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Utilization of Antenatal care Service in Urban Slums of Sambalpur, Odisha

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Abstract: Rapid urbanization is resulting in the development of slum areas throughout the city and the slum dwellers are also becoming a part of the urban population. Though the urban population was blessed with all the modern health facilities, the accessibility and utilization of health services by the slum dwellers need to be studied. The current research study was conducted to assess the utilization of antenatal care (ANC) services by pregnant women living in urban slums. A community-based cross- sectional study was carried out among a total of 306 pregnant women selected purposively who were in the third trimester of their current pregnancy and habitat of slums of Sambalpur Municipality Corporation, Odisha, India. The study was undertaken from July 2024 to December 2024. The mean age of the participants was 27.10±4.06 years with 88.1% literacy rate and 75.5% were homemakers. About fifty percent of women experienced their 1st delivery. Throughout pregnancy, all the studied participants received antenatal checkups. However, about 41 percent of women underwent ANC less than 4 times. All the deliveries were conducted at the institution. There was a significant association between ANC visits with the place of the last delivery ($p<0.001$) and a significant association between the number of ANC visits at the place of the last delivery ($p=0.019$). Study shows the inadequate utilization of ANC services by slum women in terms of timely registration of pregnancy and immunization status and compliance of IFA supplements. Hence the study recommended for more involvement of health care providers in the ANC services and the need for recasting for the slum habitats which should be need-based and address the drawbacks of the available ANC services.

Keywords: Pregnancy status, Antenatal care, Utilization, Urban slum women

I. INTRODUCTION

Following the successful achievement of the Millennium development goal (MDG), India is now proceeding to achieve the targets of the Sustainable Development Goal (SDG). As per the Sample Registration System (SRS) Report 2021 released by the Registrar General of India it has continued to witness a significant improvement in key maternal and child health indicators [1]. As per the Special Bulletin on Maternal Mortality in India, 2019-21 based on the Sample Registration System (SRS), the Maternal Mortality Ratio (MMR) of the country has shown a marked reduction, declining by 37 points from 130 per lakh live births in 2014–16 to 93 in 2019–21[2]. As per the current United Nation Maternal Mortality Estimation Inter-agency Group (UN-MMEIG) Report 2000-2023, published on 07 April 2025, India's MMR has reduced by 23 points from 2020 to 2023. By this achievement, MMR of India has now declined by 86% compared to global reduction of 48% over the past 33 years from 1990 to 2023. There is a decline of 5 points in MMR between 2019-21 and 2020-22. India has already achieved the NHP 2017 target of MMR <100 and is on track to meet the SDG 2030 target of MMR <70 per 100,000 live births. The country committed to reducing the Maternal Mortality Ratio (MMR) drop down to 70 deaths per 100,000 live births by 2030[3]. To achieve the target, it is mandated to ensure quality antenatal care services, the presence of skilled birth attendants during delivery in a hygienic and safe setup based on institution and above all quality service with evidence-based practice throughout the period from conception to delivery. To exert the target into action, the country is now going through Quality and comprehensive ANC that incorporates a minimum of at least four ANCs including early registration and first ANC within the first trimester. The ANC package includes physical and abdominal examinations, Hb estimation, screening for Gestational Diabetes Mellitus, Thyroid disorders, HIV/Syphilis and urine investigation, TT/Td vaccination, distribution of IFA tablets & Calcium (6 months during antenatal period & 6 months during postnatal period) and counselling for nutrition, family planning etc.the 4th HPNSP, the 7th Five Year Plan (FYP) of the government. According to the recent National Family Health Survey (NFHS-5) report, four or more ANC visit rate is observed among 58.1percent women. Though the rate of ANC visits has increased from 51.2% to 58.1% between 2014 and 2017 it is still far behind the target that was promised. Moreover, the situation is not the same for urban areas, especially women living in slums.

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India is undergoing rapid urbanisation, with projections indicating that approximately 55% of its population will live in urban areas by 2050 [4]. This rapid growth necessitates a deeper understanding of urban health systems, particularly concerning vulnerable populations. The urban poor are the ones who suffer the most from the severe consequences of urbanisation, including overcrowding and inadequate housing, competition for resources and increased exposure to air, water and noise pollution.

The slum women are facing a variety of health hazards due to poor sanitation, overcrowding, lack of available maternal health services as well as poor utilization of the services due to poverty and other social drivers. These people lack the basic knowledge regarding necessary maternal health services, their utilization, and the benefit to bring about a healthy baby from a healthy mother. With a view to assessing the utilization of ANC services by the women residing in urban slum areas, the current study was carried out. A community-based cross-sectional study was conducted among slum women of Sambalpur city situated in western part of Odisha, a coastal state of India.

II. STUDY METHOD

In total 306 pregnant women in their second trimester participated in the study after obtaining informed written consent from each of them. The participants were selected purposively to meet the needful criteria of the study and interviewed by the trained field investigators through face-to-face interviews and by using a pre-tested, pre-coded and semi-structured interview schedule. The continuous variables were expressed by mean and standard deviation; categorical variables were expressed in percentages and the differences between percentages were computed using the chi-square test by IBM SPSS 20.0. The study was approved by the Institutional Ethical Committee of the Gangadhar Meher University, Sambalpur, Odisha, India.

III. RESULTS

Result analysis of the current study depicts the distribution of the participants by their socio-economic characteristics. The age distribution of the study participants ranged from 18 to 39 years old, with a mean age of 27.1±4.1 years. Stratification by age into different categories showed that most of the participants (62.8%) belonged to the age group 25-29 years and all the women participated in the study described themselves as married at the time of the interview.

Educational status of the studied women revealed that state, about 88 percent of them were literate. However, their education is limited up to secondary level. which is about 29.5% and 26.5% for the participants and their counterparts respectively. Only about 8 percent and 6 percent of them have earned a degree of higher secondary and graduation. Most of the study participants (74.5%) were members of nuclear families. Occupation-wise, two-thirds (75.5%) of the participants were homemakers and 19.9% of them earned their livelihood by working as domestic helpers. The majority (67.9%) of the participants are from lower-income families with income < Rs1,00000 per year.

Table-1 Socio-demographic Profile of the study Participants

Socio-Demographic variables	**Number**	**Percentage**
Age		
15-19	03	0.98
20-24	83	27.12
25-29	165	53.92
30-35	44	14.37
35 and above	11	03.59
Mean Age = 27.10±4.056		
Religion		
Hindu	265	86.6
Muslim	28	9.2
Christian	13	4.2

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Education		
Illiterate	37	12.1
Primary	60	19.6
Middle School	36	11.8
Secondary	127	41.5
Higher Secondary	25	08.2
Graduation	19	06.2
Other	02	0.7
Occupation		
Housewives	231	75.5
Domestic Helper	61	19.9
Labourer	08	02.6
Services & Self Employed	06	02.0
Household Income/Year		
<1,00000/-	208	67.97
Rs.1,00000-5,00000	66	21.57
Rs. >5,00000	32	10.46

Table-2 illuminates the past obstetric history of the study participants. Among all the study participants about half (49.7%) of the women were prime. Out of the rest about 75 percent of women have one child and 18 percent of women were living with 2 children. About 8 percent of the mothers became pregnant for the third or more times. One third of the past deliveries were executed through cesarean section. Among the women who experienced birth earlier about 94 percent ended with a live born baby whereas 4 percent of them experienced miscarriages and two of the past deliveries ended with neonatal deaths. All the past deliveries were conducted at the institution. However, Government run hospitals were the preferred place of delivery. Pregnancy outcomes ended with a positive primary sex ratio i.e 60.1 percent of birth of a female child.

Table-2 Past Obstetric profile of the study Participants

Past Obstetric Information	**Number**	**Percentage**
Number of Alive Children		
1	115	74.67
2	27	17.53
>= 3	12	7.79
Mode of Last Delivery		
Normal Delivery	96	66.66
Cesarean Section	48	33.33
Past Pregnancy status		
Miscarriage	06	3.97
Live Birth	143	94.70
Neonatal Death	02	1.32
Past Place of Child Birth		
Government Hospital	95	65.97
Private Nursing Home	49	34.03
Past pregnancy Outcomes		
Male Child	57	39.86

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Female Child	86	60.14

Table-3 Utilization of Antenatal care by the Study Participants

Utilization of Antenatal Care	**Number**	**Percentage**
ANC Registration		
Early (< 12 weeks)	142	57.02
Late (>= 12 weeks)	107	42.97
TT Doses		
2Dose	191	62.41
1+Booster dose	115	37.58
1Dose	306	100.00
Consumption of IFA		
<100 days	225	73.53
>= 100 days	81	26.47
ANC checkups		
Yes	306	100.0
No	-	-
ANC was taken from		
Govt. Hospital	208	67.97
Private Practitioner	63	20.59
Both	35	11.44
Number of ANC Checkup		
< 4Times	127	41.50
4 Times	119	38.89
> 4Times	60	19.60

Table-3 presents that all the participants received at least one antenatal checkup. Among those who had received ANC, about 60.0% of them took it ≥4 times and 41.50 % received it less than 4 times. The majority (55.36%) of them took ANC from Government hospital and 20.59 percent of pregnant women seeked the advice of private practitioners. All have taken the TT vaccine during their antenatal period and only few of them have not completed the vaccine schedule. Similarly it is observed that, all the women received the IFA supplements. However consumption of IFA tablets is not very encouraging. The majority of women (73.53) consumed the IFA supplements for less than 100 days.

IV. DISCUSSION

This study demonstrates the utilization status of ANC services by the women residing in urban slum areas. The mean age of the participants was 27.1±4.1 years old and most (62.8%) of them were between the age group 25-29 years, which is higher than the study findings of the rural and urban areas of Delhi where the mean (SD) age of the study participants was 25.6 (3.9) years [6]. The age of the currently studied women was also much higher than the study undertaken in slums of Dhaka, Islamabad, Bangalore and Uttar Pradesh [8,9,10,11] . The majority of the study participants were Hindu (86.6%) followed by 9.2 percent Muslim and 4.2 percent of christian women. About 88 percent of the study participants were literate though among the sampled women more than 70 percent have not studied beyond secondary level. The household income of the studied participants varied but a majority of them i.e. 67.97 percent of women live with a household income less than Rs 8,000/- which is more than the household income of people living in slums of Bangaluru, India [11].

Key findings of the present study show that all of the respondents had received at least one antenatal checkup and for those who had received ANC, about 66.1% of them avail it four times or more. Such findings are much more than national

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figures in comparison to the NFHS-5, 2019-21 survey report (NFHS-5) which observed that, percentage of mothers who had undergone four Antenatal care visits is 58.1 percent. However, the figure varies with rural and urban areas. In urban areas 68.1 percent of mothers had ANC for at least 4 times (NFHS-5) whereas the corresponding figures for Gujarat 80.5 %, Maharashtra 75.6 %, Rajasthan 53.8% and for Madhya Pradesh is 51.6 % [9]. A study conducted in slums of an industrialized city observed that, 49.13% of studied women had less than four ANC visits, and 50.87% of women had more than four ANC visits. Seven mothers out of 180 (3.88%) did not receive any ANC service. Bhue et al. (2024) have analysed the socio-Economic Background of Mothers and Utilization of Antenatal Care Services in Urban Slums of Burla, Sambalpur, Odisha.The study result observed that 68.32% mothers had done ≥4 ANC check-ups in their last pregnancy.According to the NFHS-5 survey report, 44.1% of women in India and 54% of women living in urban areas had consumed the Iron and Folic Acid (IFA) for 100 days or more. The figures of the current study observed a low compliance of IFA among the women i.e. 26.5 % for 100 days or more. 67.9% of women in the present study reported receiving ANC from the government hospital. In a study conducted in slums of Bangladesh found that 20.6% received ANC from doctors. Coverage of Tetanus Toxoid (TT) was also 100% among the studied women. A study conducted among women in three districts of Bangladesh reported that the coverage of the TT was good; most of the women either had at least one injection during their last pregnancy or had already completed their lifetime protection dosage [11] . In this study, 62.5% took the TT vaccine and among them, two-thirds (65.5%) received complete doses during their antenatal period. The value of this study's findings is higher than the study findings of Mohapatra et al (2012), Simkhada et al (2007). From these findings regarding the place of last delivery, it was evident that the practice of Institutional delivery in the studied slum area is also 100 percent. This finding is also higher than the national average of 93.8 percent of institutional delivery in urban India [5].

V. CONCLUSION

This study concluded that the women living in slums of Sambalpur, Odisha were well aware of ANC services and also utilizing the services more effectively in comparison to other areas. The credit goes to the grass root level health personnels such as Anganwadi and Asha workers. However, in some aspects like consumption IFA for 100 and more days, early pregnancy registration, more than four antenatal visits are still lagging behind. Though the slum dwellers are part of the urban population, their knowledge intake is different from the rest of the population. To make them aware and knowledgeable regarding the importance of regular ANC checkups, institutional delivery, postnatal checkups, follow-up visit and other maternal health services more and more intervention is needed slum dwellers' need-based health policy making is now a crying need of the slum residents. Health services need to be available to the slum population by considering their drawbacks. It will make slum women encourage utilizing the available essential maternal health services including the ANC, delivery care and PNC and so on.

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