

## Migration for Better Health Support: A Study in Western Dooars of Jalpaiguri District

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### Abstract

Health migration or moving for better treatment is a very common feature in developing world. The amount of health migration from the disadvantageous part of the developing countries have some significant volume. The fact that lies behind such consequences is the huge shortages of health providing units with proper instruments and proper health professionals. In the rural India the health need is managed by the supply side (Supply induced) and the people feels to migrate other places during the point of urgent need with or without financial affluences. Different studies found in India, where the economic growth rate is significant after 2000, but the performance of the social indicator is remarkably undistinguished and sometimes the value of these social indicators are lying below than our neighbouring countries like Bangladesh and Bhutan. The health indicator performance confirms that the functioning of the health indices are not in full pace due to several constraints. One such major constraints is the shortages of healthcare providing support units controlled publicly. The present study concentrated on the fact like health scenario of migrated peoples in Jalpaiguri district of West Bengal. This occur on regular basis and several facts are responsible for such kind of behaviour. The study made an attempt to compare the socio-economic and health status of the migrated people's of Western Dooars in compare to the permanent residents of this geographical location. Different descriptive statistics are used by the study to illustrate the behaviour of the identified variables.

**KEYWORDS:** Health, Migration, Health professionals, Health indicator, Stochastic frontier.

### Introduction

Migrants tend to follow a temporary and circular pattern, moving between cities and urban centres in search of improved opportunities. Traditionally India has some experience of low volume internal migration and that was limited in terms of rural to urban level<sup>1</sup>. India basically has some experience of population movement in terms of intra-district or rural to semi-urban level. But in last two decades the immense change in migration pattern have noticed and simultaneously grandness of rural to urban migration increases. Patil (1993) observed that in the time frame 1970-1990 the rural to urban migration volume increases by 100 percent, i.e. from 21 percent to 40 percent<sup>2</sup>. But the International Institute for population studies (IIPS) data of 1994<sup>3</sup> identified that unlike other developing nations, the rate of urban expansion in India is very low where only one fourth of the total populations are living. So the most pertinent question come that whether the urban centre of India was prepared to adopt such enormous migration pressure. The Indian information shows a clear compartmentalisation between rural and urban sector performance in case of different health indicators like infants and child safe birth, maternal health hazards during delivery, mental health upsets etc. The National Family Health Survey (NFHS)-III (2005-06) results shows that from every aspects of nutritional status of children, urban areas were staying ahead than rural areas. The nutritional standards

were observed from three measure like height-for-age, weight-for-age, and weight-for-height where the respective urban values were 16.4, 6.8, and 10.6, where as the rural counterpart shows the values 23.8, 8.3, and 17.4 respectively. The Sample Registration System (SRS) estimates of 2012 shows that infant mortality rate (IMR) for urban areas was 31 per thousand live birth, which is much lower than the IMR of rural, i.e. 51 per thousand live birth. Similarly in case of natural growth rate of population (Rural 15.9, Urban 12.2), death rate (Rural 7.7, Urban 5.8) and birth rate (Rural 23.7, Urban 18.0) the specified values of rural areas were higher in compare to its urban similitude. Gandotra et.al (1982)<sup>4</sup> and Jain (1979)<sup>5</sup> shows that such compartmentalisation is a product of combination of different healthcare practices and reproductive behaviour between rural and urban areas. Thus a clear comportsment of rural-urban differential in health status in India is evident by such different national standard house published survey results under different phases. The growth of rural to urban migration in India with such health performance differential between this two regions should be important to determine the effects of migration on health. The present paper try to identify the impact on health of migrants from high mortality facilitated rural areas to the relatively low mortality facilitated urban areas. The new migrants obviously faces the hazards of modern environments, new influences on health and mortality at every steps of urban competitive life. An understanding of the mortality risks associated with rural-urban migration has the potential to influence health policy and the provision of health services through an appreciation of the differential health needs of rural-urban migrants relative to non-migrant groups.

### **Migration: An Indian Experience**

Earlier studies encountered that India's internal migration exposed with the myopic distance travel between rural to rural areas and occupied 3/5 th cases under such phenomenon of intra-district level. In between 1971 to 1991 Indian urban population growth increases from 19.9 percent to 25.7 percent (Diwaker & Qureshi, 1992)<sup>6</sup>, and during this time urbanisation in India also mature with tremendous velocity. Selvaraj and Rao (1993)<sup>7</sup> pointed out that nearly 200 million people are live in the urban cities and also among them 30 percent are endure under the below poverty line at that time. If we focused on the volume of migrants from rural to urban destination during 1960 to 1970 and to 1990, Patil shared the data from 21 percent to 25.4 percent and to 40 percent respectively. The upshot of such migration also included in the rapid growth of Indian metropolis. Indian census data of 1991 identified that in these metropolis the 1/3 population made up of migrants. Overall, the migrant population tends to be younger, and is more likely to be male and single, than the general population, although more women and families have also started to migrate in recent years and more people are settling in cities. Indicators of socioeconomic status place the migrants below that of the urban population but above their rural counterparts. Skeldon (1986) pointed out that in India inter-state population movements are specially male dominated, and the female participation increases after 1970. The sex-ratio of migrants has been declined from 119 to 100 during the period of 1961 to 1981. During the same period the determinants like female participation in education and work force were also increases. Studies also identified that ratio of migrating females to the total migrants varies inversely with the distance of migration (Gill, 1981)<sup>8</sup>. In south India it was observed that time that the female migrants were employed in unskilled work in urban areas<sup>9</sup>. The migration in India involves from different socio-economic strata, for example Sekhar (1993) pointed

out that for poor rural people migration was nothing but an endurance strategy against decreasing productivity, where as rich people were migrated for economic accumulation<sup>10</sup>. Greenwood(1971)<sup>11</sup> keyed out that rural educated people had the highest propensity to migrate in the urban cities due to availability of employment, where as rural uneducated and unskilled people found greater economic security in villages and actually for them employment is scarce in urban cities. The migration health relation is an area where research literature is limited in Indian scenario. Several studies were made to observe the aftermath of migration on biological and psychological factors of urban cities<sup>12</sup>. Another important issue is maternal health. On every indicator of maternal and infant health, the migrant population fares worse than the urban population. Maternal health of migrants is a challenge for urban health-care systems, and many cities of the world have started pilot programmes to address needs. For example, Shanghai has experimented by offering subsidies to migrant women to be able to deliver in public hospitals (instead of illegal private clinics), and has achieved good outcomes. But this success has created an ambivalent attitude about making the policy public for fear of attracting too many people into Shanghai. The relationship between child mortality and rural-urban migration analysed by Brockerhoff et.al (1995)<sup>13</sup> considering Demographic and Health Survey (DHS) data set for 17 countries. The study found that the survival panoramas was higher for rural-urban migrants in compare to their rural lineage, but remain lower than the urban non-migrants counterparts. Similar pattern of studies are found in case of Tam (1994)<sup>14</sup> in Bolivia and Peru. The author identified that association between rural-urban migration and utilisation of maternal and child health services in Bolivia and Peru, where the utilisation rate increases among migrants in compare to their rural origin, but it was limited in compare to the utilisation of urban non-migrants. Thus studies of different level tires to identify a three level relationship between health outcomes and health seeking behaviour with migration in terms of rural to urban, in terms of original rural base, and in terms of urban non-migrants. Migrants, therefore, do not qualify for public medical insurance and assistance programmes, and have to payout-of-pocket expenses for medical services in cities. City governments are faced with the dilemma of not wanting to overburden public finances by extending medical cover to migrants versus the need to provide some services to prevent potential public-health crises. Local policies are being piloted in various cities to meet this challenge. Brockerhoff (1995)<sup>15</sup> found the influence of migration on child health status considering three groups like, those children left behind in the rural areas; those who accompany their mothers on migration; and those born after migration has taken place. The study found that each of these groups has a different survival prospect, with those remaining in the rural areas and those born either 2 years before or after migration holding the greatest mortality risks. Children born more than 2 years after migration have the lowest rates of mortality, and there appears to be no decline in mortality rates beyond this with duration of residence in urban areas. Children born more than 2 years after migration still do not manage to achieve the low mortality rates of urban non-migrants. Two hypotheses have been suggested to explain the differential health outcomes between migrant and non-migrant groups. Firstly, migrant selectivity, in which the process of rural-urban migration is selective for those with characteristics that predispose them to particular health behaviours (for example, higher levels of education). The increased survival prospects among the children of rural-urban migrants is determined by characteristics that also make them the most likely to migrate out from rural areas (Brockerhoff & Eu, 1993). Uyanga (1983)<sup>16</sup> suggests that this creates a

*migrant personality*, in which those migrating between rural and urban areas are more receptive to the use of modern health facilities, and thus have better health outcomes than rural non-migrants. This, coupled with the increased availability of health services and a potential for greater socioeconomic status in urban areas, produces health differentials between rural-urban migrant and rural non-migrant groups. Goldsheider (1989)<sup>17</sup> found that differential health outcome between the rural-urban migrants and urban non-migrants was evident due to difficulties in imbibing into new urban environment. Berry (1992)<sup>18</sup> identified that imbibitions of migrants could be followed from three angles like economic, social and cultural aspects of the urban society. The study added that a successful imbibitions of migrants into new urban environments reckoned by the fact like their behavioural and social mobility and also the receptivity of the urban societies. But basically majority of migrants were concentrated in the low income informal employment sectors, which might create a separate income class and the imbibing process of them in urban societies was affected severely. The health-care community in India has focused on three main concerns about migrant health. The first is infectious diseases: this highly mobile group can be both victims and vectors of such diseases, which was particularly highlighted during the epidemic of severe acute respiratory syndrome. The range of diseases in migrants tends to be different from that in the non-migrant urban population. Migrants have more communicable diseases, such as acute respiratory infections, diarrhoeal, parasitic, and sexually transmitted diseases, and tuberculosis. Hence health authorities are concerned about these diseases, especially sexually transmitted diseases and tuberculosis. Studies<sup>19</sup> noted the importance of social institutions in aiding the assimilation of migrants into the host population. Such social institutions include community groups, health services, and family members already living in the host area, which can provide information to allow the migrant to adapt to their new urban environment. The inherent cohesiveness of migrant populations, and the continued pattern of rural social institutions in urban areas, may result in a lack of social interaction between the migrant and urban populations. The failure of migrants to assimilate into their new urban environment can lead to the continuation of traditional rural medical practices among migrant groups and the under-utilization of modern health services. The concentration of migrants in the lower socioeconomic strata, their under-utilization of health services and the continuation of rural medical practices results in a mortality differential between rural-urban migrants and urban non-migrants.

The present study deals with the impact of rural-urban migration on the maternal and child health status in the area like Western Dooars part of Jalpaiguri district. It includes the under 2 years mortality rate, child immunisation rate, maternal institutional delivery, scenarios of antenatal and postnatal care among the migrant families of urban or semi-urban regions of this geographical arena.

### **Western Dooars**

Dooars is a huge bio-reserve situated in the extreme north of West Bengal and famous for its tourists attraction for traditional natural beauty and tea garden. The name 'Dooars' comes from the term 'Duar' which means 'doors' in Bengali, Assamese and in Nepalese language (Debnath, 2010). The name 'Dooars' is also derived from 'doors' as the region is the gateway to the entire north-east India and Bhutan. It is also the gateway to the hill stations of Darjeeling - Sikkim region. There are 18 gateways through which Bhutanese people can communicate with the people

living in the plains. Among this 18 gateways 11 are in West Bengal and 7 are in Assam. River Sankosh was demarcated as the boundary between Western and Eastern Dooars. The present tract, as will be dealt in under this study, belongs to the Western Dooars which was a piece of land covering about 80 miles in length, east to west and 20 to 30 miles in breadth, north to south (Sunder D H E, 1895). There are different opinions regarding creation of geographical location of Western Dooars. Historically, the so called Western Dooars was formed in 1864 and constituted of that portion of lands taken from Bhutan at the end of war which lies between eastern part of *Tista* and western part of *Sankosh* river. In this study we consider the well accepted geographical location of Western Dooars which is mainly within the Jalpaiguri District. But the total areas of this district are not a part of Western Dooars, some blocks of them are demarcated as geographical position of Western Dooars. It consists of plains, hills and forest areas of the Jalpaiguri districts. The place is surrounded by Bhutan at north, Assam our neighbouring state at east, neighbouring country Bangladesh and neighbouring district Cooch Behar at south and Darjeeling district at west side. It contains mainly the forest and tea garden areas of Jalpaiguri district with variety of flora and fauna. It is one of the large sources of state revenue from tea and representing a unique ecosystem with magnificent biodiversity. The eastern part of river Tista is the most impressive greenery, i.e., the major reserve forests, like Chapramari, Jaldapara, Garumara, Chilapata, Nilpara and Buxa. The area of Dooars has common forest with Bhutan our neighbouring country and state Assam. Forest area of Dooars is the initial part of the great Asian biodiversity which is initiated from Nepal (*Tarai*) and spread up to Myanmar. The forest of Western Dooars consists of variety of wild lives and exotic collection of herbal products. Apart from its historical, political and ecological importance, the Western Dooars has been adobe of a good number of tribal communities from time

**Table-1:Key socioeconomic and health indicators of Jalpaiguri district**

Indicator	Value
<b>DEMOGRAPHY</b>	
Surface Area (Sq. Km.)	6227
Total Populations with Male & Female %	3401173 (Male=51.5% , Female=48.5% )
% of Rural-Urban Population	Rural=82.16%, Urban=17.84%
% of Caste in total Populations	SC=36.71%,ST=18.87%,Gen & Oth=44.42%
% of Major religious Groups	Hindu=83.3%, Muslims=10.85%
Populations decadal growth rate	21.52%
Percentage share of State population	4.24%
% Share of Children	15.33%
Sex Ratio	942
Population density Per Sq. Km.	546
<b>EDUCATION</b>	
Total literacy Rate With Male & Female %	62.85%, Male=72.83%, Female= 52.21%
% of Rural-Urban Literacy	Rural=58.93%, Urban=80.02%
% of SC & ST Literacy	SC=61.87%, ST=42.59%
% of Gender Gap in Literacy	20.62%
Net Enrollment Ratio	60.9
Drop-out rate	19.55
Education Index Value & Rank	Value=0.6, Rank=13/18
<b>ADMINISTRATIVE INFORMATION</b>	
No of Blocks	13
No of Inhabited Villages	742
No of Sub-divisions	3
No of Households	688139
Average Family Size	5
Human Dev Index Value & Rank	Value=0.53, Rank=10/18
Drinking water Facility available in Villages	732
Electricity Facility available in Villages	462
Types of House	Pacca=28.4%, Semi-Pacca/Thatched=71.5%
<b>SOCIAL &amp; ECONOMIC CHARACTER</b>	
Per-capita Income	19103.63
% of BPL Families	35.87%
% of Cultivable area to total area	57.55
% of Adicultural Worker	Male=14.2%, Female=25.7%
Income Index Value & Rank	Value=0.38, Rank=12/18
<b>HEALTH</b>	
Infant Mortality Rate	Male=45%, Female=34%
Life Expectancy	Male=61 yrs, Female=63 yrs
Mean age of Marriage	Male=25.2yrs, Female=19yrs
Beds per lakh of Population	124
No of Primary Health Centres	38
No of Sub-Centres	181
Health Index Value & Rank	Value=0.61, Rank=12/18
Gender Dev Index Value & Rank	Value=0.45, Rank=12/18

immemorial. In modern phase, these people are seen to earn their livelihood primarily from plantation work, agriculture and forestry and so on. The area is however still regarded as the only ecological zone of the state, where majority of the tribal communities scheduled for West Bengal are seen to reside together.

The district lies between  $26^{\circ} 16'$  and  $27^{\circ} 0'$  north Latitude and between  $88^{\circ} 04'$  and  $89^{\circ} 53'$  east Longitude . Its altitude ranges from 90 to 1750 mt. A vast texture of dense forest teeming with beautiful wildlife covers the region. The area outside the reserve forest is 4455 sq. km. and 3016836 peoples are settled there. This is the human face of Western Dooars. People with various language and diverse religious make this place special interest. Historically the forest core area coverage was 2718 sq km during 1900 (Milligan J A, 1919) but the British people during their expansion of economic activity for drainage of resources identified this place for plantation work (Milligan J A, 1919). But the labour crisis was an acute problem during that time. As a result, policy initiatives of transferring people from Chotonagpur region adopted (Milligan J A, 1919). The people are different tribals who were moving from Chotonagpur region during the British rule in India. British projected this area as tea plantation which required huge cheap labour at that time. As a result, tribals from Santhal, Murmu, Lech, Boro were transferred to this region for clearing of forest and plantation. Other than tribal people from East Pakistan (Newly Bangladesh) are also migrated to this place during the division of Bengal (Debnath, 2010) . The human flow of multiple origins has made it a land of mixed culture. The key socio-economic indicators values are shown in table-1 for the district based on 2001 census information.

### Data and Methods

The study defined migration according to its purpose, i.e. the people or group of people moved between four possible combinations among rural and urban areas in the last 10 years anterior of this survey. The study is not deals with the migration history, so to establishing migration status the factors like spending periods in current place of residence, types of current and previous place of residence were used. The possible four combinations of migrations are rural-rural, urban-urban, rural-urban, and urban-rural. In this study the last migration (10 years prior of this survey) are considered and the cases of circular migration are excluded. The study used primary level survey data of three blocks of Jalpaiguri district during 2011. The study uses two stage least square sampling techniques to chose the sample. The criteria for choosing three blocks are determined by the one backwardness identifying indicator like female illiteracy. Three blocks are chooses where the female illiteracy levels are minimum within the district. According to this criteria the blocks like Jalpaiguri, Alipurduar-I, and Maynaguri are chosen where the female illiteracy levels are least. From each block the towns or block level trade centres are ranked in terms of population density and from each block three such towns are chosen where the population densities are highest. Here, the underline assumptions is that higher population density implies better amenity based factors for living are available, and simultaneously those factors will attract the migrants. Thus the study chooses nine towns/village based trade centres from these three blocks which are also termed as the primary sample units. From each towns complete household listing were made by the study to identify the people who migrated from other places since last 10 years. A structured questionnaire was used to capture the health situation specially in terms of mortality behaviour, child health situation, maternal health situation, and the distribution of burden of ailments. The questionnaire was framed to capture his/her experience regarding these health status symbol in compare to his/her status of health before migration experiences. A variable was created categorizing the sample into urban non-migrants, rural non-migrants and rural-to-urban migrants. Migrants taking part in the remaining streams (rural-rural, urban-

urban and urban–rural) are now referred to as ‘other migrants’. The structure of analysis of data can be described in terms of different health scenario. The study constructed two indicators of child health outcomes, which are infant mortality and birth weight. Infant mortality is defined in the standard way as a live birth dying during the first year of life. Mothers are asked more detailed information about their last two births since January 1st 2000, including the birth weight in kilograms of the baby. The initial sample is first used to examine whether women in migrant households are any more or less likely to have had a child since 1 January 2000 than women in non-migrant households. Finding no difference, we then condition on fertility and study infant mortality and birth weight for babies born after this date for the remainder of our analysis. Regarding child health status, the target population for the survey was ever married women aged 13–49 years and the data was collected from all of these 9 block level towns. The survey asked whether each member of the household has ever been to the other places in search of work, and whether they have ever lived in the district. These questions are asked of all household members who normally live in the household, even if they are temporarily studying or working elsewhere. In addition to a binary classification into migrant and non-migrant households, we also construct household migration prevalence ratios, defined as the proportion of individuals aged 15 and over in the household who had been to the other places prior to 1 January 2000. The urban sampling methodology included a multistage sampling between migrants and non-migrants with (1) stratification for geographical zone and the type of residential colony (as a surrogate for socioeconomic status); and (2) cluster sampling of urban blocks in each stratum. The sampling technique in the rural area between migrants and non-migrants consisted of (1) random sampling of villages stratified for population size, followed by (2) coverage of all eligible persons in the villages selected. The survey time-period was 6 months (2011 September to 2012 February). Variables that were studied are listed in Table 1.

**Table-1: Variables measures for the study**

		By Questionnaire	
Migrants	Non-migrants		
<b>Health Status</b>		Hospitalised within last 1 year	
		Local Doctor/RMP visits within last 30 days	
		Death Case within last 5 year	
		Where Primarily visited during ailments	
		Prevalance of Malaria	
<b>Socio-economic</b>		Education	
		Occupation	
		Marital Status	
		Effect of natural calamity since last 5 year	
<b>Demographic</b>		Age	
		Gender	
		Place of Residence	
<b>Behavioural</b>		Smoking	
		Alcohol Consumption	
		Diet	
		Physical Activity	
		Stress	
		By Measurement	
Migrants	Non-migrants		
		Weight	
		Hight	
		Waist Circumference	
		Hip Circumference	

### Findings and Discussions

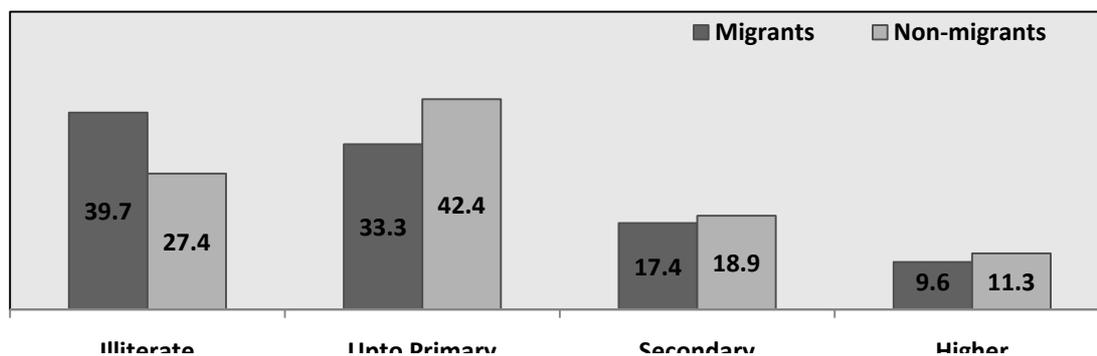
The study comprises more or less of quality data set consisting of 5119 individuals of which 43.97 percents are female. The data set purposively distinguished between two category, one who have some migration experience within last 10 years and the other group is termed as non-migrants, i.e. who are staying in the survey place by more than last 10 years. In the data set the study interact with 2419 migrated individuals (termed as per study) and which is the 47.26 percent of the total sample size. Thus the study can able to conduct a more or less same volume of representation of migrants over the total sample size. Simultaneously gender distribution of the migrants and non-migrants group are more or less same and the study made an effort to made the proper representation of genders in the study sample. The distribution of age-sex of the total sample size are shown in the table-2 in terms of disaggregation between migrants and non-migrants. The majority of the selected individuals are belonging in the 19-49 years age group, which have some implications like that majority of the populations are in the working group and it is lapped with any developing countries population distribution. Here, no difference exist between migrants and non-migrants groups.

**Table -2: Age & Gender distributions of Migrants & Non-migrants of the study area**

Age Groups	Migrants		Non-Migrants	
	Male(%)	Female(%)	Male(%)	Female(%)
0-6	11.9	13.4	12.3	11.6
6-18	24.7	22.1	23.8	26.4
19-49	56.3	47.5	48.3	44.4
50 & above	7.1	17	15.6	17.6
Total	n= 1047	n= 1372	n=1204	n=1496

Source: Sample study, Jalpaiguri, 2011

**Figure-1: Education Status between Migrants & Non-migrants sample populations of study area**

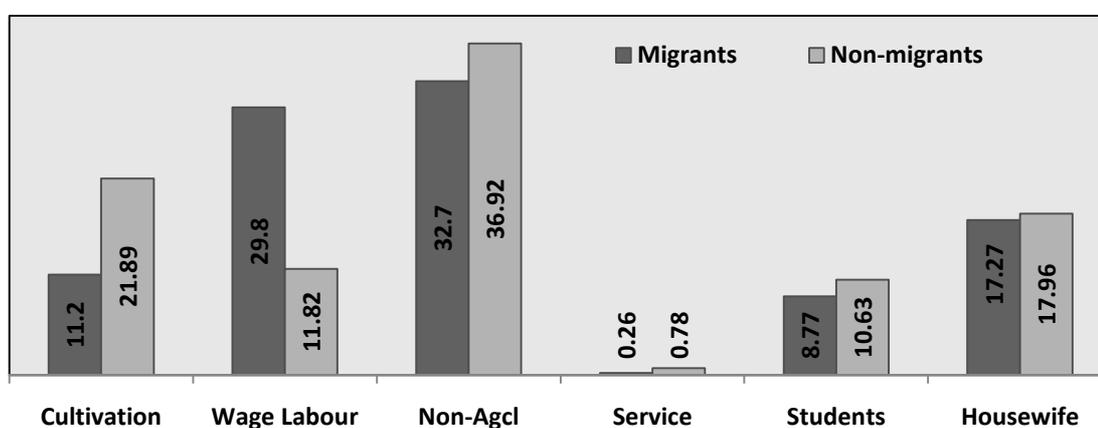


Source: Sample study, Jalpaiguri, 2011

The didactics status in the study area shows that migrated individuals are staying slightly ahead from the access of mostly free education services offered to them. The percentage of illiteracy among migrants is higher than the other and in case of all strata's (as divided by the study) of education like upto primary level, secondary level and higher, the status of migrated individuals are quite dark than the non-

migrants. The shortfall of such educational performance may be due to the fact like government level deficiency to cover the educational imbalance over the district. Another significant finding which is not shown in the figure-1 is the status of education for the head of the households. Here, also the study found same level of information between migrant and non-migrant groups, where the migrated groups are staying behind than the other. The overall literacy rate in the sample area is 63.5 percent. In literacy area, the government is doing a lot but the actual picture expects more than that is being implemented till now. Thus, the progress of education is mixed, and it is however important to add that the proportion of illiterate is much less among the youngest population (10-14 years) implying that children of the surveyed household have now better access to school education compared to their parents. The gender gap in literacy is observed decreasing across the age groups over time. However, the study found a form of blended education among the migrated and non-migrated inhabitants of the district.

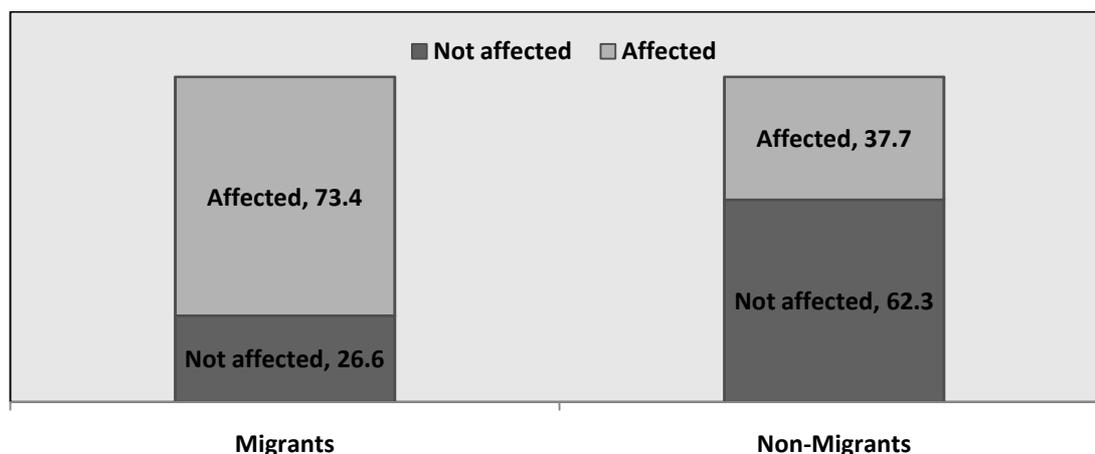
**Figure-2: Percentage of Occupational structure of Migrants & Non-migrants of Sampled Households**



*Source: Sample study, Jalpaiguri, 2011*

Figure-2 depicts the occupational pattern in the study area. For operational purposes the study population of migrants and non-migrants are taken as, persons practising cultivation, wage labour, non-agricultural activities, employees, students and housewives. In the study area, 862 persons are cultivators, in which, migrants go for the major share but it is interesting to see some non-migrants are also depend on cultivation. It is also observed that both migrants and non-migrants are wage labourers and maximum of them are in non-agricultural labourers. In Falakata block the same pattern exists. In the district, we see that people are engaged in occupation of various types. With regard to the total samples, majority are found working as non-agricultural labourers followed by wage labour and cultivation. But as the agricultural sector can provide only seasonal employment, the government should encourage the people who are willing to take up self-employment, and encourage small scale industries in such areas that they should create employment for many a number of persons than the number of persons they displace. The division between migrants and non-migrants shows that in cultivation non-migrants involvement are higher than the migrants. The possible cause behind such occurrence is that most of the migrants are land less and so why cultivation in their own land is not a common feature.

**Figure-3: % Distribution of Sampled households of Migrants and Non-migrants affected by natural calamity in last 5 years**

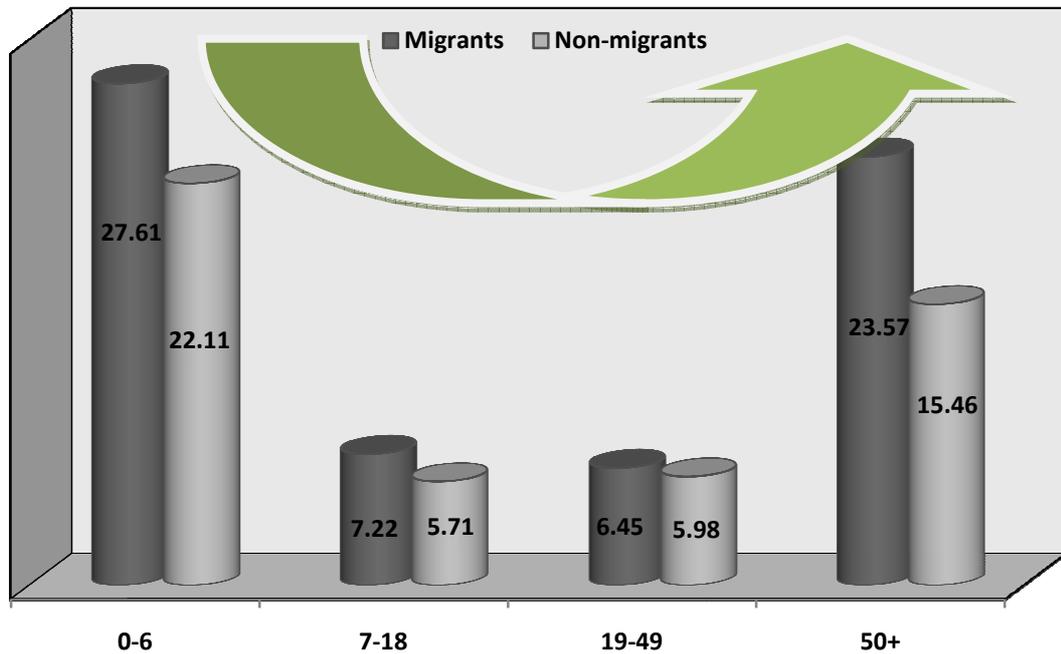


*Source: Sample study, Jalpaiguri, 2011*

Natural calamity is closely correlated with the lives of the Jalpaiguri district. During the starting and end season of monsoons every year, a vast area of Western Dooars becomes flooded by the rivers. Especially, the villages located closer to the river bank suffer mostly during this season. The erosion of land due to change of tracks of the river creates large number of environmental refugees - a new brand of helpless people become uprooted by nature's whims. Figure 3 describes the situation of households affected by the natural calamity at least once in last five years. For the study area, among migrants 73.4 percent and among non-migrants 37.7 percent are affected by the natural calamities once or more since last five year from the poorest (self-assessed) income group. The close link between calamity and poverty is also evidenced by the result that poor households were affected in greater proportion than the non-poor households. The geographical locations of the sampled migrants are located near the river bed as they are possibly new entrants in the area. So a high chance of victimised during abnormal calamities of monsoons are always stayed with their daily life.

The study found general "U"-ness in the mortality behaviour of the sampled area. The mortality level is found higher for the low and high age group and lower for the middle age group. This established the "U"-ness of mortality aspects like other parts of the country. The estimated crude death rate in the study area is 8.12, which is higher than the rural West Bengal (6.3 SRS estimates, 2007). But the mortality difference between migrants and non-migrants shows that migrated people faces higher death burden at every age group in compare to permanent residents of the district. The mortality behaviour of the migrated people has shown some steep "U"-ness in compare to non-migrants, but which actually means nothing.

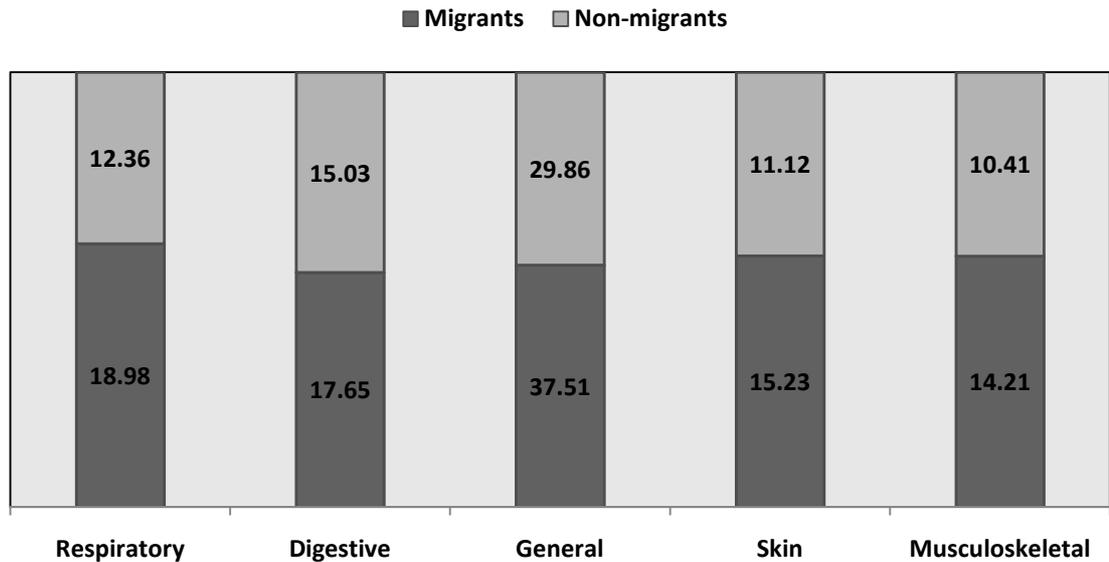
**Figure-4: % of age-wise mortality with or without medical attention among migrants and non-migrants of the study area**



*Source: Sample study, Jalpaiguri, 2011*

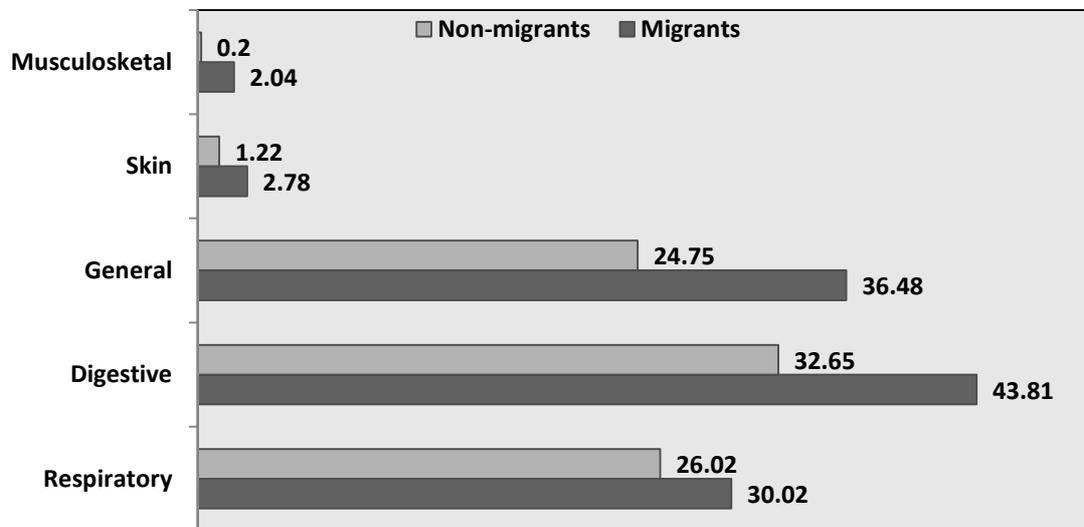
How sick are the migrated people of the study area in compare to the non-migrants? The scenario emerging from the self-perceived morbidity reflects a worrying health profile of the region. About 36.49 percent of the non-migrated and 45 percent of the migrated population have experienced some sort of ailments in the last one month, either old or new. Both of these rates are significantly higher than the state average which is 24 percent for the male and 26 percent for the female population as reported by the NSSO report in 2004. When we disaggregate the rate by age groups shows usual 'U' shape (from Table 5.18) indicating higher concentration of morbidities among the children and older aged persons. In case of respiratory and digestive ailments the study observed that migrated people of the study area are over burdened in compare to non-migrated people. In overall sense gastro-intestinal problems is a major disease specially at the end of monsoons (As the survey started during September). Almost all types of communicable diseases primarily related to respiratory and gastro-intestinal systems - are highly prevalent in the study area in varying degrees making it perfect public health laboratory for health managers.

**Figure-5: % of distribution of ailments among migrants & non-migrants (In last 30 days)**



*Source: Sample study, Jalpaiguri, 2011*

**Figure-6: % of ailments in last 30 days among migrants and non-migrants children of sample households**

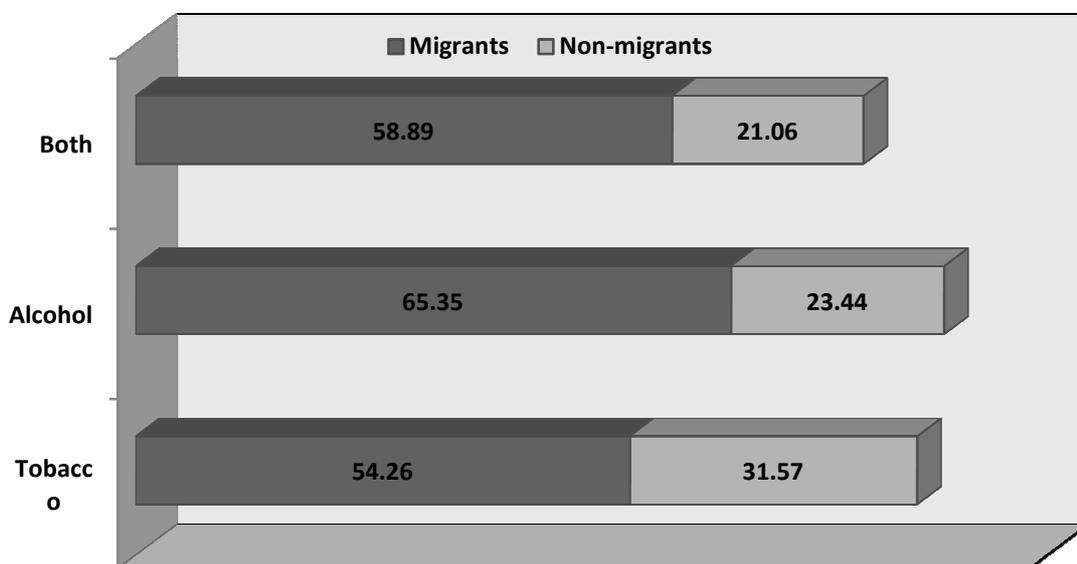


*Source: Sample study, Jalpaiguri, 2011*

The study shows that migrated families children (below 5 years) are three times more vulnerable to respiratory ailments than the rest. The study area found that prevalence rate is highest for the digestive ailments compared to other ailments among the migrated and non-migrated children of the district Jalpaiguri. In all the study shows that 33.4 percent child of age under 5 years have ailments. During monsoons digestive problems occur in every block. The survey time cover September month of year 2011 hence the prevalence rate observes the cases for digestive problems not only for the child of less than 5 years of age but also for the young also. The figure 6 shows that presence of digestive and respiratory ailments is remarkable among the age group of

less than 5 years, but in terms of general ailments the higher age groups is more vulnerable position.

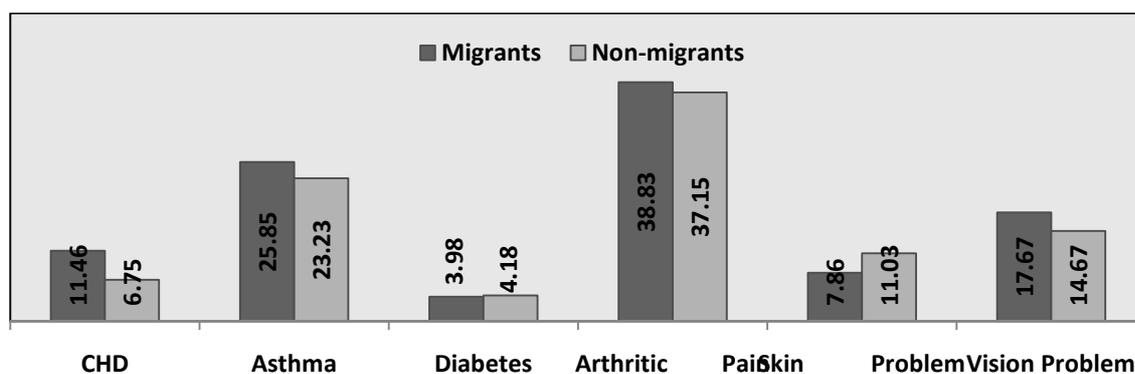
**Figure-7: % Distribution of Use of Tobacco & Alcohol among migrants & non-migrants in study area (Age > 40 yrs)**



*Source: Sample study, Jalpaiguri, 2011*

Analysis of risk factors for cardiovascular disease among migrants and non-migrants shows that throughout the Jalpaiguri district, the prevalence of tobacco and alcohol use is higher among the migrants, which increases their risk of cardiovascular disease. Alcohol and Tobacco use is very common habit among the tribals and it is also related with their rituals. The study found that both tobacco and alcohol use is very common among the poorer income class of the migrated families of age more than 40 years. But in case of non-migrated families, only tobacco use is more frequent (31.57 percent) among the surveyed households of age more than 40 years. In the future, these higher risks may lead to higher rates of cardiovascular disease, cancer, liver disease and injuries among the poor migrated people relative to the nonpoor. The aggregate results are shown in figure 7 in terms of horizontal bars which established that migrants section had the highest risk of CHD diseases due to consumption of tobacco and alcohol.

**Figure-8: % of Chronic Non-communicable ailments distribution in last 5 Years**

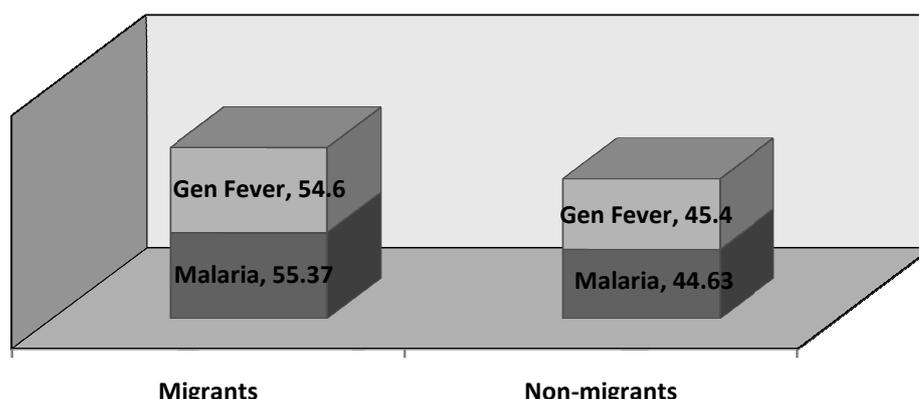


*Source: Sample study, Jalpaiguri, 2011*

The distribution of chronic non-communicable ailments in last 5 years in the sampled area is shown in the figure 8. The vulnerability or risk for each of the above health condition of the two above state categories was estimated on the basis of a set of symptoms and risk factors, similar to the procedure followed in the World Health Survey (WHS). The persons who reported all the primary symptoms and have additional risk factors (e.g., smoking and overweight for Chronic Heart Disease or CHD) are identified as 'high risk' population. The study shows that 17 percents people under both migrant and non-migrant categories are highly vulnerable to CHD. About 6.73 percent are already diagnosed which is higher than the corresponding state average (3 percent, De Auley et.al IJMRHS Vol-2, 2013). Among the blocks the severity of CHD is high in Alipurduar-I block in compare to other two blocks. The data also suggest that, contrary to the conventional beliefs, the prevalence of CHD risk would be considerably high among the poor people. The migrated people have more or less double value of CHD burden in compare to non-migrants. The most possible explanation is that study already found better education status among the non-migrants with better awareness regarding the effects of consumption of tobacco and alcohol in compare to migrants class, as a result the CHD occurrence also lower for them. In case of other chronic non-communicable disease burden the distribution shows more or less even pattern for asthma, diabetes, arthritic pain, skin problem and vision problem among migrants and non-migrants.

Figure 9 brings out the classification of the sick persons of migrants and non-migrants suffered by malaria or any fever within last one year from the period of survey. There is a widespread of malaria attack and the others followed with lack of sufficient nutritional food and timely medical provisions, leading them to starve and wait for the outside help. In the surveyed area, out of 2761 ailed persons 1098 are suffering by malaria, and of which 490 are women. This means 39.77 percent people are suffering by malaria in the area which implies malaria is frequent among the dwellers. So the government level initiatives were needed to check the spreading of malaria in post rainy season for better health outcome. The study purposively interested to mark the prevalence rate between migrated and non-migrated people and found that out of total suffering by normal fever since last one year are higher among the non-migrated people. But when this data disaggregated in terms of gender, the study found that migrated women were over burdened by normal fever in compare to non-migrated. In case of malaria the study found that burden of disease was higher for the migrated people and the cause behind such distribution lacking of proper drainage system, nutritional foods etc.

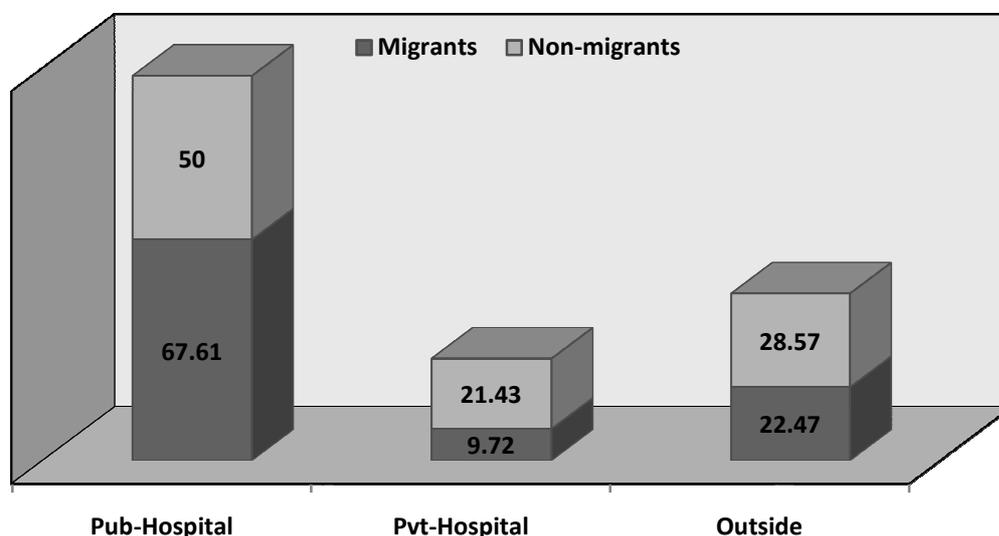
**Figure-9: % Distribution of Malaria and General Fever among migrants & non-migrants**



*Source: Sample study, Jalpaiguri, 2011*

Figure 10 brings out the difference classification of the migrants and non-migrants of hospitalisation rate in terms of sources of care between public hospital and private hospital. The relatively weaker role of the public sector at the Jalpaiguri district in the backdrop of its overwhelming dominance in rural West Bengal is apparently perplexing but may be explained by the fact that a large number of small private hospitals/ nursing homes have grown up at different gateways of the district as the alternative source of inpatient care. As the national highway (NH-31) passes through this region touching almost all trade centre and the north eastern frontier railway also connected this region with the other parts of the country, so improved road connection facilitate the process of health migration. Here, the study found 65.01 percent used publicly provided hospital and comparatively lower percentage (11.42 percent) used privately provided systems. The outside visits for health problems are not negligible in this region. This type of visits covers the cases of health migration to South India or Kolkata for better treatment according to their beliefs. A little less than one-fourth (23.53 percent) of all inpatients had sought admission in outside. Clearly, there is a trend of health migration which, ironically, is likely to be triggered by improving communication system and deteriorating local public healthcare delivery system. Regarding referral pattern the study shows that most of the hospitalisation cases are referred by the doctors or rural unqualified medical providers. In terms of source of care, the migrated peoples are prominently dependent upon public healthcare facilities in compare to private healthcare.

**Figure-10: % Distribution of Hospitalisation in terms of source of care between migrants and non-migrants of study area**

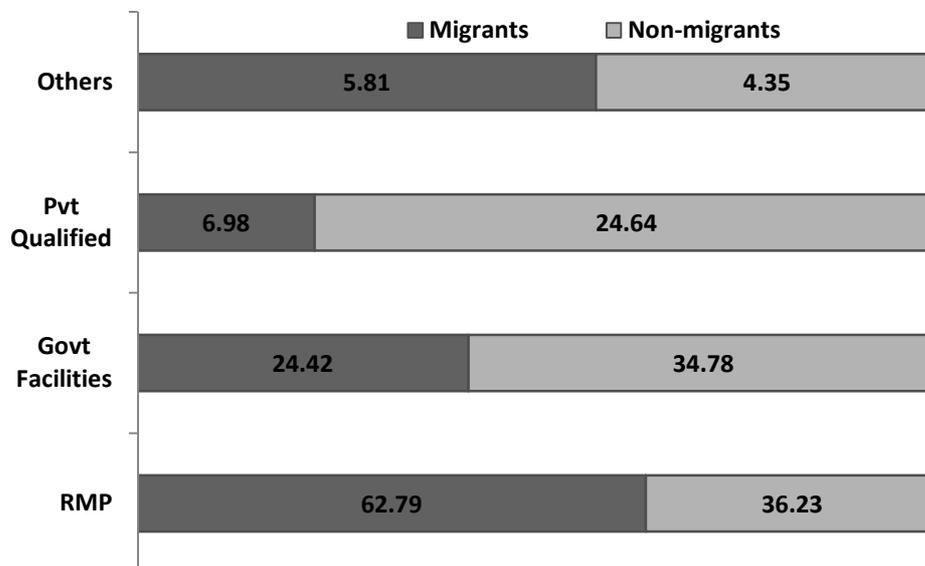


*Source: Sample study, Jalpaiguri, 2011*

Figure 11 depicts the classification of outpatient care seeking behaviour among migrants and non-migrants between different providers. The results identify that 62.79 percent of the ailing persons from migrated group visit Rural (unqualified) Medical Practitioners (RMP) for outpatient care, whereas corresponding figure for the seeking care from government facilities is 24.42 percent. Conversely the non-migrated visit to the private qualified is more or less four times higher (24.64 percent) than the

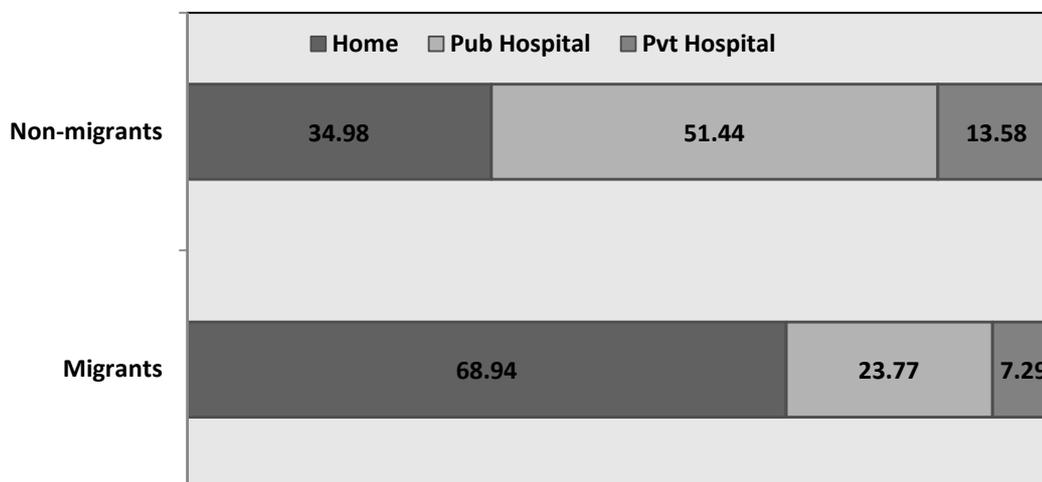
migrated (6.98 percent). This identifies that market price of RMPs is significantly lower and affordable for the poorest migrated section. There is another cause to frequent visits to RMPs beside the physical proximity of their availability.

**Figure-11: % Distribution of Outpatient care in terms of Economic Status among migrants and non-migrants of the sampled area**



Source: Sample study, Jalpaiguri, 2011

**Figure-12: % Distribution of Place of Delivery of migrants and non-migrants in study area**

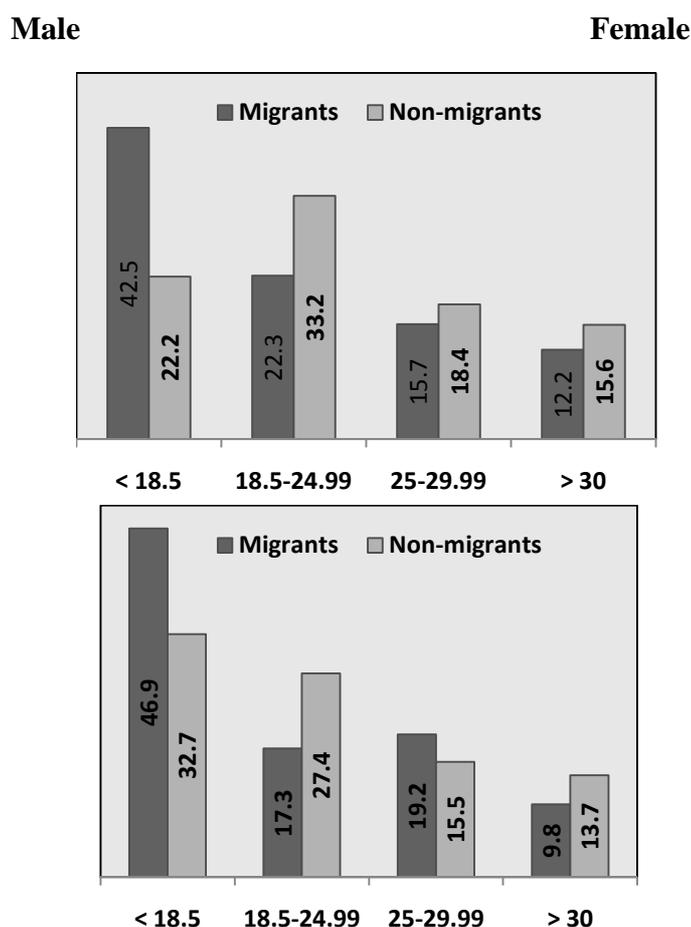


Source: Sample study, Jalpaiguri, 2011

Figure 12 shows the classification of place of delivery of the sample areas among migrants and non-migrants. Out of sample 738 eligible mothers, who delivered at least one child in last five years, only 34.28 percent have delivered their last child at public or private institutions. In case of households having more than one eligible mother, the respondent mother is selected following *Kish table* (A procedure adopted by the NFHS). This is comparable to the rural areas of the most backward districts in

West Bengal such as Uttar Dinajpur (23.6 percent) or Malda (26.4 percent). The study focuses a link between migration and institutional care. Here, one out of four women from migrated families utilizes institutional care for birth delivery, whereas from the non-migrated families 65 percent uses institutional delivery for care. The number of home deliveries reduces for the non-migrants and this is supported by the results of survey. Quality of Care judged by the price occurs in case of non-migrants, as the number of institutional delivery for the non-migrants is nearly double that migrants in using private nursing homes (13.58 percent). In aggregate form, after home delivery most of the deliveries (about 34.28 percent of all institutional deliveries) is conducted at government provided hospitals.

**Figure-13: BMI Distribution for Male& Femalerespectively between Migrants & Non-migrants of the study area**

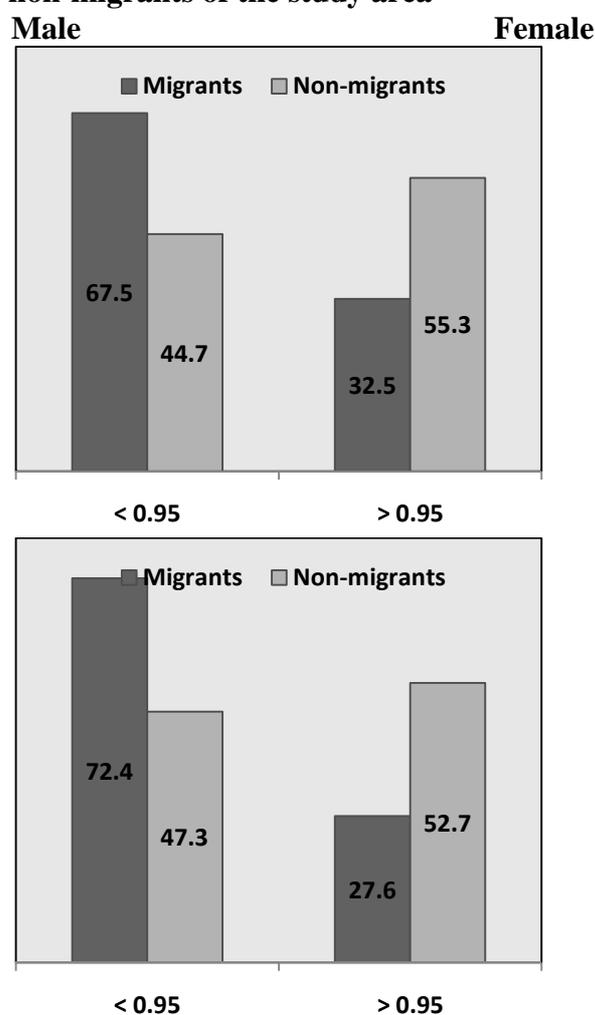


*Source: Sample study, Jalpaiguri, 2011*

The distributions of Body Mass Index (BMI) and Waist Hip Ratio (WHR) across the various classifications are presented in Figures 13 and 14. The value of BMI is calculated by the ratio of weight in Kgs and height's square in meters. There are some specified value of BMI by World Health Organisation (WHO) to identify the level of malnutrition. If the calculated value of BMI is less than 18.5 that will indicate malnutrition, if the value of BMI is between 18.5 and 29.99 the situation is normal, and if the value of BMI is higher than 30 that will indicate obese. Similarly the waist-hip ratio (WHR) is also another indicator of malnutrition, if the value of WHR is less than 0.95 that will indicate the malnutrition and if WHR > 0.95 that will

indicate the better level of protein energy. The age-standardized distribution of BMI across various age categories is presented in figure 13 and the distribution of WHR in figure 14 for male and female separately. This study reveals that overweight is widely prevalent in the adult non-migrant population. Among migrated men, 42.5% of those surveyed had a BMI of  $< 18.5$  (Fig. 13). A high frequency of underweight was observed in all the three age groups in this population. Similarly, 66.2% of migrated women surveyed were underweight, with 46.9% having a BMI of  $< 18.5$  (Fig. 13). As with the males, this pattern was noted in all the two groups, with the highest frequency of underweight observed again in the female migrants. In contrast, overweight was noted in only 12.2% of men and 9.8% of women from the migrated population. There were very few participants who had a BMI of  $\geq 30$ . More than two-third of both men and women in the migrated population were underweight (BMI  $< 18.5$ ). Similarly the migrated female have low WHR in compare to migrated male. In overall sense the WHR of migrated men and women lies much below than the non-migrated class.

**Figure-14: Distribution of Waist-hip ratio (WHR) for male & female respectively between migrants & non-migrants of the study area**



Source: Sample study, Jalpaiguri, 2011

### Conclusion

Migration based criteria has a significant effect on mortality in Jalpaiguri district. The study try to observe the effect of migration on different health seeking behaviour

by considering them into migrated and non-migrated groups. The social, environmental and healthcare infrastructure influences the migration process but the migrated people staying behind than the non-migrated class. The study observed a clear compartmentalisation at every step between migrated and non-migrated class by the differentiated values of indicators considered in the study. The health scenario of migrants of Western Dooars offers little to celebrate. A typical resident of the Western Dooars carries an extra load of ill-health and health risk compared to others living within the same district. The situation of migrated people is more trivial in that respect. Poverty coupled with sharp geo-climatic challenges, make him / her especially vulnerable to health shocks caused by environmental and the life style related agents. People's response to these challenges is often perplexing primarily due to complex interface of the social, economic, and geographical barriers to access health care and perceived severity of the problem. Utilisation of inpatient care in public institutions is remarkably high implying that the perceived severity and benefits of getting a seriously ill person admitted to a hospital is higher than the perceived costs and barriers of doing so. On the contrary, the family of a pregnant migrated woman feels constrained to take her to a hospital for delivering a birth probably because the equation between benefits and costs is reversed. The village unqualified doctors dominate the outpatient market because both the migrated and non-migrated people think it would be too costly, or unnecessary, or hazardous to seek treatment for a minor ailment from a qualified provider. In other words, physical accessibility to a government health facility apparently becomes a prohibitive issue when people seek ambulatory or birth delivery care (due to low perceived severity and benefits) but becomes non-prohibitive when they need admission to a hospital (due to high perceived severity and benefit). The clear implication of this complete response behaviour is that adding more health facilities to the less accessible areas may not improve 'access' of the migrated peoples unless the social barriers are simultaneously addressed to influence the perception about severity of health needs and increased benefits of accessing these facilities.

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