# **Research Article**

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# Ante natal care utilization and delivery services in a tertiary care hospital

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## **ABSTRACT**

**Background:** Maternal health has ever been a serious matter of concern worldwide. In developing countries like India, maternal health care services are not sufficient as per requirement, which ultimately leads to maternal deaths triggering a challenge to achieve improve maternal health (i.e. MDG 5). Therefore the present study has tried to focus on the utilization of ante-natal care services by pregnant women by their demographic and socio economic characteristics.

**Method:** A prospective longitudinal study was conducted on 3rd trimester pregnant women attending antenatal clinic in tertiary care hospital by convenience sampling method over a period of 2 year including 407 women after taking consent using semi structured questionnaire including information of socio demographic profile, antenatal health checkup and later followed up to note mode of delivery. Data was analyzed using MS excel 10.0 and SPSS 20.0

**Results:** out of total 407 respondents, 78.62% were in the age group of 20-30 years, 10.07% were illiterate, and 71.01% belonged to lower class. Majority (42.01%) were registered in 2nd trimester, 50.89% primipara registered in 1st trimester (p<0.0001). 69.53% and 30.47% had >4 and <4 visits respectively. 83.29% had regular IFA consumption and 100% had inj. TT. 78% delivered by normal vaginal delivery and 22% by LSCS.

**Conclusion:** Ante natal care utilization in the view of early registration and regular visits to health care Centre seems to be very important.

Keywords: Ante natal care, Socio demographic profile, Maternal health

# INTRODUCTION

Maternal health care is important for better maternal, perinatal and infant health outcomes. High maternal and neonatal mortality rates are associated with inadequate and poor quality maternal health care, including antenatal care, skilled attendant at birth and postnatal care. Hence achieving MDG goal on maternal health requires providing high quality pregnancy and delivery care, improving sexual and reproductive health care and universal access to all its aspects. Antenatal care is recognized as a key maternal service in improving a wide range of health outcomes for women and children. It provides an opportunity to provide interventions for

improving maternal nutrition, to encourage skilled attendant at birth and use of facilities for emergency obstetric care. 1,4

In any community, mothers and children constitute a priority group. In India, woman of the child-bearing age (15-44 years) constitute 22.2% and children <15 years of age about 35.3% of the total population. Together they constitute nearly 57.5% of the population. Pregnancy and child birth constitute significant events in the life of a woman. In this aspect, care of mother and child occupies a paramount place in our health service delivery system. MCH' refers to the promotive, preventive, curative and rehabilitative health care for mothers and children's.

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#### Magnitude of problem

Pregnancy and child birth are the natural physiological phenomenon but unfortunately its consequences are still the leading cause of death, disease and disability among women of reproductive age in developing countries more than any other single health problem. WHO estimates show that out of 529,000 maternal deaths globally each year 136,000 (25.7%) are contributed by India, which is highest burden for any single country in the world. Currently, India's Maternal Mortality Ratio is 212, infant mortality rate 47, child mortality rate 18.4. Only 50.7% of women getting minimum 3 ANC checkups during pregnancy and only 40.8% deliver in the health facility. Of these, only 42.8% of women getting minimum 3 ANC checkup in rural area and 73.8% in urban area (NFHSIII).

The purpose of present study was to identify the determinants of antenatal care services utilization and delivery services, in order to increase the level of use of antenatal care.

#### **METHODS**

A prospective, descriptive study was conducted on 3rd trimester pregnant women attending tertiary care hospital by convenience sampling method during October 2012 to October 2014. As per the previous year's statistics, every month about 200 pregnant women were registered in 3rd trimester. The data collection period of the study was 8 month, so by using formula estimated sample size was

n = 4pqN/(N-1) e2 + 4pq

n= 320 (where e= error which is 10% of p)

Presuming that the dropout rate is approx. 33%, sample size was 425. But 18 women were lost to fall up during subsequent visit. So, the finally 407 pregnant women were included for analysis.

#### Data collection

Ethical clearance was obtained from the Institutional Ethics Committee of the Institution. A semi-structured questionnaire was prepared in accordance with the study objective and it was pilot tested for clarity of questions and its response. Consent from Subjects was taken before administering the questionnaire. Information regarding the socio demographic profile, antenatal health checkup was recorded in the first interview. Later, follow up for mode of delivery.

## Data analysis

All results were tabulated using Microsoft Excel 2010. Data was analyzed by simple proportions and chi square test.

#### **RESULTS**

Table 1 shows that 320 (78.62%) respondents were in the age group 20-30 years contributing highest number to the study and 18 (4.42%) women were < 20 years at the time of present pregnancy. It was observed that 20 (4.91%) study subjects were illiterate. Nearly half i.e. 212 (52.09%) respondents were studied up to higher secondary school. And only 34 (8.35%) study subjects were studied up to graduation. Maximum respondents 187 (45.95%) were belonged to lower middle socioeconomic class. 56 (13.76%) respondents were married before the legally permissible age of 18 years and more than 4/5th of these i.e. 47 (83.93%) got pregnant before the age of 20 years.

Table 1: Socio demographic profile of subjects.

Character		No. of subjects	Percentage	
Age (in years)	< 20	18	4.42	
	20-30	320	78.62	
	>30	69	16.95	
Education	Illiterate	20	4.91	
	Primary School	41	10.07	
	Middle School	100	24.57	
	Secondary School	148	36.36	
	Higher Secondary	64	15.72	
	Graduate	34	8.35	
	Upper (I)	08	1.97	
Caria	Upper Middle (II)	110	27.03	
Socio- economic status	Lower Middle (III)	187	45.95	
	Upper Lower (IV)	102	25.06	
	Lower (V)	00	00	
Age at 1 <sup>st</sup> pregnancy	<20	79	19.41	
	20-30	301	73.96	
	>30	27	6.63	
Age at Marriage	<18	56		
	18-25	275		
	>25	76		

Table 2 shows that 55.55% women of <20 yrs and 56.52% of >30 years register in 3<sup>rd</sup> trimester of pregnancy while maximum (45.93%) women of 20-30 yrs register early in pregnancy. This difference was found to be significant (p<0.0001). Similarly illiterate women register late in pregnancy whereas those who educated more than secondary school register early in pregnancy (48.78%). Whereas it was observed that 114 (74.51%) women who registered in 1st trimester were primi-Para. Majority of subjects 42.01 (171 out of 407) were registered their present pregnancy in 2<sup>nd</sup> trimester in tertiary care centre. While out of total 54 multipara, 19 were registered in 3<sup>rd</sup> trimester. Statistical test here shows there is significant association between parity status and registration of pregnancy (p-value is 0.000).

T able 3 shows that 30.47% women had < 4 ANC visits and 69.53% had > 4 ANC visits. 61.11% Women < 20 years and 52.17% > 30 years had < 4 and > 4 ANC visits respectively whereas 75.94% women of ideal age group of 20-30 years had > 4 visits. This difference shows statistically significant. Education is inversely

proportional to antenatal care. Women educated more than secondary school had more no. of visits. While primipara visited to seek health care more often than women with more no. of children. This could be due to more anxiety and insecurity for the first time.

Table 2: Association between socio demographic factors and ANC registration.

		ANC Registration					
		Upto 12 weeks	13-24 weeks	>25 weeks	Total	p value	
Age (in years)	<20	03	05	10	18	$\chi^2 = 89.14$	
	20-30	139	147	34	320	d.f.=4	
	>30	11	19	39	69	p < 0.0001	
Total		153	171	83	407		
Education	Illiterate	04	05	11	20	$\chi^2 = 70.84$	
	Upto Primary	29	60	52	141	d.f.=4	
	>Secondary	120	106	20	246	p < 0.0001	
Total		153	171	83	407		
Parity Status	1	114	80	30	224	$\chi^2 = 43.08$	
	2	32	63	34	129	$\chi^2 = 43.08$ d.f.=4p=0.000	
	>3	7	28	19	54		
Total		153	171	83	407		

Table3: Association between Socio demographic factors and ANC Visits.

		ANC Visits				
		<4	>4	Total	P value	
Age ( in years)	<20	11(61.11)	7(38.89)	18	$\chi^2 = 29.52$	
	20-30	77(24.06)	243(75.94)	320	d.f.=2	
	>30	36(52.17)	33(47.83)	69	p = 0.0000	
Total		124	283	407		
Education	Illiterate	14	6	20	2 45 66	
	Upto Primary	64	77	141	$\chi^2 = 45.66$ d.f.=2	
	>Secondary	46	200	246	p <0.0000	
Total		124	283	407	h <0:000	
Parity Status	1	44	180	224	$\chi^2 = 32.62$	
	2	50	79	129	d.f.=2	
	>3	30	24	54	p<0.00001	
Total		124	283	407		

Figure 1 illustrates that 339 women consumes iron folic acid (IFA) tablets regularly whereas 68 women consumes it irregularly. The most common reason for irregular intake was forgotten to take followed by concept of no need to take daily. 100% women took two doses of TT injection.

Figure 2 shows that 78% women delivered by normal vaginal delivery while 22% required assistance in delivery (LSCS).

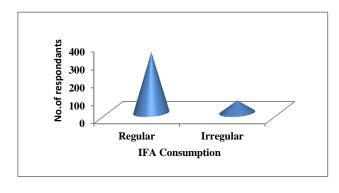


Figure 1: IFA Consumption in Ante natal period.

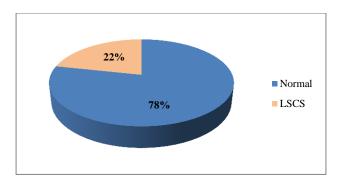


Figure 2: Mode of delivery of subjects.

## **DISCUSSION**

In present study 18 (4.42%) pregnancies occurring at teenage pregnancies and 69 (16.95%) pregnancies above 30 years of age. Whereas majority i.e. 320 (78.62%) were in the ideal age group of 20-30 years. Data of the National Family Health Survey (NFHS)-3 among young women age 15-19 in Maharashtra, 14 per cent have already begun childbearing, a little lower than the national average (16%). Gupta Anita et al6 in her cross sectional descriptive study on 102 women found that 65.68% women were less than 25 years; 37.3% of the women were illiterate while only 5% of them were graduate and above.

In the present study 20 (4.9%) study subjects were illiterate while 34 (8.35%) completed their graduation. Pandey et al found that 16.5% mothers were illiterate, 19.42% studied till primary, 31.07% studied till higher secondary and 33.01% were graduate or above. Similarly found that 16.5% women belonged to upper class, 80.58% to middle class and 2.92% to lower class. Singh Atul et al in hospital based cross-sectional study found 36.67% women were illiterate while 63.33% were literate and 46.22% respondents were from higher socioeconomic class, 41.11% and 12.66% from middle and lower class respectively.

Early marriage increases the chance for early pregnancy which is a risk for both mother and baby and also marriage at late age is a risk factor for congenital anomalies in baby. Thus ideal age at marriage is a prerequisite for fruitful pregnancy outcome. Dasgupta Urmila et al 105 (17.5%) had married before 18 years of age.<sup>9</sup>

Education is a strong predictor of use of maternal health care services. A study on utilization of maternal health services in Southern India has shown that women with High School education and above were eleven times more likely to use antenatal care in Karnataka. Women's education was also an important predictor of whether women received adequate number of antenatal visits. <sup>10</sup>

In the study conducted by H. Tuladhar, N. Dhakal observed that most of the women i.e. 228 (75.8%) started

to attend ANC only in 2<sup>nd</sup> trimester and only 66 (21.9%) had started from 1<sup>st</sup> trimester.<sup>11</sup> In the study conducted by Dasgupta Urmila et al on ante natal care utilization from a metropolitan city revealed that 36.5% of mothers had done ante natal registration in first trimester which is similar to our study.<sup>9</sup> Registration of pregnancy is essential to provide the effective care & follow up care of the mother. The best care can be possible if it is started early during pregnancy preferably within 1<sup>st</sup> 12 weeks i.e. 1<sup>st</sup> trimester.

The study reveals that the antenatal visits occur late in the pregnancy; the reason could be that they believed that pregnancy being a natural phenomenon did not need any special care.

A study conducted by Kulkarni MS, Nimbalkar MR.<sup>12</sup> in North Goa found that 78.8% of women registered for Antenatal care and received 5 or more visits.

A cross sectional descriptive study conducted by Gupta Anita et al<sup>6</sup> on determinants of utilization pattern on Antenatal and delivery services. In the study majority 92% of the women received ANC during pregnancy and 76.5% of the respondent had 3 or more visits. Women with lower education and those belonging to lower income groups had less than three ANC visits as compared to those with higher education and belonging to high income groups. This difference was statistically significant. Numbers of visits were more in women who got married at age more than 18 years than those married at less than 18 years.

339 (83.29%) respondents consumed regular IFA tablets while 68 (16.71%) consumed irregularly. In the study conducted by S Revathi, Paul Niranjan, Hiremath S G, Mane Abhay, Patil RS found that a high proportion of the women who had been prescribed iron supplements (87.7) per cent) reported taking them adequately which is similar to our finding. 13 Khanam N et al conducted a longitudinal study from June 2007 to September 2009, comprising of 280 participants to assess the utilization of maternal and child health care in different areas of Wardha District, India and found that 39.51 % Rural & 48.0% urban participants were registered in first trimester. 14 IFA tablets (≥100) consumption was 62 (30.24%) in rural area and 25 (33.33%) in urban area. A cross sectional descriptive study conducted by Gupta Anita et al<sup>6</sup> found that 16.7% of women had not taken Iron and Folic acid tablets, 92.2% of women had received inj.TT.

Mackenzie et al observed that maternal request was one of the main indications for CS (23%) in 1996. Defensive obstetrics is another common reason for high rates of CS. It has been observed that 82% of physicians performed CS to avoid negligence claims. Kulkarni MV et al in their study on utilization of maternal health care services in an urban slum of Nagpur found that out of

total 151 hospital deliveries, 25.17% delivered by caesarean section which is similar to our finding. <sup>16</sup>

#### CONCLUSION

Efforts to encourage women to attend ANC could be targeted at less educated women and could include formal or informal education sessions for younger women who include information on ANC and childbirth.

Further studies on quality of ANC and its impact on obstetric outcome are needed. Within the limited resources, safe motherhood strategies need to be targeted in order to increase access to ANC and delivery care. Such interventions may include preparing community health workers to promote ANC, improving the quality of ANC offered and strengthening health systems to ensure the availability of medical supplies.

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Institutional Ethics Committee

## **REFERENCES**

- 1. WHO: The World Health Report 2005 make every mother and child count. Geneva, Switzerland: World Health Organization. 2005.
- 2. WHO: Trends in Maternal Mortality 1990 to 2008 estimates developed by WHO, UNICEF, UNFPA, and the World Bank. Geneva, Switzerland: World Health Organization, 2010.
- 3. Campbell OM, Graham WJ. Strategies for reducing maternal mortality: getting on with what works. Lancet. 2006;368(9543):1284-99.
- WHO: Antenatal care in developing Countries: Promises, Achievements and Missed Opportunities. An Analysis of Trends, levels and Differentials, 1990-2001 Geneva, Switzerland: World Health Organization: 2003.
- Park K. Textbook of preventive and social medicine. 22<sup>nd</sup> ed. Jabalpur: Banarsidas Bhanot. 2013;480-5.
- Gupta A, Chhabra P, Kannan AT, Sharma Gayatri. Determinants of utilization pattern of antenatal and delivery services in an urbanized village of east delhi. Indian J of preventive and Social Med. 2010;41(3-4):240-5.

- Pandey S, Shankar R, Rawat CMS, Gupta VM .Socio-Economic factors and delivery practices in an urban slum of district nainital, uttaranchal. Indian Journal of Community Medicine. 2007;329(3):210-1. Available At Http://www.ljcm.Org.In With Ip:116.203.68.82
- 8. Kumar AS, Dabral M, Gupta SB, Srivastav A. Matenal risk factors and their effects on pregnancy outcome: a cross-sectional study. Indian J Matern Child Health. 2011;13(3):1-8.
- 9. Dasgupta U, Naskar S, Haldar A, Mallik S. Antenatal care service utilization and social correlates of beneficiaries: an experience from a teaching hospital of a metropolitan city. Indian journal of matern and child health. 2012;14(2):1-9.
- 10. Navaneetham K, Dharmalingam A. Utilization of maternal health care services in southern India. Soc Sci Med. 2002;55:1849-69.
- 11. Tuladhar H, Dhakal N. Impact of antenatal care on maternal and perinatal outcome: a study at nepal medical college teaching hospital. Journal of Obstetric, Gynecologic. 2011;6(2):37-43.
- Kulkarni MS, Nimbalkar MR. Influence of sociodemographic factors on the use of antenatal care. Indian J of preventive and Social Med. 2008;39(3-4):98-102.
- 13. Revathi S, Paul N, Hiremath SG, Mane A, Patil RS. A study on utilization of antenatal care services among pregnant women in urban slum of raichur district. Indian J Matern Child Health. 2013;15(4):1-8
- 14. Khanam N, Athavale AV, Goyal RC, Quazi SZ, Gupta M, Muntode P. A longitudinal study to assess the utilization of maternal and child health care in different areas of wardha district, India. International Journal of Health Sciences and Research. 2012;2:75-81.
- 15. Mackenzie IZ, Cooke I, Annan B. Indications for caesarean section in a consultant unit over the decades. J Obstet Gynecol. 2003;23:233-8.
- Kulkarni MV. Utilization of maternal health care services in an urban slum of Nagpur. Indian J Matern Child Health. 2013;15(2):1-7.

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