



Original Research Article

A Longitudinal Study to Assess the Utilization of Maternal and Child Health Care in Different Areas of Wardha District, India

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ABSTRACT

Introduction: Maternal and neonatal mortality & morbidity continue to be high despite the existence of national programs for improving MCH in India. This could be related to several factors, an important one being non-utilization or under-utilization of services **Objective:** To assess the utilization of some aspects of MCH care in different areas of Wardha District, India. **Material and methods:** It was a longitudinal study from June 2007 to September 2009, comprising of 280 participants (registered pregnant women of ≤ 16 weeks of gestation). They were given 8 visits by investigator. Both rural and urban areas were covered. Information on socio-demographic profile, obstetrical profile, ANC services, intra-natal health care services, PNC services and neonatal health care services were collected. **Results:** Rural 39.51 % & urban 48.0 % of participants were registered in first trimester. Participants' 86.32 % in rural area and 91.75 % in urban area were given 5 ANC visits. Prevalence of consanguineous marriage-rural 29.17 % & urban 21.33 %. In rural 41.47 % & urban 32.26 % participants gave h/o of anaemia during previous pregnancy. T.T. coverage and IFA tablets (≥ 100) consumption were of similar percentage in both rural & urban area. Delivery was mainly institutional. But in 3.84% cases home delivery was assisted by untrained birth attendant in rural area. Percentage of premature labour and prolonged labour did not differ much in both areas. In rural areas 51.32 % of mother did not received minimum 3 number of PNC visits but 25.88 % in urban areas. Birth weight recording and prevalence of low birth weight were similar in both areas. **Conclusion:** Rural - urban differences in utilization of MCH care services could be due to differences in availability and accessibility.

Key words: Longitudinal study, Utilization, Maternal and child health care.

INTRODUCTION

Maternal mortality adds up to 600,000 women each year. Every minute, at least one woman dies from complications of pregnancy and childbirth. Maternal mortality represents one of the widest health gaps between developed and developing nations, with 99 percent of all maternal deaths occurring in developing countries. That \leq one percent of maternal deaths worldwide occur in developed countries indicates that maternal deaths could be avoided if the proper health resources and services were available to women in developing nations. ⁽¹⁾ In addition to the number of deaths each year, over 50 million women suffer from maternal morbidity due to acute complications from pregnancy. ⁽²⁾ Neonatal mortality now constitutes 61% of infant mortality and nearly half of child mortality in developing countries. ⁽³⁾ Maternal and neonatal mortality & morbidity continue to be high despite the existence of national programs for improving maternal and child health (MCH) in India. This could be related to several factors, an important one being non-utilization or under-utilization of maternal health-care services, especially amongst the rural poor and urban slum population due to either lack of awareness or access to health-care services. Keeping this in mind the present study was conducted to assess the utilization of some aspects of MCH care in different areas of Wardha District, India.

MATERIAL AND METHODS

Settings: For study purpose we had selected participants from different areas [rural (group-A/ Seloo PHC & group-B/

Deoli PHC) and urban (group-A /Arvi-naka & group-B/slum areas -Bhurad mohalla & station fail)] of Wardha District, India. **Study design:** longitudinal study. **Study participants:** All the registered pregnant women of \leq 16 weeks of gestational age from September 2007 to December 2007 and were willing to deliver in the study areas. **Sample size:** Data of 280 participants [rural (Group-A includes 104 & Group-B includes 101) and urban (Group-A includes 44 & Group-B includes 31)] were analyzed. **Permission:** A written permission from the Institutional Ethical Committee and from the District Health Officer was obtained to proceed for the study. **Study period:** June 2007 to September 2009. **Data collection tools:** A questioner on some MCH care services was prepared. In the entire duration of study 8 visits (ANC/5+PNC/3) were given. **Data collection:** by direct interrogation of investigator with participants. In the entire visits respondent were participants. Information on socio - demographic profile, obstetrical profile, ANC services intra-natal health care services, PNC services and neonatal health care services were collected. In the first ANC visit, data on socio - demographic profile and obstetrical profile were collected. Data of antenatal care services were collected during entire 5 ANC visits. In the first PNC visit data of intra-natal health care services, data of neonatal health care services and PNC services were collected during entire 3 PNC visits.

DATA ANALYSIS: SPSS statistical software was used. Statistical methods applied were numbers and percentages. Rural - urban Comparison and area under them were also compared.

RESULT AND DISCUSSION

Table no-1; Socio-demographical profile:

Variables(with maximum percentage)		rural		urban	
		A(N=104)	B(N=101)	A(N=44)	B(N=31)
Age (yrs)	20-24	75(72.11)	76 (75.24)		
	25-29			25(56.82)	18 (58.06)
Religious- Hindu		82(78.85)	77 (76.23)	34(77.28)	25(80.63)
Literacy rate		85(81.73)	79(78.22)	37(84.1)	25(80.65)
Socio-economic class	Lower middle to middle	45(43.27)	57(56.44)		
	Middle to lower middle			41(93.18)	24(77.42)

Figures in parenthesis indicate percentages. A=group-A & B=group-B

Table no-1; shows the socio-demographical profile of the participant. Majority of participants were in the age group of 20-24 years in rural area 151(73.67%) where as majority were in the age group of 25-29 in urban area 43(57.33%). Most of them were Hindu-rural 159(77.5%) and urban 59(78.6%). Literacy rate-rural 164(80%) and urban 62(82.67%). Most of them were from lower middle to middle class family in rural area 102(49.77%) and middle to lower middle class family in urban area 65(86.67). Socio-economical class were defined by Prasad's classification in rural & by Modified Kuppuswami's classification in urban area.

Table no-2; Obstetrical profile:

Variables	rural		urban	
	A(N=104)	B(N=101)	A(N=44)	B(N=31)
Married within 18-25 yr	98(94.23)	95(94.06)	38(86.36)	25(80.6)
Consanguineous marriages	30(28.85)	30(29.71)	9(20.46)	7(22.58)
Anaemic (previous pregnancy)*	14(38.87)	20(43.47)	5(29.41)	5(35.71)
Adopted family planning methods.	14(13.46)	10(9.90)	10(22.73)	6(19.36)

Figures in parenthesis indicate percentages. A=group-A & B=group-B. *[{Rural -n=82(A=36, B=46)} and {urban -n=31(A=17, B=14)}]

From table no-2; it was observed that majority of participants married within 18-25 years both in rural 193(94.15%) and Urban 63(84.00%) area in the present study. A Singh et al ⁽⁴⁾ reported < 20 years age were 22.5%, 21-24 years 38.7% and 25-29 years 38.7% in rural area. B. Joseph et al ⁽⁵⁾ reported 100 % in the age group of 15-30 years in urban area. In the present study prevalence of consanguineous marriages in rural area was 60(29.17%) and urban area was 16(21.33%). A Nath et al ⁽⁶⁾ reported 36% in Shindoli Village of District Belgaum and C.P. Prakasam et al ⁽⁷⁾ in a study in Tamil Nadu observed total 26.8% out of which 30.5% in rural area and 23.8% in urban

area. **n** (no. of participants) in the table no.-2 reflects multiparous women out of which 34(41.47%) in rural area and 10 (32.26%) in urban area gave history of anaemic during previous pregnancy. 24 (11.71%) in rural area and 16(21.33%) in urban area adapted different family planning methods.

Table no-3; ANC services:

Variables	rural		urban	
	A(N=104)	B(N=101)	A(N=44)	B(N=31)
Registered in first trimester	41(39.41)	40(39.60)	20(45.45)	16(51.16)
5-ANC visits	91(87.50)	86(85.15)	41(93.18)	28(90.33)
T.T. coverage	102(98.08)	98(97.03)	44(100)	30(96.78)
IFA tablets (≥ 100) consumption	32(30.78)	30(29.71)	15(34.10)	10(32.26)

Figures in parenthesis indicate percentages. A=group-A &B=group-B

From table no-3; it was observed that rural area 81(39.51%) and in urban area 36(48.0%) of participants were registered in first trimester. Nazli Khatib et al ⁽⁸⁾ observed 59.3% in rural area. In our study 177(86.32%) in rural area and 69(91.75%) in urban area were given 5 ANC visits. Gupta RS et al ⁽⁹⁾ observed 36.1% of the rural and 71.4% of urban mothers received ANC >3 visits. A Singh et al ⁽⁴⁾ reported 34.9% gave 3 or more visits in a study in rural Tamil Nadu. Sinha RN et al ⁽¹⁰⁾ in a study of urban area of West Bengal observed 54% to 82% had 3 or more antenatal check-ups. T.T. coverage varied between 200(97.56%) to 74(98.67%) from rural to urban being lowest in the high risk urban area in our study. Sinha RN et al ⁽¹⁰⁾ reported 83.5% to 93.4% being lowest in high risk urban (96.78%) study area. B. Joseph et al ⁽⁵⁾ reported 100 % T.T. coverage in factories based study in Bangalore. Gupta RS et al ⁽⁹⁾ observed 2/3rd of mothers were immunized against tetanus in both rural and urban areas. IFA tablets (≥ 100) consumption was 62(30.24%) in rural area and 25(33.33%) in urban area. Agarwal AK et al ⁽¹¹⁾ reported 43% consumption rate for desired number of IFA tablets at 9 months in rural area where as Sinha RN et al ⁽¹⁰⁾ reported 12.7% to 23.7% in his urban study.

Table no-4; Intra-natal health care services:

Variables	rural		urban	
	A(N=104)	B(N=101)	A(N=44)	B(N=31)
Normal deliveries	94(90.38)	92(91.08)	35(79.54)	25(80.64)
Institutional delivery	96(92.30)	83(82.17)	40(90.90)	27(87.09)
Delivery assisted by UBA*	----	1(5.56)	----	----
Premature labour	21(20.19)	22(21.78)	09(20.45)	08(25.81)
Prolonged labour	16(15.39)	19(18.81)	10(22.73)	08(25.81)

Figures in parenthesis indicate percentages. A=group-A &B=group-B. *UBA-untrained birth attendant for Home delivery [{rural -N=26(A=8, B=18)} and {urban -N=8(A=4, B=4)}]

From table no- 4; it was observed 186(90.73%) normal deliveries were in rural area and 60(80%) in urban area. It was mainly Institutional both in rural 179(87.31%) and urban 67(89.33%) in our study. Gupta RS et al ⁽⁹⁾ reported Home delivery 61.7% in rural areas and Hospital delivery

71.4% in urban areas. P. Das et al ⁽¹²⁾ reported 83.6% home deliveries in rural areas. M.K. Sharma et al ⁽¹³⁾ reported 72% home deliveries in slums population of Chandigarh. The more institutional delivery in this study was because of the 2 nos. of Medical Colleges & Hospitals and a District level Hospital nearer to the study area. In our study Home delivery assisted by untrained birth attendant was 1(3.84%) in rural area. P. Das et al ⁽¹²⁾ reported untrained person 36.3% attained home deliveries in rural areas and M.K. Sharma et al ⁽¹³⁾ reported untrained person 57% attained home deliveries in slums population of Chandigarh. In our study area regular training programme conducted by tertiary health care system, direct supervision by ANM improves skill of untrained personnel, hence delivery service mostly provided by trained personnel. Complications during current delivery - in rural area 43(20.98%) had premature labour and 35(17.07%) had prolonged labour, where as in urban area 17(22.67%) had premature labour and 18(24.00%) had prolonged labour.

Table no-5; PNC services:

Variables	rural		urban	
	A(N=104)	B(N=101)	A(N=44)	B(N=31)
3-PNC visits	58(55.78)	42(41.59)	34(77.27)	22(70.98)
family planning advice	94(90.38)	81(80.19)	40(90.90)	25(80.64)
Exclusive breast feeding advice	96(92.30)	79(78.21)	40(90.90)	26(83.87)
Baby care advice	93(89.42)	77(76.23)	39(88.63)	26(83.87)

Figures in parenthesis indicate percentages. A=group-A &B=group-B

Table no-5; shows 105(51.32%) of mother did not received minimum 3 number of PNC visits in rural areas and 19(25.88%) in urban areas. According to Sulochana Dhakal et al ⁽¹⁴⁾ 66% did not receive postnatal care among rural women in Nepal. Sinha RN et al ⁽¹⁰⁾ reported 78.8% to 88.4% received no postnatal check-up in his urban study. Advice for family planning noted 175(85.36%) in rural and 65(86.67%) in urban area in this study. Monika Agarwal et al ⁽¹⁵⁾ reported 76.7% and Ruth E. Bessinger et al ⁽¹⁶⁾ reported 94% in Uganda, 85% in Zimbabwe, 84% in Ecuador. In this study 175(85.36%) in rural area and 66(88.00%) in urban area received exclusive breast feeding advice but 170(82.93%) rural and 65(86.67%) in urban area received Baby care advice.

Table no-6; Neonatal health care services:

Variables	rural		urban	
	A(N=104)	B(N=101)	A(N=44)	B(N=31)
Birth weight Recorded	96(92.30)	83(82.17)	40(90.90)	27(87.09)
BCG&OPV coverage	98(94.22)	89(88.11)	42(95.45)	28(90.32)
Essential new born care given	91(87.49)	79(78.21)	40(90.90)	26(83.87)
Low birth weight*	11(10.57)	13(12.88)	04(09.10)	03(09.68)
Pathological jaundice*	04(03.84)	04(03.96)	03(06.81)	02(06.45)

Figures in parenthesis indicate percentages. A=group-A &B=group-B N.B: Essential new born care (resuscitation with asphyxia, prevention of hypothermia & infection, exclusive breast feeding and referral of sick new born). * Morbid condition seen & taken treatment.

Table no-6; shows birth weight was not recorded 26(12.69%) in rural area and 8(10.67%) in urban area. P. Das et al ⁽¹²⁾ reported 38.18% in rural Block of West Bengal for not recording birth weight. BCG coverage was 187(91.21%) in rural and 70(93.33%) in urban in our study. Gupta RS et al ⁽⁹⁾ reported that 69.61% in rural areas and 89.3% in urban areas. OPV coverage was 187(91.21%) in rural and 70(93.33%) in urban in our study G.O.I, RCH, Wardha ⁽¹⁷⁾ shows 66% in rural and 88% in urban. In this study 170(82.93%) in rural area & 66(88.00%) in urban area were received essential new born cares. Morbidity seen and taken treatment for low birth weight -24(11.70%) rural & 07(9.33%) urban, pathological jaundice -08(3.90%) rural & 05(6.67%) urban in this study.

CONCLUSION

We conclude that utilization of MCH care services is not same between rural and urban area and for different services (antenatal, intra-natal, postnatal and neonatal) of MCH care. The difference in utilization of MCH care facilities was noted. Registration of pregnancy in first trimester is more in urban area compared to rural. Less than 35% of people both in urban(33.33%) and rural area(30.24%) had consumed IFA tablets (≥ 100). Normal deliveries were more in rural area compared to urban area and it was mainly Institutional. Those deliveries were Home mainly assisted by trained birth attendant. Half of the patient in rural and one fourth of the patient in urban area did not received minimum 3 number of PNC visits. Rural -urban differences in utilization could be due to differences in availability and accessibility.

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