Rural-urban Migration and Utilization of Maternal and Child Health Services in Mega Cities of India

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Introduction

The association between rural-urban migration and health seeking behaviour has received little research attention, with most previous studies focusing on the biological or physiological consequences of migration to an urban area (Bogin, 1981). The few studies, that have contrasted health outcomes between migrant and non-migrant groups, have shown that the health status of rural-urban migrants often improves relative to those in their rural origin. The health outcomes of rural-urban migrants, however, remain below those of urban non-migrants (Bender *et. al.*, 1993; Brockerhoff, 1995; Stephenson & Matthews, 2003).

The increasing concentration of population in large cities has been a striking feature of India's urbanization during the last century (Bhagat and Mohanty, 2009). The rapid growth of slum population in the four mega-cities: Mumbai, Delhi, Kolkata and Chennai, has been the concern of policy makers for years. The recent socio-economic transformation due to globalization in the second order metros of the country has resulted in the escalating immigration from rural areas and prepared way for rapid proliferation of urban slums. These slums are mainly occupied by the rural-urban migrants. Therefore, to improve the lives of slum dwellers and to provide estimates of population and health indicators separately for each of the four mega cities in India and each of four medium and large cities viz. Hyderabad, Indore, Meerut and Nagpur which have crossed the one million mark and believed to be regional metros has been included in NFHS-III (Gupta et al., 2009). Utilizing this information, present study endeavours to assess the differentials in utilization of maternal (ante-natal care services and delivery assisted by the health personal) and child health care services (full immunization) among rural to urban migrants and urban non-migrants in the selected mega-cities of India. The study also examines the association between rural-urban migration with utilization of maternal and child health care services in these cities using the latest data set of Indian National Family Health Survey, 2005-06.

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Data and Methods

The study examines the data obtained from the Indian National Family Health Survey (NFHS) administered during the year 2005-06. The NFHS (Indian DHS) is a cross-sectional, multi-stage household survey and is designed to provide estimates of key indicators relating to fertility, mortality, family planning, maternal and child health related indicators at both national and state levels. NFHS 2005-06 also covered samples from eight mega-cities of India, namely Mumbai, Delhi, Kolkata, Chennai, Hyderabad, Indore, Meerut and Nagpur. Area designated as slums in the 2001 census were used as the survey sample. In order to have a sample large enough to provide reliable information, in each of the eight cities, NFHS-III selected a representative sample of approximately 2000 households with about 1000 households each from enumeration areas designated as slum and non slum areas within the municipal corporation limits of these cities. (Gupta et al 2009, IIPS and Macro International 2007). The study uses national women's weight when eight cities are combined.

This study focuses on the utilization of maternal and child health care services. Variables for pre-natal care in the first trimester with three or more antenatal care (ANC) visits and delivery assisted by skilled health personal are considered for maternal health care while for child health care full immunization has been taken into account. Migration status is the main predictor variable. Along with this we have taken some other theoretically pertinent demographic and socio-economical variables in the analysis. We have defined *migrant as a person who has changed place of residence across an administrative boundary*. On the basis of available basic information from the NFHS-3: type of current and previous place of residence, years lived in the current place of residence by respondent we have identified migration status and migration streams which are rural to rural, urban to urban, rural to urban and urban to rural. The respondents of the cities who have reported their duration at the current residence as 'always' have been classified as *urban non-migrant* and those who reported previous residence as rural and current residence as urban classified as a *rural to urban migrant*. Urban to urban migrants of the selected cities were removed from the analysis. Visitors were also excluded from the analysis. In the variable of cities sample of all eight cities was combined for better estimates.

We have used bi-variate as well as multivariate techniques for analysing the relationship between socioeconomic and demographic variables with the three outcome variables: antenatal care, delivery attended by skilled health personal and full immunization. We fit binary regression models to assess the adjusted effects of demographic and socio-economic

variables along with main independent variable migration status on the outcome variables: antenatal care (three or more ANC visits = 1, otherwise = 0), delivery assisted by skilled health personal (delivery assisted by skilled health personal = 1, otherwise = 0) and immunization (child is fully immunized = 1, otherwise = 0). *Model I* contained variable of migration status. *Model II* included migration status along with all other demographic (sex of the child, birth order/preceding birth interval) and socio-economic characteristics (caste, religion, and educational attainment of mother, educational attainment of father and mass-media exposure, occupation of father, occupation of mother and wealth index).

Preliminary Findings

Preliminary results reveal that rural-urban migration has been significantly associated with the ANC visits, delivery assisted by skilled health personal and immunization (table 1). Multivariate results show that in the mega cities of India rural to urban migrants are 44 % less likely to have ANC visits than their non-migrant counterparts after controlling for other demographic and socioeconomic factors. Similar results are observed for delivery assisted by skilled personal and full Immunization. Results in respect to economic factors show that richest groups are significantly more than four times likely to go for ANC care, similarly with increasing economic status likelihood of delivery assisted by skilled health personal increases significantly but we full immunization is not associated with the economic factors.

Interestingly, caste has been found to affect the delivery assisted by skilled health personal and with increasing social status its chances increase; nonetheless its relationship with ANC care and full immunization is not found to be significant. It could be noted that educational attainment has the positive and significant association with the all three health care services in the mega cities of India. Available results lead to the inference that migration status (rural to urban migration) is a significant predictor for utilization maternal and child health care services in mega-cities of India.

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Table 1: Results of logistic regression analysis showing association between migration status and full ANC, delivery assisted by health personal and full immunization NFHS, 2005-06, India

	Full ANC (N=2523)		Delivery assisted by health personal (N=3488)		Full immunization (N=645)	
Covariates	**Model I**	**Model II**	**Model I**	**Model II**	**Model I**	**Model II**
Migration status						
Urban Non-migrants®	1.00	1.00	1.00	1.00	1.00	1.00
Rural to Urban Migrants	0.37***	0.56***	0.26***	0.40***	0.58***	0.72*
Table 1 cont'd						
Birth order/preceding birth interval						
First birth (Order 1) ®		1.00		1.00		1.00
Order 2-4 & <24 months		0.49***		0.51***		0.7
Order 2-4 & 24-47 months		0.72*		0.58*		0.62*
Order 2-4 & 48+ months		0.87		0.94		1.26
Order 5+ & <24 months		0.16***		0.45**		0.39
Order 5+ & 24-47 months		0.36***		0.41***		1.32
Order 5+ & 48+ months		0.40**		0.33***		0.76
Sex of the child						
Male®		1.00		1.00		1.00
Female		0.82*		0.95		1.04
Caste						
Scheduled Castes/Tribes®		1.00		1.00		1.00
Other Backward Classes		0.92		1.44**		0.78
Others		1.22		1.77***		0.69
Religion						
Hindu®		1.00		1.00		1.00
Muslim		0.67**		0.77*		0.45***
Others		2.97**		3.40***		1.8
Educational Attainment of Mother						
No education®		1.00		1.00		1.00
Primary		1.67**		1.77***		1.37
Secondary or Higher		2.13***		4.42***		1.79*
Educational Attainment of Father						
No education®		1.00		1.00		1.00
Primary		1.36*		1.42*		1.97*
Secondary or Higher		1.17		0.98		1.81*
Mass Media Exposure						
No®		1.00		1.00		1.00
Yes		1.31*		1.19*		1.31
Occupation of Mother						
Do not work®		1.00		1.00		1.00
White collar jobs		1.35		2.59***		1.17
Manual jobs		0.98		1.15		0.72
Occupation of Father						
Do not work®		1.00		1.00		1.00
White collar jobs		1.44		1.23		2.22
Manual jobs		1.35		1.03		2.55
Wealth Index						
Poorest®		1.00		1.00		1.00
Poorer		1.09		3.86**		1.60
Middle		1.84		5.49***		1.90
Richer		3.02*		9.50***		2.53
Richest		4.19***		12.87***		3.45

Notes: * Significant at p<0.10, ** p<0.05, *** p<0.001, ® = Reference category