INTERNAL MIGRATION AND UTILIZATION OF MATERNAL HEALTH CARE SERVICES IN INDIA

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ABSTRACT

In India, internal migration has been given very low priority by the government, partly due to a serious knowledge gap on its extent, nature, and magnitude. Internal migration in India accounts for a large population – 309 million internal migrants or 30% of the total population (Census of India, 2001).This study was an attempt to examine the utilization of maternal health care services among currently married migrant and currently married non-migrant women aged (15-49) years old in India. To examine maternal health, two indicators (antenatal check up and institutional delivery) were used. This paper used National Family Health Survey-3 (NFHS-3) data of India. Study findings indicated that a slightly higher proportion of currently married migrant women utilize antenatal care services than non-migrant women. By contrast, higher proportion of non-migrant women delivered their last baby at an institution than migrant women. These findings were also corroborated by multi-variate analysis. These findings can be useful for policy makers and program planners to improve health services for migrants in India.

KEY WORDS: INTERNAL MIGRATION / ANTENATAL CARE / AND INSTITUTIONAL DELIVERY

47 pages

CONTENTS

CONTENTS (cont.)

LIST OF TABLES

LIST OF FIGURES

CHAPTER I
INTRODUCTION

1.1 Problem Statement and Justification of the Study

Urbanization is known as one of the key social changes of the 20th century. According to state of world population, UNFPA, 2007, it was expected that in 2030, almost 5 billion world's population would be living in urban areas (UNFPA, 2007).

There is a considerable difference between developed and developing countries in the situation of urbanization. In developed countries, more than three-quarters of the population resides in urban areas, compared with less than half of the population in developing countries.

In the future, mainly urban population growth would occur in less developed regions. As projected by United Nations, by 2015, 18 cities out of 22 cities with a population of 10 million or more would be placed in developing countries (United Nations, 2005). The rapid inclusion of city population will be significantly contributed by the growth of the slum population. In 2001, more than one third (34%) or 924 million of the world's population lived in slum areas. Further, 43 % of urban population of less developed countries lived in slum areas, compared to 6 percent of developed countries (United Nations Human Settlements Program, 2003).

India is the second largest populous country in the world, after China. Nearly one third (31%) or 377 million of India's population lives in urban areas, scattering in about 8,000 cities and towns (ORGI, 2011). In the last two decades from 1981 to 2001, population of Indian cities has increased substantially. Out of the 20 largest cities in the world, four are in India Mumbai, Kolkata, Delhi and Chennai. Overall, the average growth rates of these cities are higher than the growth rate of urban population. As projected by United Nations, in 2030, 41% of India's population would reside in urban areas (United Nations, 2005).

Internal migration plays an important role in social and economic development, especially in developing countries, including India. Yet, internal migration has been given very low priority by the Indian government, partly due to a serious knowledge gap on its extent, nature and magnitude. According to the 2001 census, internal migrants account for a large population which is 309 million or 30% of the total Indian population (ORGI, 2001). The recent estimates indicated that 326 million or 28.5 % of internal migrants of total population in India (NSSO, 2007-08).

Internal migration has been an important component of urbanization in India. Although, rural- urban migrants are better represented among the better-off segments of the urban population (educationally and economically), there is still about a half of the migrants falls in the bottom six consumption deciles and work mainly in the informal sector as self-employed or casual wage employed (Bhagat, 2011). Most of the poor rural migrants live in slum areas, though slums are not entirely result of rural to urban migration and urban poverty is not totally product of rural poverty (Mitra, 2011).

Migrants are mainly less likely to access health care to receive the poor quality of care due to their inferior socioeconomic background, language problem, policy problem in access to health care services, location and social stigma (Derose et al. 2007). According to the studies conducted by CEHAT (The Centre for Enquiry into Health and Allied Themes), migrants are deprived as compared to the native population in terms of accessing the education and health services. Other study highlighted that migrants delay in the seeking health services due to lack of money, lack of knowledge and unfamiliarity with the available health services, problems of transportation and primarily due to the time since most of them work as daily wage worker. Furthermore, migrants are at greater risk due to their hazardous working and living conditions (VHAI, 2000).

Studies show that migrant workers in India are often exposed to occupational hazards such as toxic chemicals, harmful levels of dust, accidents at factories and construction sites and working under unhealthy conditions. Poor migrants mainly live in slum areas where living conditions are overcrowded, unhygienic, inadequate nutrition, poor housing condition, lack of clean water and poor

sanitation facility. (Deshingkar, 2011). According to the World Bank estimates, 21 % of communicable diseases in India are water related.

Social protection programmes in India barely focus on migrants. Migrants are generally low paid and oppressed. They also, lack proper housing, access to health services, improved sources of drinking water and sanitation. There are a vast number of urban people living in slums (UN-Habitat (2006, p.193). The increasing intensity of the urban population in slum areas is commonly equated with rising urban poverty. Slums represent the worst of urban poverty and inequality. Slums have the maximum numbers of poor people and the migrants who reside in slums are immensely affected by the rejection of the right to shelter, to potable water, to sanitation and to health care. According to study conducted by NSSO in 2008, 25 % of urban households reported that they did not have access to drinking water within their premises, 22 % did not have bathroom, 15 % did not have access to drainage facility and 11% did not have any toilet facility. Only three fifths of urban households owned their dwelling in 2008–2009 (NSSO,2010b).

According to a study using NFHS-2 (National Family Health Survey) data, disparities between health conditions of the urban poor and better -off population in urban areas exist. Study indicated that under –five mortality rates were significantly higher for the urban poor in Madhya Pradesh (132 per 1,000 live births) than for urban areas as a whole (83 per 1,000 live births) (Urban Health Resource Center,2008). Similar patterns were observed in immunization by age 12 months. A smaller proportion of children (21%) in households with a low standard of living status were fully immunized by the age of one year as compared with 41% of all urban children (EHP, 2003) (Environmental Health Project). Ghosh and Shah, (2004) also found that in urban slums, more than 3 out of 5 children do not receive all childhood vaccinations. Further, NFHS-3 data indicated that the under- five mortality rate was substantially higher (73 per 1,000 live births) among the urban poor as compared with the average of 48 per 1,000 live births among all city dwellers in India (UHRC,2008).

In addition, the level of malnutrition is slightly higher among urban poor children, (54%) than among children in rural areas (51%) (Urban Health Resource Centre, 2008). According to WHO, India is home of three most common diseases among children that are Diarrhea, Fever and Acute respiratory Infection (ARI).

In the mean time, the number of primary health care facilities has not increased in the same manner with the unstable growth of urban population, especially health facilities for the poor. Moreover, health facilities might not be available in physical proximity of urban slum neighborhoods. Among the urban poor population in India, only 25% of mothers reported to receive complete antenatal care during pregnancy (at least three ANC visits, iron and folic acid tablets for at least three months, and at least two tetanus toxoid injections). Almost three-quarters of delivery were conducted at home among urban poor (Agarwal et al., 2007)

Although researchers have studied the influence of rural-urban migration on fertility (Brockerhoff and Yang, 1994; Chattopadhyay et al., 2006; White et al., 2005) and mortality (Stephenson et al., 2003), only few studies focus on the relationship between internal migration and utilization of maternal health care services. My study aims to explore the relationship between internal migration and utilization of maternal health care services. Findings can be useful for policy makers and program planners to improve health services in India for migrants. Study findings can also be beneficial for governmental or non-governmental organizations as they design and advocate appropriate interventions related to migration in India.

1.2 Goal of the study

To understand the utilization of maternal health care services among migrants compared with non-migrants in India.

1.3 Research Questions

The study answers two questions as follow:

1. Does the utilization of maternal health care services differ among migrants and non- migrants?

2. Do the different types of internal migration affect the utilization of maternal health care services among currently married women in India?

1.4 Research Objectives

1. To explore the utilization of maternal health care services among migrants and non-migrants in India.

2. To examine the relationship between different migration streams and utilization of maternal health care services in India.

CHAPTER II
LITERATURE REVIEW

2.1 Theoretical Model

This study applies one theory (Andersen behavior model) to explain the effect of and link between internal migration and utilization of maternal health services in India.

The Andersen behavior model, also known as health services utilization model, is an often- used framework for analyzing or explaining factors those linked to utilization of health care services, such as pharmaceutical care, home health care, health services for mental health problems and preventive services. This study used the simplest version of the behavioral model of health services to relate internal migration with the use of maternal health care utilization in India (Andersen, 1968).

The model describes that people's healthcare services utilization is a function of their inclination to use services (predisposing variables), factors which facilitate or hamper use (enabling variables), and their requirement for care (need variables). Predisposing variables take into of account of demographic characteristics such age, education and health beliefs. The enabling variables include the resources available to consumers such as income and insurance coverage. Need variables refer to the perceptions of the individual or diagnostic assessment by providers (Wolinsky, 1988b).

Predisposing, enabling and need variables may be used to explain the relationship between migration experience and utilization of health services. Since migration is itself a life event and it can be regarded as a predisposing factor which directly affects individual's health care utilization. Migrants are different from their local residents in terms of their socio-demographic characteristics. Migrants also face different kinds of constraints forced by social structure and government policy. Previous study suggests that lower rate of utilization of health services among migrants are due to factors such as their self selection, less education, lower family

income, unfamiliarity with the health care delivery system and less insurance coverage (Fan, et al, 2012). From the behavior model point of view, we can say that migrants' utilization may be different from non-migrants due to the differences in predisposing, enabling and need factors.

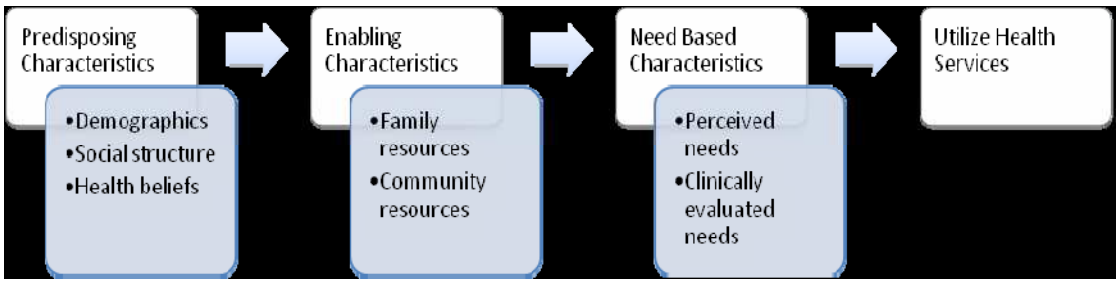


Figure 2.1 Andersen's Behavioral Model of Health Services Utilization (adopted from Wolinsky, 1988b)

A study conducted by Borhade (2006) among labor migrants in Nasik, India reflects migrants' self selection and their perception towards not utilizing the health care services.

"*I was scared to go to the government hospital because I felt I was not a resident of Nasik. As I stay in Nasik only temporarily, I feel I don't have the right to use the health services in the city. So I have never visited the government hospital which is very close to the settlement."*(Male migrant, 21 years, Nasik) (Borhade, 2006).

Similarly, migrants prefer home delivery due to expensive private healthcare facilities, not good quality treatment at government hospitals, supportive environment at home and non-availability of somebody at home who would take care of other siblings during the institutional delivery (National Urban Health Mission Draft 2008).

2.2 Internal Migration in India: Trends and patterns

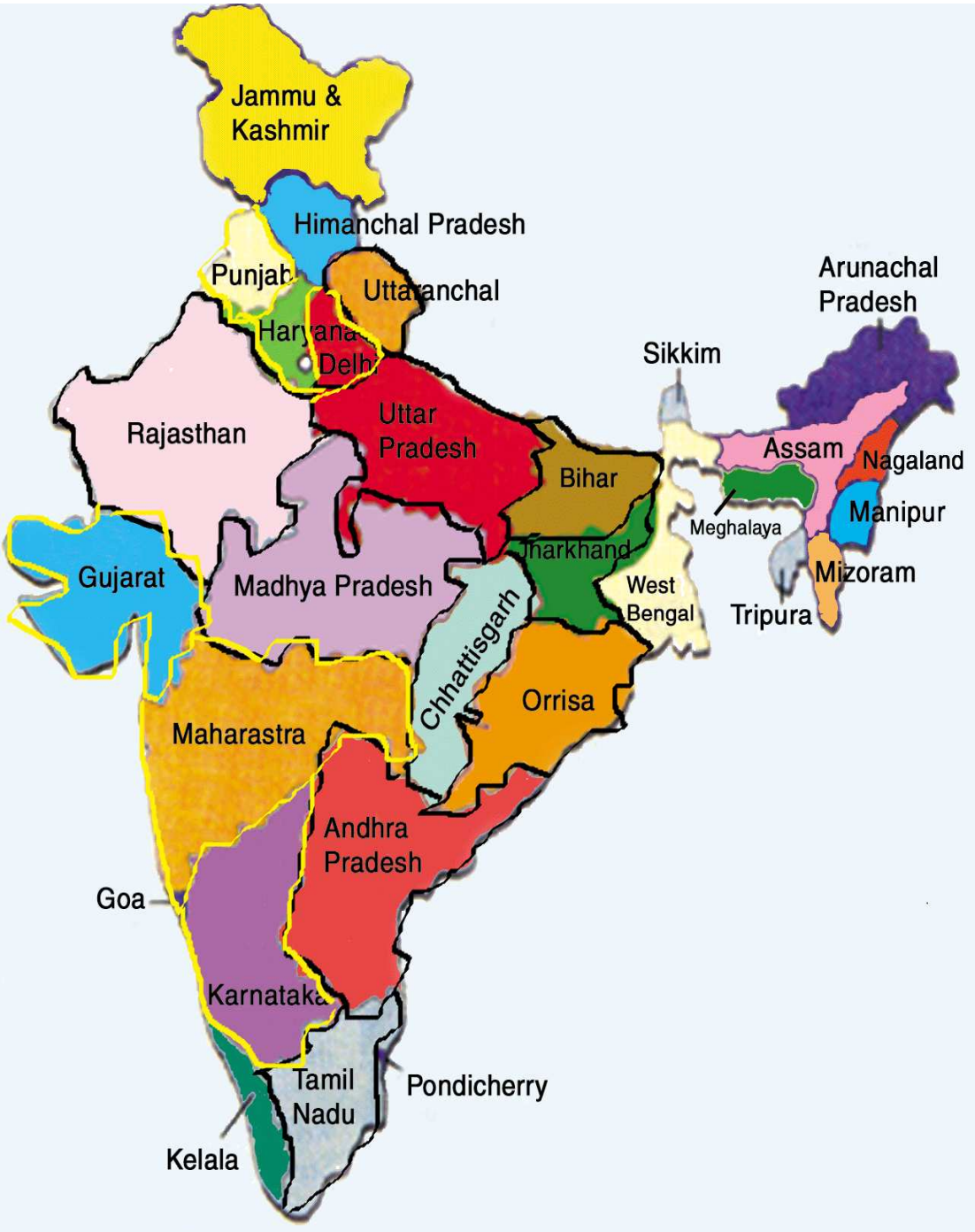
In the past, international migration received more attention from researchers, international organization and funding agencies because in some of the cities of developed countries international migration was the major component of the population growth. Until, recently, internal migration has accorded top priority as, the volume of movement within the national demarcations is much larger than movement across countries. The Human Development Report, (2009), shows that movement across major zonal demarcations within countries are almost four times higher (740 million), compared to movement internationally (214 million) (UNDP, 2009, p.21). If smaller units such as village and town were taken as demarcations, then India alone accounted for 309 million internal migrants based on place of last residence in 2001. Out of this, 101 millions are enumerated in urban areas (ORGI, 2001).

In India, internal migration is a considerable contributor of the growth of Indian cities. The main sending states of migrants are Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Andhra Pradesh, Chhattisgarh, Jharkhand, Orissa, Uttarakhand and Tamil Nadu. The key destination states are Delhi, Maharashtra, Gujarat, Haryana, Panjab and Karnataka (Bhagat, 2011) (see Figure 2.2).

While every Indian individual has liberty of movement and free to settle with in the territory of India as a fundamental right of all citizens (Article 19, constitution of India), migrants faced numerous obstacles in utilization of public facilities, housing, employment and limitation on their political and cultural rights due to language and cultural differences. This discrimination happens in various part of India because of beliefs of the ‘sons of the soil’ movement, which leads to anti-migrants feeling among the natives (Hansen 2001; Weiner 1978). As migrants mostly belong to poor socio-economic condition, illiterate, consequently, they end up residing in slums and unsafe locations that make them more vulnerable for discrimination and abuse.

Migrants’ lack of access to services in the cities mainly due to their lack of identity and residence proof in the city. Due to non-availability of residence proof, the majority of migrants are not added in the voter’s lists so cannot use their right to vote. Further, without residential proof, migrants cannot open a bank account; get a ration card and driving licence. These are essential documents which provide chance

to utilize and get benefits from the different government programmes including health care services. It must be cleared that residential proof is totally based on the migrant's potentially to either own their house or have house on rent under licence agreement. The rejection of right to vote for migrants is significantly connected to the denial of right to housing in the city. Due to lack of proper housing, most of the migrants are forced to reside informal sector and are not capable to obtain residential proof. Since majority of them work in informal sector so they do not have any chance to acquire identify proof from their employers, compared with their counterparts who work in the formal sector. As migrants do not have identity and residential proofs which make them non-citizens in the city, they easily become vulnerable for police harassment caught up in criminal cases. Hence, migrants neither have physical safety and security at the place of work nor at the place of stay (Bhagat, 2011).



Source: Maps of India

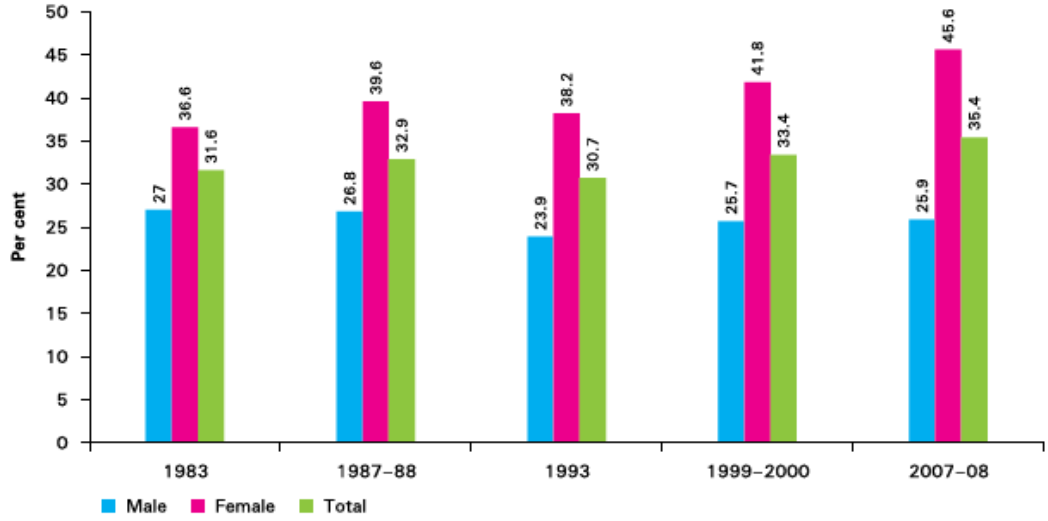
Note- (1) Black line indicates sending states

(2) Yellow line indicates destination states

Figure 2.2 Map of the study area

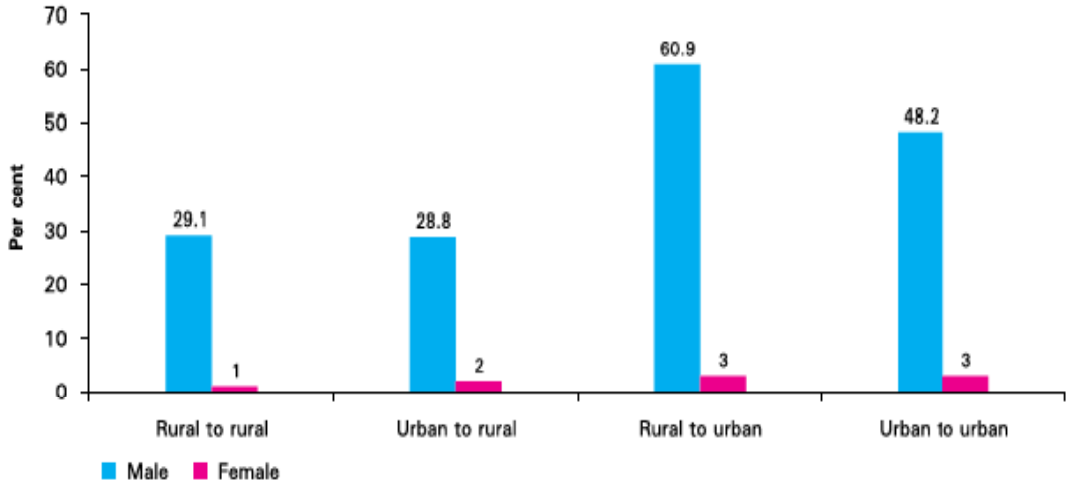
2.2.1 Migration to Urban Areas

India's urban population increases from 79 million in 1961 to 377 million in 2011. It is projected that by 2030, urban population will reach about 600 million (Ahluwalia, 2011). According to the latest data of National Sample Survey Office, the proportion of internal migrants in urban areas has increased from 33% in 1999-2000 and 33.6 % in 1983 to 35 % in 2007-08 (NSSO, 2010a). This is mainly because of the increase in the migration rate for females (Figure-2.3). Even though, female migration is mainly due to marriage, later or sooner, they also join the group of migrant's workers in urban areas. However, over all, male migrant's rate in urban area has not much increased (26% and 27 %), but male migration in relation to employment has increased from 42% in 1993 to 52% in 1999–2000 and 56% in 2007–2008 (NSSO, 2010a).This clearly indicates the growing significance of employment -related migration in urban areas. Among various migration streams including rural to rural, rural to urban, urban to rural and urban to urban, employment related migration is quite high (62%) for rural to urban migration stream (NSSO, 2010a) (see Figure-2.4). Moreover, for rural to urban migration stream, employment related migration is rising significantly with in inter- state rural to urban migration (Bhagat,2010).



Source: NSSO, 2010a.

Figure 2.3 Migration rates in urban areas, India, 1983 to 2007–2008 (in per cent)



Source: NSSO, 2010a

Figure 2.4 Employment-related reasons of migration by streams of migration, India, 2007–2008

2.2.2 Seasonal and Temporary Migration

According to the recent estimates of National Sample Survey 64th round 2007-08, 14 million are seasonal/temporary migrants in India (NSSO 2010a). Seasonal/temporary migrants are defined as 'those household members who stayed away from the village/town for a period of one month or more but less than six months during the last 365 days, for employment or in search of employment'. The majority of seasonal/temporary migrants intended to migrate to cities and urban centres (Keshri & Bhagat, 2012). Several studies have indicated that seasonal/temporary migration is more common among the socioeconomically underprivileged groups such as Scheduled Caste and Scheduled Tribes and among the poorest of the poor and landless households. Migration is one kind of livelihood strategy of the rural poor (Deshingkar & Akter 2009; Keshri & Bhagat 2010).

2.2.3 Government Policies and Programmes

It is obvious from both the Eleventh Five Year Plan (2007-2012) and Draft Approach Paper to the Twelfth Five Year Plan (2012-2017) that, Indian government policies and programmes are not given much attention on the issue of migration and of protecting the rights of migrants. Although the draft plan (2012, 2017) recognizes

urban transition in a positive framework, yet there is no reference about migration issue in these documents, let alone to safeguarding migrants' rights in the city. In India, urban development is a part of state subject, but the central government programme gives the states enough opportunities to take advantage of those programmes. In the view of this the Jawaharlal Nehru Urban Renewal Mission (JNNURM) and Rajiv Awas Yojana (RAY) are two important examples of urban development programmes.

Both programmes have taken considerable steps to address the needs of the urban poor and slum dwellers through the Basic Services for Urban Poor (BSUP) component. However, these programmes do not address the migrant's issues clearly. For example, those who are living in Mumbai slums, but arrived after the year 2000 would not given the right to housing under slum rehabilitation programmes. This shows how urban policies and programmes are discriminatory against migrants. This has to be changed, in order to make the city comprehensive and inclusive.

2.2.4 Vulnerabilities of Migrant Workers

Migration has both positive as well as negative effect on migrants' population. On one hand, it has become an income generation strategy for many and provided socio – economic benefits (Club et al. 2000; Deshingkar et al. 2009). On the, other hand it has also severe negative effects on migrants (Borhade, 2011). Being new at the place of destination with limited negotiable skill increases chances of being discriminated among migrants. Several studies have pointed out that the migrants are deprived as compared to the native population in terms of employment, education and health (Chatterjee, 2006; NACO, 2007). However, it is hard to precisely indicate reasons for this, whether it is because of poor education, lower health care provision, deficient wages or discrimination. These factors jointly reinforce each other. For example, a prejudice against the migrants leads into health providers' ignorance which in turn causes poor migrants health (Borhade, 2011).

The extent of vulnerability among migrants is, - dependent on different kinds of factors such as legal status and surrounding environment. Hiring migrants becomes cheaper to the employers, because employers can avoid providing health coverage and usually pay lower wages to migrants than natives' population. Internal

migrants' variability in terms of movement and their working situation in the informal sectors in the city expels migrants from utilizing sufficient curative care (Chatterjee, 2006).

2.3 Access to Health Care

Health care utilization is a perception and knowledge of people's need for medical care service in terms of service availability, service acceptability, and service affordability (Fosu, 1989). In a broad perspective, health status of population mainly depends on their health care access. Most studies show that migrants are less likely to utilize health care services. This is due to migrants feeling estranged from the public health system at temporary destinations, while private facilities are too costly. There are different factors such as migration status, duration of their work and distance to services which often hampered migrant population in access the services/programme (Borhada,2011).

Several studies on international migration pointed out that most of the temporary and permanent migrants living outside their home countries have restricted or even no access to any health services and health insurance at place of destination (Fosu, 1989; Gaur, 2003).Although this is usually in the case of irregular or unauthorized migrants, regular migrants also found difficulties and vulnerable to access the health care (Gaur, 2003). A large number of authorized and unauthorized migrants in Japan are barred to join public health plans, which in turn leads to limited use of public health care facility (Yamanaka, 2003). Less utilization of health care due to limited affordability was found as the main cause of morbidity among illegal migrants in the US and unskilled migrants in Lebanon (Gaur 2003; Potter, 1991).

During SARS crisis in China internal migrants were identified as the source of spreading the virus. This is not only because of the fact that they were mobile, but also because of their less utilization of heath care due to low economic background which prohibits them from medical care system. Another problem among migrants in China to access health services is closely associated with Chinese *Hukou* system (Chen, 2011). Female migrants are less likely to utilize health care than female locals and money is reported as the main reason for not utilizing services among

female migrants. Study also emphasized that female migrants faced more barriers to access healthcare than locals and health insurance can reduce access barrier of not utilizing services among female migrants (Fan,et al,2012).

In slum areas of India, residents may not fully utilize services, even when given free of charge or brought near to their proximity. This is, - because they do not have time and they have more pressure to earn money for their survival. Further, study conducted in Basti of Rajasthan state of India indicated that though Basti is closer to a range of health facilities, poor economic condition of people who live in Basti inhibits them to access health services. Poor economic condition is also related with higher level of child mortality and morbidity and more closely associated with migrant than non-migrant families (Kumar,Mcnay & Castaldo, 2008).

Previous study show that female migrants in urban areas are more likely to have worse reproductive health outcomes than those who have stayed in urban areas for long time and those who have lived in rural areas (Brockerhoff & Biddlecom, 1999; Zhao et al, 2012). According to study conducted in Shanghai indicated that only 49.7 % of the rural to urban migrants women were received sufficient antenatal care than urban natives (Zhao et al, 2012). Indicators of healthcare utilization such as antenatal care coverage, prevalence of anemia, prevalence of reproductive tract infection and violence against women show the lower health status of migrant women (Nandita, 2002). During pregnancy, migrant women tend to move to their native villages for delivery, so they miss out health service from the either places of stay. Mother and baby do not get services in the village due to lack of awareness, negotiating capacity, distances of health facility from their place of stay and un-availability of previous record of services received. Urban migrants prefer deliveries in their native places regardless of availability of government and private hospitals at destinations (MOHFW, 2008). High costs of living in cities and lack of proper source of income often compel women to work in a commercial sector. Working hour conflicts with operation of major health facilities which hampered women to use health facilities since women cannot afford to lose hours of pay except for terrible circumstances. Family support networks are also weak in cities, compared to villages, which give women only few options to attend to young children and hence are more unwilling to attain sufficient antenatal and obstetrical care.

According to a study conducted in Peru (Subariya,2007), urban local women are more likely to seek an institutional source for modern contraception methods, antenatal care and help with child diarrhea or ARI symptoms, compared with women who are migrants, both from urban and rural areas. Among them, women who migrated from rural areas are less likely to seek support from private or public sources for their reproductive and child health needs. Consistently an Indonesian study show that in Indonesia migrants were less likely to seek pre natal care in a public or private hospital than non-migrants but were more likely to initiate prenatal care in their first trimester and to receive four or more pre-natal visits than non-migrants (Liew. P. Hui, 2010).

While numerous studies concluded that migrants less utilize health care facility (Fosu, 1989; Gaur 2003; Potter, 1991; Yamanaka, 2003), Teller (1973) shown a different view. According to Teller's (1973) view, migrants who have been staying in a place of destination since long time and have assimilated to the society tend to have similar access as non-migrants. The study in Peru (Subariya, 2007) also pointed out that most of migrants from rural areas have no education or only a primary level of education, have no health insurance or live in households that are in the lowest wealth category compared with urban non-migrants and urban migrants. Further study indicated that other factors (education, health insurance or wealth category) are significantly associated with women's likelihood of using reproductive health care, but not health care for children's illnesses (Subariya,2007).

2.4 Conceptual framework

The conceptual framework of this study was derived from *Andersen's Behavioral Model of Health Services Utilization* after modification. On one hand, migration is theorized to have impact on maternal health service utilization as it is considered as a source of different predisposing and enabling factors between migrant and non-migrant women. On the other hand, migration may have an independent impact on maternal health service utilization, regardless of predisposing and enabling factors taken into account. The conceptual framework was designed to show the

influence of predisposing and enabling factors in relation to migration experience on utilization of maternal health care services, antenatal care and delivery. Since the focus of the study is on two outcomes, two frameworks are needed. One framework was for the influence of internal migration on the utilization of ante natal care services, and the other was for the influence of internal migration on the utilization of health services for delivery. For each outcome, two measures of migration are tested, migration status and migration stream. The framework takes into account of the predisposing factors including age, education, Occupation, number of living children, want another child, living with partner and household structure and one enabling factor, wealth index. For the outcome of delivery health service utilization, receiving antenatal care is included as one control variable.

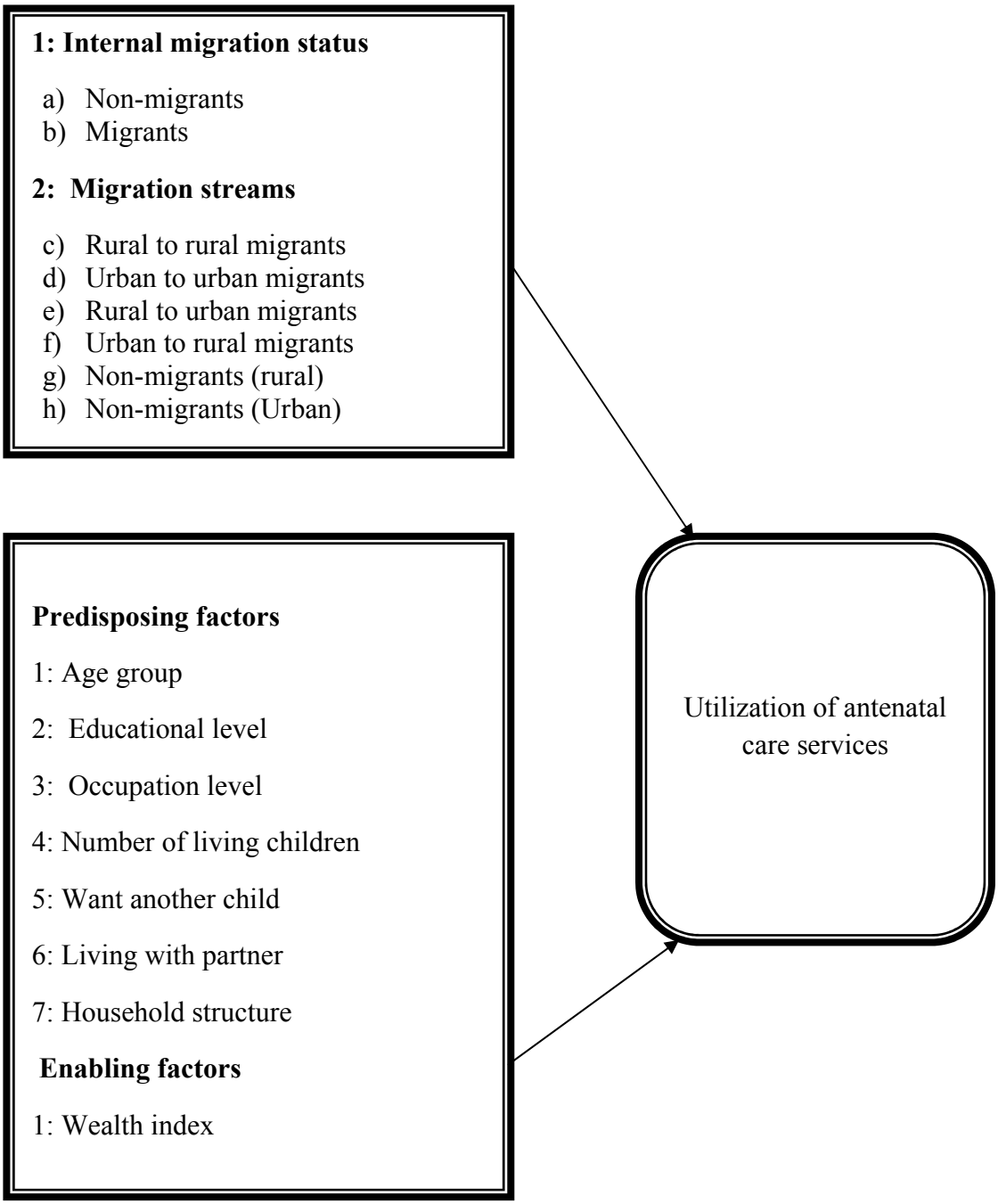


Figure 2.5 Conceptual Framework

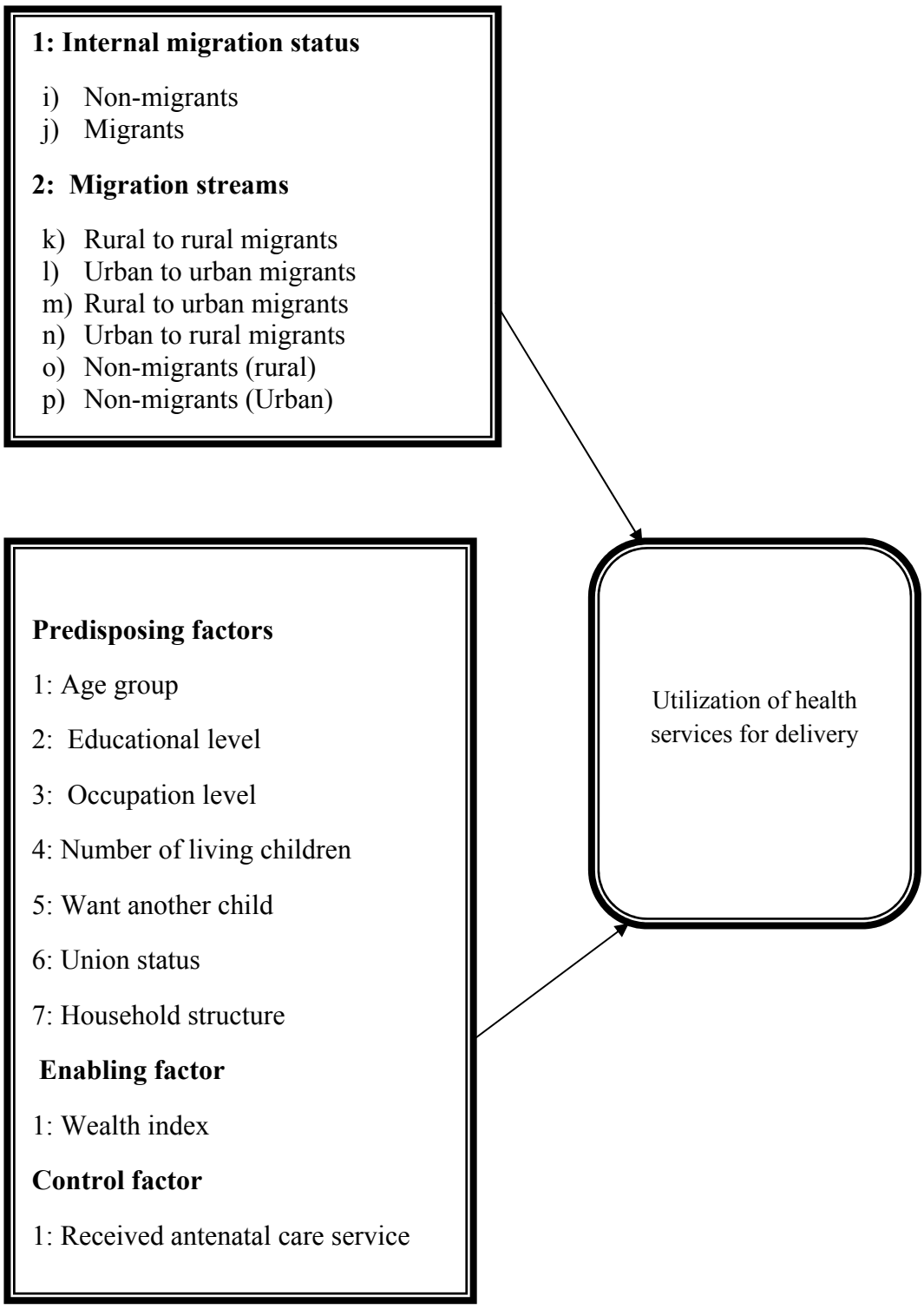


Figure 2.6 Conceptual Framework

2.5 Hypothesis

The core hypothesis behind this study was that rural-urban migrant women were less likely then urban non-migrants, urban to urban migrants, but were more likely than rural non-migrants to utilize maternal health care services.

CHAPTER III
RESEARCH METHODOLOGY

This chapter presents the methodology used for this study. This chapter covers sources of data, operationalization of variables and method of analysis.

3.1 Source of Data

This study employed NFHS-3 data set, which is part of the National Family Health Surveys (NFHS) conducted with a representative sample of households throughout the country. The Ministry of Health and Family Welfare (MOHFW), Government of India (GOI), initiated the NFHS surveys to provide high quality data on population and health indicators. The MOHFW designated the International Institute for Population Sciences (IIPS), Mumbai, as the nodal agency for each of the three rounds of NFHS.

The third National Family Health Survey (NFHS-3) was conducted in 2005-06. There were four types of respondents covered in NFHS-3 ie. 15-49 age groups ever married women & never married women, 15-54 age groups male married and never married. In NFHS-3, the total interviews were conducted with 124,385 women age groups 15-49 and 74,369 men age groups 15-54 from all 29 states.

In NFHS-3, with in each state, the urban and rural samples were selected separately. The sample size for each state was allocated proportionally to the size of the state's urban and rural populations. A similar sample design was adopted for all the states. In each state, the two stages of sampling done for selection of primary sampling unit in rural areas whereas three stages of sampling done for selection of primary sample unit in urban areas.

3.1.1 Study sample

This study uses data of NFHS-3 women segment age group (15-49) years. Information is collected on various types such as fertility, family planning, child mortality, maternal and child health, nutrition, and individual and household background characteristics. From women data set, only 33631 currently married women age group (15-49) years are used for present study. A total of 33631 currently married women age group (15-49) years are considered for analysis.

3.2 Operationalization of Variables

3.2.1 Dependent or outcome variables

Two variables, (ante- natal care and institutional delivery,) were used as outcome variables in this study. Measurement of each outcome variable is described below:

(a) Ante-natal care

Ante-natal care (ANC) constitutes one of the key elements towards initiatives to promote safe motherhood. ANC is,- mainly provided by a doctor, an Auxiliary nurse midwife (ANM) or another health professional to observe any pregnancy related to complications so that it can be detected and treated at initial stage. Included in ANC are also advice and counseling on preventive care, diet during pregnancy, delivery care, postnatal care and related issues. In India, full ante-natal check-up comprises at least three visits for ANC, at least one TT injection received and IFA consumption for 100 days or more (Ministry of Health and Family Welfare, 2005).

NFHS-3 collected information from women who had a birth during the five years preceding the survey on number of times they have received ante natal care for their most recent birth. One new variable was computed from this question. Those women who did not had ANC for the most recent birth, was categorized as ‘0’, while women who received at least one ANC, was categorized as= ‘1’.

(b) Institutional delivery

In India, Reproductive and Child Health Programme aims to promote deliveries at health institutions so that deliveries can be conducted in proper hygienic conditions under the supervision of trained health professionals. For each birth during the five years preceding the survey, NFHS-3 asked the mother where she gave birth. Only most recent birth was considered for this study. If the delivery was conducted in public, NGO/trust or private institutions, it is considered as institutional delivery. If the delivery was conducted at other places (own home, parents home and others place), considered as non- institutional delivery. Those women who gave birth at an institution were categorized as institutional delivery = '1', whereas women who did not give birth at institution were categorized as non institutional delivery = '0'.

3.2.2 Internal migration experience

Internal migration, one of the predisposing factors in the theoretical model, was the main predicator variable in this study. Since NFHS did not have any direct questions on migration, so derived migration experience from a question asked to the women: *"how long you have been living continuously on this (current) place of residence?"* Those who answered 'always', were classified as non-migrants, whereas, for those whose answered 'number of years lived at the current place of residence' or 'length of time at the current place of residence', a further question was asked "Just before you moved here, did you live in a city or in a town or in the countryside?"

Considering the objective of current study, i.e. to explore the relationships between migration and utilization of maternal health care services, this study focused on recent migration and defined migrants as women who moved during the last 5 years before the survey and changed place of residence across an administrative boundary.

Based on above information, there were six possible categories of migration status: (1) Rural to rural migrants (2) Urban to urban migrants (3) Rural to rural migrants (4) Urban to rural migrants (5) Non- migrants (rural) and (6) Non-migrants (urban).

3.2.3 Control variable

The analysis controlled for other characteristics of women, considered as predisposing and enabling factors. Factors as predisposing factors included socio-demographic characteristics of women such as age, level of education, occupation, number of living children, want another child, living with partner and household structure. One factor regarded as the enabling factor included in the analysis is household's wealth index.

Summary of dependent variables, predisposing factors and enabling factors are shown in table 3.1.

Table 3.1 Summary table of variables and their measurements

S/N	Variables	Description	Measurement
	The dependent variables		
1	Ante natal care	Number of times have received ante natal care for their most recent birth	0= No ANC visit 1= At least one ANC visit
2	Institutional delivery	Whether the delivery of the most recent birth was conducted at institution (Institutional delivery defined as public, NGO/trust or private institutions against the counterparts (i.e. own home, parents home and others place).	0= Non institutional delivery 1= Institutional delivery

Table 3.1 Summary table of variables and their measurements (cont.)

S/N	Variables	Description	Measurement
	Independent variable		
3	Internal migration	Whether women migrated from rural to rural, urban to urban, rural to urban and urban to rural. Women who always lived at place of current residence, categorized as non-migrants rural and non-migrants urban.	1= Rural to rural migrants 2= Urban to urban migrants 3= Rural to urban migrants 4= Urban to rural migrants 5= Non- migrants (rural) 6= Non- migrants (urban)
4	**Control variables**		
	Age	Age of women at time of survey	1= 15-24 2 =25-34 3= 35-44 4= >44
	Education	Highest level of education of women	1= No education 2= Primary 3= Secondary 4= Higher education
	Occupation	Occupation of women	1= Not working 2= Professional/ technical/manager/clerical/sales/service 3= skilled & un-skilled manual worker 4= Agricultural employee & household domestic

Table 3.1 Summary table of variables and their measurements (cont.)

S/N	Variables	Description	Measurement
4	**Control variables**		
	Living with partner	Living with partner or not	1= Living with partner 0= Staying else where
	No. of living children	No. of living children of women	1= None 2= 1 3= 2 4=3 5= 4+
	Want another child	Want another child by women	1= Yes 2= No 3= Un decided
	Household structure	Structure of household	1= Not- Nuclear 0= Nuclear
	Wealth Index	Wealth status of household	1= Poor 2= Middle 3= Rich

3.3 Method of analysis

Descriptive statistics were used for the purpose of describing sample data. Bi-variate (Chi- squared test) analysis was performed to explore the association of each dependent variable with the main independent variable. Further, binary logistic regression analysis was performed to examine the net effect of migration status and migration streams on utilization of maternal health care services after simultaneously controlling for other predisposing and enabling factors.

CHAPTER IV
RESULTS

4.1 Univariate analysis for utilization of maternal health care services

Table 4.1 provided background characteristics of currently married women age group between (15-49) years. Mean age of the respondents was 31.2 years with a range of 25–34 years. Among the currently married women, more than thirty percent (33.9%) were uneducated, 16.3 % had 1–5 years of schooling and the rest had either secondary or higher than secondary level of schooling. About one fifth of the women worked as an agricultural-employee & household domestic, while 55.2 % of the women did not work at the time of the survey. In terms of number of living children, almost 35% have two children, followed by 22.0% of them having three children. The mean number of living children was 2.4. Regarding the fertility preference, 74.5% of currently married women did not want another child. More than half (54.0%) were in households considered as rich, whereas about one fourth were from poor households. The majority of women (92.6%) live with their partner. More than half (53.9%) were from joint/or extended family.

Table 4.1 Background characteristics of currently married women aged 15–49 years

Background characteristics	Frequency	Percentage
Age		
15-24	7,232	21.5
25-34	15,311	45.5
35-44	8,473	25.2
>44	2,615	7.8
Mean Age	31.2	
Total	33,631	100.0

Table 4.1 Background characteristics of currently married women aged 15–49 years (cont.)

Background characteristics	Frequency	Percentage
Education		
No education	11,403	33.9
Primary	5,470	16.3
Secondary	13,539	40.3
Higher education	3,216	9.6
Total	33,628	100.0
Occupation		
Not working	19,897	55.2
Professional/ technical/manager/clerical/sales/service	3,975	11.8
Skilled & un-skilled manual worker	2,883	8.6
Agricultural- employee & household domestic	6,848	20.4
Total	33,603	100.0
Number of living children		
None	2,684	7.9
1	5,671	16.8
2	11,731	34.8
3	7,399	22.0
>=4	6,146	18.3
Mean no. of living children	2.4	
Total	33,631	100.0
Whether want another child		
Yes	8,014	23.8
No	25,023	74.5
Un decided	546	1.6
Total	33,583	100.0
Wealth index		
Poor	8,640	25.7
Middle	6,829	20.3
Rich	18,162	54.0
Total	33,631	100.0

Table 4.1 Background characteristics of currently married women aged 15–49 years (cont.)

Background characteristics	Frequency	Percentage
Whether living with partner		
Staying else where	2,504	7.5
Living with partner	31,096	92.6
Total	33,600	100.0
Household structure		
Nuclear	14,575	46.1
Extended family	17,066	53.9
Total	31,641	100.0

Table 4.2 described distribution of currently married women aged 15-29 years old by their migration status. About migrants, rural-rural migration accounts for the largest migration streams, which was about one fifth. About one tenth were urban-urban, 7.7% were rural-urban and 3.5% were urban-rural migrants. Further, result revealed that 30% of women were non-migrants living in rural areas and 28.4 % were non-migrants living in urban areas at the time of the survey. More than 82% of women received at least one ANC check up during their last pregnancy while less than fifty percent (48.1%) of women delivered their last child at institution.

Table 4.2 Currently married women aged 15-49 years by migration status, antenatal care and institutional delivery

	Frequency	Percentage
Migration Status		
Non-migrants	19,618	58.3
Migrants	14,013	41.7
Total	33,631	100.0

Table 4.2 Currently married women aged 15-49 years by migration status, antenatal care and institutional delivery (cont.)

	Frequency	Percentage
Migration streams		
Rural to rural migrants	6,817	20.3
Rural to urban migrants	2,595	7.7
Urban to urban migrants	3,427	10.2
Urban to rural migrants	1,174	3.5
Non-migrants (rural)	10,084	30.0
Non-migrants (urban)	9,534	28.4
Total	33,631	100.0
Received at least one ANC check up		
No	2,932	17.9
Yes	13,446	82.1
Total	16,378	100.0
Institutional delivery		
No	8,446	51.1
Yes	8,082	48.9
Total	16,528	100.0

4.2 Bivariate analysis for utilization of maternal health care services

Table 4.3 described percentages of currently married women aged 15-49 years old by antenatal checkup according to migration status and migration streams. Using Chi- squared test, results show that migration status and migration streams had a significant association with utilization of antenatal care services. About 83.0% of migrant women received at least one antenatal check up, compared to 81.2% of non-migrant women. The level of utilization of antenatal care services among rural-urban migrants (87.1%) was virtually similar to urban-rural migrants (87.0%), was higher than rural non- migrants (71.9%) and rural-rural migrants (77.3%), but lower than urban- non migrants (93.6%) and urban-urban migrants (94.4%).

Table 4.3 Percentage of currently married women aged 15-49 by antenatal checkup according to migration status and migration streams

Characteristics	Antenatal checkup		Total	
	No ANC	At least one ANC	%	N
Migration status**				
Non- migrants	18.8	81.2	100.0	7,754
Migrants	17.1	82.9	100.0	8,624
Migration streams***				
Rural to rural migrants	22.7	77.3	100.0	4,868
Rural to urban migrants	12.9	87.1	100.0	1,471
Urban to urban migrants	5.6	94.4	100.0	1,575
Urban to rural migrants	13.0	87.0	100.0	710
Non-migrants (rural)	28.2	71.9	100.0	4,434
Non-migrants (urban)	6.4	93.6	100.0	3,320

*Note ** and *** Chi-square test is significant at P<0.01 and P<0.001*

Table 4.4 discussed percentages of currently married women aged 15-49 years old by institutional delivery according to migration status and migration streams. It was observed that migration status and migration streams had a significant association with utilization of health care services for delivery. Data revealed that 53.3% of non- migrant women used health care services for delivery, significantly higher compared to 44.9% of migrant women. Regarding the different migration streams, the level of utilization of health care services for delivery among rural-urban migrants (59.7%) was higher than rural non- migrants (35.3%), but lower than urban non- migrants (77.5%) and urban-urban migrants (78.4%).

Table 4.4 Percentage of currently married women aged 15-49 by institutional delivery according to migration status and migration streams

Characteristics	Institutional delivery		Total	
	No	Yes	%	N
Migration status* **				
Non- migrants	46.7	53.3	100.0	7,834
Migrants	55.1	44.9	100.0	8,694
Migration streams* **				
Rural to rural migrants	70.6	29.4	100.0	4,903
Rural to urban migrants	40.4	59.7	100.0	1,487
Urban to urban migrants	21.6	78.4	100.0	1,590
Urban to rural migrants	53.8	46.2	100.0	714
Non-migrants (rural)	64.7	35.3	100.0	4,482
Non-migrants (urban)	22.6	77.5	100.0	3,352

*Note *** Chi-square test is significant at P<0.001*

4.3 Multivariate analysis for utilization of maternal health care services

In order to explore the relationship between each dependent variable and migration, taking into account of other characteristics of the study sample, a logistic regression analysis was performed. In the logistic regression, for each dependent variable, two models were examined. First model predicted relationship between overall migrant's status and utilization of maternal health care services. The second model predicted relationship between different types of migrant streams and utilization of maternal health services. The results of binary logistic regression have been discussed below.

4.3.1 Utilization of antenatal care services

Logistic regression analysis was used to measure the strength of the association between various factors and the probabilities of utilizing antenatal care services. The first model uses the simplest measure of migration, whether or not a woman is a migrant. The second model takes a more informative measure, migration stream. Both models control for other characteristics of women considered as pre-disposing and enabling factors. In the first model after controlling for other characteristics, a woman's migration status had a significant association with utilization of antenatal care services. Migrants had a higher odds of utilizing antenatal care services (OR=0.96, $p<0.001$) than non- migrant women. In the second model, net of other factors migration stream had a significant association with utilization of antenatal care services. Urban non-migrants (OR=1.76, $p<0.001$), urban to urban migrants (OR=1.54, $p<0.01$) and urban to rural migrants (1.39, $p<0.05$) had higher odds of utilizing antenatal care services than rural to urban migrants women. However, rural non-migrants (OR=0.68, $p<0.001$) had a lower odds of utilizing antenatal care services than rural to urban migrants.

Other control variables show significant effects on antenatal care utilization. In general, women's age, their level of education & occupation, number of living children they have, desire for another child, whether women living with husband and wealth index were significantly associated with the utilization of antenatal care services. Effects of all control variables in models are primarily similar.

Consistent in both models, compared to women aged 15-24 years old, women aged (25-34) years old had a higher odds whereas women aged (45-49) years old had a lower odds of utilizing antenatal care services. Women with some education (either primary, secondary, or higher than secondary of education) had a higher odds of utilizing antenatal care services than women with no education. The higher the education level, the a higher odds of utilizing antenatal care the women had. Regarding the occupation of women, results show that women who worked as professional/technical/manager, clerical/sales/service and skilled & un-skilled manual worker had a higher odds of utilizing antenatal care services, compared to women who did not-work. However, women who worked as agricultural-employee & household domestic worker had a lower odds of utilizing antenatal care services than women who

were not working. Working as professional/technical/manager, clerical/sales/service and agricultural-employee & household domestic worker did not show significant association with antenatal care utilization in model 2 however.

Women with no child or one, two or three living children had a higher odds of utilizing antenatal care services, compared to women with four or more living children. Further, compared with women who want more children, women who did not want another child had a higher odds while women who reported un-decided had a lower odds of utilizing antenatal care services. In terms of wealth index, women in middle and rich household had a higher odds of utilizing antenatal care services than women in poor category. Women who lived with their partner had a higher odds of utilizing antenatal care services, compared to women who did not live with their partner. Finally, results indicate that household structure was not significantly associated with utilization of antenatal care services.

Table 4.5 Odds ratio from Multivariate regression analysis assessing the association between migration status, migration streams and other background characteristics and their utilization of antenatal care services

	Model 1 Odds Ratio	**Model 2 Odds Ratio**
Migration status (Ref. migrants)		
Non-migrants	0.96***	
Migration streams (Ref. rural to urban migrants)		
Rural to rural migrants		1.01
Urban to urban migrants		1.54**
Urban to rural migrants		1.39*
Non-migrants (rural)		0.68***
Non-migrants (urban)		1.76***

Table 4.5 Odds ratio from Multivariate regression analysis assessing the association between migration status, migration streams and other background characteristics and their utilization of ante natal care services (cont.)

	Model 1 Odds Ratio	Model 2 Odds Ratio
Age group (Ref. 15-24 years)		
25-34 years	1.21**	1.23***
35-44 years	0.92	0.96
>44 years	0.48**	0.53*
Education (Ref. No education)		
Primary	1.55***	1.57***
Secondary	2.52***	2.47***
Higher education	13.61***	11.40***
Occupation (Ref. Not working)		
Professional/ technical/manager/clerical/sales/service	1.32*	1.18
Skilled & un-skilled manual worker	1.31**	1.31**
Agri- employee & household domestic	0.89*	0.96
No. of living children (Ref. >=4)		
None	2.53***	2.45***
1	3.85***	3.77***
2	2.64***	2.62***
3	1.53***	1.52***
Want another child (Ref. Yes)		
No	1.63***	1.59***
Un decided	0.69**	0.71**
Wealth index (Ref. Poor)		
Middle	1.67***	1.59***
Rich	3.53***	2.89***

Table 4.5 Odds ratio from Multivariate regression analysis assessing the association between migration status, migration streams and other background characteristics and their utilization of ante natal care services (cont.)

	Model 1 Odds Ratio	Model 2 Odds Ratio
Union status (Ref. Staying elsewhere)		
Living with partner	1.27**	1.24*
Household structure (Ref. Nuclear)		
Not Nuclear	1.02	1.01
Pseudo R2	0.18***	0.19***
Log likelihood	-5899.7	-5836.7
N	15202	15202
*** : P< 0.001 **: P<0.01 *P<0.05		

4.3.2 Utilization of health care service for delivery

As with the outcome of antenatal care service utilization, logistic regression analysis using two models with two measures of migration was conducted to explore the association between migration and utilization of health services for delivery, control for other characteristics of women. All control variables are similar as included in the first outcome, except that when delivery services utilization is the outcome, utilizing antenatal service is included as one among control variables. Results are shown in Table 4.6 below. In the first model when whether or not a woman is a migrant is used to measure migration of other variables, a woman's migration status had a significant association with utilization of health services for delivery. Non- migrants had a higher odds of utilization of health services for delivery (OR=1.07, p<0.001) than migrants. The second model used migration stream as the main independent variables. Results indicate that, net of other variables, migration streams had a significant association with utilization of health services for delivery. Urban non-migrants (OR=1.75, p<0.001) and urban to urban migrants (OR=1.54, p<0.01) had a higher odds of utilization of health services for delivery than rural to urban migrants. Meanwhile rural to rural migrants, urban to rural migrants and non-

migrants from rural areas (OR=0.54, p<0.001, OR=0.71, p<0.01 and OR=0.70, p<0.001) had a lower odds of utilization of health services for delivery than rural to urban migrants.

As for effects of the control variables, results are consistent in both models. Results are also in line with when using antenatal care utilization as the outcome. Receiving ante-natal check up, age, education, occupation, number of living children, desire for another child, whether lived with husband and wealth index were significantly associated with the utilization of health services for delivery. The only non-significant variable is household structure. Effects of antenatal care utilization should be additionally noted. In both the models, result suggested that utilizing antenatal care has a strong association with utilizing delivery services. Women who had antenatal check up at least once have a much higher odds of using delivery health services, i.e. more than 5 times higher compared to those did not have antenatal checkup.

Table 4.6 Odds ratio from Multivariate regression analysis assessing the association between migration status and migration streams and other background characteristics and their utilization of health care services for delivery

	Model 1 Odds Ratio	**Model 2 Odds Ratio**
Migration status (Ref. Migrants)		
Non-migrants	1.07***	
Migration streams (Ref. Rural to urban migrants)		
Rural to rural migrants		0.54***
Urban to urban migrants		1.54***
Urban to rural migrants		0.71**
Non-migrants (rural)		0.70***
Non-migrants (urban)		1.75***

Table 4.6 Odds ratio from Multivariate regression analysis assessing the association between migration status and migration streams and other background characteristics and their utilization of health care services for delivery (cont.)

	Model 1 Odds Ratio	Model 2 Odds Ratio
Received ante natal check up (Ref. No)		
At-least one ANC check up	5.65***	5.31***
Age group (Ref. 15-24 years)		
25-34 years	1.38***	1.39***
35-44 years	1.76***	1.83***
>44 years	1.21	1.42
Women Education (Ref. No education)		
Primary	1.30***	1.32***
Secondary	1.90***	1.93***
Higher education	5.73***	4.91***
Women Occupation (Ref. Not working)		
Professional/ technical/manager/clerical/sales/service	1.19*	1.09
Skilled & un-skilled manual worker	0.93	0.94
Agri- employee & household domestic	0.59***	0.73***
No. of living children (Ref. >=4)		
None	4.64***	4.60***
1	5.02***	5.17***
2	2.61***	2.72***
3	1.43***	1.46***

Table 4.6 Odds ratio from Multivariate regression analysis assessing the association between migration status and migration streams and other background characteristics and their utilization of health care services for delivery (cont.)

	Model 1 Odds Ratio	**Model 2 Odds Ratio**
Want another child (Ref. Yes)		
No	1.63***	1.61***
Un decided	1.08	1.08
Wealth index (Ref. Poor)		
Middle	2.00***	1.80***
Rich	4.65***	3.31***
Union status (Ref. Staying elsewhere)		
Living with partner	1.54***	1.35***
Household structure (Ref. Nuclear)		
Not Nuclear	1.0	0.95
Pseudo R2	0.31***	0.32***
Log likelihood	-7297.8	-7135.1
N	15201	15201
*** : P< 0.001 **: P<0.01 *P<0.05		

CHAPTER V
DISCUSSION AND CONCLUSION

Maternal health still have not lost its importance in developing countries including India and considered to be an important issue for the policy makers. To fill the knowledge gap, this study explores the relationship between internal migration and utilization of maternal health care services. This chapter presents discussion and conclusion of relationship between internal migration and utilization of maternal health care services.

5.1 Utilization of antenatal care services

Finding regarding the antenatal care, for which at least one ANC visit was taken as indicator, indicated that rural to urban migrants women were more likely to use antenatal care services than those women who remained in rural areas, but were less likely to use the services than non-migrant urban and urban to urban migrant women. On one hand, the disparity in antenatal care utilization between non- migrants women in rural areas and rural to urban migrants might be attributed to better availability of and access to the services in urban areas as well as unobserved characteristics of migrants. On the other hand, the difference between migrants and non-migrant women in urban areas may reflect variations within urban areas in terms of care-seeking behaviors, probably due to non-availability of affordable services in migrant settlement areas, higher trust on traditional practices and no sufficient networks among the migrants. This finding was consistent with several study conducted in Peru, Shanghai and Indonesia, which indicated that women who lived in urban areas were more likely to utilize ante natal care services compared with women who were migrants from rural areas. (Subaiya, 2007; Zhao et al, 2012; Liew.,2010).

Further, findings suggest that the higher the education level of women, the more likely they would use the antenatal care. The same trend was observed in terms of wealth index. Women who worked as agricultural-employee & household domestic were least likely to utilize ante natal care services.

5.2 Utilization of health care services for delivery

Delivery in health facility is an important component of safe delivery. Findings pointed out that more than half of non-migrants women utilized health care services for delivery, which is higher than of migrant's women (44.9%). Further, taking into account of migration streams, findings show that rural to rural and urban to rural migrant women were least likely to utilize health services for delivery. The utilization of health care services for delivery was higher among rural to urban migrant women, compared to non-migrant women in rural areas, but was less than urban non-migrant women. The disparity between urban non –migrant women and rural to urban migrant women is probably due to expensive private healthcare facilities, not good quality treatment at government hospitals, supportive environment at home and non-availability of somebody at home who would take care of other siblings during the institutional delivery (National Urban Health Mission Draft 2008). This result further supported the findings of Brockerhoff (1990) for Senegal in which urban natives and rural to urban migrants both make use of health care services more than the rural natives.

5.3 Conclusion

Bivariate and multivariate analyses indicated that currently married women differ in their utilization of maternal and child health care services, partly depending on their migration status. Women who have lived in urban areas all their lives or migrated from urban to urban areas were more likely to utilize health services for antenatal care and delivery, compared with women who were migrants, both from urban to rural, rural to rural and rural to urban areas. Of the three groups (urban non-migrants, urban-to-urban migrants, and rural-to-urban migrants), women who were

rural to rural migrants and rural non-migrants were least likely to seek support from private or public sources for their maternal health needs.

The results from multivariate analysis indicated that mainly these factors were significantly associated with women's likelihood of utilizing maternal and child health care services. These include women's education and occupation, household wealth, number of living children, desire of another child and union status. These findings have important policy implications for reducing the barriers to health services, particularly women's health services.

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