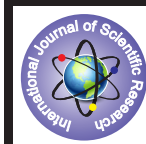


Antenatal Care Services Utilization In Women Delivered at Tertiary Care Level Hospital in Urban Area, Mumbai



Medical Science

KEYWORDS : complete antenatal care service utilization, tertiary care level, Post-natal women

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ABSTRACT

This cross-sectional study was carried out in one of the tertiary hospital of Mumbai having its own teaching institute with 1400 beds. This study was carried out to know exactly the recent situation of antenatal care services utilized by women living in urban area in India and also various socio-demographic characters affecting on outcome of pregnancy. Women in postnatal ward after delivery interviewed with pretested semi-structured Performa. Out of 384 women complete antenatal services were utilized by 255 (66.4%) women & 129 (33.6%) women used them incompletely. Among 255 (66.4%) were married between >18-25 yr of age & 27% were married ≤ 18 yr. 67 women (86%) who were used complete ANC services were aware of private health facility and 138 (72.3%) were aware of public health facility before using antenatal care services. Of them 200 (52%) women were had their first pregnancy between the age of >18-25 yrs, 210 (54.6%) women of the Hindu religion used complete antenatal services which were found to be significant. 197 (51.3%) women were educated up to secondary class which is statistically found to be significant. Total 240 (62.5%) reported complications during pregnancy and rest 144 (37.5%) haven't reported any complications. Among 255 women who utilized complete ANC services 125 (32.5%) women had normal delivery, 105 (27.3%) had caesarian section & only 25 (6.4%) had interventional delivery, intrauterine death or stillbirth. Among women who used complete ANC services 110 (28.6%) women were given birth to healthy newborn baby weighing more than 2.5Kg & which was found to be statistically significant.

Introduction

Pregnancy & delivery are very important events in women's life. Many times it has considered as natural process. As women & children shares nearly 35% of total population⁴ So illnesses & deaths among this group affects on whole society¹

Utilization of health services is a complex behavioral phenomenon and affected by accessibility, availability, quality costs and comprehensiveness of services. Nonetheless, there are potential benefits from some of the elements of antenatal care which are significant in reducing morbidity & mortality in developing countries.^{2,3,8,10} Antenatal period clearly presents opportunities for reaching women number of interventions which are beneficial for both women's & infant's health. Hence high risk pregnancy remain unidentified, obstetric history ignored, opportunities for transmitting family planning messages missed.

WHO estimates about 510000 maternal deaths occurred globally during the year 2002. According to estimates developed by WHO, UNFPA and UNICEF on maternal mortality in 1995-world MMR was 400/lac live births South -Asia 430/lac live births, Middle -east & North Africa 360/ lac live births while industrialized countries 12/ lac. Most of the maternal deaths are preventable. A lifetime chance of maternal death in world as a whole is about 1 in 75 varies from region to region. In South Asia it is 1 in 54, in India it is 1 in 55. In developing countries it is 1 in 61 and in industrialized or developed countries it is 1 in 4085. In industrialized countries antenatal care service coverage is extremely high i.e. 98% women having at least one antenatal visit. In developing country like India it is around 68%.⁹

Primary means of preventing maternal deaths is to provide access to emergency obstetric care including treatment of hemorrhage, hypertension etc. Four delays are common in this area-

1. Delay in decision to seek care
2. Delay in identifying the problem
3. Delay in reaching the medical facility
4. Delay in receiving adequate treatment.

So our services should direct towards all these delays.¹¹ Content & antenatal care should be as follows as per WHO:

The new model of antenatal care separates pregnant women in two groups: those likely to need only routine antenatal care (75% of total ANC population) & those with the specific health conditions or risk factor (25% of pregnant women) that necessitates special care.

For the first group, a standard programme of four antenatal visits is recommended (with additional visits as required). Also recommends measurement of blood pressure, testing of bacteria & proteinuria and blood tests to detect blood sphyllis, severe anemia, routine weight & height check up at each visit is considered optional. Information regarding danger sign is important. If possible minimum of four visits, one visit in each month of gestation, twice monthly after 7th month till 9th month of gestation and weekly thereafter.

For other group- Number of visits will be more, including all necessary baseline investigation and other investigations depending on risk factor women should be screened.¹²

There are urban-rural differences found in child and maternal health care service utilization in developing countries.⁷ Despite better physical access to health care, higher average cost for accessing health services makes urban poor community as disadvantage as their rural counterparts. There has been found declining trend in out-patient care from 27% to 19% & in-patient care from 60% to 40%.⁶ It was generally observed that, tertiary hospitals with large numbers of obstetric admissions and deliveries report less maternal mortality. Reason could be these tertiary hospitals are used for normal deliveries bringing down mortality ratio. Individual hospital admission practices, as well as trends of utilization of facilities for normal deliveries may be different from trends in utilization of facilities for complicated cases.

So this study was carried out to know exactly the recent situation of antenatal care services utilized by women living in urban area in India. As there are few studies done to find out percent utilization of ANC services utilization at tertiary care level by pregnant women.⁵

Materials and methodology:

Mumbai is the most populous city of country having population of 11.9 million. It is a high density area with 21190 persons liv-

ing / Sq.km. According to planning commission of India (1983) it is estimated about 20-26% total urban population lived in slums. Slum population concentrated in 12 metropolitan cities accounts 40% of Indian population. 3/4th concentrated in 4 metropolitan city including Mumbai.

Bhrihan-Mumbai Municipal Corporation is the largest corporation in India & major public health provider. City has 3 teaching hospitals, 14 Municipal General Hospitals, 26 Maternity Homes apart from 185 Municipal health dispensaries and 176 health posts. State Government has 1 Medical College, 3 General Hospitals & two health units. All have capacity of 2871beds (Government of Maharashtra 2001) Statistics shows that the bed-population ratio is higher in urban settings & regional inequalities are seen.

In urban set up antenatal women connected to health posts, anganwadis and dispensaries for routine ANC check up as well for basic investigation and iron & folic acid supplementation. There is proper referral system established through network of ANM, male worker if required, where they refer to urban health centre or First referral Units or to Maternity homes. If any complication at this level women is referred to Tertiary care level for more specialized care. But many times patients may get directly come on her own to such facility as unknown of hierarchy. Also due to less health consciousness about facilities available around for antenatal care.

A Cross-sectional study was conducted in a 1400 bedded tertiary care hospital of Mumbai during period from April 2010-February 2011. On an average 8000 deliveries per year took place at this tertiary care hospital. So every 20th postnatal women after delivery was interviewed with a pretested semi-structured proforma after verbal consent. Sample size of 384 was estimated through systematic random sampling with the precision of 50% utilization of antenatal services. Postnatal women were inquired about socio-demographic factors, obstetric history, antenatal history of this pregnancy, places of service utilization, kind of antenatal services provided, advices given during antenatal period. Also their records at the same time were utilized to register about investigations done, medicines received by women, complications occurred during or after delivery till the time of interview & outcome of pregnancy, causes of referral if any were also noted. Complete antenatal services was considered when women visited health facility for minimum 3 antenatal checkups, registered before 16 weeks of gestation, have received 2 doses of Inj.T.T. And ate minimal 90 iron tablets. Statistical analysis was done by using SPSS 10th version & chi-square test.

Results :

1. Study women characteristics

There were 8000 deliveries per year on an average took place in one of the tertiary care hospital setting of Mumbai. Total 384 post-natal women were interviewed, of which 255 (66.4%) used complete antenatal services while 129 (33.6%) were not used them completely. "Table 1 shows there socio-demographic profile"

Table 1. Socio-demographic Profile of ANC Women

Characteristics	(n=384)	
	No.	%
Age of ANC		
≤ 18 yr	19	4.9
> 18-25 yr	315	82
> 25-30 yr	44	11.5
> 30 yr	06	1.6
Age at marriage		
≤ 18 yr	105	27
> 18-25 yr	255	66.4
> 25-30 yr	16	4.2
> 30 yr	08	2.4

Age at first Pregnancy		
≤ 18 yr	54	14.1
> 18-25 yr	308	80.2
> 25-30 yr	18	4.7
> 30 yr	04	1.0
Religion		
Hindu	295	76.8
Muslim	71	18.4
Buddhist	06	1.5
Christians	05	1.3
others	07	1.8
Socioeconomic Status		
Upper (I)	25	6.5
Upper middle (II)	76	19.8
Lower middle (III)	161	42
Upper lower (IV)	108	28.1
Lower (V)	14	3.6
Type of family		
Nuclear	144	37.5
Joint	234	60.9
Three generation	06	1.6
Educational status		
Illiterate	28	7.3
Primary	28	7.3
Secondary	287	74.7
College	20	5.2
Graduate or more	21	5.5
Educational status of spouse		
Illiterate	21	5.5
Primary	22	5.7
Secondary	263	68.5
College	53	13.8
Graduate or more	25	6.5

There were 315 (82 %) women who belonged to the age group of >18-25 yrs. Most of them 1, e 255(66.4 %) were married between >18-25 yr of age & 27% were married ≤ 18 yr. 308 (80.2 %) women had their first pregnancy between age group of >18-25 yrs & 14.1% were ≤ 18 yr. 295(76.8%) women were from Hindu religion & 234(60.9%) of women belonged to joint family. 70.1% women were from class III & IV income group respectively as per B.G.Prasad's revised economic classification. About two third women 287(74.7%) & their spouses 263 (68.5%) were educated upto secondary class.

Table 2. Association between utilization of ANC services and various socio-demographic factors:

Awareness of ANC services before utilization	Complete utilization	Incomplete utilization	Chi-square	P value
Private	67 (86%)	11 (14%)		
Public	138 (72.3%)	53 (27.7%)		
Not aware	37(45%)	45 (55%)		
Maternity home	13 (39.4%)	20 (60.6%)		
Age of first pregnancy				
≤ 18 yr	41 (76%)	13(24%)		
>18-25 yr	200 (65%)	108(35%)	2.56	>0.05
> 25-30 yr	14 (63.6%)	08(36.4%)		

Religion				
Hindu	210(71.2%)	85(28%)	13.55	<0.05
Muslim	37(52%)	34(48%)		
Buddhist + others	08(44.4%)	10(55.6%)		
Proportion as per family type				
Joint	153(65.4%)	81(34.6%)		
Nuclear	96(66%)	49(34%)	3.62	>0.05
Three generation	06(100)	0(0)		
Socio-economic level				
Upper (I)	20(80%)	5(20%)		
Upper middle (II)	45(59.2%)	31(40.8%)		
Lower middle (III)	111(69%)	50(31%)		
Upper lower (IV)	70(64.8%)	38(35.2%)		
Lower (V)	09(64.3%)	5(35.7%)		
Education				
Illiterate	15 (53%)	13 (46.4%)		
Primary	22 (78.6%)	6 (21.4%)		
Secondary	197 (68.6%)	90 (31.4%)	10.8	>0.05
College	8 (40%)	12 (60%)		
Graduate	13 (62%)	8 (38%)		

2. The association socio-demographic factors and complete antenatal care services use- "as shown in table 2"

Complete antenatal services were utilized by 255 (66.4%) women while in 129 (33.6%) women used antenatal services incompletely. 210 (71.2 %) women of the Hindu religion used complete antenatal services which were found to be significant. In RHS survey II 95.5% of Hindu women,98.6% Muslim and 100% from other religion has utilized complete ANC services. Most of the 153 (39.8%) women who used complete ANC services were from joint family while 96 (25 %) were from nuclear family.

181 (47 %) women who used complete ANC services were from lower middle& upper lower socio-economic class as per B.G.Prasad's socio-economic classification.197 (68.6%) women who used complete ANC services were educated up to secondary class which is statistically found to be significant.ANC services utilization increased with education from 53.6% in illiterate to 68.6% of women who had completed secondary education. Findings were similar to NFHS Survey II in it was found that proportion of ANC utilization increased with education from 32% in illiterate to 62% of women who had completed secondary education.

3. The association between utilization of ANC services and outcome of pregnancy-

Table 3a: Complications reported by pregnant women-

Complications	Number	Percentages
PIH	75	31.25
CPD	42	17.5
Fetal distress	39	16.25
hemorrhage	24	10

Non- progress of labour	22	9.2
Abnormal presentation	29	11.9
Failure of induction	13	5.4
others	14	5.8
Total	240	100

The association between utilization of ANC services and outcome of pregnancy-

"In table 3a" shows complications occurred during pregnancy. Among study women 240(62.5%) women reported complications during pregnancy and rest 144(37.5%) had normal delivery without complications.

Table 3b: Association of utilization of ANC service and outcome of pregnancy:

Utilization of ANC services	Weight of newborn in kg			Total
	≤ 2 kg	>2 -2.5kg	> 2.5 kg	
Complete utilization	51(20.6%)	87(35%)	110(44.4%)	248
Incomplete utilization	17(13%)	50(38.5%)	63(48.5%)	130
(χ ² =4.15 significant)				

"As shown in table 3b" 110(44.4%) women who utilized complete antenatal services given birth to healthy newborn baby weighing more than 2.5Kg & which was found to be statistically significant. Among women who utilized complete ANC services I,e 125 (49%) women had normal delivery,105 (41%) had caesarian section & only 25(9.8%) had interventional delivery, intrauterine death or stillbirth and relation of complete antenatal care services use was found to be insignificant on outcome of pregnancy.

In V.Jayram study 6 year analysis done on maternal mortality at Government hospital, Guntur shown 65% normal delivery,7% caesarian section,7%interventional delivery.

As shown in "table 3 c" - Among women who utilized complete ANC services I,e 125 (49%) women had normal delivery,105 (41%) had caesarian section & only 25(9.8%) had interventional delivery, intrauterine death or stillbirth and relation of complete antenatal care services use was found to be insignificant on outcome of pregnancy.

Utilization of ANC services	Outcome of pregnancy			Total
	Normal	Caesarian section	Others*	
Complete utilization	125(49%)	105(41.2%)	25(9.8%)	255
Incomplete utilization	58(45%)	59(45.7%)	12(9.3%)	129
(χ ² =0.49 Not significant)				

Table 3b: Association of utilization of ANC service and outcome of pregnancy:

Discussion -

This study revealed that antenatal care service utilization still out of reach for most of the women. Although study was carried out in Mumbai, the cosmopolitan city. Still only 66.4% women could utilize them properly. Similar findings 70% utilization of ANC service was found in DHS (Demographic & Health surveys) surveys conducted in 104 developing countries in 1999-2001 while, in NFHS II survey (1998-99) which was conducted in India in Mumbai, this was found to be 65%.Among the 255 women who used complete antenatal services majority of women 67 (26 %) and 138 (54%) were aware of private health facility and public health facility respectively before using antenatal care services. This was found to be insignificant. In the study by Jatinder Bajaj,awareness regarding public health services was found to be 21-39%.

Younger women ≤ 18 year age used ANC services completely than 41(76%) the other age group. Similar findings were found in NFHS survey II. 210 (71.2 %) women of the Hindu religion used complete antenatal services which were found to be significant. In RHS survey II 95.5% of Hindu women, 98.6% Muslim and 100% from other religion has utilized complete ANC services. ANC services utilization increased with education from 53.6% in illiterate to 68.6% of women who had completed secondary education. Findings were similar to NFHS Survey II in it was found that proportion of ANC utilization increased with education from 32% in illiterate to 62% of women who had completed secondary education.

44.4% women who utilized complete antenatal services given birth to healthy newborn baby weighing more than 2.5Kg & which was found to be statistically significant. Among women who utilized complete ANC services I,e 125 (49%) women had normal delivery, 105 (41%) had caesarian section & only 25(9.8%) had interventional delivery, intrauterine death or stillbirth and relation of complete antenatal care services use was found to be insignificant on outcome of pregnancy. In this study rate of caesarian sections seems to be increased as compare to other studies. But almost half of the women delivered normally which indicates these tertiary care hospitals used for normal than complicated delivery. This may be due to unawareness of hierarchy of public health system.

In VJayram study 6 year analysis done on maternal mortality at Government hospital, Guntur shown 65% normal delivery, 7% caesarian section, 7% interventional delivery.

In 75(31.5%) women major complication was found to be PIH (Pregnancy Induced Hypertension), followed by CPD 17.5%, fetal distress in 16.2% cases. In study by Nomita Bedy, Indra Kambo (1993-94) an ICMR task force study, 24% women had PIH, haemorrhage was in 23% occurred as complications. In McCord et al study at rural area of Ahmदनगर district, Maharashtra 11.4% deliveries were with complications and caesarian section rate was found to be 2%.

Conclusions: In this study first pregnancy in 2/3rd of women has occurred between $\geq 18-25$ years which is major factor affecting health of baby, outcome of pregnancy. Age of marriage in more than half of women has shown significant rise I,e above 18 years. Education had played important role in ANC service utilization. Younger women used antenatal care services more than other women. Almost half of women delivered vaginally indicating these tertiary care hospitals are being used for normal deliveries. So valuable time of obstetricians can be saved if these deliveries took place at primary care level.

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