A study on health status of pregnant women and their health care utilization in rural area of Karnataka, India

Devaraj P Patage[1*], Bheemayya Badesab[2]

[1]Post-graduate Student,[2]Professor and HOD, Department of Community Medicine, SS Institute of Medical Sciences and Research Centre, Davangere-577005, Karnataka, INDIA.
Email: devarajpatage4@gmail.com, bheemayyabadesab@gmail.com

Abstract

Background: Pregnancy is a physiological condition but great care should be taken during this period as it involves the life of both mother and growing fetus in the womb. Worldwide annually, an estimated 515,000 women die of causes related to pregnancy and childbirth; of which 99% occur in developing countries. In developing regions of world Maternal Mortality Ratio (MMR) averages to 450 per lakh population.[1] Maternal health and pregnancy outcome is influenced by various, socio-economic, cultural factors and also availability, accessibility of health care services.[2] **Objectives:** To study the health status of pregnant women and their health care utilization in rural area of Karnataka, India. **Materials and Methods:** This community based cross-sectional study was carried out among the antenatal women residing in the rural field practice area of medical college in Karnataka, India, for a duration of 1 year from December 2013 to November 2014. Complete enumeration of all antenatal women who are nearing term was conducted to collect relevant information using predesigned semi-structured questionnaire and followed by antenatal examination. **Results:** Out of the 257 study participant almost one fifth have bad obstetrics history, one fourth consanguineously married, one third had hyper emesis which directly or indirectly increased the health risk to mother and unborn child. Anemia is the most common factors influencing the health of antenatal women, low pregnancy intervals and pre-eclampsia was also noted. **Conclusion**: There is improvement in health status of pregnant women and antenatal care utilization by them in rural areas of Davangere after implementation of NRHM. Problem of anemia and pre-eclampsia still persist even after good number of antenatal visits.
Keywords: Anemia, Antenatal care, Healthcare utilization, Health status, Pregnancy.

[*]**Address for Correspondence:**
Dr. Devaraj P. Patage, Post-graduate Student, Department of Community Medicine, SS Institute of Medical Sciences and Research Centre, Davangere-577005, Karnataka, INDIA.
Email: devarajpatage4@gmail.com

Access this article online	
Quick Response Code:	Website: www.statperson.com
	DOI: ---

INTRODUCTION

Pregnancy is a physiological condition but great care should be taken during this period as it involves the life of both mother and growing fetus in the womb. Worldwide annually, an estimated 5,15,000 women die of causes related to pregnancy and childbirth; of which 99% occur in developing countries. In developing regions of world Maternal Mortality Ratio (MMR) averages to 450 per lakh population.[1] A multifactorial inter-relationship exists between the environment in which pregnant mothers live and her health.[2] Health of pregnant women is influenced by availability, accessibility of health care services. There was a demonstrated need for prenatal care and referral because 10-12% of women presented with a poor obstetric history and a significant number with anemia, bleeding, hypertension, toxemia, and urinary tract infections during this pregnancy.[3] One of the important millennium development goals set in the year 2000 was three-quarters reduction in maternal and infant mortality rates by the year 2015. The main goal of National Rural Health Mission (NRHM) launched by Government of

India in 2005 is to reduce MMR. Government statistics shows that after the implementation of the NRHM there is considerable decrease in MMR and increase in health care utilization by antenatal women in India and also in Karnataka. Hence this study intended to study the present health status of pregnant women and antenatal care utilization by them in rural areas of Davangere. This study attempted throws light on ground realities of health status pregnant women and antenatal care services in rural area, which would help the healthcare providers to strengthen maternal and child health care services.

MATERIALS AND METHODS

This community based, cross-sectional study was carried out in Lokikere Primary health Centre (PHC) area, the rural the field practice areas of SS Institute of Medical Sciences and Research Centre (SSIMS and RC) Davangere which provides services for 17,489 populations. It was noted from previous postnatal records that there will be approximately 20 to 22 deliveries occurring per month in the PHC Lokikere area. Thus the total number of deliveries expected during the study period was approximately 240 to 260. All antenatal women residing in the PHC area and expected to delivery during the period of December 2013 to November 2014 (1 year duration) were considered for our study. To know

health service utilization during the entire antenatal period, women nearing delivery were selected using EDD (expected date of delivery) list available at the PHC. All the health staff and the study group were briefed regarding the purpose of the study and the confidentiality was maintained. The data was be collected by direct interview with each antenatal case by administration of a pre-tested, semi-structured questionnaire at their residence. A total of 269 antenatal women who were registered in the PHC area were approached, of which 12 refused to participate for various reasons, hence information for the study was collected from 257 antenatal women and analyzed. The questionnaire consisted of basic information, socio demographic, obstetric and medical history. Antenatal registers maintained at the PHC and antenatal cards possessed by the pregnant women were used for validation information provided. Complete health check-up was done including measurement of blood pressure and weight gain. Information about hemoglobin was obtained from the antenatal cards at the time of visit.

RESULTS

Among total of 257 antenatal residing in the rural field practice area of SS Institute of Medical Sciences and Research Centre, Davangere, participated in the study.

Table 1: Age at first pregnancy

Parameter	Frequency	Percentage (%)
Age groups (in years)		
≤ 20	130	50.6
21 to 25	104	40.5
≥ 26	23	8.9
Education		
Literate	234	91.1
Not-literate	23	8.9
Occupation		
Homemaker	238	92.6
Laborer	13	5.1
Office work	6	2.3
Socio-economic status		
Upper class	14	5.4
Upper middle class	45	17.5
Middle class	68	26.5
Lower middle class	86	33.5
Lower class	44	17.1
Total	**257**	**100.0**

Majority of the study subjects had first pregnancy in the age group of less than 20 years (50.6%), while 40.5% belonged to the age group 21-25 years and 8.9% were more than 26 years of age. Literacy status showed that 91.1% of antenatal women were Literate and 8.9% are Non-literate. Occupational status of study population showed that majority of the study subjects were home

makers (92.6%), while 5.1% worked as laborers and 2.3% did office work during their antenatal period. According to modified BG Prasad socio-economic status classification majority of study participants belonged to lower middle class (33.5) followed by 26.5% to middle class and 17.5% to upper middle class.

Table 2: Descriptive statistics of study population

Parameter	Mean (± SD)
Age of antenatal women (in years)	23.45 (3.17)
Height of antenatal women (cm)	153.2 (4.56)
Weight gain during pregnancy (kg)	9.35 (2.46)
No. of hours of work	3.54 (2.95)
No. of hours of sleep	9.41 (1.35)
Birth interval	2.85 (0.10)

Descriptive statistics of study population shows that mean age of antenatal woman participated in the study was 23.45 years and their mean height was 153.2cms, mean number hours of work and sleep are 3.54% and 9.41% respectively. Birth interval was 2.85 years and weight gain during pregnancy was 9.35 kg.

Table 3: Health status based on history

Parameter		Frequency	Percentage (%)
Gravida	< 5	251	97.67
	≥ 5	6	2.33
Hyperemesis	Present	83	32.3
	Absent	174	67.7
Birth interval	< 3 years	133	51.75
	≥ 3 years	124	48.25
Total		**257**	**100.0**

This table shows the risk factor distribution based on history, majority of the study subjects had less than five pregnancies (97.67%) while 2.33% had more than five pregnancies (grand multipara). Hyperemesis was seen in 32.3%. About 51.75% of the study subjects had interval of less than three years between two consecutive pregnancies while 48.25% had an interval of more than three years, which is the minimum birth interval advised. This indicates that greater than 50% of antenatal women bearing pregnancy at the cost of their health

Table 4: health status based on examination and investigations

Risk factor		Frequency	Percentage (%)
Pallor	Present	96	37.4
	Absent	161	62.6
Pedal edema	Present	27	10.5
	Absent	230	89.5
Thyroid problem	Present	1	0.40
	Absent	256	99.60
Hemoglobin (gm %)	< 7.0 (severe anemia)	12	4.70
	7.0 to 9.9 (moderate anemia)	114	44.35
	10.0 to 10.9 (mild anemia)	87	33.85
	>11.0 (normal)	44	17.10
Total		**257**	**100.0**

On examination of study participants 37.4%, 10.5%, 0.40%, had pallor, pedal edema and thyroid problem respectively. On hemoglobin examination 17.10% were non-anemic where as 33.85%, 44.35%, 4.7% had mild, moderate and severe anemia respectively. According to WHO-1993, CDC1990, hemoglobin level below 10 gm/dl at any time during pregnancy is considered anemia. Hence mild anemia in general population is considered as normal in pregnancy.

Table 5: Health care services availed during ante-natal period

Ante-natal services		Frequency	Percentage (%)
Ante-natal visits taken	< 4	24	9.3
	≥ 4	233	90.7
Iron and Folic acid tablets (IFA) taken	< 100	109	42.4
	≥ 100	148	57.6
Completed two doses of TT immunization	No	30	11.6
	Yes	227	88.4
Height measurement done	No	180	70.1

		Yes	77	29.9
Weight recorded		No	44	17.1
		Yes	213	82.9
Blood pressure recorded		No	28	10.9
		Yes	229	89.1
Total			**257**	**100.0**

The table shows the services availed during ante-natal period. Majority of the study subjects (90.7%) had taken more than 4 antenatal visits which are minimum required during the pregnancy according to who. Majority of the study subjects (57.6%) had taken more than 100 if a tablets. About 90.4% had taken 2 doses of tetanus toxoid injections.

DISCUSSION

Among the 257 participants in our study 77.1% were belonged to middle and lower middle socio-economic class. In the study conducted by Velankar et al[4] around 72% mothers belonged to Below Poverty Line families. This indicating that majority of antenatal women in rural dependent on government health care services and will not be able to take treatment at private health facility. **Age of antenatal women:** Descriptive statistics of our study population showed that the mean age was 23.45±3.17 years. In the study conducted by Velankar et al[4] the mean maternal age at time of delivery was 22.9±3.8 years (Range: 16 - 40 years), **Height of antenatal women:** In the present study the mean height was found to be 153.2±4.56 cm. Similar findings in mean height were noted by Phaneendrarao RS et al[5] (154.2±5.2) and Solanki et al [6] (153.7±5.9). In the study conducted by Velankar et al [4] the mean height was 153.7±5.9cm. A study conducted by Ghosh et al[7] documented that mothers who were less than 140 cm in Height were more prone to have LBW. This indicating majority of study participants had normal height and age. **Weight gain during pregnancy:** In the present study women gained a weight of 9.35 kg (±2.46 kg). In India scenario women are expected to increase in weight of around 10 kg during pregnancy. A study conducted by Gourangi et al[8] showed 88% mother had pre pregnancy weight of 45 kg. Subjects with better pre-pregnancy weight had corresponding favorable total weight gain resulting in better birth weights of babies. **Hours of work:** In our study during the antenatal period the women worked on an average of 3.45 hours and took rest/sleep for 9.41 hours/day. **Birth interval:** The average birth interval between two consecutive pregnancies was 2.85 years in our study against the recommended 3 years. **Gravidity:** There were 2.33% of grand-multipara women in our study. Grand-multipara women accounts for one third of maternal deaths in developing countries. They increase the incidence of abortion, obstetric hazards like mal-presentation, multiple pregnancy, placenta previa. Medical disorders like anaemia hypertension are common in them hence at most care should be taken in these cases[9]. In a study conducted by Ghosh et al[7] parity was also found to be an important determinant of birth weight. **Hyperemesis:** Hyperemesis is one of common minor ailment seen in the pregnancy especially among primigravida. It may affect the mother's health and weight gain during the pregnancy. It is advised to move the limbs for few minutes before getting out of bed if not subsided by antiemetic drugs with plenty of glucose drink usually cure the condition. In our study there were 32.3% women with hyperemesis. **Health care utilization:** Our study showed that 90.7% of antenatal women had full antenatal checkups. Majority of the study subjects (57.6%) had taken more than 100 IFA tablets. About 90.4% had taken 2 doses of Tetanus toxoid injections. While in the study of Rewa[10] only 23.4% of the women had received full ANC. In Paras Agarwal[11] study 76% women received full antenatal checkups and 83% two doses of tetanus toxoid injections. With respect to measurements, in our study 88% of women had BP recorded, 79% weight recorded, 37% height measurement done at least once in their total visits, consistent with other studies viz., Manju Rani et al[12] reported 40% BP recording and 33% weight measurement in North India whereas 87% BP recording and 80% weight measurement in South India. In the study done by S. Srilatha et al[13] BP recording was done in 94.2% of antenatal women, weight measurement in 74.8% and height measurement 14.25%, in Thiruvananthapuram District. The District Level Health Survey (DLHS)[14] reported 93% weight monitoring and 76% BP monitoring in Indian population.

CONCLUSION

An improvement in the overall health status of antenatal women in the rural areas is reported in the present study, but there are still a good number of antenatal women with poor utilization of health care services. Problem of anemia persists even after good number of antenatal visits indicating poor quality of antenatal care services. Hence there is a need for improving the quality of antenatal services and health education.

RECOMMENDATIONS

Monitoring of antenatal women about consumption of iron and folic acid tablets similar DOTS in Tuberculosis

treatment, can be recommended to improve the consumption and address the problem of anemia promptly. It is important to improve the referral system and availability of good secondary and tertiary health care facility to handle such cases.

REFERENCES

1. Park K. Park's text book of preventive and social medicine. 21st ed. Jabalpur (India): Banarasidas Bhanot; 2011.
2. Negi KS, Kandpal SD, Kukreti M. Epidemiological factors affecting low birth weight. J K Sci 2006; 08:31-34.
3. Bhargava SK, Singh KK, Saxena BN. ICMR task force: national collaborative study on identification of high risk families, mothers and outcome of their off-springs with particular reference to the problem of maternal nutrition, low birth weight, perinatal and infant morbidity and mortality in rural and urban slum communities. Summary, conclusions and recommendations. Indian Pediatr. 1991; 28:1473-80.
4. Valenkar DH. Maternal factors contributing to low birth weight babies in an urban slum community of greater Mumbai. Bombay hospital journal.2009:51(1).
5. Phaneendra Rao RS, Prakash KP, Sreekumaran Nair N. Influence of pre-pregnancy weight, maternal height and weight gain during pregnancy on birth weight. Indian pediatrics.1998; 35:33-6.
6. Solanki N, Kavishwar A, Chaudhari V, Chhasatiya N. The effect of maternal anthropometric characteristics and social factors on birth weight of child in small town hospital of Gandevi block of Navsari district. IJMSPH 2012; 1:32-37.
7. Ghosh S, Hooja V, Mittal SK, Varma RK. Bio-social determinants of birth weight. Indian pediatrics1997; 14(2):107-114.
8. Gogoi G, Ahmed FU. Effect of maternal nutritional status on the birth weight among women of tea tribe in Dibrugarh district. Indian J Community Med 2007:32; 2:120-22.
9. Datta DC. Text book of obstetrics. 6th ed. Kolkata: New Central Book Agency (P) Ltd; 2006. p. 455.
10. Sahu D, Kushwah SS. Factors influencing maternal health in Rewa town. Letter to the editor. Indian Journal of Community Medicine 2007 April:32(2);148
11. Paras Agarwal, MM Singh, Suneela Garg. Maternal health-care utilization among women in an urban slum in Delhi. Short article. Indian Journal of Community Medicine 2007 July:32(3);203-205
12. Rani M, Bonu S, Harvey S. Differentials in the quality of antenatal care in India: International Journal for Quality in Health Care 2008:20(1): 62–71
13. Srilatha S, Ramadevi S, Amma LI, Vijayakumar K. Assessing the quality of antenatal care in Thiruvananthapuram District: 2002 Project report KRPLLD - 6/99.
14. Government of India: District Level Health Survey: Reproductive and child health survey, Wardha. 2002

Source of Support: None Declared
Conflict of Interest: None Declared