

Differentials in Maternal and Child Health Care in Tamil Nadu

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ABSTRACT

The present paper examines the rural urban differentials and the factors influencing net change in maternal and child healthcare (MCH) indicators during the National Family Health Survey NFHS-4 (2015-16) and NFHS-3 (2005-06). The National Family Health Survey (NFHS) collected data from 28,820 ever-married women in the age group of 15-49 and 5,317 men age 15-54 (NFHS-4) and 5,919 women age 15-49 and 5,696 men age 15-54 (NFHS-3) and this paper analyses these data. This paper describes about the trends in MCH indicators by residence, early childhood mortality rates, immunization and anemic status of women and children by using bivariate analysis and chi square test. The analysis reveals that there is a progress in MCH indicators and also there exist negative performance of certain indicators. Overall, there exist rural urban differentials in MCH achievements though government have introduced many government health programs like National Rural Health Mission (NRHM), NUHM and NHM etc., The government have to take steps to reduce rural urban differentials in achieving MCH goals and to reduce early childhood mortality rates.

Keywords: *MCH care, Immunization, Anaemia, childhood mortality rates*

Introduction

Government of India has introduced various health programs to improve the maternal and child health care. Family planning and family welfare programmes are modified into maternal and child health (MCH), Reproductive and Child Health (RCH) programmes to

improve the health of mother and children especially in rural areas. National Rural Health Mission (NRHM) has been implemented during 2005-2012 to reduce MMR, IMR and to achieve various health goals in rural areas and further expanded to urban as NUHM. Caldwell and Cleland stated that the health status of children is significantly associated with maternal health of women (Caldwell, 1979; Cleland Van Ginneken, 1988). The child survival rate is mainly influenced by child immunization and utilization of MCH care which mainly depends on socio economic characteristics of women (UNICEF, 1990; Kim-Farley et al, 1992; Grant, 1993). People in rural areas are lagging behind people in urban areas in achieving maternal and child health care. The main aim of this paper is to find out the rural urban differentials of maternal and child health care indicators in Tamil Nadu using the findings of National Family Health Surveys conducted during 2005-06 (NFHS 3) and 2015-16 (NFHS 4).

Methodology:

The main objective of this paper is to examine the rural urban differentials in maternal and child health care utilization, outcome and factors influencing the net change. The data for this study have been collected from the large scales surveys namely National Family Health Survey NFHS-4 (2015-16) and NFHS-3 (2005-06) in which information from 28,820 ever-married women in the age group of 15-49 and 5,317 men age 15-54 (NFHS-4) and 5,919 women age 15-49 and 5,696 men age 15-54 (NFHS-3) were collected in Tamil Nadu. The data was analysed using

bivariate analysis and Chi square test to know the significant association between independent and dependent variables. The maternal health variables used in this paper are antenatal care (AN Care), delivery, post natal care (PN Care), BMI, anemia, decision making, spousal violence of women and the child health variables used are Immunization, Vit A, ORS, diarrhea, ARI, breastfeeding, anemia, early child hood mortality rates namely, neonatal mortality, post neonatal mortality, infant mortality, child mortality, under five mortality rate and analysed with social and demographic variables.

RESULTS AND DISCUSSION:

Rural urban differentials in utilization of AN care services are presented in Table 1. The percentage of women who received AN care, first trimester registration and PN care within two days decreased over the periods. Percentage of births delivered in public health facilities is higher in rural areas and the percentage of births delivered in private health facilities is higher in urban areas. There exist a net change of rural urban differentials in first trimester registration, institutional and public health delivery.

Table 1: Trends in maternal care indicators by residence, Tamil Nadu

National Family Health Survey Indicators_Tamil Nadu	NFHS-4 (2015-16)			NFHS-3 (2005-06)		
	UR	RU	Gap	UR	RU	Gap
Received antenatal care	91.7	91.1	0.6	100	97.9	2.1
Received at least 4 AN care visits	82.5	81.8	0.7	92.1	83.4	8.7
Received AN within the first trimester of pregnancy	66.1	63.5	2.6	80.9	72	8.9
Received full AN care	46.5	44.8	1.7	32.4	24.8	7.6
Births delivered in a health facility	99.6	99.2	0.4	94.9	86	8.9
Births delivered in a public health facility	58.7	73.8	-15.1	47.0	49.0	-2
Births delivered in a private health facility	40.5	24.9	15.6	45.1	33.8	11.3
Deliveries assisted by health personnel	99.6	99.2	0.4	96.4	89.9	6.5
Received PN check-up within two days of birth	74.4	74	0.4	91.8	83.3	8.5

Note: UR= Urban, RU: Rural

Table 2 highlighted the rural urban differentials of BMI, anemic status among men and women, women participate in household decisions and women experienced spousal violence. More than fifty percent of pregnant and non pregnant women aged 15-49 years in rural areas were anemic and the proportion is higher than in urban areas. There exists a positive net change of women with BMI below normal and pregnant women who are anemic in urban areas in improved status. Women participate in household decisions increased but more than one third of women

ever experienced spousal violence both in rural and urban areas. Percentage of children who had 3 or more AN check ups and first trimester registration is decreased over the periods, which is higher among illiterate women, women belonging to Muslim community, Scheduled caste women, rural women and among women having birth order one compared with their counterparts. There exist positive improvement on immunization status of children which is higher among educated, Hindu women, scheduled caste, urban women and women with 2-3 birth order. AN care and immunization is significantly associated with birth order and significant at 5 % level.

Table 2: Trends in BMI, Anemia and other indicators by residence, Tamil Nadu.

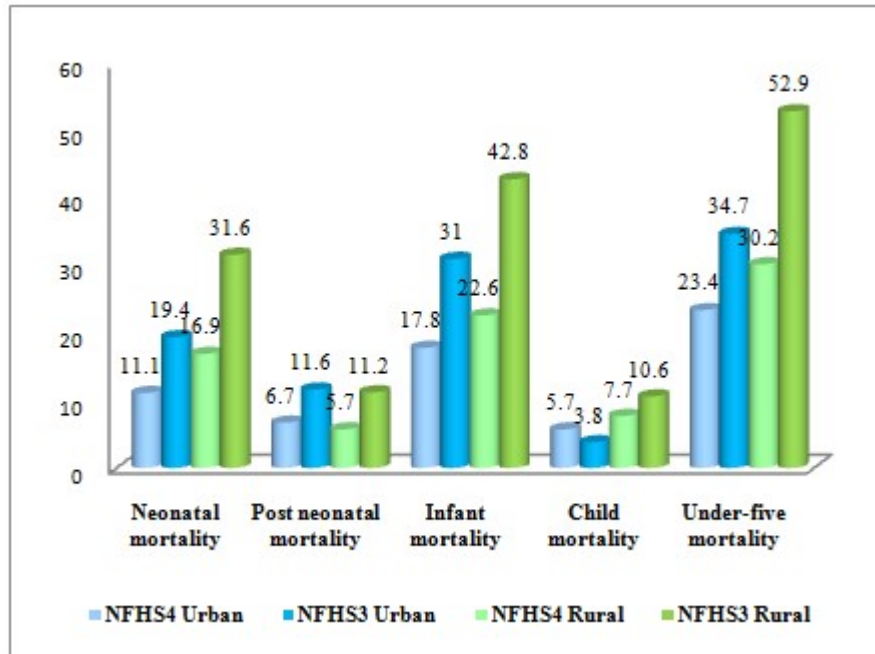
National Family Health Survey Indicators_Tamil Nadu	NFHS-4 (2015-16)			NFHS-3 (2005-06)		
	UR	RU	Gap	UR	RU	Gap
Women whose Body Mass Index (BMI) is below normal (BMI < 18.5 kg/m ²)	10.9	18.5	-7.6	16.2	30.0	-13.8
Men whose Body Mass Index (BMI) is below normal (BMI < 18.5 kg/m ²)	10.7	14.3	-3.6	14.4	22.3	-7.9
Non-pregnant women age 15-49 years who are anaemic (<12.0 g/dl)	53.7	56.8	-3.1	52.6	54.7	-2.1
Pregnant women age 15-49 years who are anaemic (<11.0 g/dl)	37.0	52.1	-15.1	57.4	52.7	4.7
Men age 15-49 years who are anaemic (<13.0 g/dl)	16.8	24.3	-7.5	14.5	19.2	-4.7
Currently married women who usually participate in household decisions	83.3	84.7	-1.4	53.2	45.0	8.2
Ever-married women who have ever experienced spousal violence	37.2	44.2	-7.0	39.0	44.4	-5.4

Note: UR= Urban, RU: Rural

Regarding differentials in child health indicators, early mortality rates are higher in rural areas compared with urban areas in Tamil Nadu except post neonatal mortality rate and is presented in Fig 1.

There is a positive net change of improvement exists in early childhood mortality rates over the periods from 2005-06 to 2015-16.

Figure 1: Early childhood mortality rates _Tamil Nadu



Immunization status of children and the rural urban differentials is presented in Fig 2. Children aged 12-23 months fully immunized decreased both in rural and urban areas over NFHS 3 to NFHS 4 periods. There exist a net change of percent of children fully immunized in both rural and urban areas (-16.9 and -4.5). Similarly it is observed that there is a decrease in percent of children 12-23 months received BCG, Polio vaccine, DPT and measles vaccine.

Figure 2: Immunization status of Children _Tamil Nadu

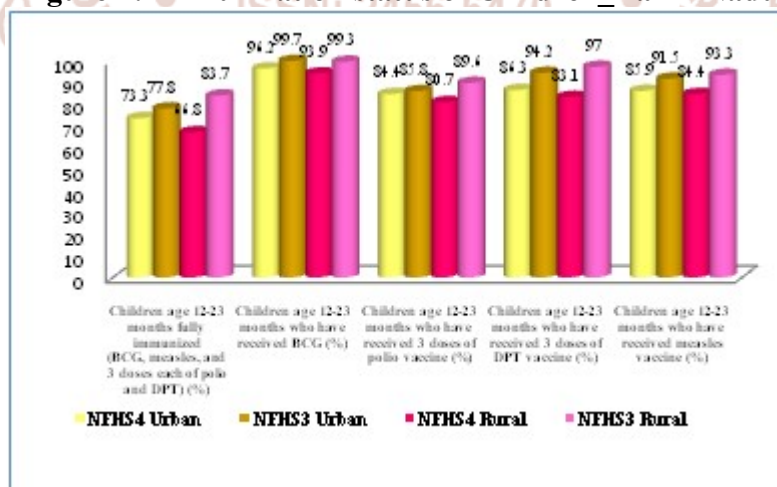
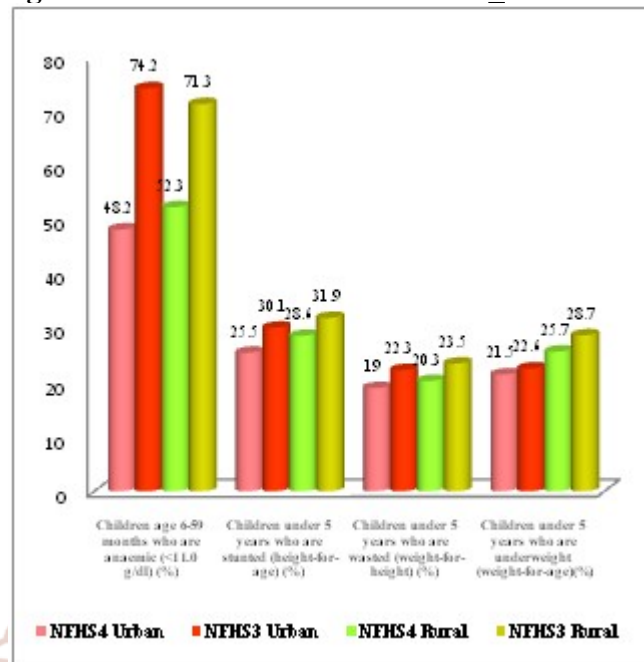


Figure 3 describes about the rural urban differentials in anemic status of children. More than 50 percent of children age 6-59 months were anemic (<11 g/dl). The percentage of children who are stunted, wasted and underweight is higher in rural areas than urban areas in Tamil Nadu. But there exist positive net change, improvement observed over the periods from 2005-15 to 2015-16.

Figure 3: Anemic status of Children_Tamil Nadu

Trends in child health indicators and the rural urban differentials are presented in Table 3. It is observed that there exist rural urban differentials in receiving Vit A, ORS by children age 9-59 months and percent of children under 6 months exclusively breastfed but there is a positive net change of improvement was observed during the period from 2005-06 to 2015-16. Percent of children under 3 years breastfed within one hour of birth decreased in urban areas and percent of children age 6-8 months receiving solid or semi solid food and breast milk decreased in both rural and urban areas over the periods.

Table 3: Trends in Child health indicators by residence, Tamil Nadu

National Family Health Survey Indicators_Tamil Nadu	% Change (NFHS 4 - NFHS 3)		
	Urban	Rural	Gap
Children age 9-59 months who received a vitamin A dose in last 6 months (%)	16.8	29.4	-12.6
Children with diarrhoea in the last 2 weeks who received oral rehydration salts (ORS) (%)	44.1	25.4	18.7
Children with diarrhoea in the last 2 weeks taken to a health facility (%)	35.0	1.1	33.9
Children with fever or symptoms of ARI in the last 2 weeks preceding the survey taken to a health facility (%)	-12.1	8.0	-20.1
Children under age 3 years breastfed within one hour of birth (%)	-3.4	1.9	-5.3
Children under age 6 months exclusively breastfed (%)	25.0	8.2	16.8
Children age 6-8 months receiving solid or semi-solid food and breast milk (%)	-7.3	-12.6	5.3

Early child hood mortality rates by social and demographic characteristics of women are presented in Table 4. There exist a positive net change of improvement, the early childhood mortality rates namely neonatal mortality, infant mortality, child mortality and under 5 mortality rates were decreased over the periods from 2005-06 and 2015-16 in Tamil Nadu. According to NFHS 3, Neonatal mortality is significantly associated with residence, education, religion, child sex, birth order and previous birth interval. Infant mortality is significantly associated with education, religion, child sex, birth order and previous birth interval. Child mortality is

significantly associated with education, religion, child sex and birth order. Under 5 mortality is significantly associated with education, child sex and birth order ($p < 0.05$).

Table 4: Early childhood mortality rates by background characteristics, Tamil Nadu

Background characteristics	Net change (Mortality) NFHS 3 (2005-06) to NFHS 4 (2015-16)				
	Neonatal	Post neonatal	Infant	Child	Under 5
Residence					
Urban	-8.3	-4.9	-13.2	1.9	-11.3
Rural	-14.7	-5.5	-20.2	-2.9	-22.7
Chi square, p value	*				
Education of women					
No schooling	-7.4	-11.4	-18.8	-5.9	-24.1
<10 years complete	-10.4	-3.7	-13.9	4.2	-9.8
10 or more years complete	-5.1	1.7	-3.4	1.2	-2.2
Chi square, p value	*		*	*	*
Religion					
Hindu	-13.3	-6.8	-20.1	-1.2	-21.2
Christian	-7.0	7.4	0.4	4.4	4.7
Chi square, p value	*		*	*	*
Caste/tribe					
Scheduled caste	-7.8	-5.9	-13.8	-3.7	-17.3
Other backward class	-14.4	-5.4	-19.8	-0.1	-19.8
Chi square, p value					
Child's sex					
Male	-14.4	-1.3	-15.7	3.2	-12.5
Female	-9.7	-9.4	-19.1	-5.3	-24.1
Chi square, p value	*		*	*	*
Mother's age at birth					
<20	-16.4	-2.4	-18.8	-3.5	-22.0
20-29	-12.5	-6.7	-19.2	-0.5	-19.6
30-39	-3.9	0.3	-3.6	-2.8	-6.4
Chi square, p value					
Birth order					
1	-11.3	-0.3	-11.6	-2.0	-13.5
2-3	-10.2	-9.0	-19.2	-0.4	-19.4
Chi square, p value	*		*	*	*
Previous birth interval					
<2 years	-43.5	-16.4	-59.9	-0.5	-60.0
2-3 years	-2.6	-5.8	-8.4	-4.8	-12.9
4 years or more	12.7	-1.5	11.2	4.4	15.3
Chi square, p value	*		*		*
Total	-12.1	-5.2	-17.4	-0.9	-18.1

Note: * Significant at 5 % level.

According to NFHS 4, Neonatal mortality is significantly associated with child sex and birth order. Infant mortality is significantly associated with child sex and birth order. Child mortality is significantly associated with education, child sex and birth order. Under 5 mortality is significantly associated with education, religion, birth order and previous birth interval ($p < 0.05$). Early childhood mortality rate is higher among illiterate women compared with literate

and women belonging to Scheduled caste. Similarly childhood mortality is higher among women who delivered male child except for child mortality and under5 mortality in which the mortality rate is higher among women who delivered female child. And the early child mortality is higher among higher birth interval during NFHS 4 (2015-16).

CONCLUSION:

The present paper highlighted the trends in MCH indicators by residence, early childhood mortality rates, immunization and anemic status of women and children and reveals that there is a progress in MCH indicators and also there exist negative performance of certain indicators. Overall, there exists rural urban differentials in MCH achievements though government have introduced many government health programs like National Rural Health Mission (NRHM), NUHM and NHM etc., The government have to take steps to reduce rural urban differentials in achieving MCH goals and to reduce early childhood mortality rates by monitoring the government programs, training to the health personnel, IEC activities and awareness creation among women living in rural areas, women belonging to scheduled caste, illiterate women and women having higher birth interval.

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