

Research Article

A cross-sectional study of antenatal care services utilization, delivery practices and factors affecting them in urban slum area of India in 2015

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ABSTRACT

Background: Antenatal care (ANC) is one of the important factors in reducing maternal morbidity and mortality has wide regional variation. The present study was carried out in an urban slum area to determine the pattern of utilization of ANC services, awareness regarding Janani suraksha yojana (JSY) national programme and MEMS (Maharashtra emergency medical services) toll free helpline number (108 and 102).

Methods: A community based cross sectional study was conducted in urban slum area of India in the month of October 2015. Probability proportion to size sampling was used to select 256 mothers who had delivered within last 1 year. After obtaining written informed consent, the participants were interviewed using a predesigned, semi-structured questionnaire and the information was cross-checked with the available antenatal cards to minimize recall bias. The data were analysed considering the level of significance at 95%.

Results: The utilization of the ANC services by the respondents was 86.33%. 43.36% were aware of JSY program while only 17.19% were aware of MEMS toll free helpline numbers.

Conclusions: Utilization of ANC services was significantly associated with mother's education and parity status of mother (Chi square=8.349; $p<0.05$). The main reasons for inadequate utilization of ANC services were non acceptability and inaccessibility of hospital services, inappropriate advice from health workers, and lack of awareness about ANC services and toll-free helpline numbers.

Key-words: Antenatal care service utilization, 108 MEMS services, Janani suraksha yojana program.

INTRODUCTION

Maternal health refers to the health of women during pregnancy, childbirth and postpartum period. While motherhood is often a positive and fulfilling experience, for too many women it is associated with suffering, ill health and even death.¹ Antenatal care is one of the most important indicators for controlling maternal morbidity and mortality. In many developing countries, women do not receive adequate antenatal care during pregnancy. Studies have shown that countries that have improved

their maternal health care services have been successful in reducing the maternal morbidity or mortality.² The current maternal mortality ratio in India is 178 per 100,000 live births, and about 800 women die each day due to preventable causes related to pregnancy and child birth.³ In 2012, about 47,000 women died due to pregnancy related causes in India.⁴

Maternal deaths also result in higher morbidity and mortality among the surviving infants. Hence improving maternal health is a global priority. Maternal mortality is

difficult to estimate with a wide range of uncertainty. So utilization of maternal healthcare provides a proxy measurement for maternal morbidity and mortality.⁵

Under the Maharashtra Emergency Medical Services (MEMS) project of the National Health Mission, based on golden hour strategy, toll-free numbers 102 and 108 have been assigned to provide 24x7 pre hospital health free of cost life support ambulance services to nearby hospitals for further treatment.^{6,7}

Janani suraksha yojana (JSY) national programme was launched in 2005-06 by the Maharashtra Government to increase the institutional deliveries in urban and rural areas and to reduce the maternal mortality and infant mortality among people below the poverty line and those belonging to schedule castes and tribes.⁸

For effective program implementation, it is essential to understand the factors affecting the utilization of maternity care during pregnancy and delivery and focus program efforts on increasing the acceptance and utilization rates. There is a wide regional variation in maternal health care utilization.⁹

The present study was carried out to find the pattern of utilization of ANC services, awareness regarding JSY national program, 102 and 108 emergency toll free helpline numbers in urban slum area.

METHODS

This community based cross sectional study was conducted in the field practice area of urban health training centre, dept. of community medicine, Dr. Vaishampayan memorial government medical college, Solapur, from 1st October to 31st October 2015 (one month), after approval from Institutional Ethical Committee.

Probability proportion to size sampling method was used to select mothers from urban slums under UHTC. Sample size was calculated by the formula $4pq/l^2$, where, p was the percentage of three or more ANC visits (approximately 80% in an urban area of Maharashtra), with 95% confidence interval and 5% allowable error, the minimum sample size was 256.¹⁰

With the assistance of anganwadi workers (AWW) working in urban slum area, eligible mothers were located and the study was explained to prospective participants. After obtaining written informed consent, mothers who had children aged between 0-12 months were included in the study. The participants were interviewed at their homes, at a time convenient to them, using a pre designed, semi structured questionnaire. The first part of the questionnaire included socio demographic and personal characteristics and second part contained questions on maternal health care utilization and knowledge regarding JSY programme and 102/108

MEMS toll free numbers.^{6,7} Modified Prasad socio economic classification was used for classifying socio economic status.¹¹

Utilization of ANC services was considered adequate, if the mothers fulfilled the following criteria during pregnancy (a) ANC registration at any time (b) administration of required TT injections (c) consumption of minimum 100 iron folic acid tablets, (d) minimum four ANC follow up visits.^{4,9}

Information was cross checked with the available antenatal cards to minimize the recall bias. The data were analysed using SPSS Windows Version 15.0 (SPSS Inc., Chicago, Illinois, USA). Chi square test was used for measuring the association, considering the level of significance at 95%.

RESULTS

In the present study, number of mothers who participated was 256. Out of total ANC registered mothers i.e. 233 (91.01%); mothers who registered early in the first trimester were 211 (82.42%). Mothers who had utilized adequate ANC services were 221 (86.33%) and those who had underutilized or not utilized the services were 35 (13.67%). Minimum four ANC visits was the least utilized ANC service followed by ANC registration. The utilization rates for these services were 87.89% and 91.01% respectively (Figure 1).

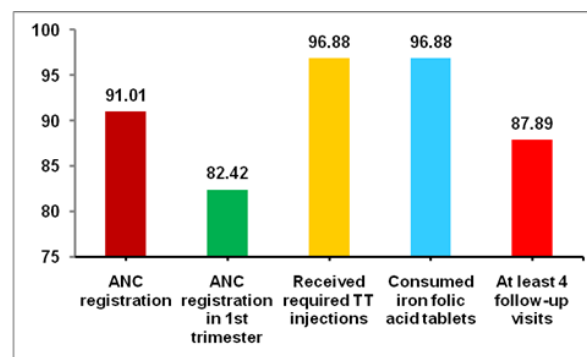


Figure 1: Percentage of respondents utilizing ANC services (n=256).

Majority of the mothers registered were in the 20-25 years age group (68.75%) with 8.20% of women aged less than 20 years. Overall 77% women were young mothers aged below 25 years. Education of the mothers as well as their husbands was relatively poor with majority of the subjects and their spouses educated up to secondary school or less. Most mothers were living in three generation families (59.77%). The parity status of mothers i.e. Primi para and multipara were equal in numbers (38.28%) (Table 1). The adequate utilization of ANC services was significantly associated with education and parity status of mother ($p < 0.05$). But it was not associated with the age of the mother or the type of the

family, education of the father, and socioeconomic status of the family ($p>0.05$) (Table 1). Main reasons for inadequate utilization of ANC services were hospital

services not acceptable, inappropriate advice from health worker, unaware of ANC services and hospital services not accessible (Figure 2).

Table 1: Socio-demographic factors and ANC services utilization.

Socio-demographic variable		Adequate utilization no (%) (n=221)	Inadequate utilization no (%) (n=35)	Total (n=256)	p value
Maternal age	<20 years	020 (95.24)	01 (4.76)	021 (8.20)	0.28
	20-25 years	153 (86.93)	23 (13.07)	176 (68.75)	
	26-30 years	041 (78.85)	11 (21.15)	052 (20.31)	
	31-35 years	006 (100.00)	00 (00.00)	006 (02.34)	
	>35 years	001 (100.00)	00 (00.00)	001 (00.39)	
Maternal education	Illiterate	024 (70.59)	10 (29.41)	034 (13.28)	0.03#
	Primary	051 (87.93)	07 (12.07)	058 (22.66)	
	Secondary	092 (88.46)	12 (11.54)	104 (40.62)	
	Above secondary	054 (90.00)	06 (10.00)	060 (23.44)	
Husband's education	Illiterate	025 (75.75)	08 (24.25)	033 (12.89)	0.07
	Primary	053 (94.64)	03 (05.36)	056 (21.88)	
	Secondary	090 (84.11)	17 (15.89)	107 (41.80)	
	Above secondary	053 (88.33)	07 (11.67)	060 (23.44)	
Socio-economic Class	Class I & Class II	028 (93.33)	02 (06.67)	030 (11.72)	0.22
	Class III	082 (87.23)	12 (12.77)	094 (37.72)	
	Class IV	100 (84.75)	18 (15.25)	118 (46.09)	
	Class V	011 (78.57)	03 (21.43)	014 (05.47)	
Type of family	Nuclear	057 (87.69)	08 (12.31)	065 (25.39)	0.88
	Joint	032 (84.21)	06 (15.79)	038 (14.84)	
	3-Generation	132 (86.27)	21 (13.73)	153 (59.77)	
Parity of mother	Primipara	091 (92.86)	07 (07.14)	098 (38.28)	0.02#
	Second Para	052 (86.67)	08 (13.33)	060 (23.44)	
	Multipara	078 (79.59)	20 (20.41)	098 (38.28)	

indicates statistically significant.

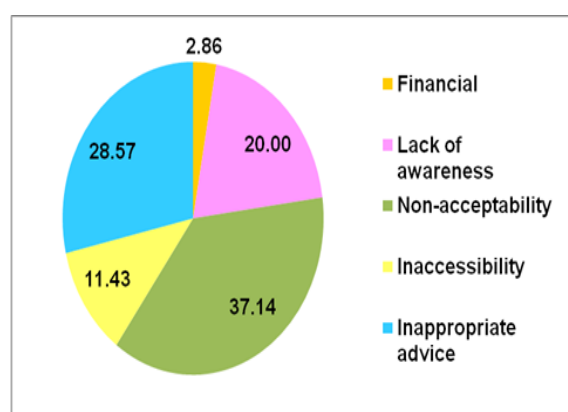


Figure 2: Main reason (percentage) for inadequate utilization of ANC services (n=35).

Institutional deliveries were 250 (97.66%) and 006 (2.34%) were home deliveries. Among 250 institutional deliveries, 138 (53.91%) were in Government hospitals and remaining 112 (43.75%) were in private hospitals.

Most of the deliveries were in Government hospitals. It was statistically significant. Out of the total anc mothers, Primipara and Second para were equal in number were statistically significant.

Table 2: Distribution of deliveries: place, parity and mode of delivery.

		Frequency (%)	p value
Place of delivery	Govt. Hospital	138 (53.91)	*P <0.01
	Private hospital	112 (43.75)	
	Home	006 (02.34)	
Parity	Primi-para	098 (38.28)	*P <0.01
	2 nd para	098 (38.28)	
	Multipara	060 (23.44)	
Mode of delivery	Normal	193 (75.39)	*P <0.01
	Assisted	005 (01.95)	
	LSCS	058 (22.66)	

* Test applied is Goodness of Fit.

Majority of the deliveries were normal deliveries which were also found to be statistically significant. It was also found that awareness regarding janani suraksha yojana national program was present among 111 (43.36%) mothers and only 44 (17.19%) mothers knew about toll free helpline numbers (Table 3).

Table 3: Awareness regarding JSY programme and toll free numbers among ANC mothers.

Awareness regarding JSY programme	Yes	111 (43.36)
	No	145 (56.64)
Awareness regarding Maharashtra Emergency toll free helpline numbers	108 only	040 (15.63)
	102 only	002 (00.78)
	Both number	002 (00.78)
	Total	044 (17.19)

DISCUSSION

The present study shows that adequate ANC services utilization rate was found to be 86.33% which is higher than the 39% utilization reported for Maharashtra State by the District Level Household Survey IV.¹⁰ A similar study conducted by Singh A et al reported 22.9% ANC service utilisation rate.¹² The utilization of individual ANC services and ANC registration in first Trimester (82.42%), TT injections (96.88%), and four ANC check-ups (87.89%) in our study is higher than that reported by District Level Household Survey IV (2012-13) which reported these rates as 70.5%, 92.5%, 81.6%, respectively.¹⁰ In our study, socio demographic factors, such as education of mother and parity status were found to be significantly associated ($p < 0.05$) with the utilization of antenatal care services. This finding is consistent with that of study conducted by Singh A et al.¹²

In this study, the proportion of institutional deliveries was 97.66% and that in government health facilities was 53.90%, which is higher than the corresponding figures of 95.6% and 40.3% reported by DLHS-IV (2012-13) for urban areas. Deliveries in private health facilities deliveries were 43.76% as compared to 55.3% deliveries reported by DLHS-IV for urban area.¹⁰

Non acceptability of hospital services was the main reason for inadequate utilization of ANC services followed by inappropriate advice from health worker. This implies that health workers need to be proactive and give timely health education to the beneficiaries for increasing the utilisation of ANC services.

Awareness regarding emergency toll free helpline numbers was 17.19% which is lower as compared to the 48.6 % reported by Bhabhor et al.¹³ Awareness of JSY was 36% in the present study as compared to 59.38% stated Sharma P et al.¹⁴ The reason for low awareness in

the present study could be due to low educational status of mothers.

CONCLUSION

In this urban community of Southern part of Maharashtra, India, the utilisation of antenatal services by mothers was high. The study has also found low level of knowledge about national health programme like janani suraksha yojana, 102 and 108 emergency toll free helpline number; hence this study provides a foresight to the policy makers to focus on creating more awareness about JSY programme and emergency toll free helpline number among the mothers.

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