

## **A study on factors responsible for utilization of antenatal maternal health services under NRHM, in rural field practice area of S. N. Medical college, Bagalkot**

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### **Abstract**

**Background:** Mother and child in a community constitute vulnerable group or special risk group, pregnancy and childbirth are special events in a women's life. In India, the utilization of basic maternal health services has remained poor in spite of increase in public and private expenditure on the provision of advanced health care.

**Objectives:** To assess the utilization of antenatal maternal health services under NRHM program in Shirura rural field practice area of S. N. Medical College Bagalkot. To assess the factors responsible for utilisation of antenatal Maternal health Services.

**Materials and Methods:** The cross sectional study was conducted in rural field practice area of S. Nijalingappa Medical College, Bagalkot. The number of postnatal mothers interviewed was 302. Postnatal mothers who were residing in the rural area during their antenatal period and who were within 3rd month of postnatal period were included.

**Results:** Among the 302 mothers interviewed, 50.3% were between 19-23 years of age and 47% belonged to Class IV socioeconomic status. About 98.7% mothers were registered their pregnancy out of which 79.1% registered in the 1st trimester. Mothers with > 4 antenatal visits was 67%, acceptance of inj TT (98.7%) and IFA tablet consumption was only 45.7%. There was significant association between socioeconomic status, age at conception and parity with full ANC coverage. There was no statistical significance between age, religion, type of family, husbands education, mothers education, husbands occupation, mothers occupation with full ANC package.

**Conclusion:** Overall utilization of antenatal services by the study population is satisfactory when compared to national indicators and this positive work should be encouraged and continued with more community awareness and participation.

**Key Words:** Utilization, Antenatal services, Intranatal services, Postnatal services, IFA

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## **Introduction**

Mother and child in a community constitute vulnerable group or special risk group, pregnancy and childbirth are special events in a women's life. But during this period they are more vulnerable to disease and death[1]. In India women of child bearing age (15-45 years) constitute about 32.2% of the total population. Thus, mothers form major consumers of the health care services at large.

Mother has a special role in family. Health of families and communities are embedded to the health of mothers. Mother's health at the time of conception is vital to have healthy baby and safe delivery [1]. It in turn helps to build-up a healthy and prosperous nation. But safe motherhood is still a dream in India as well as in third world countries.

Most of the pregnant women in developing countries live where poverty, illiteracy, mal-nutrition, poor sanitation, gender bias, unequal feeding practices, religion taboo and lack of availability of medical facilities render them prone to health hazards which are preventable [2].

The interventions that make motherhood safe are well known and the resources needed are obtainable. The necessary services are neither sophisticated nor very expensive, and reducing maternal and under five mortality is one of the cost effective strategies available in the area of public health[3].

India contributes to 26% of the global burden of maternal deaths with nearly 1,36,000 women dying annually [4] due to causes related to pregnancy and childbirth. Many of these deaths could have been avoided if the pregnant women had sought full antenatal and timely delivery care[4].

The maternal mortality of India according to Sample Registry System 2010-12 was 178 per 100,000 live births, and MMR of Karnataka was 178 per 100,000 live births [5] and that of

Bagalkot was 375 per 100,000 live births [6].

Since, the utilization of maternal health services ultimately comes down to the community level in which women live, it is of key importance to know the perspective of these women. So, understanding these factors at the community level is of paramount importance. If these factors are correctly identified and rectified, than the program efforts and interventions can be still more enhanced.

Therefore, keeping this in view, this study was undertaken to assess the factors responsible for utilization of antenatal maternal health services under NRHM in rural field practice area of S. N. Medical College Bagalkot.

### **Objectives of the study**

1. To assess the utilization of antenatal maternal health services under NRHM program in Shirur a rural field practice area of S. N. Medical College Bagalkot.
2. To assess the factors responsible for utilisation of antenatal Maternal health Services.

### **Material and Methods:**

#### **Study Area:**

The present study was undertaken in the village of Shirur, part of Bagalkot district, Karnatakastate is a field practice area under Department of Community Medicine of S. Nijalingappa Medical College, Bagalkot, which is providing preventive, promotive, curative and rehabilitative health services.

#### **Study Population:**

The study population comprised of postnatal mothers residing in the rural field practice area of S. Nijalingappa Medical College, Bagalkot, Karnataka. It comprises of all mothers who delivered three months prior to start of the study and who had delivered during the course of the study. The study was restricted only to mothers who had delivered within the last three months (which was the last birth) this was

stipulated so as to minimize recall bias and to avoid the mix up of responses with the earlier deliveries, if any. They were recruited by a door to door enumeration using ANM registers and Anganwadi records were used to identify those mothers who have been missed during enumeration.

**Inclusion Criteria:**

Postnatal mothers who were residing in the study area during their antenatal period and who were in their 3rd month postnatal period.

**Exclusion Criteria:**

- Post natal mothers who were not willing to give consent were excluded.
- Postnatal mothers not available even after 3 visits.

**Study Type:**

Community based - Cross sectional study

**Study Duration:** 1<sup>st</sup> January 2013 to 31<sup>st</sup> October 2014

**Sample Size:**

Sample size was calculated using the formula

$$Z = \frac{3.84 \times p \times q}{i^2}$$

Based on the previous study done by Venkatesh et al [7], the prevalence of complete utilization of maternal services was 35.9%. At 5% significance with 15% allowable error, sample size was calculated to be 306. Four postnatal mothers, who were not available even after 3 visits were excluded for the study. So the total sample was 302.

**Results and discussion**

**Table 1. Showing details of Socio demographic profile.**

Age (in years)	Frequency	Percent
<= 18	7	2.3
19 – 23	152	50.3

24 – 28	121	40.1
29 – 33	19	6.3
34+	3	1.0
<b>Total</b>	<b>302</b>	<b>100</b>
<b>Religion</b>		
Hindu	283	93.7
Muslim	19	6.3
<b>Total</b>	<b>302</b>	<b>100</b>
<b>Type of family</b>		
Joint family	108	35.7
Nuclear family	194	64.3
<b>Total</b>	<b>302</b>	<b>100</b>
<b>Socio-economic class (Modified B. G. Prasad Classification)</b>		
Class I	8	2.6
Class II	28	9.3
Class III	73	24.1
Class IV	136	45
Class V	57	19
<b>Total</b>	<b>302</b>	<b>100</b>

- The present study revealed that, majority (50.3%) of mothers were in the age group of 19-23 years, 93.7% were Hindus, and literacy status of mothers and their husbands was 63.2% and 67.9% respectively. Most of the mother's 64.3% lived in nuclear families while, 35.7% in joint families. Majority of the mothers were housewives 76.8% and 23.2% were working, around half of them belong to Class IV 45% socioeconomic status according to Modified B G Prasad classification.

**Table 2: Showing utilization of Antenatal Services**

Nischaya Kit utilization	243 (80.4%)
Registration of pregnancy	298 (98.7%)
Early registration (12 weeks)	241 (79.8%)

Number of antenatal checkups	201 (67.2%)
>4 ANC	99 (32.8%)
<4 ANC	
100 IFA tablet consumption	138 (45.7%)
TT immunization	298 (98.7%)
Full ANC Package	181 (60%)

Nischaya Kit was utilized by 80% of mothers. 98.7% (298) of mothers had done antenatal registration. 45.7% of registered 79.8% (241) mothers had registration during 1<sup>st</sup> trimester. 98.7% (298) mothers had received diphtheria toxoid injection. 45.7% (138) mothers received 61-100 IFA. 67.2% (201) mothers had >4 ANC checkups and 60% (181) mothers had utilized full antenatal care. In a study done by Goel S et al [9] that, only 15.6 % of beneficiaries were aware about Nischaya scheme and coverage was very less when compared to our study. The present study is in accordance with DLHS 4 Bagalkot[9], except for full ANC checkups i.e. mothers who had full antenatal care visits was 94.8% whereas in DLHS 4 44.6%, who received TT Immunization was 98.5%. The reason for this increase in number of antenatal checkups was increased from 3 to 4. According to study done by Shrivatsava et al [10] A cross-sectional comparison revealed in India, 32% of women received full ANC, whereas it was 75% for Tamil Nadu, 43% for Gujrat, 32% for Orissa and 25% for Punjab. Safe delivery practices revealed 82% for Tamil Nadu, 56% for Gujrat, 33% for Orissa and 55% for Punjab. In our study the full ANC

coverage was less when compared to Tamil Nadu state.

**Table: 3 Association of mother's socio-demographic profile with utilization of Full ANC services.**

Parameter		Total		P-value	Significance
		Partial Full ANC	Complete Full ANC		
<b>Age</b>	<= 18	3(42.8%)	4(57.1%)	0.254	NS
	19 – 23	99(65.1%)	53(34.9%)		
	24 – 28	89(73.6%)	32(26.4%)		
	29 – 33	15(78.9%)	4(21.1%)		
	34+	2(66.7%)	1(33.3%)		
<b>Religion</b>	Hindu	194(68.6%)	89(31.4%)	0.640	NS
	Muslim	14(73.7%)	5(26.3%)		
<b>Type of family</b>	Nuclear	73(75.3%)	24(24.7%)	0.99	NS
	Joint family	135(65.9%)	76(34.1%)		
<b>Husband education</b>	Literate	136(66.3%)	69(33.7%)	1.67	NS
	Illiterate	72(74.2%)	25(25.8%)		
<b>Mothers education</b>	Literate	126(66%)	65(34%)	0.153	NS
	Illiterate	82(73.9%)	29(26.1%)		
<b>Husbands Occupation</b>	Employed	192(68.1%)	90(31.9%)	0.266	NS
	Unemployed	16(80%)	4(20%)		
<b>Mothers Occupation</b>	Employed	48(68.6%)	22(31.4%)	0.95	NS
	Housewife	160(69%)	72(31%)		
<b>SES</b>	Class I	3(37.5%)	5(62.5%)	0.017	S
	Class II	15(51.7%)	14(48.3%)		
	Class III	44(60.3%)	29(39.7%)		
	Class IV	102(74.5%)	35(25.5%)		
	Class V	40(72.7%)	15(27.3%)		
<b>Age at conception</b>	<= 18	57(74%)	20(26%)	0.022	S
	19-29	151(68%)	71(32%)		
	30+	0(0%)	3(100%)		
<b>Parity</b>	Primi	67(57.3%)	50(42.7%)	0.001	S
	Multi	136(75.6%)	44(24.4%)		
	Grand Multi	5(100%)	0(0%)		
	Total	208(68.9%)	94(31.1%)		

There was significant association between socioeconomic status, age at conception and parity with full ANC coverage. There was no statistical significance between age, religion, type of family, husbands education, mothers education, husbands occupation, mothers occupation with full ANC package.

In contrast to our study, a study conducted in Belgaum[11] in the year 2010, the socio demographic factors like Literacy status, occupation, type of family, socioeconomic status and parity were found to influence the pattern of utilization.

In a study done by Satischandra et.al[12] revealed that unadjusted Odds of occupation of the women, womens and her husbands education, socioeconomic status were significant in the utilization of full ANC package. Adjusted Odds showed womens education was the significant determinant.

**Table 4: Association of utilization of individual services with utilization of Full ANC services.**

Parameter	Total		P-value	Significance	
	Partial ANC	Full ANC			
Nischaya Kit	Yes	172(69.9%)	20(30.1%)	0.411	NS
	No	36(64.3%)	20(35.7%)		
Registration of pregnancy	Yes	205(68.8%)	93(31.2%)	0.790	NS
	No	4(100%)	0(0%)		
Early registration of pregnancy	<= 3 months	158(65.6%)	83(34.4%)	0.045	S
	3-6 months	47(82.5%)	10(17.5%)		
	>6 months	3(75%)	1(25%)		
No. of ANC	<= 3	76(76.8%)	23(23.2%)	0.039	S
	4+	132(65%)	71(35%)		
TT immunization	Yes	204(68.9%)	94(31.1%)	0.096	S
	No	4(100%)	0(0%)		
Total		208(68.9%)	94(31.1%)		

There was significant association between early registrations of pregnancy, number of ANC checkup, TT immunization with full ANC package. This shows the early the registration of pregnancy more the full antenatal utilization of maternal health services.

**Conclusion**

In India, in spite of RCH services under NRHM being created, strengthened and expanded over the years, their output in terms of utilization particularly, in rural areas is still limited. The present study findings suggest that majority of the women are aware of the available health services especially new scheme like Nischaya Kit for free and early detection of pregnancy under NRHM. Overall utilization of antenatal services by the study population is satisfactory when compared to national indicators and this positive work should be encouraged and continued with more community awareness and participation.

**Recommendations**

- 1) Promotion of female literacy and empowerment are required to prevent early marriages and to improve the utilization of maternal health services because education is the best determinant in improving health status of mothers.
- 2) To increase awareness among women about the Nischaya Pregnancy Kit by mass media, pamphlets and advertisements.
- 3) Those who register early tend to utilize the services early and completely. So more stress is needed in this aspect to motivate women

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