who did not form the part of the study. The final questionnaire was modified in view of results from pilot study before it was finally put to use. The questionnaire consisted of sociodemographic information such as age, parity, age at marriage, type of family, literacy level, occupation, and mode of delivery. After that, information regarding utilization of ANC services such as registration, ANC visits, tetanus immunization, and intake of iron-folic acid (IFA) tablets was elicited.

The data thus collected was tabulated, analyzed, and expressed in percentage for categorical variables. Chi-square was used as test of significance and values <0.05 were considered statistically significant.

RESULTS

During the course of study period, a total of 310 rural RDFs were interviewed. As per their age distribution, 73.22% of them were in 20–29 years age group and 76.12% of the respondents belonged to Hindu religion. About 82% of the respondents had one or more than one living children and 15% of them had got married before the age of 18 years. Around 2/3rd of the respondents were living in a nuclear family and half of them had literacy level of higher secondary and above. Majority (71.61%) of them were housewives and 87.74% of them had undergone normal delivery [Tables 1].

The results regarding utilization of ANC services revealed that 34.5% and 27.41% of the respondents had got ANC from subhealth centre and Community Health Centre (CHC), respectively. 58.70% of the respondents had got registered before 12 weeks into pregnancy and 78.06% of them had ≥ 4 ANC visits. 94.83% of the respondents were found to be fully immunized. Only one-third of the respondents had intake of more than 100 IFA tablets. The utilization of other ANC services such as hemoglobin estimation and urine examination was found to be adequately received by the respondents [Table 2].

When comparison was drawn between the profiles of women who went for four ANC visits and who did not statistically significant difference was found with age group, religion, literacy status, type of family, and occupation of the mother ($P < 0.05$). On the other hand, no statistically significant difference was found between variables such as number of living children, age at marriage, and mode of delivery in relation to antenatal visits ($P > 0.05$) [Table 3].

Table 1: Sociodemographic profile of recently delivered rural females ($n=310$)

| Sociodemographic variable | <i>n</i> (%) |
|----------------------------|--------------|
| Age group | |
| <19 years | 28 (9.03) |
| 20–29 years | 227 (73.22) |
| ≥30 years | 55 (17.74) |
| Religion | |
| Hindu | 236 (76.12) |
| Muslim | 74 (23.87) |
| Education status of mother | |
| Illiterate | 33 (10.64) |
| Primary | 47 (15.16) |
| Secondary | 76 (24.51) |
| Higher secondary and above | 154 (49.67) |
| Type of family | |
| Nuclear | 204 (65.80) |
| Joint | 106 (34.19) |
| Number of living children | |
| 0 | 56 (18.06) |
| ≥1 | 254 (81.93) |
| Age at marriage | |
| <18 years | 46 (14.83) |
| >18 years | 264 (85.16) |
| Occupation of mother | |
| Housewife | 222 (71.61) |
| Working | 88 (28.38) |
| Mode of delivery | |
| Normal | 272 (87.74) |
| Cesarean section | 38 (12.25) |

Table 2: Utilization of ANC services by rural RDFs ($n=310$)

| Utilization of ANC services | <i>n</i> (%) |
|--------------------------------|--------------|
| ANC conducted at | |
| Subcenter | 107 (34.51) |
| Primary health centre | 45 (14.51) |
| CHC | 85 (27.41) |
| District hospital | 37 (11.93) |
| Medical college hospital | 24 (07.74) |
| Private practitioner | 12 (03.87) |
| Registration done at | |
| <12 weeks | 182 (58.70) |
| 12–24 weeks | 128 (41.29) |
| >24 weeks | 00 (00.00) |
| Antenatal visits | |
| <4 | 68 (21.93) |
| ≤4 | 242 (78.06) |
| Tetanus toxoid immunization | |
| Partially immunized | 16 (05.16) |
| Fully immunized | 294 (94.83) |
| IFA tablet intake | |
| <100 | 210 (67.74) |
| >100 | 100 (32.25) |
| Other ANC received | |
| Height and weight recording | |
| Yes | 262 (84.51) |
| No | 48 (15.48) |
| Blood pressure measurement | |
| Yes | 290 (93.54) |
| No | 20 (6.45) |
| Hb estimation | |
| Yes | 288 (92.90) |
| No | 22 (07.09) |
| Urine examination | |
| Yes | 206 (66.45) |
| No | 104 (33.54) |
| Abdomen and breast examination | |
| Yes | 159 (51.29) |
| No | 151 (48.70) |

ANC: Adequate antenatal care, RDFs: Recently delivered females, Hb: Hemoglobin, CHC: Community health centre, IFA: Iron-folic acid

DISCUSSION

Antenatal care is meant to manage the pregnancy, to detect and treat the complications if any and to promote good health among the beneficiaries. Majority (76.12%) of the respondents were Hindu in religion which is in line with the results reported by Kakati *et al.*^[12] Literacy level of one-fourth of the respondents was up to secondary level which was similar to the results reported by Gupta *et al.*^[13] and Srivastava *et al.*^[14] Only 10.64% of the respondents were illiterate in contrast to 17.6% reported by Kakati *et al.*^[12]

About one-third of the respondents (34.5%) were utilizing ANC services from the subhealth centre probably due to better access. CHC was the source of ANC services for 27.41% of the respondents and it was in agreement with the results reported by Roy *et al.*^[15] from a rural area of Lucknow. At CHC level, a gynecologist is available most of the time in the outpatient department along with availability of laboratory services and this might be the reason for the respondents preferring a CHC visit. Regarding registration of the respondents, 58.70% had

got themselves registered before 12 weeks into pregnancy which is congruent to the findings by Kakati *et al.*^[12] where 53% of the respondents had registered in the first trimester. Similarly, the study conducted by Mumbare and Rege^[16] reported that 63.81% had registered their pregnancy in the first trimester. In contrast, Gupta *et al.*^[17] in an earlier study in the same state reported that only 9.9% of the respondents had got themselves registered in the first trimester. More than

Table 3: Association of various sociodemographic variables with ANC visits

| Sociodemographic variable | Number of ANC visits | | P value |
|----------------------------|----------------------|----|---------|
| | >4 | <4 | |
| Age group | | | |
| <19 years | 24 | 04 | 0.00 |
| 20–29 years | 192 | 35 | |
| ≥30 years | 26 | 29 | |
| Religion | | | |
| Hindu | 202 | 34 | 0.00 |
| Muslim | 40 | 34 | |
| Education status of mother | | | |
| Illiterate | 11 | 22 | 0.00 |
| Primary | 23 | 24 | |
| Secondary | 56 | 20 | |
| Higher secondary and above | 152 | 02 | |
| Type of family | | | |
| Nuclear | 191 | 13 | 0.00 |
| Joint | 51 | 55 | |
| Number of living children | | | |
| 0 | 42 | 14 | 0.54 |
| ≥1 | 200 | 54 | |
| Age at marriage | | | |
| <18 years | 40 | 06 | 0.11 |
| >18 years | 202 | 62 | |
| Occupation of mother | | | |
| Housewife | 164 | 58 | 0.00 |
| Working | 78 | 10 | |
| Mode of delivery | | | |
| Normal | 211 | 61 | 0.57 |
| Cesarean section | 31 | 07 | |

ANC: Adequate antenatal care

three-fourth of the respondents (78.06%) had availed four or more antenatal visits. Almost on the similar lines, Kakati *et al.*^[12] reported 68.3% of the respondents making more than three visits to avail ANC services. Bhimani *et al.*^[18] reported that 59% of the women had visited 3 or more times for the utilization of ANC. The effect of early registration has already been documented on better utilization of ANC. It explains the higher tendency of early registered females to avail four or more number of ANC visits. Hence, encouraging early registration is likely to ensure better maternal health in the long run. National Family Health Survey 4 data show 58.6% had antenatal check-up in the first trimester and 51.2% of women had at least four ANC visits.^[19] The results have further revealed that 94.83% of the respondents had received full tetanus immunization. In this context, Bhimani *et al.*^[18] and Dubey *et al.*^[20] in their studies reported 82% and 75% of the respondents fully immunized with two doses of tetanus toxoid in their respective studies. Intake of IFA tablets among

the respondents was found to be very low as only one-third of them had taken more than 100 tablets during their antenatal period. Bhimani *et al.*^[18] and Bhandari *et al.*^[21] reported a higher rate of 48% of the respondents who had consumed full course of IFA tablets. However, in the study conducted by Kakati *et al.*,^[12] 71.6% of the respondents were found to have consumed full course of IFA tablets. Among the various variables in relation to ANC visits, age groups, religion, literacy status, type of family, and occupation of the mother were found to be statistically significant in the current study. Lack of perception about importance of ANC usually results in suboptimal utilization, but literacy, by imparting awareness and empowerment encourages optimal utilization of maternal health services. The results are in consonance with Gupta *et al.*^[17] who also reported age, literacy status, socioeconomic status, and type of family as statistically significant in association with utilization of ANC services. Kakati *et al.*^[12] also reported that the utilization of ANC was significantly associated with age, religion, place, and mode of delivery as well as parity. Singh *et al.*^[22] reported that pregnant women with secondary education were 66% more likely to receive adequate ANC compared to their illiterate counterparts.

Strengths and Limitations

The literature review revealed that no such study has been conducted in the RDFs, especially the rural ones on the utilization of ANC services. However, since this was a cross-sectional study conducted in a tertiary care teaching hospital, it lacks generalization.

CONCLUSION

Since the time of antenatal registration is dependent on traditional customs in rural areas, reinforcement of information, education, and communication activities remains the key to motivate them to register as early as possible. Although antenatal services in the country have been strengthened and expanded over the decades since independence, their utilization in rural areas is still a cause of concern.

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