

CHILD HEALTH AND CHILD WELL-BEING (CWB) 5

5.0: Introduction

Migration has many positive impacts on social, economic and health dimension. The impact of child health through migrants' remittances at origin is central theme of this study. In this chapter, an attempt has been made to understand the impact of migrants' remittances on left behind family members at origin, particularly on child health and child well being indicators. It is argued often, people are motivated to move by the prospects of improved access to work, education, health care and others. Many past studies have proved, majority of movers end up better off, however, sometimes-such better off than before they moved. Needless, to mention the amount of gain is function of the wealth quintile and duration of movement of movers. For instances; the gains are potentially the highest for people who move from poorer to the wealthiest region and shorter period to longer period of migration. Nevertheless, this type of movement is only a small share of total flow of remittances but the impact is significant. Available evidence suggests that people, who move to emerging and developing countries, as well as within countries, also tend to gain. An illustration; a study in Tonga and Papua-New- Guinea suggests that gaining better access to services, including health care, may be among the key motivations of migrants for moving of these countries with left behind family members. Moreover, better-educated (i.e., from high-school or graduates) migrants opined, 'health care' and 'children's education' were mentioned more often motivated factors than 'salary' as reasons for migration (Gibson and McKenzie, 2009). However, the links between migration and health are complex issues. Beyond the migration there are other characteristics which is also impact the health status of migrants' and their left behind family members. Of course moving to more developed region can improve access to health facilities and professionals as well as to health-enhancing factors such as potable water, sanitation, refrigeration, better health information and, last but not least,

higher incomes. Evidence suggests that migrant families have fewer and healthier children than they would have had if they had not moved (Rossi, 2008).

Not surprisingly, in a given the poor health services, water quality and sanitation in rural areas; studies suggest that migrants to urban centers significantly improve their chances of survival relative to rural residents (Brockerhoff, 1990 & 1995). The size of this effect has been correlated with duration of stay, which was itself associated with higher incomes and improved knowledge and practices. To understand the impact of migration, we organize this chapter in following manner. Section I- speaks about the differential of health status of household members (adult) by household migration status; section-II deals with the differential of health status of children. Child Well Being (CWB) and their well-being index between migrant and non-migrant are discussed in section-III. Differential of child health status with focus on nutritional status of children is discussed in section-IV. Child health outcomes i.e., child mortality is discussed in section-V. Conclusion of the chapter is presented in section VI.

5.1: Differential of health status

As we discussed above and many past studies proved the impact of the migration on health varies from area to area and person to person. To trace out the impact of the migration on health in rural Odisha the study probed some common questions about health status of left behind adult members using reference period in last two weeks prior to the survey.

Table 5.1.1: Percentage of population had fever in last two weeks prior to the survey

Particulars	Migrants	Non-migrants	Mann-Whitney 'U' Test
Had fever in last two weeks	48.0(144)	44.0(132)	0.32
Number of person per household suffered from fever			
One person	40.3(58)	25.7(34)	0.03
Two person	52.1(75)	61.1(82)	
More than two person	7.6(11)	12.2(16)	
Number of days suffered from fever			

Less than three days	58.3(84)	48.5(64)	0.1
More than three days	41.7(60)	51.5(68)	

Source: computed using primary data; figure in parentheses are number

To figure out the difference of health status of migrant and non-migrant household members, the study analyzed the information of common diseases. Percent of household members had fever in last two weeks prior to the survey by migrant status is presented in Table 5.1.1. It is found that nearly half (48%) of the migrant household members are suffering from fever in comparison to 44% of non-migrant household members in last two weeks prior to the survey. Further, the study probed number of persons suffered from fever per household. It is found that 52.1% of migrant households reported at least two persons out of total members in the household were suffered from fever in comparison to 61.1% of non-migrant households. Another 7.6 % of migrant households reported more than two persons were suffered from fever as compared to 12.2% of non-migrant household members. Further, it also detail investigates number of days suffered from fever in a single episode. It is found that, more than forty (41.7%) percent of migrant household members suffered from fever in more than three days as compared to more than half (51.5%) of non-migrant household members and the difference between migrant and non-migrant members is statistically significant at 10% level of significance.

Table 5.1.2: Percent of population had cough in last two weeks prior to the survey

Particulars	Migrants	Non-migrants	Mann-Whitney U Test
Had cough in last two weeks	66.3(199)	71.7(215)	0.15
Number of person suffered from cough			
One person	12.1(24)	5.6(12)	0.05
Two persons	85.9(171)	93.0(200)	
More than two persons	2.0(4)	1.4(3)	
Number of days suffered from cough			
One days	0.0 (0)	1.9(4)	0.5
Two days	6.0(12)	1.9(4)	
Three days	80.4(160)	84.7 (182)	
More than three days	13.6 (27)	11.6 (25)	

Source: computed using primary data; figure in parentheses are number

More on the incidences of diseases about percentage of study population had cough in last two weeks prior to the survey by household migrant status is presented in Table

5.1.2. It is found that nearly half (66.3%) of the migrant household members suffering from cough in comparison to 77.7% of non-migrant households in last two weeks prior to the survey. Further, the study probed number of person had cough per household in last two weeks prior to the survey. It is found nearly 86 % of migrant households reported at least two persons were suffered from cough in comparison to 93% of non-migrant households. Further, another two percent of migrant households reported more than two persons were suffered from cough as compared to 1.4 percent of non-migrant households. The differential between migrant and non-migrant members suffered from cough is statistically significant at 5% margin of error. Further, the study elicited that number of days suffered from cough of household members. It is found that, more than eighty (80.4%) percent of migrant household members suffered from cough at least three days as compared to 84.7% of non-migrant household members reported under same category. Another, 13.6 % of migrant members reported had cough in more than three days as compared to 11.6% of non-migrant household members.

Table 5.1.3: Diarrhoea in last two weeks prior to the survey by migration status in percent

Particulars	Migrant	Non-migrant	Mann-Whitney U Test
Had diarrhoea in last two weeks	3.3(10)	8.7(26)	0.00
Number of person suffered from diarrhoea			
One person	50.0(12)	26.9(7)	0.34
Two persons	20.0(2)	42.3(11)	
More than two persons	30.0(3)	30.8(8)	
Number of days suffered from diarrhoea			
Less than three days	40.0 (4)	53.8(14)	0.45
More than three days	60.0 (6)	46.2(12)	

Source: computed using primary data; figure in parentheses are number

All over world across rural population, diarrhoea is very common water borne disease. In view of this study administrated among sample population, had any family members suffered from diarrhoea during last two weeks prior to the survey. In addition to this, the study also probed a series of tow more questions i.e., how many number of person and duration of last episode of diarrhoea. The percent of study population suffered from diarrhoea evinces in Table 5.1.3. It is found that, very few people both migrant and non-

migrant households had diarrhoea in study area. More details on it is found more than three (3.3%) percent of migrant household members were suffered from diarrhoea as compared to 8.7% of non-migrant household members. Mainly diarrhoea is water borne diseases and it happens due to contamination of water and poor sanitation facility surrounding the population. Over a period, the epidemic may have been under control with the improvement of sanitation facility. This may be the probable cause of low reported of diarrhoea cases among study population. Although, the study obtained low reported cases of diarrhoea disease among migrant and non-migrant population but the difference is statistically significant at less than one percent level of significance. As we mentioned above the study probed the series of questions in the sample household i.e., number of person suffered from diarrhoea the study found that 20% of non-migrant households reported more than two members were suffered from diarrhoea in last two weeks prior to the survey corresponding to 42.4 % of non-migrant households. Further, the study probed number of person suffered from diarrhoea. It is found nearly 60% of migrant household members reported suffered from diarrhoea more than three days against 46.2% of non-migrant households. However, the number of person and number of days suffered from diarrhoea are not statistically significant in-group comparison between migrant and non-migrant households.

Table 5.1.4:Percentage of population had Tuberculosis in last six months prior to the survey

Particulars	Migrant	Non-migrant	Mann-Whitney U Test
Had Tuberculosis in six months	2.3(7)	2.0(6)	0.78
Number of person suffered from Tuberculosis			
One person	85.7(6)	83.3(5)	0.9
More than one persons	14.3(1)	16.7(1)	

Source: computed using primary data; figure in parentheses are number

Unlike diarrhoea, fever and cough, tuberculosis also very common ailments often reported among rural mass because of environmental unhygienic due to air pollution resulting largely by use of biomass fuel for cooking. The study asked the respondent any members of your household have/had tuberculosis in last six months if yes then how many number of person are suffering from tuberculosis and the result is presented the Table 5.1.4. It is found that 2.3% of migrant household members have/had tuberculosis in comparison to 2% of non-migrant households. Further, the study found that more than

85.7% of migrant households reported one family member have/had tuberculosis in comparison to 83.3% of non-migrant households.

Table 5.1.5: Percentage of population had at least one disease by migration status

Particulars	Migrants	Non-migrants
Yes	76.3 (229)	83.7 (251)
No	23.7 (71)	16.3 (49)
Number of sample	300	300
Mann-Whitney 'U' test 0.02		

Source: computed using primary data

Further, to understand more on, the burden of diseases among study population and make-out difference between migrant and non-migrant households. The information was generated and analyzed that member of household suffered from at-least one diseases (fever, cough, diarrhoea and tuberculosis) in a binary code with 'Yes' otherwise 'No'. By analyzing it is found that more than three fourth (76.3%) of migrant household members suffered from at-least one disease as compared to 83.7% of non-migrant households. The difference of burden of at-least one disease between migrant and non-migrant households is statistically significant at 0.02% level of significance. The result is presented in Table 5.1.5.

Table 5.1.6: Percentage of population had at least one disease by wealth quintile

Wealth quintiles	Migrants	Non-migrants
Poorest quintile	22.3(51)	13.1(33)
Second poorest quintile	16.6(38)	26.7(67)
Middle quintile	24.5(56)	11.6(29)
Second Richest quintile	21.8(50)	17.9(45)
Richest quintile	14.8 (34)	30.7(77)
Number of sample	229	251
Mann-Whitney U test 0.02		

Source: computed using primary data

It is common and general perception that people belonging to the poorer household are often vulnerable to various diseases. Other way rich people are low vulnerable to various diseases. By grasping the general perception and to validate it, the study analyzed the percent of people suffer from at least one disease by household wealth quintile and the

result shows the Table 5.1.6. It is found that increase the household wealth position the burden of diseases is decreases among migrant population (except middle and second richest quintile). However, the burden of disease is in opposite direction i.e., lower percent in higher quintile and higher percent in lower quintile among non-migrant households. For instances; 22.3% of migrant people belongs to poorest quintile suffered from at-least one disease as compared to 14.8% of richest quintile. Other hand around 13 % of non-migrant people belongs to poorest wealth quintile had suffered from at least one disease as compared to 30.7% in the richest quintile. However, the difference of disease burden between migrant and non-migrant households is statistically significant at 99 percent confidence interval.

Differential of health status among adult members by household migration status

The study used the logistic regression model to trace out the degree of difference of health status between migrant and non-migrant adult household members using three specifications. In the logistic regression model, the dependent variable is any household member suffered from at least any diseases in last two weeks prior to the survey with dichotomous nature. The dichotomous nature of explained variable defined '1', if any members in household suffered from any diseases in last two weeks prior to the survey otherwise defined as '0'. To observe the difference of health status between migrant and non-migrant members, the depended variable i.e., member suffered from any diseases assessed by number of explanatory variables (listed in below) with controlled the household migration status and separately uncontrolled also. The mathematical expression of final model is depicted in below

Therefore the final model is

$$\log \frac{P}{1 - P} = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + b_6 x_6 + b_7 x_7 + b_8 x_8 + b_9 x_9 + \mu_i$$

Where, P- Household any member suffering any diseases last two weeks prior to the survey (1- yes, 0-no) =1

Or

1-P- any household member not suffering any diseases last two weeks prior to the survey
=0

a- Constant

b₁:b₉-logistic regression coefficients

X₁: Educational Status (1- illiterate; 2- up to high school; 3- more than high school)

X₂:Social caste of the household (1-Schedule caste, 2- Schedule Tribe, 3- Other Back ward Caste, 4- General)

X₃: Household possession of any health insurance (SLI) (1- yes, 2-No)

X₄: Household type (1- Kuchha 2-Pucca, 3-Semi-pucca)

X₅: Household standard of living index (SLI) (1- Low, 2-Medium, 3-High)

X₆: Wealth Index (1-poorest quintile, 2-second poorest quintile; 3-middle quintile, 4 second richest quintile, 5- Richest quintile)

X₇: Household treated drinking water (1- yes, 2-No)

X₈: Households monthly health expenditure in rupees (1-less than 200; 2-200-500; 3- 500 more)

X₉: Household received amount of remittances in rupees (1- less than 30000; 2-30000- 5,0000; 3- more than)

X₁₀: Household often consumed nutritional food i.e. milk, meat, egg etc. (1- daily; 2- weekly; 3-Never)

X₁₁: Household migration status (1-migrants, 2-non-migrants)

Table 5.1.7: Logistic regression results

Dependent variable: Any household member suffering from at-least one diseases

Indicators	Migrant households			Non-migrant households		Total	
	Categories	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Standard of living	Low [@]						
	Medium	0.96	0.99	1.7	0.7	0.36	0.69
	High	0.38	0.6	2.1	1.0	0.58**	0.65
Educational status	Illiterate [@]						
	Up to Higher secondary	0.7	1.0	1.6	1.4	0.9	1.1
	More than	0.29***	0.7	1.3	1.6	0.19***	0.6

	higher secondary						
Wealth Quintile	Richest quintile [®]						
	Second richest quintile	0.24	1.1	1.3	1.2	0.94	1.9
	Middle Quintile	0.57	1.0	4.7	1.1	1.7	2.8
	Second poorest quintile	0.31	1.07	0.8	1.0	1.8	2.3
	Poorest quintile	2.04	0.99	0.5	0.88	2.5	0.8
Social caste	ST [®]						
	SC	1.0	2.0	0.75	0.96	0.35	0.76
	OBC	0.31**	0.64	1.4	0.75	1.6	2.05
	General	0.46	0.66	1.06	0.72	1.36	1.52
Household monthly health expenditure in rupees	<200 [®]						
	200-300	0.42***	0.51	0.66	0.61	0.96	0.91
	>500	0.17**	0.66	0.07***	0.83	0.67***	1.53
Household type	Kuccha [®]						
	Pucca	0.46	0.71	0.56	0.87	0.56	0.81
	Semipucca	1.1	0.83	0.44	0.88	1.2	0.93
How much remittance received last year in rupees	<30,000Rs [®]						
	30000-5,0000	0.69	0.51			0.59	0.41
	>5,0000	1.1	0.54			0.9	0.34
Health insurance	No [®]						
	Yes	1.0	0.67	1.01	0.7	1.01	0.7
Treating drinking water	Yes [®]						
	No	2.1	.57	2.3*	0.83	2.3*	0.83
Nutritional food intake	Daily [®]						
	Weekly	1.03	.67	1.3	.87	1.3	0.87
	Never	1.3**	.37	1.78**	.47	1.78**	0.47
Migration status of HH	Migrant HH						
	Non-migrant HH					2.1	0.67
Constant		13*	1.8	2.0	1.6	26*	2.7
-2log likelihood	155.87		132.21			255.9	
Cox & Snell R Square	0.154		0.185			0.324	
Nagelkerke	0.219		0.28			0.415	

R square			
N	229	251	468

0<p<0.05, *0<p<0.001, *0<p<0.1; Source: computed using primary data; ® Reference category

Table 5.1.7 shows the results of odds ratio of logistic regression and standard error values. With controlled household migration status. It is found that household monthly health expenditure, educational status, household frequent consumption of nutritional food and social caste playing influential role to determine the health status of the adult members of migrant household. The logistic regression results was expected while conceptualize the model household economic variables (such as variables like household standard of living, wealth quintile and migrants remittances) and health precautionary and health awareness variables (such as health insurance and treating drinking water) also influence the health status of the migrant adult members. However, these all expected variables are not statistically significant influence the health status of the migrant household members. Nevertheless, some of these variables are quite well predicted the predictor (adult health status) such as; household treating drinking water, standard of living and wealth quintile. For instances; household not treating drinking water the odds ratio of diseases in members are more than twice than household treating drinking water. Similarly, increases the wealth quintile of the household the odds ratio of diseases also decreases (2.04 in poorest quintile to 0.24 in second richest quintile).

Similar observation made with the standard of living index indicators. With, similar set of explanatory variable with same explained variables (except the migrants remittances) used in the non-migrant household it was found that only monthly health expenditure and household treating drinking water is a significant role to determine the health status of non-migrant adult household members. Education and caste variables are not playing any role in case of non-migrant family members. It also found very interesting that, household wealth position in quintile and standard of living index not singing any influence the health status of the non-migrant adult household members. Over all, the model depicts that the non-migrant household members are more than twice likely to be suffered from at least one diseases as compared to migrant family members.

Table 5.1.8: Percentage of population consults or takes advice from any health personnel for at least one disease by migration status

Indicators	Migrants	Non-migrants
Yes	92.1 (211)	91.6 (230)
No	7.9 (18)	8.4 (21)
Number of sample	229	251
Mann-Whitney Test 0.02		

Source: computed using primary data

Seeking health care or advice from health personnel is positive indicators to improve the health status during illness. Therefore, the information collected and result is presented the Table 5.1.8. More details the percent of sample population consult or take advice from any health personal for at least one disease during the illness period presented in above table. It is found that more than 92% of migrant household members seeking advice or consult from any health personnel for any diseases as compared to 91.6% of non-migrant household members.

Table 5.1.9: Consult or take advice from any health personnel and pay money for above health problems

Indicators	Migrants	Non-migrants	Total
Consult or take advice	71.3(214)	77.7(233)	74.5(447)
Pay money	71.3(212)	77.7(235)	74.5(447)

ce: computed using primary data; figure in parentheses are number

Does any member of household consulted or take advice from any health personnel and pay money for above consultation is presented the Table 5.1.9. It is found that more than seventy (71.3%) percent of migrant households reported they had consulted or take advice for their above mention health problems in comparison to 77.7% of non-migrant households.

Table 5.1.10: Sources of health care for above health problems by households' migration status

Sources	Migrants	Non-migrants
Government doctors	46.9(188)	51.1(203)
Private Doctors	17.0(68)	13.6(54)
Private nursing home	14.7(59)	10.6(42)
Private medicine home	15.7(63)	19.6(78)

Traditional healer	5.0(20)	3.5(14)
Ayurvedic/Baidya/Homeopathic	0.7(3)	1.5(6)
Number of sample	401	397

Source: computed using primary data

Sources of health care will provide us to understand a health seeking behavior of population. Therefore, the sources of health care for study population for any health problems probed and the result evinces the Table 5.1.10. It is found that majority of study population both migrants and non-migrants are utilizing government doctors as their sources of health care for their health problems. Further, it is found among the migrant households 46.9 % are seeking help from government doctors, 17.0% are private doctors, 15.7 % are private medicine home, 14.7% are private nursing home, 5.0 % are traditional healer and 0.7 % are treated by Ayurvedic/Baidya/Homeopathic doctors as sources for their health care services. Similarly, among non-migrant households more than half of (51.1 %) are seeking help from government doctors, 19.6 % are from private medicine home, 13.6% are from private doctors, 10.6% are private nursing home, 3.5 % are traditional healer and 1.5% are from Ayurvedic/Baidya/Homeopathic as sources of their health care services.

Table 5.1.11: Percentage of household having possession of any health insurance by standard of living index

Particulars	Migrants	Non-migrants
Yes	27.3(82)	19.0(57)
Percent of household having health insurance by standard of living		
Low	14.8(9)	8.6(12)
Medium	24.8(38)	29.0(36)
High	40.7(35)	25.0(9)
Number of sample	82	57
Mann-Whitney Test 0.00		

Source: computed using primary data

As we have mentioned in previous chapter health insurance protect the individual health and household's unpredictable health care expenditure through predictable income by insurance claims. The percent of people covered any health insurance by household stand of living and migration status result depicts Table 5.1.11. It is found that nearly three

(27.3%) out of ten migrant household members have health insurance in contrast to two (19%) out of ten non-migrant household members. Health status and health related expenses always depends on various socio and economic variables hence the study further analyzed household possession of health insurance by standard of living index. It was found that increases the standard of living of household the percent of possession of health insurance among migrant household's increases. While it also true among non-migrant households except the medium standard of living index.

Table 5.1.12: Self reported rated health status of able-bodied adult household members

Activities	Migrants	Non-migrants	Number of sample	Mann-Whitney U test
Carrying five kilogram luggage	11.3	27.3	251	0.00
Pulling water from well	16.7	12.7	88	0.16
Doing daily activities	18.0	16.7	104	0.66
Walking a little distance	10.3	15.0	76	0.08
Doing a household activities	33.7	70.7	313	0.00
Do you have breathing problem, due to difficulties during above activities	6.3	12.0	55	0.01

Source: computed using primary data; figure in parentheses are number

To evaluate the degree of differences of health status of adult members of migrant and non migrant household the study probed some self rated questions to respondent while collecting the information like; did any able bodied adult member their house are facing any kind of difficulties or health problems during the following activities if I will ask to do? Followed on this question, we probed another question such as; do you have breathing problem, due to difficulties during any above activities. To assess the health status these above administrated activities are recommended by the World Health Organization (WHO) for indirect measurement of health status of any population. The self-reported health status of adult household members exhibits the Table 5.1.12. It is found that more than one (11.3%) in every ten migrant households reported their adult

members are facing any kind of problems to carry five kilogram luggage in comparison to nearly three (27.3%) out of each ten non-migrant households and the difference is highly statistical significant at less than one percent level of significance. Further, one-sixth (16.7%) of migrant households reported they are facing problems, while pulling water from well in comparison to one eight (12.7%) of non-migrant households. Further, close to one-fifth (18%) of migrant households opined that their adult members are facing problem while doing daily personal activities against 16.7% of non-migrant household members are reported for same activities. Moreover, the study asked the respondent is there any of your adult members facing any problems while walking a little distance; 10% of migrant households said yes in comparison to 15.3% of non-migrant households. Add to these, the study also collected information asking to respondent on having any problems while doing daily household activities 33.7% of migrant households said yes in comparison to 70.7% of non-migrant households. More on, the study probed whether any of your adult household members had breathing problems at any time while doing these activities. It is found that around 6% of migrant adult members had breathing problems in comparison to 12.0% of non-migrant adult members.

5.2: Difference of child health status

The core theme of the study is to understand the impact of migrant remittances on child health. To understand it the study probed some common questions across the sample irrespective of the household migration status. In previous chapter, we found migrant households are more spending on health care and nutritional food intake as a result their children's health status improved over non-migrant counterparts. Does the migrants children are healthier than non-migrants children? To find out and validate the previous chapter (IV) findings the study administrated some questions to child's mother [if mother not available during the time of survey the information collected from any other eligible or knowledgeable woman in the household considered for the interview] about the health status of the children. Further, the study probed the range of common childhood diseases questions in binary code i.e., (yes or no) such as had fever, cough, diarrhoea, sneezing, headache, tightness in chest, throat ache, problem in breathing, jaundice, pneumonia and any other health problems etc. To distinction of health, status of children between

migrant and non-migrant the presentation of this section made two parts. In part one; we explained the differences of child health by various kind of diseases and household migration status. Part two we discussed the differences of child health by background characteristics such as social and economic status of the household.

5.2.1: Difference of child health status by various diseases by migration status

Table 5.2.1.1: Percent of children had following health problems by migration status

Particulars	Migrants	Non-migrants	Number of sample	Mann-Whitney 'U' test
Had cough and fevers	26.0 (79)	48.7(146)	225	0.00
Had Diarrhoeal	20.0(60)	28.7 (86)	146	0.01
Sneezing	27.0(81)	45.3 (136)	217	0.00
Headache	23.0(69)	39.0(114)	186	0.00
Tightness in chest	20.7(62)	39.0(117)	117	0.00
Throat Ache	21.7(65)	37.7(113)	178	0.00
Difficulty in breathing	21.3(64)	38.3 (115)	179	0.00
Back ache	19.7(59)	36.3(109)	168	0.00
Weakness & fatigue	18.7(55)	38.0(114)	170	0.00
Any other health problem	32.0 (96)	46.7(140)	236	0.00
Jaundice	18.0(54)	14.3(43)	97	0.4
Pneumonia	13.0(39)	17.7(53)	53	0.11
Any diseases	55.3(166)	64.7(194)	360	0.02

Source: computed using primary data; figure in parentheses are number

The above Table 5.2.1.1 shows the result of percentage of children had any type of health problems in last two weeks prior to the survey. It is found that more than one quarter (26%) of the children belongs to migrant household suffered from cough and fevers in last two weeks prior to the survey as compared to nearly half (48.7%) of non-migrant households. The difference by household migration status is statistically significant at less than one percent level of significance. Further, one-fifth (20%) of migrants children had diarrhoea as compared to 28% of non-migrant household children. More than one quarter (27%) of migrant children had sneezing as compared to 45.3% of non-migrant children. Further, nearly one-fourth (23%) of children belonging to migrant households had sneezing as compared to (39%) of non-migrant households. The table also shows

that, two (20.7%) out of every ten migrant households reported their children had tightness in chest problems as compared to four out of every ten (39.0%) non-migrant household's children had problem of tightness in chest. Another one-fifth (21.7%) of migrant household children had throat ache as compared to 37.7% of non-migrant children. Further, almost similar percentage of migrant and non-migrant household's children had difficulty in breathing, backache and weakness and fatigue health problems in last two weeks prior to the survey. Besides these 32 % of the children belongs to migrant household had any health problems as compared to 46.7% of non-migrant household children. All the health problems are statistically significant between migrant and non-migrant households. Further, nearly one-fifth (18%) of the migrant children are suffered from jaundice as compared to 14.3% of non-migrant household children's. Another, 13% of children of migrant household had suffered from pneumonia as compared to 17.7% of non-migrant households. Further, more than half (55.3%) of migrant household reported, their children had at least any one diseases as compared to 64.7% of non-migrant households reported under the same category of disease, and the difference is significant at 95 % level of confidence interval.

Table 5.2.1.2: Percentage of household consulted or takes advice from any health personnel for any health problems of their children during last two weeks prior to the survey

Take consultation or advice	Migrants	Non-migrants
Yes	60.2 (100)	39.3 (77)
No	39.8 (66)	60.3 (117)
N	166	194
Mann-Whitney Test 0.00		

Source: computed using primary data; figure in parentheses are number

Consultation or seeking advice of the health personnel is a curative and preventative measure to prevent the disease or illness. It also has potential to provide the information on differential of health seeking or health care behavior of migrant and non-migrant households in sample population. The result is shown the Table 5.2.1.2. It is found that three-fifth (60.2%) of the migrant households seeking advice or consulted health personnel for their children's health problems in comparison to nearly two-third (39.3%)

of non migrant counterparts. The difference of health seeking behavior between migrant and non-migrant households is statistically significant at less than one percent level of significance.

Table 5.2.1.3: Component wise health care expenditure for above health problems by migration status

Different component	Migrants			Non-migrants		
	Less than 50 Rupees	51- 100	More than 100	Less than 50 Rupees	51- 100	More than 100
Medicine	61.9(133)	17.7(38)	20.5(44)	63.1(147)	16.7(39)	20.2(47)
Doctor fee	53.4(71)	31.6(42)	15.0(20)	68.8(75)	19.3(21)	11.9(13)
Consultation	58.2(57)	26.5(26)	15.3(15)	49.3(34)	30.4(21)	20.3(14)
Food	68.8(33)	14.6(7)	16.7(8)	71.4(25)	5.7(2)	22.9(8)
Transport	88.2(15)	11.8(2)	0.0(0)	78.6(11)	21.4(3)	0.0(0)
Any Other	57.1(4)	42.9(3)	0.0(0)	88.9(8)	11.1(1)	0.0(0)

Source: computed using primary data; figure in parentheses are number

The total health expenditure broadly comprises various items for a particular health problems i.e., expenditure on medicine, doctor fee, consultation charges, food, transportation and any others. Component wise expenditure on health by household migration status result reveals the Table 5.2.1.3. It is found that 61.9% of migrant household spend less than 50 rupees for medicine as compared to 63.1% of non-migrant households. Further, equal percent (20.5% and 20.2%) of migrant and non-migrant households spend more than 100 rupees for medicine respectively. Moreover, more than half (53.4 %) of the migrant households spend less than 50 rupees for doctors fee in comparison to 68.8% of non-migrant households in the same expenditure category. Further, more than one-sixth (15.3%) percent of migrant households spend more than 100 rupees from their health expenditure as consultation fees compared to 20.3% of non-migrant households.

5.2.2: Socio-economic differential of health status of children

Table 5.2.2.1: Percentage of child suffered from at least one disease by wealth quintile

Wealth quintiles	Migrants	Non-migrants
Poorest Quintile	24.1(40)	14.9(29)
Second poorest quintile	22.3(37)	19.1(37)
Middle Quintile	21.7(36)	10.3(20)
Second Richest Quintile	18.7(31)	21.1(41)
Richest Quintile	13.3(22)	34.5(67)

Source: computed using primary data; figure in parentheses are number

The economic differential of health status of children by household migration status depicts the Table 5.2.2.1. It is found that 24.1% of children belongs to the poorest wealth quintile are suffered from any diseases in contrast to 14.9% of non-migrant households. Another twenty-two percent of children of migrant households suffered in any disease as compared to 19.1% of non-migrant household children. Further, 21.7% of migrants' children belong to middle wealth quintile as household economic position suffered from any diseases as compared to 10.3% of non-migrant children. Another, eighteen percent of migrant children had any health problems as compared to 21% of non-migrant household's children belong to second richest quintile as their economic position. Moreover, around 13% of migrant children had any health problems as compared to 34% of non-migrant household children belong to the richest wealth quintile. It is prudent to draw a inference that the burden of childhood diseases is as high among children belong to lower wealth quintile in comparison to higher wealth quintile. On the other hand, children belong to upper wealth quintile bearer of fewer burdens of diseases than their non-migrant counterparts. Hence, the probable answer would be household reaches after some threshold level of wealth position then the impact of migrants' remittances would be more as compared to reaching the threshold position before. Besides these the impact of remittances to shape the health status of children migration also brings some new health knowledge and information on health as well as create awareness among the household to prevent from various risk exposure on various diseases.

Table 5.2.2.2: Percentage of children suffered from any disease by social caste

Social caste	Migrants	Non-migrants
ST	56.3 (27)	64.3 (36)
SC	81.0(17)	43.3(13)
OBC	46.6(54)	50.7(36)
General	59.1(68)	76.2(109)

Source: computed using primary data; figure in parentheses are number

To observe the social differential of child health status, the study analyzed social caste indicators. The social differential of health status of children by household migration status depicts the Table 5.2.2.2. It is found that 56.3% of children belongs to ST caste are suffered from any diseases in contrast to 64.3%. Except SC caste, all other caste categories children belong to non-migrant household's are suffered from any diseases more percentage than migrant counterparts.

Table 5.2.2.3: Percentage of children had diarrhoea and administrates any supplementary foods

Supplementary foods	Migrant	Non migrant
Plain water	73.3(44)	71.6(66)
Salt and sugar	33.3(20)	15.1(13)
Fruit Juice	76.7(46)	79.1(68)
Lime water	61.7(37)	51.2(44)
Gruel made from rice	81.7(49)	80.2 (62)
Homemade remedy	63.3(38)	47.7(41)
Child on breast milk	75.0(45)	74.4(64)
ORS given	63.3(38)	45.3(39)
Normal feeding was continued	63.3(38)	62.8(54)
Had diarrhoea (Number of sample)	60	86

Source: computed using primary data; figure in parentheses are number

An attempt has been made to understand the level of child health status and household awareness to improve the child health through increasing the health knowledge, information and awareness. Hence, the study asked to the mother of the child about the administration of supplementary foods such as, limewater, Oral Rehydration Solution (ORS), salt, sugar etc, whose child had suffered from diarrhoea in last two weeks prior to the survey. It is found that almost equal (73.3% and 71.3%) percentage of migrant and non-migrant households respectively had administrated plain water to their children

during the diarrhoea episode. Similarly, 33.1 % of migrant households administered salt and sugar to their children during diarrhoea period as compared to 15.1% of non-migrant households. Further, more than three-fourth (76%) of migrant household's mother administered fruit juice to their children compared to 79% of non-migrant households. More on three-fifth (61%) of migrant mothers administered limewater to their children compared to 51 % of non-migrant households. Another, 81 % of migrant households children were administered gruel made from rice during diarrhoea period as compared to 80 % of non-migrant households. Another, 63 % of migrant households administers homemade remedy to their children as compared to 47 % of non-migrant households. Further, three-fourth (75 %) of migrant children were breastfed during the diarrhoea time as compared to 74 % non-migrant households children. Add on around 63 % of migrant households administered ORS to their children as compared to 45 % of non-migrant households. More on 63 % of migrant households were continued normal feeding to their children during diarrhoea time as compared to 62 % of non-migrant households.

Logistic regression results

It is pointed out many times that the exclusive purpose of this study as well as this chapter is to trace out the impact of internal migrants' remittances on child health and child well-being. Of course, the process of migration may not directly influences the child health in left behinds at origin. However, there are certain objects that directly determine the level of health status of left behind family members. These are health expenditure, health information and health knowledge through migration process that may perpetuate better health outcomes among migrant households over non-migrant. Further, beyond the migration process there are several social, economic and demographic factors associated to shape the child health status. Hence, an attempt is made to make an enquiry into impact of migration process to determine the child health status using logistic regression model. As mentioned previously, logistic regression model wider the scope to understand the probable impact of migration process to shape the child health status with various socio and economic predicted variables. Further, the model also has scope to find out the factors determine the child health status and their quantitative estimation with pre-controlled households migration status. Moreover, the

study also estimated the impact of migration in total model. The probability of child health status is estimated with a dichotomous dependent variable (which is pre-requisition for logistic regression model) taking on the value 'one' if household have any child suffering from at least one diseases in last two weeks prior to the survey otherwise value 'zero'.

Therefore the final model used here is;

$$\log \frac{P}{1-P} = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + b_9x_9 + b_{10}x_{10} + \dots + \mu_i$$

Where, P- Household's any children suffering at least one diseases last two weeks prior to the survey (1- yes, 0-no)

Or

1-P- Household's any children not suffering any diseases last two weeks prior to the survey =0

a- Constant

b₁:b₁₀-logistic regression coefficients

X₁: Educational Status (1- illiterate; 2- up to high school; 3- more than high school)

X₂:Social caste of the household (1-Schedule caste, 2- Schedule Tribe, 3- Other Back ward Caste, 4- General)

X₃: Household possession of any health insurance (SLI) (1- yes, 2-No)

X₄: Household type (1- Kuchha 2-Pucca, 3-Semi-pucca)

X₅: Household standard of living index (SLI) (1- Low, 2-Medium, 3-High)

X₆: Wealth Index (1-poorest quintile, 2-second poorest quintile; 3-middle quintile, 4 second richest quintile, 5- Richest quintile)

X₇: Household treated drinking water (1- yes, 2-No)

X₈: Households monthly health expenditure in rupees (1-less than 200; 2-200-500; 3- 500 more)

X₉: Migrants approximately monthly income at destination in rupees (1-less than 2,000; 2-2,000-5,000; 3- 5,000 more)

X₁₀: Household received amount of remittances in rupees (1- less than 30000; 2-30000- 5,0000; 3- more than)

X₁₁: Household often consumed nutritional food i.e. milk, meat, egg etc. (1- daily; 2-weekly; 3-Never)

X₁₂: Households percent of children in below -3SD Z-scores (1-Yes, 2-No)

X₁₃: Household percent of children in below -2SD Z-scores (1-Yes, 2-No)

X₁₄: Household migration status (1-migrants, 2-non-migrants)

Table 5.2.3.: Logistic regression results

Dependent variable: any child surer from at least one disease

Indicators	Migrant households			Non-migrant households		Over all (Total)	
	Categories	Odds ratio	Standard Error	Odds ratio	Standard Error	Odds ratio	Standard Error
Standard of living	High [@]						
	Medium	2.2**	0.6	2.18	0.96	1.68	0.56
	Low	7.8	1.05	2.2	0.72	1.2	0.62
Educational status	More than higher secondary [@]						
	Up to Higher secondary	1.01	0.91	2.6	1.5	2.3	1.1
	Illiterate	0.77	0.63	1.3	0.6	1.5	0.93
Wealth Quintile	Richest quintile [@]						
	Second richest quintile	0.742	0.75	0.32	0.7	0.62	0.5
	Middle Quintile	0.339	0.73	0.28	0.8	0.98	0.78
	Second poorest quintile	0.181**	0.78	0.36	0.8	1.46	1.6
	Poorest quintile	2.04	1.29	0.263	1.1	2.14	1.59
Social caste	ST [@]						
	SC	6.0	2.2	0.12**	0.88	4.0	1.2
	OBC	0.152*	0.72	1.0	0.7	0.152*	0.62
	General	0.22**	0.71	2.4	0.6	0.62***	0.71
Household monthly health expenditure in rupees	>500 [@]						
	200-300	0.93	0.66	0.95	0.8	0.99**	0.76
	<200	1.04**	0.63	1.3***	0.8	1.24**	0.73
Household type	Kuccha [@]						
	Pucca	2.38	0.74	0.70	0.81	1.38	0.54
	Semipucca	1.08	0.8	0.52	0.84	1.48*	0.8
Migrants monthly earning at destination in rupees	>5,000 [@]						
	2,000-3000	00	1.6			0.8	1.5
	<2,000	1.6	0.6			1.9	0.8
How much	<30,000Rs [@]						

remittance received last year n rupees	30000-5,0000	0.63	0.56			0.83	0.76
	>5,0000	0.35***	0.6			0.75**	0.9
Health insurance	No [@]						
	Yes	0.91	0.63	2.0	7.3	1.9	1.3
Treating drinking water	No [@]						
	Yes	1.2	0.54	1.0	0.5	1.6	0.5
Nutritional food in take	Daily [@]						
	Weekly	1.5	1.4	1.9	1.5	1.9	1.8
	Never	2.8**	0.36	3.0**	0.56	3.8**	0.96
Below -3SD	Yes [@]						
	No	0.78**	0.8	0.88*	0.7	0.85*	1.2
Below -2SD	Yes [@]						
	No	0.98**	0.3	1.0	2.0	1.3	1.6
Household migration status	Migrant [@]						
	Non-migrant					1.9**	0.9
Constant	7.2	1.2	5.6	1.2		5.6	1.2
-2log likelihood	158.829		149.46			291.23	
Cox & Snell R Square	0.197		0.248			0.432	
Nagelkerke R square	0.272		0.344			0.694	
N	166		194			370	

0<p<0.05, *0<p<0.001, *0<p<0.1; [@]- Reference category; Source: computed using primary data

The logistic regression result reveals the Table 5.2.3. It is found that among the explanatory variables household standard of living, wealth quintile, household received amount of remittances, percent of children living below -3SD and -2SD, household often intake of nutritional food and household monthly health expenditure are significantly explained the dependent variable. Similarly, among the social variables social caste is significant influence to dependent variables child health status. It is found household received remittances more than 50,000 rupees in last year the probability of child having any disease is less likely 0.65 as compared to household received less than 30,000 rupees as remittances. Other word migrant household received more than 50,000 rupees the chances of any child suffering from any disease is 65 percent less likely as compared to household received less than 30,000 rupees in last year as migrant remittances. The difference is statistically significant at less than one percent level of significance.

Similarly, household monthly health care spending more than 500 rupees the odds of any child diseases is 0.04 as compared to household monthly spending on health rupees 200 rupees per month and this also statistically significant at 95 percent confidence interval. Similarly, children belong medium standard of living index the odds of suffering from any diseases is more than one compared to children belongs to high standard of living index. Further, children belong to OBC and General as their social caste they are less likely of getting any diseases as compared to children belongs to ST and SC as their social caste. In the same way the model further used with same list of explanatory variables (except household received amount of migrants remittance and migrants income at destination) for children belongs non-migrant household. However, the finding reveals that, except household monthly spending on health, nutritional status i.e. percent of children under -3SD Z- scores and -2SD Z-scores and social caste are determine the children health status of non-migrant households. Except these four explanatory variables, none of the above determines the child health status of non-migrant households. In total, overall model reveals that migration has significant and imperative role to determine the child health status at origin. It was found that children belonging to non-migrant household are close to twice (1.9) more likely to suffered any diseases as compared to children belonging to migrant households.

5.3: Child Well being

“The true measure of a nation’s standing is how well it attends to its children, their health and safety, their material security, their education and socialization, and their sense of being loved, valued, and included in the families and societies into which they are born” (UNICEF, Innocenti Report Card 7, 2007). Enhancing children’s live and improving child health status eventually on child wellbeing is the central objective of major health policy across the globe as well as in India. Moreover, ‘child wellbeing’ describes the quality of childhoods as they are lived. More on, wellbeing draws in the many different factors which affect children’s lives: including physical and material conditions of where the child do lives; mental condition how the children feel and do at school; their health; exposure to dangerous risks; and the quality of parents their relationships with children development. The indicators of child wellbeing used in the

United Nations Children's Fund (UNICEF) report for ecological measures of whole member countries. Further, it is a noteworthy, about the different component of wellbeing; that each component influences each aspect of wellbeing and also a major impediment to delivering better overall wellbeing. Further, measures of child wellbeing are associated with different socioeconomic status (Bradley & Corwyn, 2002). Moreover, ill health and social problems associated with low socioeconomic status tend to be more common in societies with bigger difference of child well being index (Kawachi et al., 1997). Although, child well being is the range of indicators broadly, these indicators are categorized in three parts that is Physical well being, Health/Mental well being or Social well-being.

Further, healthy life means free from illness and to be healthy required environment much more than having nutritious food, for babies and young children it is important to them, because for their physical, social and mental well being. Moreover, it is common why child well being required why not other aspects of child development. Because, health and well-being underpin and determine children's responses to their environment, to people and to new experiences in further life. More on, we know early health provides a firm foundation for later on growth of life, whereas illness and deprivation impediment long shadows forward. Add to this, children who enjoy good health and well-being are naturally inquisitive. They have enthusiasm for life, which results in their taking advantage of opportunities to grow and develop, to advance their knowledge, skills and attitudes in all areas of learning. Further, they are strong, flexible and resourceful young people who can contribute well for community, and will develop these powers throughout their lives.

Child Well-being Index (CWI)

Although it is difficult to compute a child wellbeing index due to dearth of longitudinal data. However, we have been made an attempt to compute the index of child wellbeing assuming certain limitations. The Child Well-being Index (CWI) in our study is computed based on a multidimensional understanding of well-being index using composite index methods. More on elaborately the methodology used for the computation on CWI in principal component analysis-factor analysis (details about the

methodology refer chapter-1, methodology section). Where possible the unit of analysis is the child and all the data are collected from mother of child or eligible/knowledgeable women in the sample household administering structured questions. In our study, we computed the CWBI in three clusters these are:

- Health wellbeing
- Social wellbeing
- Physical wellbeing

These three clusters comprises number of indicators. We have also produced an overall index of child well-being in the study population by household migration status using z-scores technique for the three clusters.

5.3.1: Health wellbeing

Table 5.3.1: Mother rated health status of the children

Health status	Migrants (Percent)	Non-migrants (Percent)
Better	12.3(37)	11.3(34)
Good	55.7(167)	46.3(139)
Average	14.3(43)	11.0(33)
Partially good	17.3(52)	9.7(29)
Not good	0.3(1)	21.7(65)
Number of sample	300	300
Mann-Whitney 'U' test 0.00		

Source: computed using primary data; figure in parentheses are number

Self (mother of child or any eligible women in the household) rated health status of children by households migration status is presented the Table 5.3.1. It is found that migrant household rated slightly better (12 % as compared to 11 % respectively) health of children as compared to non-migrant households. Further, fifty-five percent of migrant households opined their health status of child's is good against 46.3% of non-migrant households. Further, 14.3% of migrant household child's health status is average as compared to 11% of non-migrant households. More on, around 17% of migrant household reported the partially good health status of their children as compared to 9.7% of non-migrant household child's. Further, very few around 0.3% of migrant household

agreed their children's health is not good as compared to 21% of non-migrant households.

Table 5.3.2: Percentage of children missed school days due to health problem

Particulars	Migrants	Non-migrants	Mann-Whitney 'U' test
Yes	13.0 (39)	10.0 (30)	0.00
Number of school days			
Less than two days	74.4 (29)	40.0 (12)	0.04
More than two days	25.6 (10)	60.0 (18)	
Number of sample	39	30	

Source: computed using primary data

As we discussed above children's are invariably suffered from various diseases because of their health problems as a result they are deprived of various opportunities. Table 5.3.2 shows the result of percentage of children missed school due to health problems. It is found that 13 % of children belongs to migrant household are missed the school due to their health problems in comparison to 10% of non-migrant household. Further, the study found that less than three-fourth (74.4%) of children had health problems and missed less than two school days due to health problems. Similarly, three-fifth (60%) of non-migrant household children missed their school days more than two days due to health problems. The result of the study is cleared that children from non-migrant households are more disadvantage in health wellbeing aspects as compared to children from migrant households.

5.3.2: Social wellbeing

Table 5.3.2.1: Mother rated children's educational performance

Educational performance	Migrants	Non-migrants
Better	18.3(55)	13.3(40)
Good	11.3(34)	15.7(47)
Medium	30.3(91)	17.7(53)
Poor	21.7(65)	24.3(73)
Very Poor	18.3(55)	29.0(87)
Number of sample	300	300
Mann-Whitney Test 0.005		

Source: computed using primary data; figure in parentheses are number

Social well being is another measure of child well-being index, which permits to measure the child's social well-being aspects through certain indicators. Among the indicators, child's educational performance is one of them and the result shows the Table 5.3.2.1. It is found that 18.3% of migrant children better performing in education in comparison to 13.3% of non-migrant children, performance rate by their mother. Further, another 11.3% of migrant household's children good educational performance as compared to 15.7% of non-migrant counterparts. Further, 30.3% of migrant household children's mother reported medium educational performance in comparison to 17.7% of non-migrant household children. Added to this 21.7% of migrant children performance are poor as compared to 24.3% of non-migrant household children. More on, 18.3% of children from migrant families are very poor educational performance as compared to 29 % of non-migrant families as reported by the child's mother.

Table 5.3.2.2: Mother rated child's memory power

Particulars	Migrants	Non-migrants
Better	13.3(40)	11.3(34)
Good	37.7(113)	30.0(90)
Medium	15.3(46)	11.3(34)
Poor	19.3(58)	22.0(66)
Very Poor	14.3(43)	25.3(76)
Number of sample	300	300
Mann-Whitney Test 0.001		

Source: computed using primary data

Another indicator of a social well-being is child's memory power. The result depicts in Table 5.3.2.2. It is found that 13.3% of migrant children have better memory power in comparison to 11.3% of non-migrant as rated by their mother. Further, 37.7% of migrant household children's mother reported good memory power in comparison to 30% of non-migrant household's children. More on, another 15.3% of migrant household children have average memory power as compared to 11.3% of non-migrant children. Add on this, 19.3% of migrant children performances are poor their memory power as compared to 22% of non-migrant households. Further, around 14% of children from migrant families are very poor memory power as compared to 25% of non-migrant family's children.

Table 5.3.2.3: Percentage of children on various social wellbeing indicators

Particulars	Migrants	Non-migrants
Child sleep during extreme noise	65.3(196)	72.3(217)
Fulfilment of all requirement	66.7(200)	53.7(161)
Parent's expectation from the children in future		
Low expectation	48.3(145)	65.0(195)
High expectation	51.3(154)	35.0(105)
Feel awkward or loneliness	53.0(159)	71.0(213)

Source: computed using primary data; figure in parentheses are number

More on a social well-being indicator, the study probed further a series of social indicators to child's mother during the survey and the results are shown the Table 5.3.2.3. Further, these indicators are as good as to measure the child social well-being index. For instances; child sleep during extreme noise, that is as good as like health care and nutritional food for good health status. It is found that, 65.3% of migrant children are able to sleep even if extreme noise around them in comparison to 72.3% of non-migrant household children's. Further, around 67% of migrant children fulfilled of all requirement as reported by their mothers as compared to 53.7% of non-migrant households. More on, around 53% of migrant children feel awkward or loneliness as compared to 71% of non-migrant household as reported by their mother. Further, more than half (51.3%) of the migrant parents have high expectation of returns from their children as compared to (35%) of non-migrant children.

5.3.3: Physical well-being

Table 5.3.3.1: Percentage of children in various physical wellbeing indicators

Indicators	Migrants	Non-migrants
H/she pass last year examination in school	90.7(272)	80.7(242)
Grasping power in classes at school	81.3(244)	82.3(247)
Will you continuity of child education	87.0(261)	65.7(197)
Does h/she likes to continue his/her education	87.3(262)	67.0(201)
Regularly talk with adult members	84.7(254)	72.0(216)
Taking food with adult members	89.7(269)	84.0(252)
Any health insurance	25.3(76)	17.0(51)
Ever received vaccination	90.9(221)	92.4(208)
Taking breakfast in school days	85.0(255)	66.0(198)

Source: computed using primary data; figure in parentheses are number

Children’s physical development is centrally implicated in various aspects for a unique child growth. Providing time to support explicit understanding of how physical activities, such as food and drink, sleep, safety and hygiene are vital to help children’s life. It is appreciate the role played by these factors in their lives, rather than simply doing them mindlessly. In prudence of the importance of physical well-being for children’s growth it includes the growth of the physical development of a baby, proper food sanitation and fulfillment of all requirements. More on this, appropriate clothing, food, vaccine, medicine, insurance, education and affection of parents and adult members essential for the overall development of child. During the survey there are number of questions probed to the mother of child’s with regards to physical wellbeing. Are they passed in last year examination?, grasping power in classes, continuity of schooling, having any health insurance, taking food with adult members, taking breakfast in schooldays, regularly talk with adult members and continuity of education etc. It is found that except percent of vaccination received and grasping power in classes all other indicators are higher among migrant household’s children as compared to non-migrant household’s children. The result is shown the above Table 5.3.3.1.

5.3.4: Overall well being index

Table 5.3.4.1: Over all child well-being indexes (CWI)

Child well being index	Health	Social	Physical
Low	31.1	34.0	54.3
Medium	11.7	32.3	33.5
High	57.2	33.7	12.2
Number of sample	488	600	468

Source: computed using primary data

Further, the overall child well-being index (CWI) developed and is presented the Table 5.3.4.1. The overall index developed in three board categories i.e., low, medium and high. These categories based on the only z-score index value of individual indicators. After compute the z-score index values for each index the single individual index value was divided in n-tile after rank the total score. The ‘n’-tile value were generated through statistical software programme through randomization process to avoid bias of dividing the score. It was found that nearly one-third (31.1%) of the children in low health well-being index as compared to 57.2 percent in high child-well being index. Further, all most

equal percent of children distributed in social well-being index irrespective of the category. Add on this, majority (54.3%) of children fall under low child physical well-being index and very few (12.2%) in high child physical well being index and rest are in medium physical well-being index. To sum up, it is found that health well-being index passionate towards high category whereas physical well-being index towards low category and social well-being index is equally distributed across all categories.

Table 5.3.4.2: Over all child well being index by migration status

Child well being index	Migrants			Non migrants		
	Health	Social	Physical	Health	Social	Physical
Low	25.5(59)	36.0(108)	74.1(180)	36.2(93)	32.0(96)	32.9(74)
Medium	6.1(14)	33.3(100)	18.5(45)	16.7(43)	31.3(94)	112(49.8)
High	68.4 (158)	30.7(92)	7.4(18)	47.1(121)	36.7(110)	17.3(39)
Number of sample	231	300	243	257	300	225

Source: computed using primary data; figure in parentheses are number

The overall child well-being index by household migration status result is presented the Table 5.3.4.2. It is found that migrant children are better in their health well-being index whereas social and physical index is better among non-migrant children across all categories. For instances; 68.4 % of migrant children are in high child well-being health index as compared to 47.1% of non-migrant children. Similarly, 30.7% and 7.4 % of migrant children in social and physical well-being index as compared to 36.7 % and 17.3 % of non-migrant children. By analyzing the well-being index with household migration status it is found that, children in migrant households are better in their health well-being index as compared to non-migrant households. More on children in physical well-being index is better in non-migrant households as compared to migrant households. Further, social well-being index is optimistic for both migrant and non-migrant households.

Table 5.3.4.3: Over all child well being index by household wealth quintile

Wealth quintile	Health Index			Social Index			Physical Index		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Poorest quintile	27.6	14.0	18.6	21.6	24.2	12.9	20.5	9.6	10.5

Second poorest quintile	15.8	22.8	23.7	28.4	21.2	12.9	18.1	21.7	42.1
Middle quintile	21.1	7.0	16.5	15.2	17.5	20.8	17.7	18.5	12.3
Second richest quintile	15.8	21.1	21.9	18.6	18.6	23.3	27.2	14.0	15.8
Richest quintile	19.7	35.1	19.4	16.2	18.6	30.2	16.5	36.3	19.3

Source: computed using primary data; figure in parentheses are number

It is hypothesized that household have better wealth position the child well-being index would have better than inferior wealth position household. To validate these arguments the study analyzed the overall child well-being index with household wealth quintile and the result is presented the Table 5.3.4.2. It is found that children belongs to the richest wealth quintile are better in their well-being index as compared to the poorest wealth quintile. For instances; around 18% of children belongs to the poorest wealth quintile are in high health well-being index as compared to 19.4% are in the richest wealth quintile. In a same way, around 13% as compared to 30.2% in high social well being index and 10.5% as compared to 19.3% in physical well being index respectively.

5.4: Child Nutrition

This section focuses on nutrition status of young children in the study population. In a developing country like ours, children are more vulnerable to malnutrition because of low dietary intakes, infectious diseases, lack of appropriate care, and inequitable distribution of food within the households. Add on it, adequate nutrition is critical to child development, particularly, the period from birth to two years of age is important for optimal growth, health and development. At this age, children are particularly vulnerable to growth retardation, micronutrient deficiencies, and common childhood illnesses such as diarrhoea, pneumonia and Acute Respiratory Infections (ARI). Deficiency of nutrition in early childhood considered to have a higher than average risk of early childhood death.

Evaluation of nutritional status is based on the rationale that in a well-nourished population, here is a statistically predictable distribution of children of a given age with

respect to height and weight. In any large population, there is variation in height and weight; this variation approximates a normal distribution. Use of a standard reference population as a point of comparison facilitates the examination of differences in the anthropometric status of subgroups in a population and of changes in nutritional status over time. The use of a reference population is based on the empirical finding that well-nourished children in all population groups for which data exists follow very similar growth patterns before puberty. There are three nutritional indices i.e., height-for-age (stunting), weight-for-height (wasting) and Weight-for-age (Underweight).

The three nutritional status indicators are expressed in standard deviation units (*Z*-scores) from the median of the reference population. The index provides different information about growth and body composition, which is used to assess nutritional status. Weight-for-age (underweight) is a composite index of height-for-age and weight-for-height. It takes into account both acute and chronic malnutrition. Children whose weight-for-age is below minus two standard deviations (-2SD) from the median of the reference population are classified as underweight. Children whose weight-for-age is below minus three standard deviations (-3 SD) from the median of the reference population are considered to be severely underweight.

In order to measure the weight for age of our study population weight of the children were recorded in the survey questionnaire for youngest survived child asking the mother through using recall method. Nevertheless, many respondents may not know the present weight of a baby or it is not a regular measurement process hence the study used mothers recall method on baby's weight at birth to obtain the child weight. Of course, the limitation of the study is using a recall method. However, weight at birth time is a critical indicator of a child's vulnerability to the risk of childhood illness and chances of survival.

Table 5.4.1: Percent of children under weight by age of months

Age groups in months	-3SD	-2SD
0-36 months	43.2 (64)	54.1 (80)
36-60 months	6.6 (15)	28.3 (64)
Total	16.3 (98)	28.2 (169)

Source: computed using primary data; figure in parentheses are number

In order to, understand the nutritional status of children by age groups. Age group wise underweight children analyzed and the result depicts the Table 5.4.1. It is found that majority of the children are underweight in the younger age months (0-36 months) as compared to older age (36-60) months in both the Z-scores. Further, it also indicates that 16.3% of children in the study area are severely underweight as compared to 28.2% of children underweight. Moreover, 43.2% of the children in 0-36 months are severely underweight as compared to 6.6% in the 36-60 months. Another, 54.1% of children belonging to 0-36 months are under weight as compared to 28.2% in 36-60 months.

Table 5.4.2: Age group wise percent of children under weight by migration status

Age groups in months	Migrants		Non migrants	
	-3SD	-2SD	-3SD	-2SD
0-36 months	82.9 (34)	51.3(39)	78.9 (30)	60.3(41)
36-60 months	17.1 (7)	48.7(37)	21.1(8)	39.7(27)

Source: computed using primary data; figure in parentheses are number

Further, an attempt has been made to understand the prevalence of underweight children by age in months in household migration status. It is found that younger age children are more severely underweight in migrant households as compared to non-migrant households (82.9 % compared to 78.9 % respectively). The prevalence of severely underweight in older children is more among non-migrant households as compared to migrant households (17.1 % compared to 21.1 % respectively). However, the opposite result have been observed underweight (-2SD) nutritional status situation and the results is depicted the Table 5.4.2. More details the prevalence rate of underweight among older age in migrant households is as high and younger age children among non-migrant households.

Table 5.4.3: Percentage of children underweight by wealth quintile

Wealth quintile	-3SD	-2SD
Poorest quintile	14.5 (17)	25.6 (30)
Second poorest quintile	20.0 (25)	32.8 (41)
Middle quintile	12.1 (13)	24.3 (26)
Second richest quintile	18.2 (22)	29.8(36)
Richest quintile	16.2 (21)	27.7 (36)

Source: computed using primary data; figure in parentheses are number

It is often argued that children belonging to rich households are healthier than poor ones. To understand this, it is analyzed that the percentage of children underweight by household wealth index and the results are depicted in Table 5.4.3. It is found irrespective of household wealth status, children in underweight are more prevalent as compared to children in severely underweight. For instance; more than fourteen (14.5)% children are severely underweight as compared to 25.6% of underweight children belonging to the poorest wealth quintile. Similarly, children belonging to the richest wealth quintile are slightly more underweight as compared to children belonging to the poorest wealth quintile in both the Z-scores values.

Table 5.4.4: Percentage of children underweight in wealth quintile by migration status

Age groups in months	Migrants		Non migrants	
	-3SD	-2SD	-3SD	-2SD
Poorest quintile	26.1(12)	27.1(23)	9.6(5)	8.3(7)
Second poorest quintile	13.0 (6)	16.5(14)	36.5(19)	32.1(27)
Middle quintile	15.2(7)	16.5(14)	11.5(6)	14.3(12)
Second richest quintile	30.4(14)	22.4(19)	15.4(8)	20.2(17)
Richest quintile	15.2(7)	17.6(15)	26.9(14)	25.0(21)

Source: computed using primary data; figure in parentheses are number

Further, the differential of child nutritional status is measured by household migration status with wealth index and the result is exhibited in Table 5.4.4. It is found that almost decreases prevalence of underweight children with increasing household wealth position among migrant households. While increases the prevalence of underweight with increasing wealth position among non-migrant households. Hence, it can be concluded that, besides the income or wealth position of the household to determine the nutritional level of children there are other factors that take part in a unique role to determine the nutritional status among non-migrant households; one of the factors probable may be health knowledge and health information. Of course the table also depicts the prevalence of underweight children is more concentrated in migrants poorest wealth quintile households as compared to non-migrant households. The probable explanation would be

migration in early stage may not be visible impact and not possible to distinguish between migrant and non-migrant and majority would be in similar groups.

Table 5.4.5: Percentage of children under weight by social caste

Social caste	-3SD	-2SD
ST	18.3(19)	32.7(34)
SC	15.7(8)	23.5(12)
OBC	19.3(36)	31.6(59)
General	13.6(35)	24.8(64)

Source: computed using primary data; figure in parentheses are number

Percent of children underweight by household social caste status and depicted the table 5.4.5. It is found that the prevalence of underweight children is more among vulnerable social groups i.e. ST and SC caste as compared to General caste (18.3% to 13.6% in -3SD and 32.7% to 24.8% in -2SD) except the OBC caste.

Table 5.4.6: Percentage of children mal-nourished in social caste by household migration status

Social caste	Migrants		Non migrants	
	-3SD	-2SD	-3SD	-2SD
ST	17.4(8)	17.1(15)	21.2(11)	22.6(19)
SC	4.3(2)	5.9(5)	11.5(6)	8.3(7)
OBC	39.1(18)	38.8(33)	34.6(18)	31.0(26)
General	39.1(18)	37.6(32)	32.7(17)	38.1(32)

Source: computed using primary data; figure in parentheses are number

Percent of children underweight by household social caste status and migration status is depicted the Table 5.4.6. It is found that the prevalence of underweight children is more among General caste compared to vulnerable social groups i.e., ST and SC caste irrespective of household migration status.

Table 5.4.7: Percentage of children underweight by household monthly health expenditure

Monthly health expenditure	-3SD	-2SD
Less than 200 rupees	13.6(18)	30.3(40)
Less than 200-500 rupees	15.5(22)	26.1(37)
More than 500 rupees	20.8(11)	26.4(14)

Source: computed using primary data; figure in parentheses are number

The prevalence of underweight (-3SD and -2SD) by household monthly health expenditure depicts in the table 5.4.7. It is found that increases the household monthly health expenditure the prevalence of underweight children also increases in both the Z-score indices i.e., -2SD and -3SD. It can be understood that increases prevalence of underweight children would be increases households expenditure on health as a result the prevalence rate high in upper expenditure group.

Table 5.4.8: Percentage of children underweight in household monthly expenditure in migration status

Monthly health expenditure	Migrants		Non migrants	
	-3SD	-2SD	-3SD	-2SD
Less than 200 rupees	33.3(8)	44.4(20)	37.0(10)	43.5 (20)
Less than 200-500 rupees	45.8(11)	40.0(18)	40.7(11)	41.3(19)
More than 500 rupees	20.8(5)	15.6(7)	22.2(6)	15.2(7)

Source: computed using primary data; figure in parentheses are number

The prevalence of underweight (-3SD and -2SD) by household monthly health expenditure and migration status is shown the Table 5.4.8. It is found that increases the household monthly health expenditure the prevalence of underweight children decreases in both the Z-score indices i.e., -2SD and -3SD among migrant and non-migrant households. Further, the percentage of prevalence of underweight among migrant households found low as compared to non-migrant households. For instances; 33.3% children in migrant households are severely under weight as compared to 37 % of non-migrant households in household monthly health expenditure less than 200 rupees. Similarly, 20.8% in migrants' children as compared to 22.2% in non-migrant children in more than 500 rupees expenditure groups.

Table 5.4.9: Percentage of children underweight by household nutritional food intake

Frequency of nutritional food intake	-3SD	-2SD
Daily	15.8(89)	26.9(151)
Weekly	17.0(80)	29.1(137)
Never	17.1(42)	29.4(72)

Source: computed using primary data; figure in parentheses are number

Besides other factors to determine the health status of children, intake of nutritional food in household children's is one of them. Often it also recommended by nutritionist and health expert that quality (nutritional) food intake may reduce prevalence of under nutrition, various epidemic and morbidity henceforth on mortality. Comprehend the importance in health aspects the study probed about the regularity in some of nutritional food such as; milk, cord, meat, egg, pulses, bean, green leaf etc among households. It is found that household consumed daily nutritional food the incidence of children underweight has decreases i.e., 15.8% to 17.1% in daily-consumed households to never consumed households in severely underweight category. Similarly, 26.9% to 29.4% in underweight category household consumed nutritional food daily to never and the result is revealed the Table 5.4.9.

Table 5.4.10: Percentage of children underweight in nutritional food intake by migration status

Often nutritional food intake	Migrants		Non migrants	
	-3SD	-2SD	-3SD	-2SD
Daily	91.3 (42)	88.2(75)	90.4(47)	90.5(76)
Weekly	80.4(37)	82.7(43)	74.4(160)	80.1(173)
Never	43.5(20)	42.4(36)	42.3(22)	42.9(36)

Source: computed using primary data; figure in parentheses are number

More on, the prevalence of underweight children in food intake by household's migration status is presented the Table 5.4.10. By analyzing, it is found that the prevalence of underweight children are more in household consumed daily nutrition food as compared to never consumed nutrition food households irrespective of their migration status. However, the prevalence rate is more or less same both the migrant and non-migrant households. Perhaps the methodology adopted to collect data for underweight would be not appropriate (as we mentioned above) as a result the results depicts in an alteration forms.

Table 5.4.11: Percentage of underweight children suffered from at least one disease by nutritional food intake

Nutritional food intake	-3SD	-2SD
Daily	26.9(151)	15.8(89)
Weekly	17.0(80)	29.1(137)
Never	17.1(42)	29.4(72)

Source: computed using primary data; figure in parentheses are number

It is general believable that household consumed good and maintain regularity of nutritional food the incidence of diseases is very low in comparison to irregularity food intake. Taking regular nutritional food not only aids to cognitive growth of the body but also prevent from various diseases through increasing immune system within a body. It is found that 29.4% children in underweight nutritional level suffered from any diseases during last two weeks prior to the survey taking nutritional food as compared to 15.8% in daily nutritional food in same group of food intake and the findings shows the Table 5.4.11.

Table 5.4.12: Percentage of underweight children suffered from at least one diseases in food intake by household migration status

Nutritional food intake	Migrants		Non migrants	
	-3SD	-2SD	-3SD	-2SD
Daily	10.0(15)	16.7(25)	15.5(28)	23.8(43)
Weekly	12.7(15)	22.0(26)	16.1(25)	25.8(40)
Never	11.3(9)	20.0(16)	24.3(17)	30.0(21)

Source: computed using primary data; figure in parentheses are number

More on the percent of underweight children suffered from any diseases in household's often-nutritional food intake by household migration status reveals Table 5.4.12. It is found that households increases, regular nutritional food intake the percentage of disease incidences decreases irrespective of their migration status. Further, children in migrant households are less likely infected by any diseases as compared to non-migrant households irrespective of nutritional status (i.e., Z-scores) and frequency of nutritional food intake. For instances; 10% of children from migrant households suffered from any diseases consumed nutrition food daily in -3SD Z-score nutritional category as compared

to 15.5% in non-migrant households. Similar observation made all categories in both the migrant and non-migrant households.

Table 5.4.13: Percent of underweight children suffered from any diseases in food intake by household monthly migrants' remittance status

Monthly migrants remittances	Daily		Weekly		Never	
	-3SD	-2SD	-3SD	-2SD	-3SD	-2SD
Less than 2,000	17.9(10)	26.8(15)	21.4(9)	31.0(13)	26.9(7)	34.6(9)
2,000-5,000	10.1(8)	17.7(14)	11.7(7)	21.7(13)	7.3(3)	17.1(7)
More than 5,000	10.0(3)	16.7(5)	11.1(3)	22.2(6)	16.7(3)	22.2(4)

Source: computed using primary data; figure in parentheses are number

Often economist regards increases household level of consumption expenditure with changing pattern from necessary goods to luxurious goods with increasing income of household. In this regards, the best example is the famous economist Keynesian psychological law of consumption. Study also hypothesized increases the household level of income through migrant remittances that will increases the households consumption expenditure particularly in nutritional food as a result the health status of household members will be changed with less burden of diseases. To test the above hypothesis the study data has analyzed, with percent of underweight children suffered from any diseases in food intake by household monthly migrants' remittance status and the results is revealed the Table 5.4.13. It is found that increased household level of income through in terms of migrants' remittances the level of percent of children suffered from any diseases also decreases (17.9% in less than 2,000 rupees to 10% in more than 5,000 rupees). Further, the percent of children suffered from any diseases also decreases with increasing regularity of household level of consumption of nutritional food intake for instances; 17.9% in daily nutritional food intake to 21 in never nutrition food intake).

In this regard, one of the respondents said while collecting qualitative data through case study methods to support our quantitative finding. He is male around 40 years old teacher by profession in a primary school, teaching in the study village since last 14 years. *“Mu dekhichi surat and mumbai balankar abasta kemiti thila and bartaman kemiti acchi. Jetebele mu partame ahi gama ku aisithili sabau lokaku deolla demutha khaibaku milunathila bartama semanakar*

ghara loka bedesa badi jai tankara dhan sampati ra unnrati sawte pialamanaka pani patapadhaiba pani paisa kharacha kariaba abama takankar urnnati swastya pani bhala doctor dekheiba and machha mansa and panipariba kinikari khaiba.” When he first came to this village, he has seen many families in this village were not getting two time meals per a day. After the family members migrated to Surata city of Gujarat and Mumbai metropolitan they could able to push up not only their economic level of household but also they are able to send their children for better schooling. They are also spending good amount for better health. The migrant remittances also wider the scope to sending household to allocate more on consumption purposes particularly in nutritional goods aspects.

5.5: Child Mortality

Infant and child mortality rates reflect a country’s level of socioeconomic development and quality of life. It also used for monitoring and evaluating population and health programmes and policies of a country. Other hand it enable the programme evaluator to assess the level of effectiveness of particular programme and policy to achieve a certain target or goal. In view of this, the study probed some questions to get information about it. However, the review needs to follow cautious while generalizing the information in view of the limitation of study particularly in child mortality indicators. Because of small sample size which may attribute the small numbers to numerator.

Table 5.5.1: Percent of household have died children (0-5) in last year

Indicators	Migrants	Non-migrants	Mann-Whitney ‘U’ Test
Yes	16.0(48)	20.0 (60)	0.2
No	84.0(252)	80.0(240)	
Number of sample	300	300	
Number of children died per household			0.66
One	54.2(26)	58.3 (35)	
Two	45.8(22)	41.7(25)	
Number of sample	48	60	

Source: computed using primary data

Percentage of household had died any child age (0-5) in last year were collected and shown the Table 5.5.1. It is found that 16% of migrant households reported they have loss at least one child age group 0-5 years in last year comparison to 20% in non-migrant

households. However, in number of children, it was found 48 migrant households children death as compared to 60 of non-migrant households. Further, the table shows the number of child died per household. It is found that 54.2% of migrant households had died in one child as compared to 58.3% of non-migrant households. Correspondingly, 45.8% of migrant households had died two children as compared to 41.7% of non-migrant households.

Table 5.5.2: Percentage of household have died children (0-5) in last year by gender

Households migrant status	Male	Female	Mann-Whitney 'U' Test
Migrant	64.6 (31)	81.3 (39)	0.2
Non- migrants	66.7(40)	75.0(45)	
Number of sample	71	84	
Number of children died per household			0.66
One	39.4(28)	39.3 (33)	
Two	60.6(43)	60.7(51)	
Number of sample	71	84	

Source: computed using primary data

The Table 5.5.2 presents that percentage of household have died children in last year by gender. It is found that almost equal (64.6% and 66.7) percent of male children died both in migrant and non-migrant households. However, there is six (81.3 & 75.0 % respectively) percent absolutely difference between female child death between migrant and non-migrants households. Further, the table also depicts the number of children died per household by gender wise. It is found that, of total male children death among migrant household 39.4% of household have one child died in comparison 39.3 in non-migrant household.

Table 5.5.3: Percentage of household have died children (0-5) in last year by age group

Age in months	Male	Female
Less than 12 months	78.7(37)	71.2(42)
13-60 months	21.3(10)	28.8(17)
Number of sample	47	59

Source: computed using primary data

Percentage of household have died in children in both sexes by age group wise shows the Table 5.5.3. It is found that; majority of household had died children in less 12 moths age as compared to age between 13-60 months. Further, by gender segregation it is found that male children are little advantage as compared to female children.

Table 5.5.4: Percentage of household have children died (0-5) in last year by age group in both sexes in household migration status

Age in months	Migrants		Non-migrants	
	Male	Female	Male	Female
Less than 12 months	83.9(26)	65.8(25)	60.0(24)	63.6(28)
13-60 months	16.1(5)	34.2(13)	40.0(16)	36.4(16)
Number of sample	31	38	40	44

Source: computed using primary data

By gender, age group in months and household migration status wise segregated percent of children died shows the Table 5.5.4. It is found that; majority of household had died children in less 12 moths age as compared to age between 13-60 months irrespective of household's migration status. Further, by gender segregation it is found that male child's are little advantage in older age (more than 12 moths) than younger age (less than 12 months) in non- migrant households, same way in female child in migrant households.

Result of Probit Analysis

Probit model used to estimate the effects of one or more independent variables on a dichotomous dependent variable. In our study to study such as dead or alive of children by household migration status as dependent variables in dichotomous nature with number of children categorical independent variables. Needless, to explain this can also estimate through logistic regression model. However, probit reports the change in the probability for an infinitesimal change in each independent, continuous variable and, by default, the discrete change in the probability for dummy or dichotomous variables.

The dichotomous-response variables transformation in (T) as a response rates, which are proportions or probabilities (p). Note the difference in the transformations between the current version and the previous versions. Further, a probit is the inverse of the

cumulative standard normal distribution function (CDF). Thus, for any proportion, the probit transformation returns the value below which that proportion of standard normal deviates is found. For the probit response model,

To motivate the probit model in our study that the probability of dying a children is not depends on an unobservable index like I_i (also known as a latent variable), that is determined by one or more explanatory variables, say households level of health care utilization, level of nutrition food intake, nutritional status of children, households wealth index etc. in all as X_i , in such a way that the larger the value of the index I_i , the greater the probability of a children dying in a household.

We express the index I_i as

$$I_i = \beta_1 + \beta_2 X_i \dots\dots\dots i$$

Where X_i is the explanatory variables

β_1 and β_2 are the parameter of the equation

Now the problem is how the unobserved index values is related to probability of dying a child in a household. Now it is reasonable to assume that there is a critical or threshold level of the index value called it I_i^* , such that if I_i exceeds I_i^* , the children will die in a household otherwise it will not. The threshold I_i^* , like I_i , is not observable, but if we assume that it is normally distributed with the same mean and variance, it is possible not only to estimate the parameters of the index but also to get some information about the unobservable index itself. This calculation is as follows. Taking the assumption of normality, the probability that I_i^* is less than or equal to I_i can be computed from the standardized normal CDF (Gujarati, 2004) as

$$P_i = P(Y = 1 | X) = P(I_i \leq I_i^*) = P(Z_i \leq \beta_1 + \beta_2 X_i) = F(\beta_1 + \beta_2 X_i) \dots\dots\dots ii$$

Where $P(Y = 1 | X)$ means the probability that an event occurs given the value(s) of the X , or explanatory, variable(s) measured by the area of the standard normal curve from $-\infty$ to I_i as and

Z_i is the standard normal variable, i.e., $Z \sim N(0, \sigma^2)$. F is the standard normal CDF

Now to obtain information on I_i , the utility index, as well as on β_1 and β_2 , we take the inverse of equation (ii) to obtain

$$l_i = F^{-1}(l_i) = F^{-1}(P_i)$$

$$= \beta_1 + \beta_2 X_i \dots \dots \dots \text{iii}$$

Further, if we derivative of this function in equation (ii) with respect to X (or explanatory variables). It turns out that this derivative is as and the probit model⁶ has been specified as follows

$$dP_i / dX_i = f(\beta_1 + \beta_2 X_i) \beta_2 \dots \dots \dots \text{iv}$$

Where β constants,

Therefore the final model is;

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 + b_9 X_9 + b_{10} X_{10} + u_i$$

.....iv

Where, Y- Probability of any children dying (1- yes, 0-no)

Or

a- Constant

b1:b10-probit regression coefficients

X₁: Educational Status (1- illiterate; 2- up to high school; 3- more than high school)

X₂: Social caste of the household (1-Schedule caste, 2- Schedule Tribe, 3- Other Back ward Caste, 4- General)

X₃: Household standard of living index (SLI) (1- Low, 2-Medium, 3-High)

X₄: Wealth Index (1-poorest quintile, 2-second poorest quintile; 3-middle quintile, 4 second richest quintile, 5- Richest quintile)

X₅: Households monthly health expenditure in rupees (1-less than 200; 2-200-500; 3- 500 more)

X₆: Household received amount of remittances in rupees (1- less than 30000; 2-30000- 5,0000; 3- more than)

X₇: Household consumed daily nutrition food i.e. milk, meat, egg etc. (1-No 2-Yes)

X₈: Household consumed weekly nutrition food i.e. milk, meat, egg etc. (1-No 2-Yes)

X₉: Household percent of children in below -3SD Z-scores (1-Yes, 2-No)

⁶ See Basic Econometrics, Damodar N Gujarati, fourth edition

X₁₀: Household percent of children in below -2SD Z-scores (1-Yes, 2-No)

Table 5.5.5: Probit regression analysis

Dependent variable: Any children died last year

Indicators	Migrant households			Non-migrant households	
	Categories	dF/dx	Z 'test'	dF/dx	Z 'test'
Educational status	Illiterate [@]				
	Up to Higher secondary	-0.19***	-16.8	-0.21	-0.63
	More than higher secondary	-0.99		-0.12	-0.42
Households standard of living index	Low [@]				
	Medium	0.85***	-1.8	0.29**	2.57
	High	0.97	18.2	0.10	0.67
Wealth Quintile	Richest quintile [@]				
	Second richest quintile	-0.006	-1.2	-0.005	-0.05
	Middle Quintile	-0.01**	-2.4	-0.05	-0.37
	Second poorest quintile	-0.01**	-2.5	-0.03	-0.22
	Poorest quintile	-0.006	-1.8	-0.04	-0.25
Social caste	ST [@]				
	SC	-0.005	-0.8	-0.06	-0.42
	OBC	-0.01	-1.8	-0.09	-0.36
	General	-0.009	-1.4	-0.01	-0.7
Household monthly health expenditure in rupees	<200 [@]				
	200-300	-0.008	-0.1	-0.032	-0.3
	>500	0.016	1.4	-0.19	-1.5
Below -3SD	Yes [@]				
	No	-0.005	-0.9	0.19	-1.55
Below -2SD	Yes [@]				
	No	0.007	0.9	0.00	-0.37
Consumed daily nutritional food in take	No [@]				
	Yes	-0.006	-0.5	-0.29*	-1.65
Consumed weekly nutritional food intake	No [@]				
	Yes	-0.032**	-2.9	-0.04***	-4.07
-2log likelihood	-63.2			-73.23	
R Square	0.25			0.18	
Chi-square	43.8			33.2	
Observed 'P'	0.18			0.28	
Predicted 'p'	0.005			0.24	
N	177			150	

0<p<0.05, *0<p<0.001, *0<p<0.1; [@] Reference category; Source: computed using primary data;

Table 5.5.5 shows the probit regression results in inverse function and Z values of the various explanatory variables with controlled household migration status. In the model the dependent variable is probability of the child die with explanatory variables household level of education, standard of living, wealth index, monthly health expenditure, nutrition status of the children and pattern of nutritional food intake etc. It is found that household level of education, standard of living, wealth position, nutritional food intake are significantly affecting the probability of children death among migrant households in the study area. However, nutrition food intakes, standard of living index, are only significantly influence the probability of the children death among non-migrant households in the study area. Further, the study also found the background characteristics like social caste and economic variable like monthly health expenditure is not influenced the explained variables both among migrant and non-migrant households.

5.6: Conclusion

To sum up, we can conclude this chapter with come across overall impact of internal migration on health at origin among left behind family members in general and child health in particular. The impact of migration process i.e., remittances is a multidimensional effect in a source region. The empirical finding indicates that household receiving more remittances the health status of the left behind members is better in comparison to household receiving less remittances. Inter-alia the study has observed that remittances accrued from migrant have potential to make out differentiate the health status of left behind families at origin. In view of the objectives of the study i.e., impact of migrant remittances on health of left behinds with focus on child health, the subject matters we have analyzed and summarised in this chapter. It is found that more than three fourth (76.3%) of migrant household adult members suffered from at-least one disease as compared to 83.7% of non-migrant households. Furthermore, the study has been observed that, 22.3% migrant people belong to poorest quintile suffered from at-least one disease as compared to 14.8% richest quintile people. More than half (55.3%) of migrant household reported, their children had at least any one diseases in last two weeks prior to the survey as compared to 64.7% of non-migrant households. It is clear indication from the empirical evidences that, negative association between wealth

quintile and burden of diseases. More details the study draw an inference that the burden of childhood diseases is as high among children belongs to lower wealth quintile in comparison to higher wealth quintile. Well-being is the pathway for sound health. It has been observed that migrant children are better in their health well-being whereas social and physical well-being is better among non-migrant children (Refer Table 5.3.4.1). The finding also suggests that, children in the migrant households have better nutritional standard as compared to the non-migrant households; particularly the older age children (refer Table 5.4.1). It also suggests that the children of the migrant families are less prone to any diseases or morbidity and henceforth so as on mortality as compared to the non-migrant households (refer Table 5.5.1).

Besides these the impact of remittances to shape the health status of children, migration also bringing some new health knowledge and information on health as well as create a awareness among the household to prevent from various risk exposure on various diseases. This study also suggests that migrant household members are better in their health status as compared to non-migrant counterparts. In view of this, besides, the migration process, the other factors are also playing unique role to shape the health status of population. However, the role of the migration cannot undermine based on the empirical findings. With the empirical findings it also gears-up, household receiving more remittances spends more on health care. This is two ways process; one is spending directly on medical expenses other one is indirectly expenses on nutritional food intake. Both the direct and indirect ways are resulting better health outcomes and fewer incidences of morbidity as well as mortality.

Finally, it has been observed that internal rural-urban out-migration has magnificent impact on the health status of left behind family members through migrant remittances. As many past studies cited the impact of migration on health, the present study also drew the conclusion in same line. To substantiate the quantitative argument the study quote one of the qualitative finding [“ *Bidesibadi jibaru amagama re lokakanara chalicalana, arthika, swastya and sikyara khetrare bipula matrare labhabanaa hoichi. Ahi subidha kebala takanka madhyare simitanahi annyana gaama lokankara madhya bahuta subbidha heuchi. Purbaru ama*

gaama re besi loka roga re maruthile karanna tannka pakahre pasia nathila chikichha heba pain jadiba kichhi loka pakare paisa thila kintu semananka ate sabu kathha janna nathila abama jaddi ba janna thila swatstya seba painni ki ahi subhidha nathila jemiti ajkalli achhi. Bartamana ama gaana ra besi loka baharaku jai paisa patra bahuta kameile tennu semane abe bahuta subidha re achhanti. Tike kichhi roga hele tanka ghara pila kimba bada loka manaku turanta medical jauchhanti abama upachara karuchhanti". In English. Due to migration the life style of the people has changed. The process of migration not enhances the income level of migrant households but also their education and health status. More on he has categorically explained that before migration the household members are unable to access and utilize the health facilities because in lack of resources and awareness. Although few households had ability to pay but their limitation was their awareness of facilities. However, at present it has corrected in our village due to migrant remittances specially focus on child emergency medical situation. Moreover, the benefit accrued from migrant not only restricts with mover household members but also it percolates other household members in our village]. In conclusion we may summaries that migration has potential to improve the health status of left behinds particularly children left behinds. Hence, the finding suggests that migration is substituted not as an alternative for the overall development.
