

## Research Article

# Assessment of utilization of antenatal care services by mothers attending immunization sessions at a primary health centre in Mysore district, Karnataka, India

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## ABSTRACT

**Background:** Health status of any community depends on the care provided to its vulnerable population like women and children. Good care during pregnancy assures an uneventful childbirth and healthy mother and child. Hence this study was conducted to assess utilization of antenatal care (ANC) services by mothers attending immunization clinics in a primary health centre (PHC) and subcentres.

**Methods:** In this facility based cross sectional study, 200 mothers who delivered between July 2012 to June 2013 were interviewed using a questionnaire. Details regarding antenatal checkups were noted down from Thyai card.

**Results:** Full ANC services were utilized by 93% women. All mothers had registered pregnancy and most within 1st trimester. 61% were staying in village more than 10 km away from a PHC. 42.5% of mothers had married before 18 years and 54.5% had their first pregnancy between 15 to 20 years.

**Conclusions:** Awareness and utilization of ANC services was high in the study area. Child marriage and teen age pregnancies were considerably high.

**Keywords:** Antenatal care, Service utilization, Mother and child health, Rural Mysore

## INTRODUCTION

Healthy mother gives birth to a healthy baby and helps in building a healthy population. Considering the important role of mother's health, fifth Millennium Development Goal (MDG 5) aims at improving maternal health with the targets of reducing Maternal Mortality Ratio (MMR) by 75% of 2009 rate by 2015 and achieving universal access to reproductive health services.<sup>1</sup>

MMR is still high in developing countries even though there is an overall decrease in MMR worldwide. Almost all (99%) of these deaths occur in developing countries.<sup>2</sup> It is estimated that in 2010 MMR in developing countries was 15 times more than that of developed countries. The

highest maternal mortality ratios can be witnessed in India where approximately 20% of all maternal deaths take place.<sup>3</sup>

Complications due to pregnancy and child bearing are among the leading causes of death and disability among women of child bearing age in developing countries. It is estimated that for every maternal death occurring, there are 20 other women getting disabilities due to complications of pregnancy and childbirth.<sup>4</sup> Every year at least half a million women and girls needlessly die as a result of complications during pregnancy, childbirth or the 6 weeks following delivery.<sup>1</sup> Most maternal deaths could be prevented if women had access to appropriate health care during pregnancy, childbirth and immediately

afterwards. Antenatal care among pregnant women is one of the effective strategy in reducing maternal morbidity and mortality.

In rural areas, institutions run by the Government such as Sub-centres, PHCs, and CHCs as well as private institutions provide these services. Unfortunately, many women are deprived from the health care services due to lack of knowledge about available services, ignorance and poverty.

Mothers who do not received good quality Antenatal care (ANC) are known to be at more risk of having low birth weight babies and infant mortality rate.<sup>5</sup>

However in developing countries antenatal care is still low; only 51% of pregnant women attend the recommended four visits or more.<sup>6</sup> In India more than one in five mothers received no antenatal care. Almost two-thirds of women in Bihar did not receive any antenatal care.<sup>7</sup>

As per DLHS-3 mothers who had full ANC check-ups in Karnataka are 51.1% and in rural area of Karnataka 48.7%.<sup>8</sup>

Therefore, the present study was carried out in a rural PHC with an objective to assess the utilization level of ANC services and to find out the socio-demographic and other factors associated with it.

## METHODS

### *Type of study*

Facility based Cross sectional study, carried out at immunization clinic of a randomly selected PHC and its Subcentres.

Study period was six months (1<sup>st</sup> August 2013 to 31<sup>st</sup> January 2014).

### *Study population*

Women who had delivered between 1<sup>st</sup> July 2012- 31<sup>st</sup> June 2013 and came on the immunization day for their children during the study period were included in this study.

### *Exclusion criteria*

- Mothers who were not permanent residents of the villages under Hadinaru PHC
- Who were not willing to participate.

### *Estimation of sample size*

Utilization of antenatal services in rural areas as per NFHS-3 is 49 %. Assuming same coverage with 15%

allowable error, required minimum sample size was 185 mothers. Totally 200 mothers were included in the study.

### *Sampling method*

Out of the two field practice areas attached to the department, one was randomly chosen by lottery method.

In the selected PHC, participants were chosen by consecutive sampling methods till the desired sample size was met.

### *Data collection*

A pretested semi-structured questionnaire including the variables of socio-demographic profile and major factors affecting utilization of ANC services was used in the study. The mothers who had delivered between 1<sup>st</sup> July 2012 to 31<sup>st</sup> June 2013, and came for immunization of their children were interviewed and required information on antenatal care was collected. Information from maternity tracking document (Thayi Card) was noted down wherever available.

In all cases mother was the main respondent as there were no maternal deaths. At the time of interview help of other family members (Husband and mother in law) was also utilized to gather the information.

### *Statistical analysis*

Data was analyzed by obtaining rates and proportions. Chi-square test was used to find the significance of difference at 5% type 1 error. Analysis was done using SPSS version 20 software.

Ethical clearance was obtained for the study by institutional ethical committee before starting the study.

## RESULTS

Totally 200 mothers were interviewed during the study period. Out of these 200 mothers, 177 (88.5%) were in 20-34 years age group. Teenage pregnancies were 109 (54%). 177 (88.5%) were housewives and 23 (11.5%) working mothers (maximum were coolie workers).

169 (84.5%) women were literates. 151 (75.5%) husbands were literates. 160 (80%) mothers were staying in joint family. Most of the population belonged to class III (45.3%) and class IV (36%) according to revised B.G. Prasad's classification. Childhood marriage is still a bothering finding of our study as 42.5% of mother had married before 18 years of age.

Almost all (98.5%) mothers had done the registration of pregnancy in first trimester and only 1.5% had done in 2<sup>nd</sup> trimester. 123 (61.5%) mothers were staying >10 km away from PHC.

**Table 1: Distribution of study variables among the study population. (N=200).**

Variable	Frequency	Percentage
<b>Age of the study subjects</b>		
15-19	21	10.5
20-24	123	61.5
25-34	54	27
35&above	02	01
<b>Occupation of the mother</b>		
Housewife	177	88.5
Working	23	11.5
<b>Education of the mother</b>		
Illiterate	31	15.5
Primary school	53	26.5
Middle High school	25	12.5
High school	64	32
PUC	19	9.5
<b>Type of family</b>		
Nuclear	38	19
Joint	160	80
Three generation	02	01
<b>Socioeconomic status</b>		
Class I (Upper)	02	01
Class II (Upper middle)	28	14
Class III (Lower middle)	91	45.3
Class IV (Upper lower)	72	36
Class V (Lower)	07	3.5
<b>Age at first pregnancy</b>		
<20yrs	109	54.5
20-25	82	41
26-30	07	3.5
>30	02	01
<b>Personal habits</b>		
Nil	171	85.5
Tobacco chewing	16	08
Betel leaf	13	06.5
<b>Distance from PHC</b>		
<5km	28	14
5-9 km	49	24.5
>10km	123	61.5
<b>Number of ANC visits</b>		
3	19	9.5
4	106	53
5	53	26.6
>5	22	10.9
<b>High risk pregnancy</b>		
Yes	68	34
No	132	66

Only 82 (41%) mothers knew about the danger signs of pregnancy. From them, 40.24% mothers told fever, 26.84% mothers told bleeding per vagina, 21.95% mothers told swelling of lower limbs and 10.97% mothers told leaking membrane were the danger signs. Half of the mothers in study population had their first

child before 20 years of age. 41% conceived between 20-25 years and 3.5% between 26-30years.

90% mothers had undergone more than 3 ANC check-ups. All women had taken TT injection and IFA tablets. 188(94%) mothers had consumed more than 100 IFA tablets during pregnancy. Women who were not taking IFA tablets regularly were due to vomiting (58.33%) and abdominal discomfort (41.67%).

28% mothers were anemic during their pregnancy. From 56 anemic mothers 11 (19.6%) had mild anemia where 45 (80.4%) had moderate anemia. There were no severe anemic mothers. Majority of women (61.5%) had gained 6-9 kg of weight during pregnancy and 18% had gained less than 6kgs. 54% women knew about family welfare services and 76.5% knew about benefits of regular ANC visits. 65.5% mother received the benefits of Janani Suraksha Yojana (JSY), 58.5% from Prashuti arike and 61.5% mother had received Madilu kit during delivery.

Among 200 subjects, 186 (93%) mother had received full ANC services (Registration of pregnancy in 1<sup>st</sup> trimester, more than 3 antenatal visits, TT2/Booster dose injection, 100 or more IFA tablet taken). Upper Casts, middle SES and shorter distance from the PHC had statistically significant higher completeness of ANC.

## DISCUSSION

In the present study 186(93%) mothers had received full ANC services. A cross-sectional study done by Sachin S Mumbare, Rekha Rege in tribal area of Nashik District (Maharashtra) in 2011 presented that about 71.90% of women had received full antenatal services.<sup>9</sup> Another study from rural Mysore by Kavitha Patel, in 2013 also observed high rate (94.95%) of utilization of full antenatal services during their pregnancy.<sup>10</sup>

100% registration of pregnancy with 98.5% early registrations in the study area is consistent with study from rural community of Pondicherry (100% registration of pregnancy in 2010) and rural north Karnataka (C. S. Metgud in 2009 revealed that 92.31%).<sup>11</sup> But only 59.4% registrations in first trimester in Pondicherry and 30% in North Karnataka suggest improved awareness (84.5% maternal literacy), access and utilization of services in the study area.<sup>11,12</sup> 90% women had more than three antenatal visits in the study area. A Comparative study done in TamilNadu by P. R. Rejoice revealed that 96.8% of the women made at least three antenatal visits in Tamil Nadu while Karnataka it was 80.5%.<sup>13</sup> Scenario in North India is worrying as seen in rural areas of Aligarh by M. Athar Ansari that 72.1% of currently pregnant women and 59.7% recently delivered women did not have any antenatal checkup.<sup>14</sup>

Present study revealed that all women had received TT injection and maximum (95%) consumed IFA (>100) tablets during pregnancy. Though other studies also

reported high coverage of TT injection, IFA consumption was inadequate. Study conducted in Pondicherry revealed that 75.3% mother received more than 100 IFA tablets tribal Maharashtra represented that 86% mothers had received 100 IFA tablets during pregnancy.<sup>9,12</sup>

In the present study during the antenatal checkups, it was found that all women were weighed, blood pressure measured, blood sample taken, abdominal examination and ultrasound done. While there was 37.5% women whose height measurement was not done. It showed that 74.5% had done more than two ultrasound and 12.5% had done only once during pregnancy. All of these measurements and tests are part of essential obstetric care or are required for monitoring high-risk pregnancies.

Though maternal education did not have statistically significant impact on ANC utilization in our study, study done in Uttarakhand in 2011 revealed that mother education level has positive effect on using full ANC.<sup>15</sup> Highly educated women are significantly 5 times more likely to receive antenatal care as compared to women who do not have a single year of education.<sup>16</sup>

80% mothers were staying in joint family in the study area. Though its association with ANC service utilization was not statistically significant, study from EAG states revealed that women from joint family were 2.27 times more likely to use the services than nuclear family.<sup>16</sup>

The ANC utilization is significantly higher in women belonging to Class III and Class IV. Contrasting observations were reported by many studies where full ANC was significantly higher among pregnant women belonging to SES class I and II,<sup>11</sup> and houses with richest wealth index.<sup>13</sup> Observation in our study could be because of limited representation from upper SES. As upper SES mothers would have visited private clinics for immunization of their kids.

In this study 10.5% women were aged between 15-19 years. As child marriage is still practiced in the study area (42.5%), these teen age pregnancies were observed.

Upper caste mothers utilized ANC services more than backward caste. Study done in Kerala and EAG states showed that women of Scheduled caste and tribe were having low utilization of ANC.<sup>16,17</sup>

In this study 14% mother were staying under 5 km distance and 61.5% women are staying more than 10 km away from primary health centre. Studies done in rural north Karnataka showed that women who live nearby <6 km were 3.91 times more likely to use the service.<sup>11</sup>

In this study 34% mothers belong to high risk group. Among them 28% women were anemic and 6% belong to other complications like abortion, still birth. Women having pregnancy related problems and delivery related complications had utilized full antenatal care.<sup>18</sup>

Study done in EAG state showed that women who have experienced still birth and abortion were more likely to receive at least three antenatal visits.<sup>16</sup>

## CONCLUSION

Awareness regarding the antenatal care, availability, accessibility and utilization of the antenatal care services was above the national average in the study area. 42.5% child marriages and nearly half teenage pregnancies were observed in the study population.

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