Research Article

Utilization of antenatal care services in periurban area of Aligarh

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Abstract

Background: Utilization of antenatal care (ANC) services is poor in the peri-urban areas, causing increased maternal morbidity and mortality.

Objective: (i) To determine the current status of utilization of ANC services and (ii) to asses factors affecting utilization of ANC services.

Materials and Methods: A community-based cross-sectional study was conducted in peri-urban field practice area of urban health training center, J N Medical College, Aligarh, India. The data were collected by home visit using a pretested, structured, semi-open questionnaire from 200 recently delivered women, who utilized ANC services. Data were tabulated and analyzed by using SPSS-20. Proportion, frequencies, and χ^2-tests were used to interpret the data.

Result: Full utilization of ANC services was found to be 59%. Home deliveries were 23% and all were conducted by untrained persons. Utilization of ANC services was significantly associated with education, socioeconomic status, parity, and age at marriage. Main reasons for inadequate (partial/no) utilization of ANC services were financial constrains (34.14%) and lack of awareness (30.48%), whereas for home deliveries it was tradition (23.91%) and financial constrains (21.74%).

Conclusion: Utilization of ANC services was not satisfactory and home deliveries by untrained person were still present. Prevailing barriers to utilization of ANC services and institutional deliveries must be identified and taken into consideration in planning and policy making.

KEYWORDS: Antenatal care services, cross-sectional study, peri-urban area, utilization

Introduction

According to the Provisional Population Totals of Census 2011 in India, the urban population comprised 31.8% of the total population of 1210 million as compared to 27.8% in Census 2001.[1] The population projections by United Nations 2009 indicate that by 2030, India's urban population will grow to 590 million, accounting for nearly 40% of the total population.[2]

The unprecedented growth in the urban population in India has resulted in an alarming increase of peri-urban area—the landscape interface between town and country/the rural–urban transition zone where urban and rural uses mix and often clash, basically leading to slum formation. In 2003, UN expert group recommended a provisional operational definition of slum based on inadequate access to safe water, inadequate access to sanitation and other infrastructure, poor structural quality of housing, overcrowding, and insecure residential status.[3] These poor environmental conditions coupled with high population density makes the residents, a major reservoir for a wide spectrum of adverse health conditions such as delivery-related complications, postpartum morbidity, and maternal mortality.[4-7] Though these areas have better government and private health facilities as compared to rural areas, still the women living in these areas are unable to utilize essential antenatal, natal, and postnatal care services. The utilization of maternal health care is a complex phenomenon influenced by various factors, such as economic status, educational level, age, caste, religion, and lack of information, in different settings, contributing in maternal mortality.[5,8,9]

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As per World Health Organization (WHO), UNICEF Trends in maternal mortality, 1990–2013 Globally, there were estimated 289,000 maternal deaths in 2013, a decline of 47% since 1990. At the national level, India accounted for 17% (50,000) of all global maternal deaths. The global maternal mortality rate (MMR) in 2013 was 178 per 100,000 live births, down from 380 maternal deaths per 100,000 live births in 1990. The MMR in developing regions is 15 times higher than in developed regions.[10] Over past decades, the Government of India has implemented several policies and programs such as Child Survival and Safe Motherhood Programme 1992; Reproductive and Child Health I, II (RCH) Program; National Population Policy 2000; and National Urban Health Mission 2013–2017, to reduce the burden of maternal mortality and morbidity and improve maternal health.[9] As a result, the overall utilization of antenatal care (ANC) services in India has improved over time, however, the level of uptake is still considerably low among the women residing in these areas.

To ensure better maternal health for these women, it is necessary to examine their health-care needs and determine sociodemographic and cultural correlates/variables associated with utilization of ANC services. It can help the government in designing appropriate, context-relevant programs and policies. Therefore objectives of the present study were: (1) to determine the current status of utilization of ANC services and (2) to assess the determinants affecting the utilization of ANC services among women living in these areas of Aligarh.

Materials and Methods

The present descriptive, community based, cross-sectional study was conducted in the field practice area of urban health training centre (UHTC) of Department of Community Medicine, J N Medical College, AMU, Aligarh, India to evaluate utilization of ANC services and delivery-related practices among the recently delivered women, who have given birth within last 1 year preceding to the time of interview. Health facilities available within 2 km of the area includes: a tertiary care facility (Medical College), UHTC, one private nursing home, offering facilities for ANC and delivery services.

Sample size was calculated by using, 4 pq/L^2 (52.5% prevalence (p) of one antenatal check-up in urban slum of Aligarh by Khan[7] with allowable error of 6%, 95% confidence interval, and 10% dropout and non-response rate. Total calculated sample was 305. Till now 200 recently delivered women (RDW) who have given birth in last 1 year have been interviewed and the collected data have been analyzed.

A pilot study was carried out in the beginning, to pilot the questionnaire and necessary modifications were made accordingly. For the main survey, every house was approached from the starting point of study area and recently delivered women were interviewed after taking informed written consent, using a pretested, structured, and semi-open questionnaire. They were explained about the purpose of the study and assured regarding the confidentiality of the information obtained. Then relevant information about the ANC services utilization and place of the delivery was recorded along with the sociodemographic and cultural variables. Repeated visits were scheduled for those women, who had delivered within previous 6 weeks to complete history of post-natal period. Houses found locked or eligible women not present in three consecutive visits were excluded from study. Women, who have not given consent, were counted as nonresponse and excluded also.

A woman is considered to have received full ANC only when she has fulfilled the following criteria: ANC registration within 12 weeks/ first trimester of pregnancy, at least four antenatal check-up visits, two doses of tetanus toxoid (TT) injection, and iron and folic acid (IFA) tablets/syrup for 90 days or more during her pregnancy. A delivery considered to be safe delivery when it was conducted either in a medical institution or home assisted by a doctor/nurse/other qualified health professionals, as per WHO guidelines.[11] Under guidance of existing literature on ANC utilization, we have considered a range of sociodemographic variables such as age of women, education of women and her husband, economic status, age of women at marriage, type of family and parity to study the relevance with ANC utilization and delivery practices.

The collected data were analyzed using SPSS-20. Proportion, frequencies, χ^2, and other statistical tests were used to interpret the data. Confidence intervals (CI) of 95% and *p*-value (<0.05) were considered significant for the analysis. Ethical approval has been obtained from the Institutional Ethics Committee, JNMCH, AMU, Aligarh. The women were explained about nature of the study and written consent was taken from them. Confidentiality of the given information was maintained. Health education and adequate counseling has been provided to all the women who were interviewed. If any woman was found to have problems, then appropriate referral was done.

Result

Table 1 depicts coverage utilization of ANC services among the study population. In present study, out of 200 RDWs who were interviewed, only 62% were registered during first trimester of pregnancy. Majority of (97%) women availed at least one ANC visit for their last birth. Although it was not fully transformed into recommended ANC visits as per guidelines. Only 73% mothers paid minimum four or more ANC visits. Majority of (85.5%) women received required doses of tetanus toxoid (TT) vaccine. Most of (95.5%) women received recommended number of IFA tablets (100 IFA tablets), but only 58.5% of the women consumed ≥100 received IFA tablets. In this study only 59% women had full utilization of ANC services.

Table 2 describes main reasons for inadequate (partial/no) utilization of ANC services, which was found to be financial constrains (34%); lack of awareness (31%); and others such as socioeconomic status, educational status, traditions, and unavailability of accompanying person.

Table 3 describes utilization of ANC services with respect to various sociodemographic variables. It was observed that utilization of ANC services was significantly associated with

Table 1: Utilization of antenatal care (ANC) services by mothers (*n* = 200)

ANC service	Yes	No
	Number (%)	Number (%)
ANC registration in first trimester	124 (62)	76 (38)
Any ANC visit	194 (97)	6 (3)
≥4 ANC visits	146 (73)	54 (27)
Received required TT injections	171 (85.5)	29 (14.5)
Received 100 iron folic acid (IFA) tablets	191 (95.5)	9 (4.5)
Consumed ≥100 received tablets	117 (58.5)	83 (41.5)
Full utilization of ANC services	118 (59)	82 (41)

Table 2: Reason for inadequate utilization of ANC services (*n* = 82)

Reason	Number	Percentage
Financial	28	(34.14)
Lack of awareness	25	(30.48)
Not necessary	15	(18.28)
Others	14	(17.10)

Table 3: Sociodemographic variables affecting adequate ANC services utilization (*n* = 200)

Socio-demographic variable	Utilization of ANC services			Total	*P** value
	Full	partial	No		
	No. (%)	No. (%)	No. (%)		
Age of mother (years)					
15–24	51 (56)	36 (39.6)	4 (4.4)	91	>0.05
25–34	62 (62)	36 (36)	2 (2)	100	
≥35	5 (55.6)	4 (44.4)	0 (0)	9	
Education of women					
Illiterate	30 (42.9)	36 (51.4)	4 (5.7)	70	<0.05
Primary/Middle	25 (59.5)	16 (38.1)	1 (2.4)	42	
≥High school	63 (71.6)	24 (27.3)	1 (1.1)	88	
Education of husband					
Illiterate	15 (34.9)	23 (53.5)	5 (11.6)	43	<0.05
Primary/Middle	19 (50)	19 (50)	0 (0)	38	
≥High school	84 (70.6)	34 (28.6)	1 (0.8)	119	
Socioeconomic status#					
Upper	30 (90.9)	3 (9.1)	0 (0)	33	<0.05
Upper middle	24 (68.6)	11 (31.4)	0 (0)	35	
Middle	32 (57.1)	22 (39.3)	2 (3.6)	56	
Lower middle	24 (40.7)	32 (54.2)	3 (5.1)	59	
Lower	8 (47.1)	8 (47.1)	1 (5.9)	17	
Type of family					
Nuclear	37 (48.7)	37 (48.7)	2 (2.6)	76	>0.05
Joint	81 (65.3)	39 (31.5)	4 (3.2)	124	
Age at marriage (years)					
<25	48 (46.6)	50 (48.5)	5 (4.9)	103	<0.05
>25	70 (72.2)	26 (26.8)	1 (0.01)	97	
Parity					
1	50 (71.4)	19 (27.1)	1 (1.4)	70	<0.05
2–3	54 (59.3)	35 (38.5)	2 (2.2)	91	
≥4	14 (35.9)	22 (56.4)	3 (7.7)	39	

*(*P*-value <0.05 = significant) # (Modified B G Prasad Classification)

Table 4: Distribution according to the place of deliveries (*n* = 200)

Place of delivery	Number	Percentage
Institutional		
Government hospital	80	(40)
Private hospital	74	(37)
Home	46	(23)

Table 5: Main reason for conducting delivery at home (*n* = 46)

Reason	Number	Percentage
Traditional	11	(23.91)
Economical	10	(21.74)
Fear of hospital	8	(17.39)
Others	17	(36.96)

education of women and her husband, their socioeconomic status, age of woman at marriage and parity ($p < 0.05$) and no significant relationship was found with age of women and type of family.

Full utilization of ANC services ranged from "42.9% to 71.6%" and "34.9% to 70.6%" with increasing educational status of women and her husband respectively, whereas full utilization of ANC services ranged from "47.1% to 90.9%" with respect to increasing socioeconomic status. Women of higher parity (35.9%), nuclear family (48.7%) and who married at an earlier age (46.6%) were less likely to full utilization of ANC services as compared to women of low parity, belonging to joint family and who married at later age.

Table 4 describes that 77% deliveries were institutional, of the 200 women 80 (40%) delivered in government hospital and 74 (37%) delivered in private hospital, whereas 23% deliveries were conducted at home.

Table 5 describes that main reason for conducting deliveries at home were found to be traditional practices (23.9%); low economic status (21.7%); and others such as fear of hospital, rude behavior of health staff not necessary to deliver at hospital, and no complication.

Discussion

Maternal health care has been one of the priorities of the Government of India since many decades. This study examines the factors affecting ANC utilization among women of peri-urban area of Aligarh. Urban Health Training Centre is functioning as the main public resources of Primary Health Care and Reproductive Child Health Care services for the people, as it is located in the close proximity of the service area. The study reveals full utilization of ANC still less. Several factors have been found significantly associated with utilization of ANC services.

In this study early registration of pregnancy was found to be 62% which is higher than the study conducted by Ansari and Khan[12] in rural areas of Aligarh, which reported only 40% RDWs were registered during first trimester, whereas DLHS-3 and NFHS-3 data for Aligarh shows that only 36.3% and 44% women were registered during first trimester respectively.[13,14] Indicating that situation is improving but still there is lack of awareness and knowledge regarding early registration of pregnancy.

In this study higher level of uptake of any ANC visit (97%) was found as compared to studies done in urban slum of Aligarh by Khan[7] and Ansari et al.,[4] who reported that only 52.5% and 80.4% mothers had availed at least one ANC checkup, respectively. This difference is due to time trend, physical accessibility of health facilities, difference in educational and socioeconomic status, etc. Although it was not fully transformed into recommended ANC visits, only 73% women had four or more ANC visits, indicating lack of awareness and knowledge regarding it and other factors such as family tradition, paucity of time to visits again and again, and lack of accompanying person.

Almost 95.5% women received 100 or more IFA tablets but only 58.5% consumed it. NFHS-3 (2005–2006) reported that 65% women received IFA supplements for their most recent birth, but only 23% took IFA for 90 or more days.[14] IFA tablets consumption varied from 7% to 81% in various studies carried out in urban slums across the country.[13–17]

The finding in this study reflects availability and physical accessibility in terms of TT vaccination (85.5%) through various health facilities, such as UHTC, anganwadi centers, and private hospitals. This is slightly parallel to findings of study conducted by Agarwal[18] in urban slum of Delhi, who reported that 83% women were immunized against tetanus.

In this study 59% of women received full ANC which is quite higher as compared to the study conducted by Singh et al.[9] to assess utilization of maternal care services in 3315 adolescent mothers in urban India-based on evidence of DLHS-3 reported only 22.9% women received full ANC care. Singh et al.[19] using the evidence from NFHS-3, reported only 16% adolescent women in India received full ANC**.** Utilization of ANC services varied from 50% to 90% in various studies carried out in other urban slums.[13–17,20] Financial constrains (34.14%) and lack of awareness (30.48%) were found to be the main reasons of partial and no utilization of ANC services simulating findings of other studies.[5,21]

Educational status was found to be significantly associated with ANC utilization. Findings similar to this study were reported by Hazarika[6] on the basis of evidence from NFHS three for eight cities and other studies also reported that women with higher education have positive attitude and practices toward ANC and other health services than women with little or no education.[7,9]

Utilization of full ANC ranged from 47.1% to 90.9% with respect to increasing socioeconomic status. Women belonging to the higher socioeconomic status due to advantaged background and economically accessible health services received full ANC compared women in the lower socioeconomic status, as found in study conducted by Hazarika.[6]

Women of higher parity, nuclear family, and who married at an earlier age were less likely to avail full ANC services as compared to women of low parity, belonging to joint family, and who married at later age. Perceived barriers were traditional practices, their past experience, economical, no complication in present pregnancy, unavailability of accompanying person, etc. Similar findings were also reported by Salam and Siddiqui in Bijapur,[22] Venkatesh et al.[23] in urban slum of Devnagere city.

Overall 77% deliveries were institutional and only 23% deliveries were conducted at home. Finding of this study is lesser than other studies in urban slum of Aligarh and Delhi, which reports 67% and 71% deliveries were conducted at home respectively.[4,24] According to DLHS 3 data, only 32% deliveries in Aligarh were institutional.[13] None of the home delivery had followed aseptic precautions and all the home deliveries were conducted by unskilled attendant, either local or any family member simulating the findings of other studies.[4,7,24] In this study adoption of institutional delivery has been improved,

probably in response to Janani Suraksha Yojna (JSY) and also there is role of regular contact with health personnel, problem in previous or present pregnancy. Still why women prefer to deliver at home is (1) to explore traditional practices, (2) to avoid rude behavior of medical staff, (3) fear of hospital, and (4) inability to get cash in hand.

The unsatisfactory utilization of full ANC with a high dropout rate is still a cause for concern here. A number of pregnant women once initiated failed to avail full ANC services, in spite of physical accessibility. IEC and BCC can bring about changes in their attitude and practices and women should be explained about importance of early ANC registration, regular ANC checkups, danger signs of pregnancy, and risk of home deliveries by health education. This component should be strengthened in the health-care delivery system. The study reveals that socioeconomic status, education, cultural practices perceptions, religious beliefs, and traditions affect health-care behavior considerably. Planning and policy making must be taken into consideration in future. Education is an important indicator in the context of utilization of ANC services so more emphasis should be given on education especially female education.

Limitation

Due to cross-sectional nature of study, it does not allow causal association. Although many variables have been taken in consideration still there may be some missing variables that are thought to have impact on utilization of ANC services.

Conclusion

Utilization of ANC services was not satisfactory and home deliveries by untrained person were still present. Prevailing barriers to utilization of ANC services and institutional deliveries must be identified and taken into consideration in planning and policy making.

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