ORIGINAL ARTICLE

Utilization of Antenatal services and concerning factors: A community based study

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Citation

Article Cycle

Abstract

Background: Antenatal and post natal care are important component of maternal mortality rate. Antenatal facilities provided to mothers form the base of their future outcome. The services provided to mothers are still poor in India. A proper and effective program implementation is depending on understanding of basic factors that affect maternal and child health services utilization. Considering all these facts, it is important to study the maternal health service utilization pattern among the beneficiaries living in urban area of Jabalpur and factors responsible for their under utilization. **Material & Methods**: A prospective study was carried out in urban area of Jabalpur district of Madhya Pradesh. Cluster sampling technique was used to select 396 Antenatal females in the 36 different clusters. Information about socio demographic factors and ANC services utilization was recorded. **Results:** This study showed that 50.50% of women were registered within 12 weeks of pregnancy, 58.80% women received four or more antenatal visits, 23.99% women consumed hundred and more Iron Folic Acid (IFA) tablets and 96.21% received 2 doses of Tetanus Toxoid (TT) injections. Only 22.72% women had complete ANC service utilization. **Conclusion**: Utilization of Antenatal Care (ANC) services was poor in the urban areas of Jabalpur district even though the physical accessibility was adequate. ANC services utilization is significantly associated with level of education of mother, education of husband, occupation of mother, type of family and time of registration of pregnancy.

Keywords

Introduction

Antenatal care is an important determinant of maternal mortality rate and one of the basic components of maternal care on which the life of mothers and babies depends (1). Antenatal check-up is a mean to encourage women for institutional delivery by the health professionals. India alone accounted for one quarter of all maternal deaths. For every woman who dies during pregnancy,

approximately 30 more women suffer injuries, infections and disabilities during pregnancy or childbirth accounting at least 15 million women per year (2,3).

Maternal health care service utilization level is still poor in India. Full ANC prescribed by the GOI consists of at least four antenatal check-up, one TT immunization and consumption of hundred IFA tablets or an adequate amount of syrup.

National Family Health Survey NFHS-4 (4) revealed that 31.1%, 19.5% and 39.4% pregnant females received full antenatal care in India, urban area of Madhya Pradesh (MP) and Jabalpur respectively. Past figures showed that maternal mortality rate was always high in MP (5). There are multiple causes for these situations like early marriages, malnutrition, illiteracy, ignorance and lack of availability of health services (6). For effective implementation of maternal health care related programs, understanding of the factors affecting the utilization of maternal care during pregnancy is required.

Aim & Objectives

To determine the maternal health service utilization pattern among the beneficiaries living in urban area of Jabalpur and factors responsible for under utilization.

Material & Methods

A prospective study has been carried out in urban area of Jabalpur district (Madhya Pradesh) from March 2016 to July 2017. Study population was comprised of mothers who were residing in urban area of Jabalpur district and enrolled in anganwadi centers. Sample size was calculated by using the right size software (Freeware). Considering estimated proportion of 50%, design effect as 3.7, rate of homogeneity 0.3 and 10% non-respondents cluster required in study was came out to 36 with 11 antenatal females in each cluster. Hence final sample size of study was 396. Wards of urban planning Municipal Corporation considered as clusters. There were total 87 wards in Jabalpur city, out of which 36 wards were selected by using two digits Random number table. List of recently registered ANCs from these wards was collected from anganwadi and from this list, 11 women from each ward were selected by systematic sampling method.

Non-resident women of study area, migratory and women not giving consent for study were excluded from study. All mothers were interviewed using a predesigned, pretested, semi structured questionnaire. Relevant information about the ANC services utilization was recorded along with the socio demographic data. Adequate utilization of services was considered, if the women had fulfilled the criteria as registered at their first trimester, received adequate TT Immunization, consumed minimum 100 iron folic acid tablets and at least did four antenatal visits to the health facility. Interviewer contacted twice to each participant of which one is essentially during her third trimester. Pretesting of questionnaire was done in an urban slum located near the institute.

The data were analyzed using SPSS software. Chi square test was used wherever necessary. Permission was taken from institutional ethical committee, before commencing the interviews. Informed Consent was obtained from participants.

Results

In this study total 396 ANCs were participated. It was found that, 260 (65.67%) belonged to age group 20-25 years and 14 (3.53%) participants had age less than 20 years. Most of the antenatal women (46.20%) had education up to high school or more while 8.08% were illiterate and 338 (85.25%) were unemployed /homemaker. It was found that, 23 (5.8%) husband of participants were illiterate and 42.9% husbands were educated up to high school or more. (Table 1)

It was further observed that 50.50% of women were registered within 12 weeks of pregnancy, 58.80% women completed four or more antenatal visits, 23.99 %women consumed 100 and more IFA tablets and 96.21% received 2 TT/ booster doses of TT injections. Only 22.72% women had complete ANC service utilization. (Table 2)

As shown in Table 3 the reasons for underutilization of ANC services. It was observed that 40.81% of the women not registered for ANC care within 12 weeks because they were not aware and nobody advised them. Most common reason (46.34%) for non-completion of 4 ANC visits was lack of time. About 33.22% of women not consumed 100 IFA tablets due to their side effects. Most common reason (40%) for not taking 2 TT /booster was unawareness about TT immunization. So, overall most common reason for not availing ANC services is lack of awareness and knowledge.

It was observed that ANC services utilization is significantly associated with level of education of mother, education of husband, occupation of

mother (utilization was more in housewives), type of family (utilization was more in women belonging to joint family) and with early registration; while no statistically significant association was found with occupation of husband and age, religion and socioeconomic status of mother. ([Table 4](#))

Discussion

The present study was carried in urban area of Jabalpur district of Madhya Pradesh. This study included 36 wards of Jabalpur city and eleven ante natal females from each ward were participated. Mean age of women participants was 24.46 ±3.98 years. Most of the women (41.41%) were educated up to middle school certificate and were unemployed /homemaker (85.35%). Majority of women (74.49%) belonged to joint family and were Hindu (92.17%). 94.2% husbands of study participants were literate, of which maximum (44.69%) were educated up to middle school certificate. Most of the husbands (51.26 %) of study participants were semiskilled workers. Maximum number of women (66.16 %) belonged to upper lower class according to Kuppuswami socioeconomic classification (7).

In this study 50.50% participants registered within 12 weeks of their pregnancy. The findings were similar to study of Gundbowdi KD *et al*(8), Parineeta M *et al* (9), Roy MP *et al* (10), Bhaisare KA *et al* (11), Yadav AK *et al*(12)and Mumbare SS *et al* (13) who reported that 53.8%, 50.9%, 53.7%, 58%, 62% and 63.81% women were registered within 12 weeks of pregnancy respectively. NFHS-4 (4) shows slightly higher percentage of women registered in first trimester which was 69.1%, 66.5%, 65.4% according to national, Madhya Pradesh and Jabalpur district urban area respectively.

Present study showed that 58.8% participants had four or more antenatal visits which were nearly similar with NFHS-4 (4) national, MP state and Jabalpur district data of urban area which shows that 66.4%, 51.6% and 65.9% pregnant women had at least 4 antenatal visits, respectively. Previously studies record three or more visits as adequate visits. Findings of present study were quite less than that of Roy MP *et al (10)*, Yadav AK *et al* (12), Joshi P *et al*(14), Panja TK *et al*(15) and Haridas S *et al* (16) who found it 85.5%, 70%, 90%, 91% and 67.75% respectively but higher than that reported by Sharma N *et al* (17), Pahwa P *et al* (18), Singh JP *et al* (19), Meshram II *et al* (20) and Neyaz A *et al* (21) who

found that 10.4%, 59%, 37.1%, 42.1% and 51.4% pregnant women had three or more antenatal check-ups, respectively.

In the present study 23.99% women consumed 100 or more IFA tablets. This was similar with finding of Annual Health Survey, Madhya Pradesh 2012-13 (22) and Sharma N *et al* (17) who reported that 19.5% and 21.7% women consumed 100 or more IFA tablets, respectively. But this was lower than the finding of NFHS-4 (4), Rahman SJ *et al* (23), Parineeta M *et* al (9), Murthy N *et al* (24), Singh JP et al (19), Yadav AK *et al* (12) and Neyaz A *et al* (21).

Considering immunization with Tetanus Toxoid 96.21% participants received two doses or booster dose this corresponds with NFHS-4 (4) national fact sheet, Madhya Pradesh and Jabalpur district fact sheet for urban area which reported 89.9%, 93.8% and 96.2% of mothers whose last birth was protected against neonatal tetanus. Findings of present study are also consistent with that of Gundbowdi KD *et al* (8), Parineeta M *et al* (9), Kotresh M *et al* (25), Haridas S *et al* (22), Neyaz A *et al* (21) and Singh MK *et* al (26). But this was higher than those of Mumbare SS *et al* (12), Pahwa P *et al* (17), Rahman SJ *et al* (22) and Sharma N *et al* (16).

In this study 22.72% participants utilized full/ adequate ANC services which was similar to Singh JP *et al*(18) and Rahman SJ *et al* (22) who observed that 24.7% and 19% pregnant females received full antenatal care. According to Murthy NMR *et al* (24), 93% mother received full ANC services in their study which is remarkably higher than that seen in present study. The difference in ANC services utilization may be because of variation in health awareness, availability of health infrastructure and health care seeking behavior among women. Findings of present study show similarity with recent studies than past studies. It indicates improvement in antenatal services.

In this study the most common reason for underutilization was lack of knowledge and awareness. This was similar with finding of Sharma N *et al* (17), Singh JP *et al* (19) and Neyaz A *et al*(21) but it was different from finding of Kotresh M *et al* (25) where reason was that they were ignorant or due to religious constraints. While as per Parineeta*et al* (9), main reasons for inadequate utilization of ANC services were financial and unavailability of transport facilities.

It was observed that ANC services utilization is significantly associated with level of education of

mother, education of husband, occupation of mother (utilization was more in housewives), type of family (utilization was more in women belonging to joint family) and with early registration; while no statistically significant association was found with occupation of husband and age, religion and socioeconomic status of mother. This was consistent with finding of studies did in different parts of country. (9,11,12,21,23)

Conclusion

This study showed that TT immunization was satisfactory but IFA tablets consumption was not up to the mark, therefore reducing the percentage of pregnant women who completely utilized ANC services. The apparent cause for low consumption of IFA was associated side effects. We observed poor utilization of healthcare services in urban area even though the physical accessibility was adequate. Present study exposed the fact that education of pregnant women and husband are significant contributing factors for utilization of antenatal care services. Present study also highlights the different obstacles such as socioeconomic status, occupation of mothers, type of family etc. impeding utilization of antenatal health services.

Recommendation

This study reiterates that pregnant women should be educated regarding importance of early registration of pregnancy, antenatal visits and TT immunization. Also, there is a need for counseling sessions to each pregnant woman about the benefits of consumption of iron tablets and their side effects. Health workers need to be trained and motivated regularly. For this, better orientation and ongoing training programs should be designed. Dedicated joint efforts, both by the community as well as health staff are essential for the achievement of complete antenatal health services utilization.

Limitation of the study

This study covered women who were already registered in anganwadis. After taking particulars from the register, we went to their houses and filled the data. Hence, our study is concentrated around the women who registered themselves with the anganwadi while those women taking services directly from Government or private hospitals without going to the anganwadi were missed. As most of the anganwadis were situated near the slum areas, most of the women of high socioeconomic status may also be missed.

Relevance of the study

This study denotes about the Antenatal services utilization status in urban area of one of the largest city in central India. In past 10 year, govt. mainly focuses on rural area and forgot about urban area mainly urban slums which had conditions worsen than rural area.

Authors Contribution

All authors have contributed equally in this article.

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Tables

TABLE 1 DISTRIBUTION OF STUDY POPULATION ACCORDING TO SOCIO-DEMOGRAPHIC FACTOR

Variables	Characteristics	Number of women(n=396)	Percentage
Age	<20 years	14	3.53
	20 -25 years	260	65.67
	26-30 yrs	89	22.47
	>30 years	33	8.33
Education	Illiterate	32	8.08
	Primary School Certificate	17	4.3
	Middle School Certificate	164	41.41
	High School Certificate	82	20.7
	Intermediate Or Post High School Diploma	72	18.18
	Graduate Or Post Graduate	29	7.32
Occupation of pregnant women	Unemployed/Homemaker	338	85.35
	Unskilled Worker	19	4.8
	Semiskilled Worker	29	7.32
	Skilled Worker	2	0.5
	Clerical ,Shop Owner ,Farmer	8	2
Type of Family	Nuclear	101	25.5
	Joint	295	74.5
Religion	Hindu	365	92.2
	Muslim	13	3.3
	Sikh	1	0.25
	Christian	5	1.26

	Jain	2	0.5
	Others*	10	2.52
Education of husband	Illiterate	23	5.8
	Primary School Certificate	26	6.56
	Middle School Certificate	177	44.7
	High School Certificate	90	22.7
	Intermediate Or Post High School Diploma	46	11.6
	Graduate Or Post Graduate	34	8.6
Occupation of husband	Unemployed	6	1.51
	Unskilled Worker	89	22.48
	Semiskilled Worker	203	51.26
	Skilled Worker	23	5.8
	Clerical, Shop Owner ,Farmer	60	15.15
	Semi-Profession	13	3.3
	Profession	2	0.5
Kuppuswamy's socioeconomic score	Upper Class 26-29	0	0
	Upper middle class16 -25	15	3.79
	Lower middle class15 -11	118	29.80
	Upper lower class 5 to 10	262	66.16
	Lower class<5	1	0.25

TABLE 2 DETAILS OF UTILIZATION OF ANTENATAL SERVICES

	Variables	Number of women(n=396)	Percentage
Registration	Early registration within 12 weeks	200	50.50
	Late registration after 12 weeks	196	49.49
Number of ANC visits	Minimum 4 visits	232	58.6
	Less than 4 visits	164	41.4
Iron tablets consumption	100 iron tablets	95	23.99
	Less than 100	276	69.70
	No	25	6.31
TT immunization	2TT/Booster	381	96.21
	One	6	1.52
	No	9	2.27
ANC service utilization criteria	ANC services utilized	90	22.73
	ANC service underutilized	306	77.27

TABLE 3 REASONS FOR UNDER UTILIZATION OF ANC SERVICE

Variables	Not registered within 12 weeks (196)	%	Not completed 4 antenatal visits (164)	%	Not consumed 100 tab (301)	%	Not receiving 2 injections /booster (15)	%
Not aware	80	40.81	76	46.34	80	26.57	6	40
Long distance	14	7.14	10	6.09	0	0	0	0
Provider was not available	15	7.65	7	4.26	23	7.64	1	6.67
Asked to come back other time	5	2.55	4	2.43	56	18.60	4	26.67
No problem experienced	45	22.95	42	25.60	21	6.97	0	0

Tradition	25	12.75	10	6.09	27	8.97	5	33.33
Don't have time	34	17.34	50	30.48	22	7.30	2	13.33
Side effect	0	0	0	0	100	33.22	0	0

TABLE 4 ASSOCIATION OF SOCIO-DEMOGRAPHIC VARIABLES OF WOMEN WITH ANC SERVICE UTILIZATION

Variable		Total(N=396)	ANC Services utilized (n=90)	Underutilized (n=306)	χ^2	P value*
Present age of mother	Up to 24 years yrs(233)	50(21.5%)	183(78.5%)	0.518	0.471
	>24 yrs (163)	40(24.5%)	123(75.5%)		
Education of mothers	Up to middle school(214)	40(18.7%)	174(81.3%)	4.31	0.037
	Above middle school(182)	50(27.5%)	132(72.5%)		
Occupation of mothers	Housewife(305)	81(26.5%)	224(73.5%)	11.08	0.000
	Employed(91)	9(9.9%)	82(90.1%)		
Education of Husband	Up to middle school (226)	42(18.6%)	184(81.4%)	5.14	0.023
	More than middle school (170)	48(23.2%)	122(71.8%)		
Occupation of Husband	Unemployed + unskilled worker(96)	22(22.9%)	74(77.1%)	0.002	0.959
	Semiskilled and above(300)	68(22.7%)	232(77.3%)		
Religion	Hindu(365)	82(22.5%)	283(77.5%)	0.18	0.670
	Other(31)	8(25.8%)	23(74.2%)		
Type of family	Nuclear (99)	10(10.1%)	89(89.9%)	11.95	0.000
	Joint (297)	80(26.9%)	217(73.1%)		
Socioeconomic status	Lower Class(263)	53(20.2%)	210(79.8%)	2.95	0.085
	Middle And Upper(133)	37(27.8%)	96(72.2%)		
Time of registration	Early(200)	87(43.5%)	113(56.5%)	99.28	0.000
	Late (196)	3(1.53%)	193(98.47%)		