

Antenatal care services utilization and factors affecting them among women of urban slums in North India, Uttarakhand

Upadhyai N¹, Jha A K^{2*}, Gupta S K³, Luthra M⁴

¹Assistant Professor, ²Associate Professor, ³Professor and HOD, ⁴Professor, Department of Community Medicine SGRRIM and HS Dehradun, INDIA.

Email: swetankankit@gmail.com

Abstract

Background: Antenatal care is the key to a healthy pregnancy. Every mother should get the required care for a safe pregnancy outcome. Its full utilization is still not universal as is evident from the various survey findings. The condition is still worse in underprivileged areas. **Objective:** To assess the utilization of antenatal care services among mothers in urban slums of Dehradun. **Materials and Methods:** A community based cross-sectional study was carried out in the urban slums of Dehradun between May 2013 - Apr 2014 using pre-structured and pre-tested questionnaire after taking their verbal consent. Slum areas were selected by 30 cluster sampling method from the notified slum list. Total of 488 mothers within 3 months after delivery who were interviewed using the questionnaire. **Results:** In our study, most of the women were young (18-23 years), illiterate (42%) and belonging to lower Socioeconomic status. Out of all only 42% women had recommended 4 ANC visits. Education, Socioeconomic status, Place of ANC were the significant factors affecting ANC utilization. **Conclusion:** Consistent and focused efforts are needed to sustain and consolidate the good coverage and utilization of antenatal services.

Key Words: Antenatal care, antenatal visits, urban slums.

*Address for Correspondence:

Dr. Amit Jha, Associate Professor, Department of Community Medicine SGRRIM and HS Dehradun, INDIA.

Email: swetankankit@gmail.com

Received Date: 13/11/2017 Revised Date: 17/12/2017 Accepted Date: 05/01/2018

DOI: <https://doi.org/10.26611/1011512>

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 09 January 2018

INTRODUCTION

Every day, approximately 830 women die from preventable causes related to pregnancy and childbirth, 99% of all occurring in developing countries^{1,2}. Skilled care before, during and after childbirth can save the lives of women and newborn babies^{3,4}. Most maternal deaths are preventable. Poor women in remote areas are least likely to receive adequate health care. These women should be identified and given the required care timely so

that these preventable maternal mortalities and morbidities can be minimized. To improve maternal health, barriers that limit access to quality maternal health services must be identified and addressed at all levels of the health system⁵. This will be our sincere attempt to contribute to reach the SDG targets of reducing global MMR to 70 per lac LB by 2030⁶. This study was done to assess the utilization of antenatal services among women in urban slums.

MATERIAL AND METHODS

This Cross sectional study was conducted among the women of urban slums in Dehradun City during May 2013, to April 2014. The total slum population of Dehradun was 120,850 residing in 79 slums⁷. Of which 30 slums were selected by cluster sampling. All married women residing in the urban slums who have delivered in the past 3 months were interviewed after verbal consent using pre-structured questionnaire. 488 such women were included in the study by door-to door survey.

Proportionate to size sampling was done in each slum. The interview schedule included identification data, socio-demographic profile, details of antenatal care and also enquired about the perceived barriers to non utilization. WHO recommends at least 4 ANC visits for pregnant women⁸. Adequate sample size was calculated by the formula $4pq/l^2$ at 95% confidence interval. According to NFHS 3, Uttarakhand state report, the proportion of women receiving at least three antenatal visits is 45%⁹. This was taken as the basis for calculating sample size. At 10% allowable error and 95% confidence interval, the minimum required sample size is calculated as follows: $(1.96)^2 \times 45(100-45) / (10\% \text{ of } 45)^2 = 488$. Data was coded, entered and analyzed using SPSS 20.0. Data was expressed in percentage and proportions. Chi-square test was applied to test significant association. P-value <0.05 was considered significant.

RESULTS

Four hundred and eighty eight slum women who delivered in the past 3 months were interviewed for their received antenatal care. Non consenting and sick women were excluded from the study. The mean age of the respondents was 25.2 years, maximum 238 (48.8%) participants were in the age group 20-25 years. Among all women, 208 (42.6%) study participants were illiterate, 65 (13.3%) of them were educated at least primary class, 61 (12.5%) were educated up to high school and 36 (7.4%) were educated up to intermediate. Only 35 (7.2%) were with educational qualification graduate and above. Majority 304(62.3%) belonged to nuclear family and 184(37.7%) belonged to joint family. Most of the participants, 336 (68.9%) were Hindus followed by 126 (25.8%) Muslims and 26 (5.3%) Sikhs. Majority of them 404 (82.8%) belonged to Class IV (upper lower) followed by 78 (16%) in Socio-economic Class III (lower middle) and 6 (1.2 %) in Class V (lower). (Table1) Although majority 474(97.1%) utilized the antenatal care services in some form, 14(2.9%) received no ANC service. Out of total, 92 (18.8%) had only one visit, 83 (17%) had 2 ANC visits, 94 (19.3%) had 3 ANC visits and 205 (42%) had 4 or more ANC visits. (Table2). Most of the study participants 372 (76.2%) received ANC from a government health facility and 90 (18.4%) received ANC from private health facility. 12 (2.5%) participants consulted both these places for their ANC visits. (Table2). Proportion of women who made 4 or more ANC visits, shows an increasing trend with increasing education. Illiterate women were the least to go for ANC visits 55 (26.4%) and most of educated women 25 (71.4%) had recommended 4 or more ANC visits.. Proportion of women with <4 ANC visits were maximum 153 (73.6%) among illiterates. This association

between education and number of ANC visits was found to be statistically highly significant ($p < 0.0001$) (Table 3). Table shows that proportion of women receiving 4 or more visits were maximum, among Socio-economic Class III 54 (69.2%) followed by Class IV 149 (36.9%) and Class V 2(33.3%). Women having <4 visits were maximum among Class V 4 (66.7%) and minimum among those belonging to Class III 24 (30.8%). The association between the socio-economic status and ANC visits was found to be statistically highly significant ($p < 0.001$). (Table 4) More of primipara women had 4 and more visits 87 (50%) whereas women with higher parity were the ones with least number of visits (33.3%). However the association between parity and the number of visits was not found to be significant ($p > 0.05$). (Table 5) Women who had 4 or more ANC visits is maximum 9(75%) among those who took ANC from both government and private facility, followed by private 61 (67.8%) and government health facility 135 (36.3%). Participants who received <4 visits were majority 237 (63.7%) taking ANC from government health facility. The association between place of ANC and the number of ANC visits was found to be statistically highly significant ($p < 0.001$). (Table 6)

Table 1: Socio-demographic Distribution of study participants

Category	Age group	Number	Percentage (%)
AGE	<20 Yrs	64	13.1
	20-25 Yrs	238	48.8
	25-30 Yrs	142	29.1
	30-35 Yrs	35	7.2
	>35 Yrs	9	1.8
EDUCATION	Illiterate	208	42.6
	Primary school	65	13.3
	Middle school	83	17
	High school	61	12.5
	Intermediate	36	7.4
	Graduate and above	35	7.2
SES	Class I (upper)*	0	0
	Class II (upper middle)*	0	0
	Class III (lower middle)	78	16
	Class IV(upper lower)	404	82.8
	Class V (lower)	6	1.2
PARITY	1	174	35.7
	2	168	34.4
	3	86	17.6
	>3	60	12.3
Total		488	100

Table 2: Distribution of study participants by ANC visits and place of ANC

		Number	Percent
Number of ANC visits	No Visit	53	10.9
	1 Visit	53	10.9
	2 Visits	83	17.0
	3 Visits	94	19.3
	4 and more visits	205	42.0
Place of ANC	Government Health Facility	372	76.2
	Private Health Facility	90	18.4
	Both government and private facility	12	2.5
	No ANC received	14	2.9
Total		488	100.0

Table 3: Distribution of study participants by education in relation to number of ANC visits

Education	< 4 ANC visits		≥ 4 ANC visits		Total Number
	Number	Percentage (%)	Number	Percentage (%)	
Illiterate	153	73.6	55	26.4	208
Primary	39	60	26	40.0	65
Middle	37	44.6	46	55.4	83
High School	33	54.1	28	45.9	61
Intermediate	11	30.6	25	69.4	36
Graduate and above	10	28.6	25	71.4	35
Total	283	58	205	42	488

Chi-square= 50.864, df= 5, p- value < 0.001

Table 4: Distribution of study participants by socio-economic status in relation to number of ANC visits

Socio-economic Status	< 4 ANC visits		≥ 4 ANC visits		Total Number
	Number	Percentage (%)	Number	Percentage (%)	
Class III (Lower Middle)	24	30.8	54	69.2	78
Class IV (Upper Lower)	255	63.1	149	36.9	404
Class V (Lower)	4	66.7	2	33.3	6
Total	283	58.0	205	42.0	488

Chi-square= 28.272, df=2, p-value < 0.001

Table 5: Distribution of study participants by parity in relation to number of ANC visits

Parity	< 4 ANC visits		≥ 4 ANC visits		Total Number
	Number	Percentage (%)	Number	Percentage (%)	
Parity 1	87	50	87	50.0	174
Parity 2	103	61.3	65	38.7	168
Parity 3	53	61.6	33	38.4	86
Parity >3	40	66.7	20	33.3	60
Total	283	58	205	42	488

Chi square 7.641, df=3, p-value= 0.05

Table 6: Distribution of study participants by place of ANC in relation to number of ANC visits

Place of ANC	< 4 ANC visits		≥ 4 ANC visits		Total Number
	Number	Percentage (%)	Number	Percentage (%)	
Government Health facility	237	63.7	135	36.3	372
Private Health facility	29	32.2	61	67.8	90
Both	3	25.0	9	75.0	12
No ANC	14	100.0	0	0.0	14
Total	283	58.0	205	42.0	488

Chi-square=67.393, df= 3, p-value 0.0000

DISCUSSION

Antenatal care is the key to reduce maternal mortality and promote both maternal and fetal well being. WHO recommends at least 4 antenatal visits for pregnant women⁵. Antenatal visits ensure that the women gets the care timely and adequately. Women in the urban slums are vulnerable. In this study we found that most of the women belonged to low socioeconomic status (SES Class IV and III). Comparable findings were reported by Makade KG *et al* in slums of Mumbai (73%) in Class IV¹⁰. In the present study, 205 (42%) study participants had 4 or more visits and 94 (19.3%) had 3 ANC visits and 57(10.9%) had no visit (Table 2). So a total of 61.3% had less than expected visits in our study. Our findings are consistent with national and state average, by NFHS III (52%) and by Annual Health Survey 2012-13 for Uttarakhand (59%) respectively^{9,11}. Gupta A *et al* in Delhi reported 76% mothers had 3 and more ANC visits¹². The difference may be due to their higher education of women and also better health care services due to inter-state variations. However Jain A *et al* in Agra (24%) and Sharma P *et al* in Dehradun (34.3%) found less women had ≥ 3 ANC visits than our study^{13,14}. Khan Z *et al* (2009) in their study in urban slums of Aligarh reported that 80.4% of mothers received any antenatal care which is almost comparable to our finding¹⁵. However findings less than ours were reported by Gupta SK (63.8%) in urban slum of Bhopal and Agarwal P *et al* (76%) in urban slum of Delhi^{16,17}. In our study, we found a statistically significant association between education of women and Antenatal visits received. Maternal education is an important determinant of ANC visits. NFHS III and DLHS III survey also reported more ANC visits in more educated women^{9,18}. Agarwal P *et al* in urban slum of Delhi, Sharma P in the urban slum area of Dehradun and Gupta A *et al* in east Delhi reported similar significant association^{12,14,17}. Our study shows significant association between socio-economic status in relation to number of ANC visits. It can be seen from the table that proportion of women receiving ≥ 4 visits were maximum among women of socio-economic Class III (Lower-Middle) 54(69.2%) followed by class IV 149(36.9%) and Class V 2(33.3%). AHS 2012-13 in Uttarakhand reported similar conclusion¹¹. Pallikadavath S also found that higher socio-economic status was associated with increased chances of receiving an antenatal check-up¹⁹. Similar statistically significant positive association was found in other studies^{20,21,22}. Our study found ANC visits was maximum among primipara 87(50%) and least among the women with more parity 20(33.3%). This association however was not found to be statistically significant ($p>0.05$). Similar findings were reported by Agarwal OP, Simkhada B, and Dutta M^{22,23,24}. In our study we found

more women who took ANC from private providers 61(67.8%) had ≥ 4 ANC visits than those taking care from government providers 135(36.3%). The association between place of ANC and the number of ANC visits was found to be statistically highly significant ($p<0.001$). No studies were found highlighting the association between ANC visits and place of ANC to compare the results. The results may be due to the conducive behavior of the surroundings and doctor at private health facility so that these women go for more number of times to get their checkup done.

RECOMMENDATIONS

Urban slums continue to be a neglected and underserved section of the Indian society. The ground conditions are difficult and the challenges huge. The situation demands a multi dimensional response that is need based, socially accepted, scientifically grounded, and that involves the participation of the local community. The Government should strengthen the present infrastructure so that it can serve the recommended population. The NGOs working in urban areas for other projects can be utilized to provide information education and communication support for maternal care. Use of mass media for awareness generation can also be tried. At the same time, care must be taken to meet the demand generated by social mobilization.

REFERENCES

1. World Health Organization. WHO India. [Internet] [accessed on 1.4.2016] Available from http://www.who.int/gho/maternal_health/en
2. Simkhada B, Teijlingen ER, Porter M et al. Source, Factors affecting the utilization of antenatal care in developing countries: systematic review of the literature. *J Adv Nurs*. 2008 Feb; 61(3):244-60. doi: 10.1111/j.1365-2648.2007.04532.x.
3. World Health Organization. WHO India. [Internet] Available from <http://www.who.int/topics/pregnancy/en/> [accessed on 1.4.2016]
4. Park K. Preventive Medicine in Obstetrics, Paediatrics and Geriatrics: Antenatal Care. In: Park K. Text Book of Preventive and Social Medicine: 21st Edition.
5. (WHO). WHO Recommended Interventions for Improving Maternal and Newborn Health (2nd edition) Geneva: WHO Department of Making Pregnancy Safer; 2009.
6. Women and the Sustainable Development Goals. [Internet] [accessed on 1.4.2016] Available from www.unwomen.org/women-and-the-sdgs. Infocus
7. Uttaranchal Urban Development Project (UUDP). Revised Draft Final Report, Appendix 1: Town Report Volume 2 of 9, Dehradun: Urban Development Department Government of Uttaranchal, Asian Development Bank (ADB), Apr 2007.
8. National Health Mission, Ministry of Health and Family Welfare. Government of India. New Delhi [accessed on 20.7.2016] Available from

- nrhm.gov.in/nrhmcomponents/rmnch-a/maternal-health/background.html.
9. International Institute for Population Sciences (IIPS) and Macro International. National Family Health Survey (NFHS-3), India, Uttarakhand 2005-06. Mumbai: IIPS; 2008.
 10. Makade KG, Padhyegurjar SB, Kulkarni RN, Padhyegurjar MS. Study of factors affecting total number of living children among married women of reproductive age group in a slum area in Mumbai. *Indian J Community Health* 2013;25(2):106-09.
 11. Office of the Registrar General and Census Commissioner, India New Delhi; Vital Statistics Division, Fact Sheet Uttarakhand. Annual Health Survey 2012-13 as accessed on 4.3.2014, available from www.censusindia.gov.in.
 12. Gupta A, Chhabra P, Kannan AT, Sharma G. Determinants of utilization pattern of antenatal and delivery services in an urbanized village of east Delhi. *Indian J Prev Soc Med*. 2010;41(3,4):240-44. Jain A, Jain A, Gupta SC, Misra SK. Quality of antenatal services in Agra. *Indian J Prev Soc Med* 2011;42(1):10-13
 13. Jain A, Jain A, Gupta SC, Misra SK. Quality of antenatal services in Agra. *Indian J Prev Soc Med* 2011;42(1):10-13
 14. Sharma P, Kishore S, Gupta S K, Semwal J. Effects of Janani Suraksha Yojana (a maternity benefit scheme) upon the utilization of ante-natal care services in rural and urban-slum communities of Dehradun. *Natl J Community Med* 2012; 3(1):130-36.
 15. Khan Z, Mehnaz S, Khaliq N, Ansari M, Siddiqui A. Poor perinatal care practices in urban slums: Possible role of social mobilization networks. *Indian J Community Med* 2009 April; 34(2):102-7.
 16. Gupta SK, Nandeshwar S. Status of maternal and child health and Services utilization patterns in the urban Slums of Bhopal, India. *Natl J Community Med* 2012 April; 3(2):331-32.
 17. Agarwal P, Singh MM, Garg S. Maternal health-care utilization among women in an urban slum in Delhi. *Indian J Community Med*. 2007;32:203-05
 18. Institute for Population Sciences (IIPS), 2010. District Level Household and Facility Survey (DLHS-3), 2007-08: India. Mumbai: IIPS.
 19. Pallikadavath S, Foss M, Stones RW. Antenatal care: provision and inequality in rural north India. *Soc Sci Med*. 2004 Sep;59(6):1147-58.
 20. Sharma P, Kishore S, Gupta S K, Semwal J. Effects of Janani Suraksha Yojana (a maternity benefit scheme) upon the utilization of ante-natal care services in rural and urban-slum communities of Dehradun. *Natl J Community Med* 2012; 3(1):130-36.
 21. Sharma V, Mohan U, Das V, Awasthi S. Utilization pattern of antenatal care in Lucknow under National Rural Health Mission. *Indian J Community Health* 2012; 24(1):32-36
 22. Aggarwal OP, Kumar R, Gupta A, Tiwari RS. Utilization of antenatal care services in peri-urban area of east Delhi. *Indian J Community Med*. 1997; 22(1):29-32.
 23. Simkhada B, Teijlingen ER, Porter M et al. Source, Factors affecting the utilization of antenatal care in developing countries: systematic review of the literature. *J Adv Nurs*. 2008 Feb; 61(3):244-60. doi: 10.1111/j.1365-2648.2007.04532.x.
 24. Dutta M, Manna N. A study on socio-demographic correlates of maternal health care utilization in a rural area of West Bengal, India. *Global Journal of Medicine and Public Health* 2012; 1(4):8-12.

Source of Support: None Declared
Conflict of Interest: None Declared