

## Estimation of Utilization of Maternal Health Care Services in Rural Bangalore

### Narasimha B.C.

Assistant Professor, Department of Community Medicine, Kodagu Institute of Medical Sciences, Madikeri, Kodagu District, Karnataka 571201, India.

### Ravish K.S.

Assistant Professor, Dept. of Community Medicine, Bangalore Medical College & Research Institute, Bengaluru, Karnataka 560002, India.

### Ranganath T.S.

Professor & HOD, Dept. of Community Medicine, Bangalore Medical College & Research Institute, Bengaluru, Karnataka 560002, India.

### Navyasri S.

Post Graduate, Dept. of Community Medicine, Bangalore Medical College & Research Institute, Bengaluru, Karnataka 560002, India.

### Sharvanan E.

Associate Professor, Department of Community Medicine, Kodagu Institute of Medical Sciences, Madikere, Kodagu District, Karnataka 571201, India

---

---

### Abstract

*Introduction:* Women of reproductive age have been defined by World Health Organization (WHO) as those between 15-49 years. The primary aim of antenatal care is to achieve, at the end of pregnancy, a healthy mother and a healthy baby. To provide universal access to equitable, affordable and quality maternal health care, and also to bring about an improvement in the health status of the pregnant women. In this perspective the current study was undertaken to assess the magnitude of utilization of maternal health care services. *Aim:* To assess the magnitude of utilization of maternal health care services. *Method:* 160 lactating women were interviewed by house to house visit by simple random technique and were assessed as per the study objective by semi-structured questionnaire. *Results:* As per our study 48.2% of the mothers were in the age group of 18 - 22 years and 12.50% of mothers were illiterates whereas 13.125% of the fathers were illiterates. Majority of the mothers were 96.3% (154) home makers. As per the number of antenatal visit the mean visits was 6.57. 100% were aware of JSY scheme and 51.4% had received cash incentive. *Conclusion:* It is commendable to note that, all the mothers (100%) had registered their pregnancies. Probably due effective work done by health care workers at gross route level. Out of 160 deliveries, all were institutional deliveries in the study area and this may be due to the various state and central government programmes and schemes like Janani Suraksha Yojana.

**Keywords:** Antenatal; Utilization; Janani Suraksha Yojana; Institution.

---

---

### Introduction

Women of reproductive age has been defined by World Health Organization (WHO) as those between

---

---

**Corresponding Author:** Narasimha B.C., Assistant Professor, Department of Community Medicine, Kodagu Institute of Medical Sciences, Madikeri, Kodagu District, Karnataka, Pin Code: 571201.

E-mail: [narasimhabc@yahoo.co.in](mailto:narasimhabc@yahoo.co.in)

Received on June 09, 2017

Accepted on June 28, 2017

15-49 years, and these constitute more than one fifth of the world's population and are repeatedly exposed to the risk of pregnancy and child bearing. Maternal health refers to the health of the mother during pregnancy, childbirth and the postpartum period [1]. The current Maternal Mortality Ratio (MMR) of India is 167 per lakh live births (Sample Registration System data) [2]. The Millennium Development Goals 5 - focuses to improve maternal health [3] (MDG 5 WHO).

The primary aim of antenatal care is to achieve, at the end of pregnancy, a healthy mother and a healthy

baby [3]. Key components of Antenatal Care (ANC) include the communication of health-related information, screening for risk factors, the prevention and management of complications, and planning for delivery in a safe place by skilled attendants, tetanus toxoid immunization, iron supplementation, preparation for transportation to a delivery site [4].

In the last decade, as per the National data, health indicators including utilization of antenatal care services were as poor as 60% in rural India [5]. Keeping in view the gap between the target and reality, Janani Suraksha Yojana under National Rural Health Mission (NRHM) was launched in April 2005, to improve the rural health care delivery system and health status of the people. Under supervision of Auxillary Nurse Midwives (ANM) and physicians at primary health care level, ASHAs were planned to play the role of a connecting bridge between community and first level government health sector. These groups of health care providers, along with Anganwadi workers (AWW), build the base line of rural health services in the country [5]. They, under the Mission, seek to provide universal access to equitable, affordable and quality maternal health care, as well as to bring about an improvement in the health status of the pregnant women belonging to underprivileged sections of the society.

In this perspective the current study was undertaken to assess the magnitude of utilization of maternal health care services and our secondary objective was also to assess the awareness of JSY scheme and its utilization among the beneficiaries.

## Materials and Method

### *Study Design*

Community Based Cross Sectional Study.

### *Study Period*

October 2013 to September 2014.

### *Study Area*

Rural field practice area (Primary Health Centre, Hesarghatta) of Bangalore Medical College and Research Institute (BMCRI). It has a total population of 48024 [6]. Rural health centre (RHC) is located at a distance of around 28 km from BMCRI. There are 5 private nursing homes and 27 Anganwadi centres located in this area.

### *Study Population*

All Postnatal mothers who were residing in the Hesarghatta were included in the study.

### *Sample Size*

A sample of 160 postnatal mothers were interviewed, at 5% significance level with 20% allowable error based on study done by C.S. Metgud, where the prevalence of complete utilization of maternal services was 39.52% [7].

### *Sampling Method*

Under Primary health centre of Hesarghatta, there are 4 sub-centres and 27 Anganwadi centres. Out of these, 3 Anganwadi centres were selected from each sub-centre by simple random sampling method. All the deliveries in the selected Anganwadi centres during the study period were used for data collection till the desired sample size reached.

### *Data Collection*

Data collection was started after obtaining clearance from the institutional ethical committee and after taking informed verbal consent. By using pre-tested semi structured questionnaire data was collected by house-to-house survey by interviewing postnatal mothers and also by observing their records.

### *Statistical Analysis*

Data was entered onto a computerized Excel (Microsoft Excel 2007) spread sheet and analysed using Epi info version 3.4.1. Descriptive analysis was done (means, proportions and percentages) for demographic details. Categorical variables were compared using Chi square test. p value of < 0.05 was considered significant. The results have been presented in the form of tables, figures, graphs and diagrams wherever necessary.

Socio-Economic status was classified using the modified BG Prasad's classification [8].

JSY eligibility criteria was followed [9].

## Results

In our study 48.2% of the mothers were in the age group of 18 – 22 years and only 6.2% were above 28 yrs. The mean age of mothers was 23.15 years with standard deviation of 3.1.

In our study population 47.5% (n=76) of mothers had education till high school level; whereas the fathers 41.25% (n=66) had education till high school level. Only 12.50% of mothers were illiterates whereas 13.125% of the fathers were illiterates. From this we can conclude that educational status of females was good and majority of the mothers were 96.3% (154) home makers & remaining 3.7% were working mothers.

Since one of the eligibility criteria for JSY, is belonging to SC/ST families, hence the information on category was considered. From the above table it is evident that 28.7% (46), 7.5% (12) and 63.7% (102) belongs to SC, ST and Other categories respectively. 36.2% of mothers were eligible for Janani Suraksha Yojana by category.

As per the categorisation of participants according to modified BG Prasad socio-economic classification scale, 73.1%, 21.3% and 5.6% belongs to class I, Class II and Class III respectively.

Our study reveals that 55.6% of the study population were Below Poverty Line (BPL) card holders.

Majority (50.6%) of the respondents belonged to joint family, followed by 41.3% and 8.1% belonging to nuclear families and three generation families respectively.

The mean age of marriage among mother's was 19.81 years. Majority of the mothers (83.8%) were married between the age group of 18-22 years. About 7.5% of mothers were married before the age of marriage that is below 18 years.

According to the distribution of mothers as per their parity. Around 48.1% of the mothers were of second parity and 9.4% were of third parity.

Regarding the utilization of antenatal services, the mean number of antenatal visits was 6.57 and 91.2% of the mothers had  $\geq 4$  antenatal visits, hence only 8.8% of the mothers had failed to take recommended minimum four antenatal visits. It was remarkable to

**Table 1:** Distribution of Mothers according to Socio-Demographic Characteristics

Variables	Number of Mothers	Percentage
<b>Mothers Age (in years)</b>		
18 - 22	77	48.2%
23 - 27	73	45.6%
>28	10	6.2%
<b>Occupation</b>		
Home makers	154	96.3%
Other work	6	3.7%
<b>Category</b>		
SC	46	28.8%
ST	12	7.5%
Others	102	63.7%
<b>Socio-Economic Status (Modified BG Prasad)</b>		
Class I	117	73.1%
Class II	34	21.3%
Class III	9	5.6%
<b>Families having BPL card</b>		
Yes	89	55.6%
No	71	44.4%
<b>Type of family</b>		
Nuclear	66	41.3%
Joint	81	50.6%
Three Generation	13	8.1%
<b>Age of Marriage</b>		
Below 18 years	12	7.5%
18- 22 years	134	83.8%
23-27 years	13	8.1%
Above 27 years	1	0.6%
<b>Parity</b>		
1	68	42.5%
2	77	48.1%
3	15	9.4%

note that all the mothers (100%) had registered their pregnancy.

Majority of mothers (81.9%) had appropriately immunized to 2 doses of tetanus toxoid, while 18.1% had one dose.

Among the mothers who had received Iron Folic Acid (IFA) tablets only 48.7% had consumed 100 IFA tablets i.e. 46.3% had consumed less than 100 tablets.

The results of the study show that 100% were institutional deliveries, as against country's average of 41% according to National Family Health Survey (NFHS-III).

In our study they were 156 (97.5%) women aged 19 years and above. As per the criteria for beneficiaries

of JSY, 109 (68.1%) women were eligible for JSY and 100% awareness was present regarding the scheme. Among these eligible mothers only 56 (51.4%) women have received cash incentive under JSY. The reason is that not availability of funds to issue cheque in time.

In comparison of literacy status and awareness of services, irrespective of the literacy status majority of the women were aware about ASHA worker, 24/7 hospital and JSY scheme. Same is shown by Fisher's Exact Test, that there is no statistical association between the literacy status and others ( $p = 0.531$ ,  $p = 0.235$ ,  $p = 0.799$ ). From this we can say that health workers (ANM and ASHA) are working effectively in our study settings.

**Table 2:** Distribution of mothers according Maternal Child Health (MCH) care during pregnancy

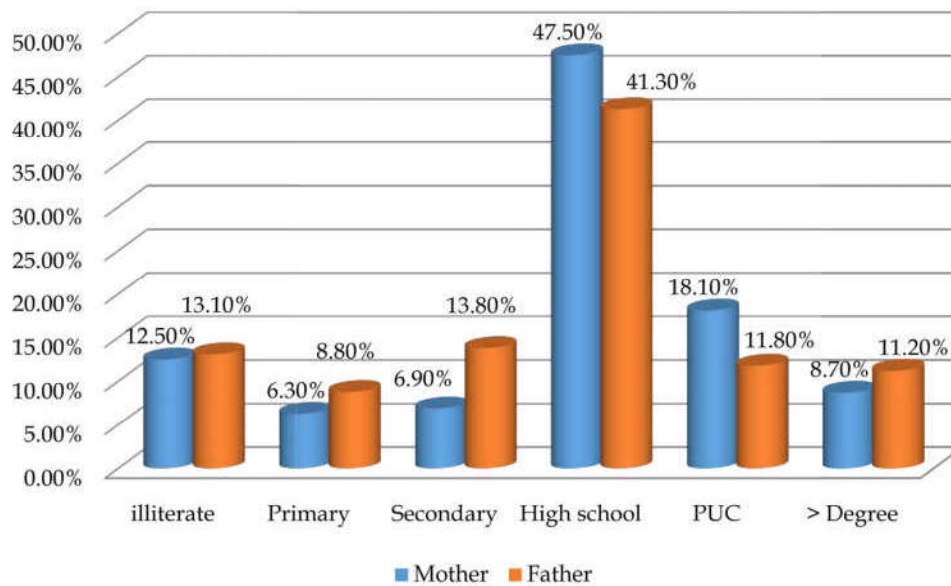
Variables	Number of Mothers	Percentage
<b>Antenatal visits</b>		
<4 ANC visits	14	8.8%
4 & above ANC visits	146	91.2%
<b>Number of TT doses taken</b>		
1	29	18.1%
2	131	81.9%
<b>Number of iron and folic acid tablets taken</b>		
Below 100	74	46.3%
100	78	48.7%
Above 100*	8	5%
*for therapeutic purpose in mothers having anaemia		
<b>Delivery practices (Place of delivery)</b>		
Home	Nil	Nil
Institutional	160	100%
<b>Delivery conducted by</b>		
Trained personnel	160	100%
<b>Nature of delivery</b>		
LSCS	42	26.2%
Normal deliveries	118	73.8%

**Table 3:** Distribution of mothers according to JSY eligibility

Caste	BPL card holding families		Total
	Yes	No	
SC	29	17	46
ST	9	3	12
Others	51	51	102
Total	89	71	160

**Table 4:** Relation between the Literarcy status of the mother and their awareness about MCH care

Awareness about		Illiterate	Literate	Total	p valvue (Fisher's Exact Test)
ASHA worker	Yes	18	115	133	$p = 0.531$
	No	2	25	27	
24/7 hospitals	Yes	19	139	158	$p = 0.235$
	No	1	1	2	
JSY	Yes	13	96	109	$p = 0.799$
	No	7	44	51	



Graph 1: Distribution of parents according to educational status

## Discussion

In our study 48.2% of the mothers were in the age group of 18 - 22 years and majority were literates. From this we can conclude that educational status of females was good and majority of the mothers were 96.3% (154) home makers. 36.2% of mothers were eligible for Janani Suraksha Yojana by category. 73.1% belongs to class I, Our study reveals that 55.6% of the study population were BPL card holders.

Regarding the utilization of antenatal services, the mean number of antenatal visits was 6.57 and it is remarkable to note that all the mothers (100%) had registered their pregnancy. Majority of mothers (81.9%) had appropriately immunized to 2 doses of tetanus toxoid and 48.7% had consumed 100 IFA tablets.

The results of the study show that 100% were institutional deliveries, as against country's average of 41% according to NFHS-III. As per the criteria for beneficiaries of JSY, 109 (68.1%) women were eligible for JSY and 100% awareness was present regarding the scheme. Among these eligible mothers only 56 (51.4%) women have received cash incentive under JSY. The reason is that not availability of funds to issue cheque in time. In comparison of literacy status and awareness of services, there was no statistical association between the literacy status and others ( $p = 0.531$ ,  $p = 0.235$ ,  $p = 0.799$ ). From this we can say that health workers (ANM and ASHA) are working

effectively in our study settings as compared to other studies listed below.

A study done by Gandhi JS et al. showed that all the mothers under study had adequate ANC check-ups. All the mothers had received Iron supplements during ANC but 72.8% of them completed it for 3 months. Majority (99.2%) had institutional delivery [10].

In a study on Newborn Health among Tribes of Madhya Pradesh by Singh N et al. the condition of antenatal care among tribal women was horrible, as about 56 percent of scheduled tribal women did not receive any ANC services and 48 percent of them did not receive any TT injection. About two-third tribal women (64 percent) did not receive any IFA tablets or syrups. Nearly 91 percent of deliveries among scheduled tribes were conducted at home as compared to 80 percent in the state. Untrained personnel assist about 70 percent of total and 86 percent of scheduled tribes women's deliveries in the state. 90 percent women did not receive any post-natal visit by health worker. Despite Government's various initiatives, the utilization of antenatal, natal and postnatal services is very low. More than one-third women do not receive any ANC services during their pregnancies [11].

In a study by Puri S et al. it was observed that, 93.8% mothers had minimum of 3 antenatal visits compared to urban slums where only 61.9% were registered. Immunization by tetanus toxoid was 90% in 70%. 86.7% mothers took iron supplementation (minimum for 3 months) [12].

## Conclusion

It is commendable to note that, all the mothers (100%) had registered their pregnancies. Probably due effective work done by health care workers at gross route level. All (100%) mothers had received IFA tablets but around half (46.3%) of them were confused about the number of tablets they had to consume. Most of them were multiparous, majority of the mothers were immunized with TT appropriately.

Out of 160 deliveries, all were institutional deliveries in the study area and this may be due to the various state and central government programmes and schemes like Janani Suraksha Yojana

We have seen better antenatal care, institutional deliveries. To sustain and improve the results, the existing various initiatives such 24/7 services, first referral unit services, 108 ambulance services, JSY, JSSK, Prasoothiaaraike, Madilu kit, NJSSK etc to be retained and strengthened.

## Reference

1. Dairo MO, woyokun K. Factors affecting the utilization of antenatal care services in Ibadan, Nigeria. *bjpm*. 2011;12(1).
2. [Internet]. 2005 [cited 7 May 2016]. Available from: [http://WHO-MDG\(2005\):Improve maternal health](http://WHO-MDG(2005):Improve%20maternal%20health). Available from [www.who.int](http://www.who.int).
3. Park K. *Parks text book of Preventive and Social medicine*. 23rd ed. India: Banarasidas Bhanot Publishers; 2015.p.527 & 686.
4. Begum N, Rahman M, Rahman M, Nayan S, Zinia S, Khan S. Utilization of antenatal care services in a selected rural area in Bangladesh. *Northern Int Med Coll J*. 2015;6(1):25.
5. Roy M, Mohan U, Singh S, Singh V, Srivastava A. Determinants of utilization of antenatal care services in rural Lucknow, India. *J Fam Med Primary Care*. 2013;2(1):55.
6. Records of Primary Health Centre, Hesarghatta.
7. C S M. Utilization Patterns of Antenatal Services among Pregnant Women: A Longitudinal Study in Rural Area of North Karnataka. [Internet]. 2009 [cited 6 May 2016]. Available from: <http://www.alameen-medical.org/ajms/ArticlePDFs/AJMS3.58-62.pdf>.
8. Dudala SR, Reddy KAK, Prabhu GR. Prasad 's socio-economic status classification- An update for 2014 Abstract/ : [Internet]. *Int J Res Health Sci*. 2014.p. 875-8. Available from: <http://www.ijrhs.com/issues.php?val=Volume2&iss=Issue3>
9. Govt. of Karnataka. Janani Suraksha Yojana, karhfw [Internet]. 2015 [cited 2015 Sep 8]. p. 1. Available from: [http://karhfw.gov.in/NRHM/PrJanani Suraksha Yojana.aspx](http://karhfw.gov.in/NRHM/PrJanani%20Suraksha%20Yojana.aspx).
10. Gandhi SJ, Godara N, Modi A, Kantharia SL. Newborn care practices of mothers in rural areas of Navsari district. *Int J Med Sci Public Heal* [Internet]. 2014;3(7):1. Available from: <http://www.scopemed.org/?mno=163468>.
11. Singh N. Newborn Health Among Tribes of Madhya Pradesh-an Overview. *RMRCT Updat* [Internet]. 2007;4(1):1-12. Available from: <http://www.icmr.nic.in/000519/updatevol4no1.pdf>.
12. Puri S, Bhatia V, Sharma M, Swami H, Magnat C. Comparison of Prevalent Newborn Rearing Practices, In Urban And Slum Population Of Chandigarh, Ut, India. *Internet J Pediatr Neonatol*. 2007;9(1):25-7.