Original Article

# A Study on Utilization of Maternal Health Care Services in Urban Slums of Kurnool City, Andhra Pradesh

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## Abstract

**Introduction:** Provision of ANC services has a positive impact on pregnancy as it enables identification of risk factors, early diagnosis and treatment of complications. It is also used by primary care physicians as a means to educate women about nutrition, breastfeeding, family planning, spacing after childbirth and promote healthy lifestyle.

**Objectives:**

1) To assess the pattern of utilization of maternal health care services

2) To study the association between socio-demographic factors and maternal health Care service utilization.

**Materials and Methods:** A Community-based, Cross-sectional study was done among 320 mothers who were residing in urban slums of Kurnool, were selected by Simple Random Sampling Method, Data were collected between April 2023 to July 2023 using Semi-structured questionnaire. Data were analysed using SPSS-Version25.

**Results:** Majority of mothers (72.5%) had antenatal registration done in first trimester.75.9% of mothers had > 4 ANC visits, 24.1% of mothers had < 4 ANC visits. 98.4% of mothers-had received 2 TT injections.76.9% of mothers had consumed > 100 Iron and Folic acid tablets, 23.1% had consumed < 100 Iron and folic acid tablets. 91.6% of mothers-delivered in Government hospital, 8.4% delivered in Private Hospital. Statistically significant relationship was found between education and employment status of mother, economic status of family with utilization of MCH services.

**Conclusion:** Socioeconomic development that prioritises maternal education and women's empowerment can lead to better utilisation of MCH services, which in turn will improve and enhance the use of MCH services.

**Key Words**: Antenatal care, Maternal and Child health services, Urban Slums, Utilization, National Family Health Survey.

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## Introduction

Antenatal care is the healthcare given to expectant mothers in order to monitor and confirm the status of their pregnancy, as well as to help them become ready for labour and potential complications so that the mother and her unborn child have the best possible delivery outcomes. The basic components of excellent ANC are early registration of pregnancy, a minimum of four prenatal consultations for each pregnancy interleaved over the three trimesters, tetanus toxoid vaccination, and iron/ folic acid supplementation[1].

One of the five areas recommended by the current WHO-positive pregnancy guidelines to improve the usage and efficacy of ANC services is increasing the recommended number of ANC visits from four to eight contacts during the duration of pregnancy[1].

Pregnancy is positively impacted by the provision of ANC services because they make it possible to identify risk factors and address pregnancy issues early on[2]. Primary care physicians also utilise it to teach women about healthy living, nutrition, breastfeeding, family planning, and spacing after childbirth. Consequently, it is thought that ANC may play a significant role in reducing the morbidities and deaths of mothers and children[3].

In 2020, pregnancy- and childbirth-related avoidable causes claimed the lives of about 800 women every day. In 2020, there was a maternal death roughly every two minutes. Maternal mortality ratios, or the number of maternal deaths per 100,000 live births, decreased by almost 34% globally between 2000 and 2020.Women's and newborns' lives can be saved by receiving care from qualified medical experts prior to, during, and after childbirth.[4]

Negative health outcomes, such as an increased chance of low birth weight, premature delivery, abortion, and perinatal mortality, are associated with insufficient antenatal care visits.[5,6]

Numerous studies carried out across different nations have demonstrated the significant correlation between the use of ANC and factors such as maternal age, parity, education, socioeconomic status, prior complex obstetrical history, support from a spouse, inadequate and poor quality of services, staff absenteeism, distance from a health care facility, and cultural beliefs and practices.[7, 8]

A comprehensive understanding of the factors that contribute to pregnant women not receiving all of the recommended antenatal care and the identification of such women is necessary for the creation of focused and efficient public health interventions. [9, 10]

Hence the present study was conducted with an aim to assess the utilization of maternal health care services and the association of socio-demographic factors on maternal health care service utilization in urban slums in Kurnool, Andhra Pradesh. The results of this study are anticipated to give policymakers information that could enhance their efforts to improve policy in the current program.

## Materials and Methods

A cross-sectional community-based study was conducted over four months, from April to July 2023. The study population included women who delivered during the previous year before 4 weeks of the study starts, residing in urban-slums of Kurnool city, Andhra Pradesh. Under the municipal corporation, Kurnool city has 55 notified urban slums. These urban slums are divided into 4 sectors depending on their geographical location (North, East, West and South).From each sector one slum was selected by simple random sampling method.

The Sample size was calculated by considering 92.7% of mothers in urban slum whose last birth was protected against neonatal tetanus taken from the India key Indicators of the fifth round of National Family Health Survey(NFHS-5)[11], 2019-2020 and by using formula $(Z\alpha)^2pq/L^2$ with the absolute error of 3% and Non response rate 10%.Sample size obtained is 320. Participants were selected and approached with the help of ASHAs from the selected four urban slums by house to house visits.

Women who had delivered during the previous year before 4 weeks of the study starts, consented to participate, could comprehend and resided in the selected urban slums for more than six months were eligible for inclusion in the study. Mothers who were not willing to participate were excluded from the study. This study has been approved by the institutional ethics committee(IEC NO.357/2023).

Each participant was clearly explained the purpose of the study, and informed consent was taken. The study was piloted on 100 participants to test the questionnaire and the methodology and necessary corrections were made. Participants were interviewed using a pretested, semi-structured questionnaire from house to house visits and information on socio-demographic data and utilization of MHC services were collected. The questionnaire was validated by faculty members. English and Telugu versions of the questionnaire were created.

We attempted to limit recall bias by selecting women who had recently delivered in the previous year. Variables such as demographic characteristics, obstetric profile and the number of ANC visits were reconfirmed from the Mother and Child Protection cards available to the participants.

Statistical Analysis was done using IBM's SPSS version 25. Descriptive data were presented as frequencies and proportions and Categorical variables were assessed using the chi-squared test. A P-value of less than 0.05 was considered statistically significant.

## Results

**Table 1: Distribution of mothers according to socio-demographic profile**

| Characteristics | N=320 | % |
|---|---|---|
| **AGE IN YEARS** | | |
| 18 to 24 | 170 | 53.1% |
| 25 to 30 | 134 | 41.9% |
| > 30 | 16 | 5.0% |
| **RELIGION** | | |
| Hindu | 241 | 75.3% |
| Muslim | 53 | 16.6% |
| Christian | 26 | 8.1% |
| **Mother's education** | | |
| Illiterate | 78 | 24.4% |
| Primary education | 90 | 28.1% |
| Secondary education | 121 | 37.8% |
| Higher education | 31 | 9.7% |
| **Mother's occupation** | | |
| Unemployed (Housewife) | 287 | 89.7% |
| Employed | 33 | 10.3% |
| Socio-Economic Status of the family (Modified Kuppuswamy Classification) | | |
| Class 1 | 5 | 1.6% |
| Class 2 | 13 | 4.1% |
| Class 3 | 100 | 31.3% |
| Class 4 | 145 | 45.3% |
| Class 5 | 57 | 17.8% |
| **Marital status** | | |
| Married | 316 | 98.8% |
| Unmarried | 3 | 0.9% |
| widowed | 1 | 0.3% |
| **Type of family** | | |
| Nuclear family | 252 | 78.8% |
| Joint family | 34 | 10.6% |
| Three generation family | 34 | 10.6% |
| **Occupation of head of the family** | | |
| Profession | 5 | 1.6% |
| Semiprofession | 10 | 3.1% |
| Clerical, Shop owner, Farmer | 25 | 7.8% |
| Skilled worker | 78 | 24.4% |
| Semiskilled worker | 151 | 47.2% |
| Unskilled worker | 50 | 15.6% |
| Unemployed | 1 | 0.3% |

Table 1 shows the socio-demographic characteristics of Mothers. In the present study, 53.1% of mothers belong to the age group between 18 to 24 years. 75.3% of mothers belong to Hindu religion. As per educational status, 37.8% of them had secondary education, 28.1% had primary education, 24.4% were illiterate and 9.7% were found

to have higher education. 89.7% were housewives & 10.3% were employed.45.3% belonged to upper lower class (Class IV) and 1.6% belonged to the upper class(Class I). 78.8%were living in nuclear family. 98.8% of participants married, while 60.3% had two children.

**Table 2: Distribution of mothers according to utilization of services during ANC**

| Characteristics | N=320 | % |
|---|---|---|
| **ANC Registration at** | | |
| Government | 301 | 94.1% |
| Private | 19 | 5.9% |
| **Gestational age at the time of Registration** | | |
| Within First trimester (Early) | 232 | 72.5% |
| After First trimester (Late) | 88 | 27.5% |
| **Number of ANC visits** | | |
| Less than four | 77 | 24.1% |
| More than four | 243 | 75.9% |
| **ANC Visits undertaken at** | | |
| Private Hospital | 48 | 15% |
| Government Hospital | 191 | 59.7% |
| Urban Health Training Center | 81 | 25.3% |
| **TT injections received** | | |
| Yes | 315 | 98.4% |
| No | 5 | 1.6% |
| **Iron Folic Acid tablets taken** | | |
| Less than 100 | 74 | 23.1% |
| 100 or More | 246 | 76.9% |
| **Mode of transport used during ANC visits** | | |
| Private vehicle | 192 | 60% |
| Government vehicle | 128 | 40% |
| **Place of delivery** | | |
| Government | 293 | 91.6% |
| Private | 27 | 8.4% |
| **Mode of Transport during delivery** | | |
| Private vehicle | 161 | 50.3% |
| Government vehicle | 159 | 49.7% |
| **Type of Delivery** | | |
| Vaginal delivery | 203 | 63.4% |
| Caesarean section | 117 | 36.6% |
| **Home visit by health worker after delivery** | | |
| Contacted within 7 days | 177 | 55.3% |
| Contacted after 7 days | 143 | 44.7% |

Table 2 shows the characteristics of ANC and utilization of services by mothers during ANC visits. Out of 320 mothers, 94.1% of pregnancies were registered at Government hospitals. 72.5% of the women were registered for ANC before 12 weeks of gestation. 75.9% of the mothers had 4 and more ANC visits. 98.4% of respondents received two doses of TT and 76.9% of them consumed >100 iron and folic acid tablets. 99.4% of the respondents received nutritional advice. 92.2% of the respondents consumed food supplements provided to them during ANC visits. 98.7% of the respondents received delivery preparedness advice. 91.6% of the women delivered at government hospitals. 63.4% of the women delivered by Normal delivery.

Table 3 shows that there was no association between age of mother, birth order, employment status of mother with early registration of pregnancy while religion, educational status of the mother and Occupation of the head of the family, Socio economic status of the family was significantly associated with early registration of pregnancy and there was no association between age of mother, Religion, birth order with adequate number of ANC visits. Significant association was found between education, employment status of mother and Occupation of the head of the family, Socio economic status of the family with adequate number of ANC visits.

**Table 3: Socio-demographic characteristics in relation to utilization of ANC services.**

| Characteristics | Registration of pregnancy | | $X^2$ | p value | Antenatal visits | | $X^2$ | p value |
|---|---|---|---|---|---|---|---|---|
| | Early (N=232) | Late (N=88) | | | <4 visits (N=77) | >4 visits (N=243) | | |
| **Age in years** | | | | | | | | |
| 18 to 24 | 127(74.7) | 43(25.3) | | | 43(25.3) | 127(74.7) | | 0.837 |
| 25 to 30 | 94(70.1) | 40(29.9) | 0.899 | 0.638 | 31(23.1) | 103 (76.9) | | |
| > 30 | 11(68.8) | 5(31.3) | | | 3(18.8) | 13 (81.3) | | |
| **Religion** | | | | | | | | |
| Hindu | 182(75.5) | 59(24.5) | | | 53(22.0) | 188(78.0) | | |
| Muslim | 37(69.8) | 16(30.2) | 7.896 | 0.019* | 16(30.2) | 37(69.8) | 2.294 | 0.318 |
| Christian | 13(50.0) | 13(50.0) | | | 8(30.8) | 18(69.2) | | |
| **Mother's education** | | | | | | | | |
| Illiterate | 66(84.6) | 12(15.4) | | | 7(9.0) | 71(91.0) | 13.3 | 0.004** |
| Primary education | 71(78.9) | 19(21.1) | 15.2 | 0.002** | 25(27.8) | 65(72.2) | | |
| Secondary education | 76(62.8) | 45(37.2) | | | 37(30.6) | 84(69.4) | | |
| Higher education | 19(61.3) | 12(38.7) | | | 8(25.8) | 23(74.2) | | |
| **Mother's occupation** | | | | | | | | |
| Unemployed (Housewife) | 204(71.1) | 83(28.9) | 2.81 | 0.093 | 75(26.1) | 212(73.9) | | 0.009** |
| Employed | 28(84.8) | 5(15.2) | | | 2(6.1) | 31(93.9) | | |
| **Occupation of the head of the family** | | | | | | | | <0.001** |
| Profession | 4(80.0) | 1(20.0) | | | 3(60.0) | 2(40.0) | | |
| Semi profession | 6(60.0) | 4(40.0) | | | 5(50.0) | 5(50.0) | | |
| Clerical, Shop owner, Farmer | 11(44.0) | 14(56.0) | | <0.001** | 9(36.0) | 16(64.0) | | |
| Skilled worker | 45(57.7) | 33(42.3) | | | 28(35.9) | 50(64.1) | | |
| Semiskilled worker | 125(82.8) | 26(17.2) | | | 24(15.9) | 127(84.1) | | |
| Unskilled worker | 41(82.0) | 9(18.0) | | | 7(14.0) | 43(86.0) | | |
| Unemployed | 0(0.0) | 1(100.0) | | | 1(100.0) | 0(0.0) | | |
| **Socio-Economic Status** | | | | | | | | |
| Class 1 | 3(60.0) | 2(40.0) | | | 0(0.0) | 5(100.0) | | |
| Class 2 | 11(84.6) | 2(15.4) | | <0.001** | 2(15.4) | 11(84.6) | | 0.021* |
| Class 3 | 81(81.0) | 19(19.0) | | | 18(18.0) | 82(82.0) | | |
| Class 4 | 108(74.5) | 37(25.5) | | | 34(23.4) | 111(76.6) | | |
| Class 5 | 29(50.9) | 28(49.1) | | | 23(40.4) | 34(59.6) | | |

* -p value < 0.05, ** -p value< 0.01

## Discussion

In the present study, 75.9% mothers had >4 ANC visits, 24.1%had < 4. According to data from the NFHS-5, 67.2% of women in Andhra Pradesh obtained full ANC (at least four ANC visits) in urban areas; in comparison, equivalent figures for Chandigarh 79.1%, Delhi 77.1%, Uttarakhand 71%[11].

Present study revealed 85% of antenatal care received from government hospitals. Similar finding was also reported by Delhi Slum Study[12] and study conducted in Uttar Pradesh region's Rohilkhand, which also revealed that majority of the women received ANC from government facilities.[13]

In present study, 98.4% of the mothers have had two TT injections. Data from NFHS-5 revealed a comparable result of 92.5%. 76.9% of the mothers reported receiving the IFA tablets, which is consistent with 76.7% reported in the NFHS-5data.[11].

The utilization of maternal health care services was inversely correlated with maternal age; these results are consistent with a research by Regassa N et al., [14].

In the present study, mothers with secondary or higher education were more likely to attend at least four ANC visits. Association between maternal education and ANC service utilization reported in this study is consistent with earlier research in India.[15]

Female literacy was found to be strongly associated with >4 ANC visits. This clearly shows that education leads to better health-related behaviour, increased comprehension, and compliance with medical recommendations. Better utilization of maternal health care services is a natural result of modest education, and additional studies support this.[16,17]

Jat et al. found that socioeconomic class and mother's education were connected with utilization of ANC[18].

Babalola and Fatusi et al. found that individual education and family socioeconomic level were the most significant predictors of service utilization[19].

In the present study, 91.6% were delivered in a government setting and 8.4% in a private setting; these findings are consistent with the study conducted by Raja Dana Sekaran et al[20]., with the difference owing primarily to the costs associated with attending private maternity facilities and transportation.[21,22]

Other studies have also found that families with >2 children are less likely to have adequate ANC visits [23-25]. Mothers with fewer children may be more cautious and apprehensive about pregnancy.[26]Another possible explanation is that when parity develops, women gain experience and knowledge of previous pregnancies and they may believe that healthcare is no longer necessary.[27]

**Limitations of the study**

The study results were limited to urban slums.

## Conclusion

Participants who were educated, employed were more likely to make adequate use of ANC services. Mothers' educational and employment status, occupation of the head of the family, family's socioeconomic status are consistently strong predictors of all maternal health services considered in this study; however, other determinants of service utilization vary in magnitude and level of significance depending on the type of maternal service - antenatal care and postnatal care. The study found that the government sector was more heavily utilized in urban slums.

Efforts should be made to improve the utilization of antenatal care services by conducting media campaigns aimed at raising awareness, particularly among vulnerable population.

Government and other interested agencies should work to build better general community-based education programs so that women understand the importance of maternal health care services.

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