

RESEARCH ARTICLE

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Factors Affecting Utilization of Maternal Health Care Services in Urban area of Bhubaneswar, India

Sabyasachi Roy*, Antaryami Sahoo, Lisa Sarangi

Department of Community Medicine, Hi tech Medical College, Bhubaneswar, Odisha, INDIA

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*Correspondence to:

Dr. Sabyasachi Roy, MBBS, MD,

Department of Community Medicine, Hi tech Medical College, Bhubaneswar, Odisha, INDIA.

Email: drsabyasachi86@gmail.com

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Abstract

Objective: To assess perception of beneficiaries in terms of satisfaction with the utilised maternal health care services, to find out different socio- demographic factors affecting the utilisation of services and determine proportion of mothers who have access to health care settings.

Methodology: A community based cross-sectional study design that employed quantitative data collection method was carried out to assess factors affecting utilization of maternal health care services in June 2016 in Khurda district, Eastern Bhubaneswar Zone. **Results:** A total of 495 women were included in this study to investigate the factors that influence utilization of maternal health care services. The majority of respondents were illiterate (71.9%) and primary level educated constituted 26.3%. 86.1% had at least one ANC visit. 61.7% of mothers had less than four visits and 46.2% of mothers started attending ANC in the second trimester. About 38.3% of mothers made four and more ANC visits which is higher than the national level in 2011 in which only 19% of mothers made four and more ANC visits. **Conclusion:** The study findings reveal that the study community had high level of utilization of selected components of maternal health care and high level of satisfaction with the utilized services and most of them are utilized from government run health system. Keeping in mind the possible good delivery and good utilization of maternal health care in the study community, few areas still need to be addressed.

Key words: Factors, Antenatal care, Maternal health care, Urban, India.

INTRODUCTION

Child bearing is one of the hazardous experiences that women engage in while bringing new life to this world. It is often associated with complications that may cause morbidities, disabilities, and mortalities. World Health Organization (WHO) estimates that more than half a million women lose their lives in the process of reproduction worldwide every year; of these deaths, about 99 percent are from developing countries. In addition to the risk of dying during pregnancy and childbirth, many more women suffer from short and long-term maternal disabilities and illness. According to WHO (2001) for every maternal death, an estimated 30 to 50 women suffer pregnancy related health problems such as vesicovaginal fistulae, infertility, and depression that can be permanently debilitating.^[2]

Globally more than 70 percent of maternal deaths are due to complications.^[3] The World Bank estimates that 74 percent of maternal deaths could be averted if all women had access to interventions that address complications of pregnancy and childbirth, especially emergency obstetric care.^[4] Similarly, studies that focused on



maternal morbidity and mortality in developing countries have repeatedly recommended the need for antenatal care and availability of trained personnel to attend women during labor and delivery.^[5] Antenatal care (ANC) provides avenue to provide pregnant women with information, treat existing social and medical conditions, and screen for risk factors. However, it is not enough to receive ANC, since majority of the fatal complications occur during or shortly after delivery. It is therefore important that pregnant women have skilled obstetric attendance during delivery. However, utilization of these services in most developing countries is constrained due to various cultural, socioeconomic, and demographic factors.^[6] As the result disparities between developed and developing countries in terms of utilization of antenatal, delivery, and postnatal services are unfairly large, in developed countries, it is estimated that about 97 percent of the pregnant women receive ANC and 99 percent use skilled obstetric service at delivery, whereas in developing countries, only 65 percent and 53 percent of women use ANC and skilled obstetric care services, respectively.^[7]

Odisha is one of the states that experience the high maternal mortality ratios in India; that is, 673 per 100,000 live births and more than fourteen thousand mothers die as the result of pregnancy and related causes each year.^[8] In addition, more than 400,000 suffer long-term disabilities due to complications during pregnancy, delivery, or postpartum periods. Most maternal mortalities and disabilities in the country are due to direct obstetric complications, which are avoidable if women can get adequate and timely antenatal, delivery, and postdelivery services. The major causes of maternal death are abortion (32%), obstructed labor (22%), hypertension (9%), sepsis (12%), haemorrhage (10%), and others (15%).^[9] Reducing maternal morbidities and mortalities is the issue that is given due attention by Odisha government is among the first Indian state governments to make a strong commitment to the United Nations inspired millennium development goals (MDGs) by making one of the MDG targets, maternal health, central to its national development strategy.^[10-12]

In general the variations in utilizing maternal health care services and factors affecting its utilization varied by geographic area and socioeconomic and cultural settings in the country which calls for investigation of area and culture specific determinants of maternal health care utilization. However, the magnitude of utilization of maternal health care services and factors affecting it are not investigated in Eastern Bhubaneswar Zone in general and Khurda district in particular while this part of the country has its own peculiar geographic, socioeconomic, and cultural setting

which might affect utilization of these services. Studies trying to explore factors affecting utilization of maternal health care services in Eastern Bhubaneswar Zone in general and Khurda district in particular are very scanty and it is this knowledge gap that leads us to initiate this study. Thus, identifying factors specific to each area so as to identify area specific measures that can help minimize the hindrances is very crucial.

Objective

- To assess perception of beneficiaries in terms of satisfaction with the utilised maternal health care services.
- To find out different socio- demographic factors affecting the utilisation of MCH services.
- To know the MCH care utilisation rate
- To determine proportion of mothers who have access to health care settings.
- To study the different MCH services available to the study population.

METHODOLOGY

A community based cross-sectional study design that employed quantitative data collection method was carried out to assess factors affecting utilization of maternal health care services in June 2016 in Khurda district, Eastern Bhubaneswar Zone. Khurda district has total population of 104,248 of which about 51% were males, while 49% were females. In 2015/2016, there were 13 clinics, 11 health posts, one health center, and one drug shop. The health coverage of the district was about 86%.^[13]

The study populations were women of reproductive age (15-49 years) who gave at least one live birth in the five years prior to the survey date and who were the usual residents of the district. The sample size was determined using the formula of Cochran.^[14] Thus, taking the prevalence of one of the major parameters in this study, that is, antenatal care utilization, which was 24.8 percent (0.25) for Odisha Regional State,^[8] the sample size was determined. The estimate of the sample in this study was desired to be precise at confidence level of 95 percent and margin of error of four percent. Then, using the formula, the sample was determined to be $(1.96)^2 (0.25) \times (0.75) / (0.04)^2 = 450$. Adding 10 percent allowance for nonresponse, the total sample size was determined to be 495. To identify the study units, the district was first stratified into urban and rural

areas and one urban and five rural kebeles were selected from the district using simple random sampling technique. Then lists of eligible women who live in the selected kebeles were obtained from kebele health extension workers registration books. A probability sample proportional to the population size technique was used to determine the number of respondents that were selected from each kebele. Finally, the respondents included in the study from each kebele were identified by using simple random sampling technique.

The outcome variables in this study are antenatal and delivery care services utilization for which the categories are either use or nonuse of the services. The independent variables were categorized into demographic which include age of women and their husbands, marital status, and place of residence and socioeconomic which includes education of women and their husbands, occupation of women and their husbands, religion of women and their husbands, women's knowledge/attitude towards maternal health care services, availability, and accessibility of maternal health care services, women's perception of quality of services, and cost of transportation and services. The data was entered using EPI INFO version 3.51 and finally was exported to SPSS version 16.0 for analysis. Frequencies and summary statistics such as means, standard deviations, percentages, and ranges were computed to describe the study population in relation to relevant variables. The association and significance between the dependent and independent variables were measured using binary logistic regression analysis.

The ethical clearance was obtained from the Hi-tech medical college and hospital. The survey was commenced after obtaining permission from District Council. Informed verbal consent was obtained from each study subject. Each respondent was informed about the objective of the study and assurance of confidentiality.

RESULTS

A total of 495 women were included in this study to investigate the factors that influence utilization of maternal health care services. All of the respondents were Hindu in religion, more than 95% were married, and more than 60% were housewives. The majority of respondents were illiterate (71.9%) and primary level (grades 1 to 8) educated constituted 26.3%. Secondary and above level educated constituted less than 2%. The majority of respondents were in the age category from 20 to 34 which is the peak reproductive age category and about 93.3% of the respondents lied in this age category. About 69.9% of the respondents had family members attending formal school. 98.2% of respondents ever attended health education.

About 12.1% of respondents ever experienced abortion/still birth. More than 95 percent of the respondents have access to health facility in their own kebele while only 1.8% of respondents have no access to health facility in their own kebeles. About 86.1% of respondents attended antenatal care (ANC) for their recent birth. Of these 35.5% started attending ANC in the first trimester, 46.2% in the second trimester, and the remaining 18.3% in the third trimester. Out of 426 mothers who received ANC for their recent pregnancy, 263 (61.7%) made less than four visits while 163 (38.3%) made four and more ANC visits during the course of their recent pregnancy. Only 25.3% of respondents gave birth in health institutions for their recent birth with the help of health professionals while majority (74.7%) of respondents gave birth at home without the help of health professionals. Rural women were less likely to use institutional delivery, 20.9%, as compared to urban women, 35.9%.

Those women who delivered at home were asked why they preferred home and their reasons were as follows: easy labor 281 (75.9%), feeling shame to go to health institutions 42 (11.4%), health facility being far 36 (9.7%), and other reasons 11 (3.0%). Of those who gave birth at home, 255 (69.1%) were attended by TTBA's followed by neighbors 103 (27.9%) and the remaining 12 (3.0%) by others. Those women who delivered at health institution were asked why they prefer health institution and their reasons were as follows: being sick 32 (25.6%), received health education 37 (29.6%), saving mother's life 31 (24.8%), good service 15 (12.0%), no fee 6 (4.8%), and other reasons 4 (3.2%). Of those who gave birth at health institutions 52 (41.3%) were attended by midwives, followed by nurses 34 (27.0%), medical doctors 17 (13.5%), health extension workers 4 (3.2%), health officers 2 (1.6%), and do not remember 16 (13.5). About 92.1% of husbands of respondents lied in the age category from 25 to 44 years. The major occupation of husbands was farming (90.1%) followed by merchant (7.3%) and the remaining occupations constitute less than three percent. The majority of husbands were illiterate (51.7%) and primary level (grades 1 to 8) educated constituted 44.6%. Secondary and above level educated constituted less than four percent.

The bivariate analysis of factors affecting attendance of ANC indicated that age of women, education of women, health education on maternity of women, presence of health facility in the kebele, family size of the household, history of abortion/still birth, means of transport to the nearest health facility, perception of women to the quality of maternal services, and rural-urban residence were found to be significant predictors of ANC utilization. On the other hand,

Table 1: Background characteristics of respondents

Variable	N (%)
Age group	
<19	36 (12.73)
20-25	172 (61.36)
26-30	50 (18.18)
>30	22 (7.73)
Education	
Illiterate	48 (17.27)
Primary	168 (60)
Secondary	45 (16.36)
>Higher Secondary	19 (6.36)
Husband's education	
Illiterate	28 (10)
Primary	151(54.09)
Secondary	75(26.82)
>Higher Secondary	26(9.09)
Occupation	

Table 1 continued

Housewife	248(88.64)
Engaged in occupation	32(11.36)
Family type	
Nuclear	156 (55.91)
Joint	124(44.09)
Parity	
Primipara	174(62.27)
Multipara	106 (37.73)
Family planning practice	
Ever/current user	99 (35.45)
Never user	181 (65.54)
P/C/I (Range Rs.400-Rs.6000)	
Rs400- Rs2300	136 (48.63)
Rs2300- Rs4200	66(23.63)
Rs4200- Rs6100	52(18.63)
Rs6100- Rs8000	26(9.09)
Total	280 (100)

Table 2: Number of Antenatal visits by background characteristics of respondents (n=280)

Sl/No.	Variable	Frequency	> 3 ANC	Percentage	p-value
1.	Age group				
	<19	36	27	75.00	$\chi^2 = 10.67$, DF 3, $p < 0.05$
	20-25	172	160	93.33	
	26-30	50	40	80.00	
	>30	22	20	88.23	
2.	Education				
	Illiterate	48	34	71.05	$\chi^2 = 12.31$, DF 2, $p < 0.05$ (* clubbed together)
	Primary	168	150	89.39	
	Secondary*	45	44	97.22	
	>HS*	19	19	100.00	
3.	Education of Husband				
	Illiterate	28	22	77.27	$\chi^2 = 3.37$, DF 3, $p = 0.34$
	Primary	151	133	88.23	
	Secondary	75	69	91.52	
	>HS	26	23	90.00	
4.	Occupation				
	Housewife	248	218	88.20	$\chi^2 = 0.0009$, DF 1, $p = 0.98$
	Worker	32	29	88.00	
5.	Family type				
	Nuclear	156	142	91.05	$\chi^2 = 1.63$, DF 1, $p = 0.20$
	Joint	124	105	84.53	
6.	P/C/I (Range Rs.400-Rs.8000)				
	Rs400- Rs2300	136	108	79.43	(* clubbed together);
	Rs2300- Rs4200*	66	61	92.30	
	Rs4200- Rs6100*	52	52	100.00	$\chi^2 = 15.28$, DF 1, $p < 0.05$
	Rs6100- Rs8000*	26	26	100.00	
7.	Parity				

	Primipara	174	163	93.43	$\chi^2=8.31$,
	Multipara	106	84	79.51	DF 1, $p<0.05$
8.	Family planning				
	Ever/current user	99	88	88.46	$\chi^2=3.37$,
	Never user	181	159	88.02	DF 1, $p=0.34$
	Total	280	247	88.18	

Table 3: Place of Antenatal care (n=280)

Place of ANC	N (%)
Subcentres	174 (62%)
Other Government Hospital	78 (28%)
Private clinic/hospital	22 (8%)
At home by Healthcare workers	06 (2%)

Table 4: Distribution of respondents according to number of antenatal visits and place of delivery

No. of ANC	Institutional delivery	Home delivery	Total
>3 ANC	244 (87.3)	2 (0.9)	247 (88.2)
< 3 ANC	18(6.4)	15 (5.4)	33 (11.8)
Total	262 (93.7)	18 (6.3)	280 (100)

Table 5: Mean scores and standard deviations for different areas of client satisfaction (n=280)

Questions	Mean (SD)
How would you rate the quality of service?	2.84 (0.82)
Did you get the kind of service you wanted?	3.22 (0.63)
To what extent has maternal care services met your needs?	3.38 (0.78)
If a friend is pregnant, would you recommend same health personnel and hospital to her?	3.54 (0.72)
How satisfied are you with the amount of care you have received?	3.08 (0.74)
Have the services you received helped you to deal more effectively with your pregnancy?	3.60 (0.55)
In an overall, general sense, how satisfied are you with the service you have received?	3.30 (0.74)
If you pregnant again, would you avail services from the same place?	3.37 (0.77)
Total score (range 8-32)	26.31(4.01)

the bivariate analysis of factors affecting delivery at health institution indicated that occupation of women, education of women, occupation of husband, education of husband, family member/s education, household family size, history of difficult labor, means of transport to the nearest health facility, women's perception of quality of maternal services, and rural-urban residence to be significant predictors of utilization of institutional delivery.

88.18%, took three or more antenatal checkup. Three or more antenatal checkup is the minimum ANC recommended by RCH programme. However, WHO-UNICEF recommends four ANC in uncomplicated pregnancies 30. The minimum number of ANC in this sample was one and the maximum was 10 (Table 2).

Majority (62%) of respondents availed the service of antenatal care from the subcentres by other government hospital (28%). Overall 90% respondents utilised government health services (Tables 3).

Number of antenatal visits was associated with place of

delivery and this was statistically significant. Women with >3 ANC were more likely to give birth to their child in a health facility (Table 4).

Majority of respondents are showed that satisfaction level was high with the utilized maternal care services (Table 5).

DISCUSSION

A total of 495 women were included in the study. 86.1% had at least one ANC visit. 61.7% of mothers had less than four visits and 46.2% of mothers started attending ANC in the second trimester.

About 38.3% of mothers made four and more ANC visits which is higher than the national level in 2011 in which only 19% of mothers made four and more ANC visits.^[12] Demographic and socioeconomic variables such as age of women, education of women and their husbands, receiving health education on maternity, presence of health facility in the kebele, presence of family member/s attending formal school, family size, history of abortion/still birth,

history of difficult labor, means of transport, perception of quality of maternal services, and rural-urban residence were found to be strongly related to maternal health care services utilization.

In this study, education of women and their husbands remained strong predictor of maternal health care services utilization and these results are consistent with the findings elsewhere.^[16-18] Women engaged in farming and merchant activities were more likely to use institutional delivery compared to housewives. Similarly, women married to merchants and others were more likely to use institutional delivery compared to women married to farmers. Mothers who previously experienced obstructed labor were found to be higher users of maternal health care services. This result is consistent with other studies.^[19] Similarly, mothers who previously experienced abortion/still birth were better users of maternal health care services than mothers who did not. This could be because of the fact that mothers who had history of obstructed labor/abortion/still birth have practical experience about the dangers associated with pregnancy and child birth than those who did not and this could motivate them to receive ANC and give birth at health facility. Finally, certain limitations of this study must be kept in mind. This study was a time bound academic exercise by a single researcher without any external funding. So, certain methodological adjustments were necessary.

- There could have been some degree of recall bias as births preceding last two years of survey was included in this study. There was an attempt to minimize such bias by cross checking of antenatal card, however few respondents could not provide any medical document.
- Instead of wealth index, per capita income was used as a marker of socio-economic status. This is a single self-reported parameter instead of wealth quintile which combines assets. Hence PCI gives less accurate information.
- Random walk technique was used for identifying households in this study which is a quota sampling procedure as opposed to segment design technique which is currently used for larger community based surveys.
- Only some selected components of maternal health care were studied. The scope of this study could have been widened to include parameters on referral, facility survey as well as perinatal outcome and child health. Aim of this study was to get an overall view of maternal health care utilization at the community level and the

findings could open opportunity for further studies.

CONCLUSION

The study findings reveal that the study community had high level of utilization of selected components of maternal health care and high level of satisfaction with the utilized services. The factors are effect on ANC utilization services was poor women, less educated women, very young mothers, women with higher parity, women of marginalised communities, women who are most disadvantaged are least likely to utilise available maternal health care services to the full extent. Furthermore, majority of the health care was utilized from government run health system. Keeping in mind the possible good delivery and good utilization of maternal health care in the study community, few areas still need to be addressed.

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CONFLICT OF INTEREST

None

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None

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