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Social Disparity in Child Morbidity and Curative Care: Investigating for Determining Factors from Rural India

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SOCIAL DISPARITY IN CHILD MORBIDITY AND CURATIVE CARE: INVESTIGATING FOR DETERMINING FACTORS FROM RURAL INDIA

Rajesh Raushan* and R Mutharayappa**

Abstract

This Working paper is focused on illness prevalence as well as curative care for children under age of five years across different social groups in rural India, and India human development survey (IHDS) data is used to study these aspects. To capture differentials in illness, different demographic, HH economic and sanitation & hygiene indicators have been included whereas, for curative care, structural component of health care delivery is added. This was done mainly due to the fact that SC and ST are poor on both health outcome and also in accessing healthcare services. Univeriate and bivariate analysis have been used for estimation of IPR and their pattern across the social groups. Odds ratio estimates of Multinomial logistic regression has been used to observe differential in illness and curative care across the caste/social groups. The study reveals that social group having poor socio economic development level are poorly performing on reporting of morbidity/illness as well as on curative care behaviour. Availability of government healthcare facility and providers matters more for ST than any other social group. Poor utilization of government health facilities is still a major concern. There is need to create awareness about incidence illnesses, their possible symptoms & signs at community level mainly in the locality where poor and deprive people are living in rural India.

Key words: Children (0-5 years), Curative care, India Human Development Survey (IHDS), Multinomial logit regression (MNLR), Rural India, Short term morbidities (STM).

Introduction

Health is a phenomenon of well being and departure from it is termed as illness, sickness, morbidity, which may ultimately lead to disability and death for want of curative care. As a biosocial entity, it is regulated more by non-biological factors than biological factors. These non-biological factors are termed as intermediate determinants and factors, related to individuals and households apart from their social, economic, and cultural factors and so on. The differential treatment of these factors results in difference in health outcomes like in mortality and morbidity as well. On the scale of health outcome, mortality is measured broadly to provide the ground for progress in longevity of population but morbidity (or illness) seldom gets due importance. Moreover, morbidity may be a more useful indicator than mortality as it is related to the pain and sufferings of the individual. But the problem with morbidity is that it is difficult to measure it without bias. Despite the well- recognised problems and difficulties of measurement, there can be little doubt that reliable information on morbidity is extremely useful (Sen, 1998). Further, difference in illness among the people can lead to inequality or disparity among them. This inequality or disparity may be due to geographical, economical, social, and cultural factors. Worldwide, social

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gradients have been used widely to predict differential in distribution of disease, disability and death in any society on social scale (Krieger et al, 1993).

The "social gradients to health" is essentially a western construct and is found significant in explaining differentials in individual's health in developed world, and there has been very little investigation into whether in developing countries individual status of health is dependent of their social status. The social gradient is responsible for social disparity in health although the concept of social gradient vary from country to country. In a country like India, caste plays a major role in shaping social disparity into the outcome i.e., illness. Caste in India has since long been a persistent determinant of power, economic inequality, and poverty. The milieu of disadvantages and deprivation endured by the low castes is bound to have an impact on their health and has been found responsible for differential health outcome and healthcare behaviour (Nayar, 2007).

It is evident that there is inter-caste disparity in outcome, but even within the caste different individual, social, economic, cultural and other geographical factors shape their health outcome and healthcare behaviour differently and several studies in health and epidemiological research provide ample evidence to support this view (Nayar, 2007). But, most of the studies have used caste context to study health disparity at local level or SC/ST and Non-SC/ST at national and regional levels. Caste groups like scheduled caste (hereafter SC) and ST (hereafter ST) do not have identical characteristics; however several indicators of development of poor sections of SC/ST are identical to the poorer sections among other backward class (hereafter OBC) and *Other* (forward caste group, also named as general) caste groups. Many OBC caste people may have better health status than *Other* caste people and vice versa but we don't have sufficient evidence to strengthen this argument of existing health disparity. Thus, the issue of dissimilarity among different caste groups provides possible ground to researchers to investigate how identical characteristics often make differences in health status in a country like India.

Given the above complex scenario, and pitfalls, the study starts with theoretical narratives in the first section, followed by conceptualization of cast disparity in morbidity and curative care in section two. Section three expounds existing evidences of short term morbidities and healthcare differentials across different *caste groups* or *social groups* (terms in italics used interchangeably). Objectives, data source, methodology and analytical framework are explained into section four. Section five elaborates the disparity and differentials in illness prevalence and in curative care as well, among social groups in rural India. Section six provides the parametric estimates of multinomial logistic regression to compare the illness and curative care behaviour across the social groups. Study concludes with discussion, and suggestive measures.

Caste and Disparity in Outcome in India

1. Caste: A Theoretical Narrative in Indian Context

Caste is a hard bound reality and the caste system has been found at the core of social organisations in India for centuries. The caste system in India is believed to be nearly 3000 years old. The ancient Hindu society divided the population initially into four mutually exclusive, exhaustive, hereditary, endogamous and occupation specific Varnas- *Brahmins, Kshatriyas, Vaisayas,* and *the Sudras* and *Ati Sudras* (added later). Caste affiliation was articulated in all aspects of a person's existence in that period. The Verna

hierarchy was relatively straightforward, with the first three as superior to the last two. Economy was in rudimentary stage at the time; but as the economy started to grow and become more complex, the *Varna* system transformed into *Jati* which further morphed as caste. But, later this *jati* system become more complex in hierarchy as *Jatis* were not exact subsets of *Varna,* and there is considerable regional variation found in the evolution of specific *Jatis* (hereafter caste) (Deshpande, 2000), but they gained popularity in terms of specific castes.

A caste may be defined as a collection of families or groups of families bearing a common name which is usually associated with specific occupation and claiming common descent. A theoretical formulation of caste recognises caste as a system of social and economic organization (of production and distribution) governed by certain customary rules and norms, which are unique and distinct. The organizational scheme of the caste system is based on the division of people into social groups (or castes) in which the civil, cultural, and economic rights of each individual caste are pre-determined or ascribed by birth and made hereditary (Thorat & Newman, 2010).

In the Indian scenario, caste system is a complex phenomena and this complexity may be easily observed in their variation with varying extent of caste specific social groups and their individuals in having unequal access of advantages which leads to difference and unequal position (i.e., inequality) among them. This may be natural as well as social in nature. The natural inequality emerges from the unequal division of physical and mental abilities among the members of a society. The later arises from the social entitlement of people to wealth or economic resources, political power and status regardless of potential abilities possessed by individuals. Not only economic resources in societies vary according to the level of development and structural features of society, but also different groups tend to have differential access to these resources. Power enjoyed by the social groups also differ and offers another related social disadvantage and deprivation. These absolute as well as relative disadvantages and deprivation make them poor on development and well being. One aspect of departure from well being is the poor performance on health front leading to health disparity among them.

2. Conceptualization of Caste Disparity in Morbidity and Curative Care

Morbidity is a departure form well- being, leading to illness/morbidity. It is possible that this departure did take place due to biological factors but apart from this, non-biological factors are found contributing more in departure to illness, which is of two types - self perceived and observed illness. Perceived illness is the pain and suffering as perceived by an individual. But there are socially and culturally defined parameters of self perceived illness recognition and behaviour at both social and individual levels. Although, the perception of pain and suffering also vary according to the knowledge and experience to accept particular sign and symptom as illness, the willingness of an individual to acknowledge illness depends on social acceptance of particular types of illness and disability (Mechanic, 1986). Second, advancement or upgradation in position increases the knowledge and make people more capable to acquire the knowledge regarding a particular illness. It may also be understood that changes in individual social and economic status make changes in perceiveness of any symptom and sign as illness. It can easily be understood in terms of the notion of education and income; educated people report more morbidity than uneducated ones, and it is positively linked with income. The World

Bank living standard measurement study report states that self perceived morbidly rate has increased with rising income level (Murray & Chen, 1992).

In the above mentioned context, household environment also play an important role in shaping health outcome. Theoretically, it is widely argued that majority of diseases can be controlled significantly under improved hygienic household environments and hygienic condition is linked with social and economic status of the individuals. Under the framework of household environment and morbidity linkages, water source, toilet facility, house type, cooking place, fuel use for cooking and lighting, proper drainage, crowding, etc. have been found to significantly regulate morbidity prevalence and pattern at household as well as community level. It is more apparent in case of child morbidity as childhood is most vulnerable period in the life of individuals.

On the other hand, curative care is way to get rid of prevailing illness, termed as treatment seeking behaviour for any illness. But, the treatment seeking behaviour depends on the perception about severity of illness, understanding of their causal effect and affordability to availing treatment (Murray & Chen, 1992) on one hand, and the perceived efficacy of available health care, the ease of access to such care, and the affordability to access to available services on the other hand. Many times, knowledge and understanding of peculiarities of the illness itself and a variety of circumstantial and social factors limit the health seeking behaviour. In rural communities, cultural beliefs and practices often lead to self medication, seeking home remedies and consultation with traditional healers (Nyamongo, 2002). Additionally, economic capacity within the household economies limits the choice and opportunity of seeking treatment. Furthermore, physical non-availability of healthcare services including dearth of transportation and roads, physical distance to facility and time taken to reach the facility undoubtedly regulate the health seeking behaviour and health service utilization (Islam & Tahir, 2002). Utilization of available services and confidence in service providers also play a major role in deciding about the choice of health facility. Overall, curative health care demand depends upon the severity of illness, the availability of health care facilities, the access to these services, the economic conditions of households and a host of other socio economic factors.

Based on above mentioned theoretical linkages, the study conceptualizes that the illness will vary according to the social and economic position of particular caste group[1] at both inter and intra level due to their differential perception, perceiveness and knowledge about the same. It is well known that SC, ST and to some extent OBCs are poorly developed on social and economic scale in comparison to forward caste/*Other* and this difference finds reflection in illness prevalence also. Secondly, it is also be possible that within the same caste, some individual who are better on social and economic scale would report more about morbidity than who are poor on social and economic scale. Thirdly, the poor household environment would make difference in illness prevalence among different castes. On the issue of treatment seeking behaviour for prevailing illness, it tends to vary in accordance with theoretical understanding of curative care, economic well being of said individual within and outside the caste group and by availability, accessibility and affordability of healthcare services. Finally, these would

[1] The current classification of caste in India broadly classifies castes into four broad categories of Scheduled Caste, Scheduled Tribe, Other Backward Classes and *Other* or Forward Castes.

be reflected in inter-caste and intra-caste disparity in morbidity prevalence and curative care in the country.

Existing Evidence on Disparity in Morbidity and Healthcare

1. Definitional and Methodological Narratives of Morbidity Measurement

Measurement of health status is a complex exercise, and it is more so to measure morbidity due to definitional and methodological issues. Simply, morbidity is a state of ill health and departure of the individual from wellness and falling sick, and is termed as illness or disease. Morbidity can be measured in two ways, namely self-perceived and observed (Murray & Chen, 1992). Morbidity is primarily influenced by the behavioural decisions of the individuals or family, besides genetically inherited health endowments and the health environment in which they reside. Self-perceived morbidity measure is based on morbidity information, pertaining to incidence or prevalence rate of illness, type of illness, functional disability indicators and use of medical services collected through the surveys. This measure however, critically depends upon a person's knowledge and perception of illness, and willingness to report the same. This is one of the major limitations of morbidity study in any geographical settings. However, observed morbidity measure, on the other hand is based on the illness pattern as assessed by an independent trained observer using specific methods that lend themselves for repetition with some degree of consistency (Murray & Chen, 1992). Although observed morbidity incurs more reliable data, the high cost involved in data collection leads to reliance on self perceived morbidity measures. Hence, most large-scale morbidity surveys depend on the responses of individuals to structured questionnaires.

Generally, research studies on morbidity struggle on the measurement issues such as definitional problem, choice of reference period, recall bias and the perception and cultural influences as well as data collection methodology, which affect the reporting of morbidity (Murray & Chen, 1992; Gumber & Berman, 1995, Duraisamy, 2001). Some studies have examined morbidity pattern across population groups, inter-state as well as regional variation in morbidity in the country using large-scale national survey data of NSSO[2], NCAER[3], NFHS[4], Kerala State Survey[5] etc. (Kannan et al., 1991; Visaria & Gumber, 1994; Sundar, 1995; Shariff, 1995, 1999; Duraisamy, 1995, 1998, 2001; Gumber & Berman, 1997). Case studies covering small geographical regions have also been done (Chatterji & Pandu, 1995). These existing studies are descriptive in nature and have not gone beyond the variations in morbidity levels and their explaining variables. Even these measures could not be compared at the national level due to their narrow regional and local relevance, except very few widely accepted parameters. The reasons for these lacunas are conceptual, methodological besides limited regional relevance and lack of data availability on large scale.

[2] National Sample Survey Organisation.

[3] National Council for Applied Economic Research.

[4] National Family Health Survey.

[5] Kerala State Survey.

2. Child Morbidities and their Explaining Constructs

Usually, health status of people is measured in the perspective of mortality and life expectancy, although mortality rate at infancy is widely used in this context, though yardstick of measuring child health different altogether. There are voluminous studies that have used child mortality, nutritional aspects and anthropometric indicators to measure child health (Duriasamy & Duriasamy, 1995). However, morbidity among children has not got much attention in this regard even though the children are the most vulnerable to diseases (Duriasamy, 2001). On the line of studying child health, Mosley & Chen (1984) postulated the pathways through witch maternal and other socio economic and cultural determinants regulate child health apart from biological determinants (mainly in developing countries). Their study distinguished two sets of factors- biological and socio-economic factors. They argue that social, cultural and economic status of a household promotes or offset child health through their impact on the biological inputs. A Plethora of studies have investigated and found significant effect of the above mentioned co-variates in explaining child health in developing countries including India. However, most of the studies are found to have used this framework to study mortality and nutritional aspect of child health. Moreover, few other studies have tried to capture child morbidity but those studies are either based on small sample size or based on regional/local level, though a few of them have national relevance also (Duraisamy, 2001) in last two decades.

Studies have found that a small number of diseases such as diarrhoea, respiratory diseases like pneumonia have been found responsible for two-third deaths among children at early age, and sadly the same situation is bothering researchers even today, as has been very aptly pointed out by UNICEF. These afflictions are still playing a major role in shaping child health scenario globally. However, the determinants of child mortality differ according to the type of disease and place of residence. In view of the havoc being caused by diarrhoea and respiratory diseases, an in-depth analysis of the causes and consequences of these two diseases has become inevitable. Sadly, very few detailed studies are available on these on these afflictions currently. Few studies like Duraisamy (2001) drawing data from developing world have looked into the incidence of these two diseases and examined their determinants. Study based on Jakarta showed that defence mechanism of mother significantly reduces the chance of her child or herself getting diarrhoea. On the other hand, piped water supply was not found significantly determining morbidity. Same was the evidence produced by she avers that the better quality of drinking water along with better hygienic practices within the home were responsible for the reducing the incidence of diarrhoea among young children below age of three in rural India.

Many factors are found significant in explaining morbidity differentials at early ages. Mother's health profile and social and economic attributes of the household are found significant in this regard. Further, household income or similar indicators explaining household economic status have also been found significant in explaining morbidity differentials in varying degrees. Dilip's (2002) study on Kerala's morbidity pattern and found that prevalence of both acute and chronic diseases was higher in upper income classes than in lower income classes. Dilip (2002) reported that burden of non-communicable chronic conditions was higher among economically well-off people than the poor sections of the population. This may be because of the better lifestyle and higher awareness and perception of economic wellbeing of rich people vis-a-vis their poor counterpart. On the other hand, Duraisamy

(2001) study in rural India did not find any systematic relationship between household income and prevalence of illness. His study found an initial increase in illness with increase in household income but a sharp decline in prevalence with further increases in income. In contrast, in a recent Kerala based study, it has concluded that the probability of ill health for the poor is significantly higher than the rich. This happens because of poverty, as the poor people have less access to healthcare as they also have less resource to spend on preventive and curative care.

An inverse relationship is found between education and morbidity prevalence (Duriasamy, 1998). However, other studies have found a positive association between education and morbidity prevalence. Latest study by Duraisamy (2001) separately used mother's and father's education to establish the relationship with morbidity across the population groups and found positive and consistent relationship with mother's education but not with father's education, although it was positive in case of child illness. The higher educational attainment of a women and higher decision-making power of women within the household and consequent greater willingness toward health care of sick children must behind this finding (Chakarbarti, 2012). A study by Adjei and Buor (2012) based on south Ghana has found that rural households with relatively low socio-economic status (mainly in terms of income levels) and levels of education bear much of the burden of poor health and high prevalence of morbidities in rural Ghana although the study included population in all age groups. A majority of households with relatively low education and low income levels experienced a very high prevalence of the diseases including malaria, whooping cough, skin and diarrhoeal diseases as well as measles. Further, this survey's findings also show higher morbidity rates in rural areas than in urban areas (Sundar 1995; Dilip, 2002). In contrast, several other studies have reported that morbidity rates are higher in urban areas than in rural areas (Duriasamy, 1995; Sundar, 1995).

3. Curative Care and their Explaining Constructs

As Morbidity is a departure from well being onto ill health, curative care is to take measures to get cure from these illness. In the event of an illness, a majority of individuals seek some form of treatment within the household or outside the household, but whether a household would seek formal care or not in the event of a child falling sick depends on several extraneous factors. Mechanic (1996) has clearly mentioned that the willingness of an individual to acknowledge sickness and seek treatment depends on social acceptance of the particular types of illness and disability. To the best of our knowledge, the sole study based on rural India, dealing with household's choice of health care for children with such morbidity pattern is that by Duraisamy (2001) which found a decline in probability of choosing public healthcare services with increase in child's age. He considered 0-14 year age group individuals as children i.e. the infant, child and the young adolescent, and found evidence of their having sought treatment for diseases such as diarrhoea and ARI. The prevalence of these diseases considerably decreases when a child enters into adolescence (age ten onwards) than in early stages of childhood. Educational level of mother has been found significant in treatment-seeking behaviour as educated mother prefer to use public and private providers rather than no treatment or self treatment. Finding on healthcare behaviour at household level in the study by Duraisamy (2001) is that household income has a positive and statistically significant effect on the probability of choosing private than public providers.

The SC and ST are less likely to seek treatment in general and particularly from private sources. The distance to health facilities (doctor) significantly discourages accessing treatment from private providers while good road connectivity significantly increases the utilisation of public and private health facilities. Dilip (2002) argued that factors like the degree of accessibility of health care services and the capacity to seek care were creating artificial differentials in morbidity and hospitalization among different subgroups in Kerala. However, some Jakarta based studies have found that household's environment matters more than community facilities such as availability of good roads or doctors in the village.

4. At the End

In the domain of health research, studies which cover morbidity trends, patterns and prevalence show a unique pattern across the population group. The prevalence of morbidity at disaggregate level shows a J-shaped relationship curve between age and morbidity- an indication that elders and children are supposed to experience higher prevalence of illness (Kannan et al, 1991; Sharrif, 1995, Gumber, 1997). Moreover, Duriasmay (1995) has mentioned about a U-shaped relationship-curve representing the link between morbidity and age of individuals, placing both children and aged at the top. In addition, Duraisamy (2001) affirmed that probability of being ill, duration of illness and severity of illness decreases with age of child. This implies that infants and the very young are most susceptible to these illnesses. Second, it is also argued that no clear linkage is discernible between morbidity and healthcare across income groups as measured by income or consumption expenditure, but it may not be the case of all the studies in the health research domain. Thirdly, education provides ground to gain knowledge and to make responses in reporting high morbidities and also responses in adequate use of healthcare services. The pattern of infrastructural development also confirms the perception that well off areas get more services thereby enabling more people to access such services than poorly developed ones though infrastructural development matters more for low caste/poor people than well off sections. However, further investigation is required to strengthen the argument put forth herein.

Objectives and Methods

1. Objectives

Objective of the study is two folds-

- To analyse illness prevalence and curative care differentials among social groups in rural India.
- To predict parameters of illness and curative care among social groups in rural India.

2. Database for the Study

For the study, India Human Development Survey (IHDS)[6] data has been used. IHDS is a nationally representative survey of 41,554 urban and rural households consisting 215,754 individuals. As the study is focussed on rural India, a total of 1, 43,374 individuals have been interviewed from 26,734

[6] IHDS data are cross sectional and collected during 2004-05 jointly by the University of Maryland, USA and National Council for Applied Economic Research (NCAER), India across 28 states and 5 union Territories except Andaman & Nicobar, and Lakshadweep islands. It covered 384 districts, 1,503 villages and 971 urban blocks, located in 276 towns and cities.

households located in 1503 villages across the country. There are two important reasons for choosing rural India as the focus of the study. First, all the castes/social groups are spread over rural India in better way and second, government sponsored health care infrastructure and their delivery system is more visible in rural parts of the country. Of the 1,43,374 individuals in the sample, 17127 are children in the age group 0-5, and they are the prime focus of this study. (See Table A1). The main features[7] of IHDS data are that it include many more other indicators of human development apart from health indicators at the national level. In regard to the quality and national representative character of the data are concerned, IHDS is comparable to National Sample Survey (NSS) and National Family Health Survey (NFHS) findings (Desai et al, 2010).

3. Analytical Framework

Morbidity is one of the important indicators to measure health status, and it may be either short or long term. Here, whole study is based on short term morbidities among 0-5 year children in rural India. Two dimensions of child health are investigated in this study. First is to observe the prevalence of illness and second is the curative care for those illness among different social group i.e., inter-caste and intra-caste differentials. Throughout the study the terms 'short term morbidities', 'morbidity' and 'illness' have been used interchangeably; so, unless the name of specific disease is not mentioned, these terms denote morbidity. To observe the magnitude of illness, illness prevalence rate (IPR) has been calculated and used as under:

$$\text{Illness Prevalence Rate (IPR)} = \frac{Number\ of\ Ailing\ children\ during\ the\ reference\ period}{Number\ of\ exposed\ children\ in\ the\ defined\ area} \times 1000$$

The reference period for these illnesses is 30 days preceding the survey and the weighted case is used throughout in the analysis for better comparison and generalization of illness among different social groups in rural India.

Illness prevalence rate (hereafter IPR) has been calculated for short term morbidities at aggregate level and for fever, acute respiratory infection (hereafter ARI) and diarrhoea (specific morbidity) at disaggregate level for each social group separately. These are the diseases, responsible for more than two third of the childhood mortality throughout the world and India in particular. To find out disparity in curative care, treatment-seeking behaviour among each social group for short term morbidities has been considered. Here, it is important to mention that treatment seeking behaviour is not available separately for each short term illness. Treatment seeking behaviour among each social group has been provided for two healthcare providers as well as two places for getting those services. This will provide insights for better understanding of disparity in utilization of available healthcare services among different social group in rural part of the country.

Second part of the analysis is based on multivariate statistical techniques using multinomial logistic regression. Multinomial logistic regression (hereafter MNLR) is well suited for response variables of categorical nature and for one or more categorical or continuous predictors. MLR is used when there are more than two categories in the response or outcome or dependent variable (Hosmer & Lemeshow,

[7] Desai et al: India Human Development Survey: Design and Data quality. Technical Paper No. 1, IHDS. http://ihds.umd.edu/IHDS_papers/technical%20paper%201.pdf

2000) and both categorical and continuous independent variables can be incorporated as parameter or predictors. In the study, MNLR has been chosen for two reasons: First, MNLR provides an effective and reliable way to obtain the estimated probability of belonging to a specific social group, as also the estimate of odds ratio of different characteristics of particular social group in explanation for falling ill (Scott et al, 1999). Second, MNLR provides estimates of the net effects of a set of predictor variables on the response variable (Morgan & Teachman, 1988). Even though logistic regression has been used widely in health research to explain predictors of inequality or disparity, the use of MNLR is rare (Peng & Nichols, 2003) because the caste based study has clubbed the four different social groups into two broader categories of ST/ST and Non-SC/ST. Hence, use of MNLR is both feasible and suitable for the type of data handled.

MNLR is a statistical technique that uses one of the response categories as a baseline or reference category, and by default it chooses the last category as reference category in absence of any intervention. It calculates log odds or coefficient (β) for all other categories relative to reference category and then log odds the linear function of the predictors. However, when the independent variables are categorical, coefficients become more difficult to interpret and odds ratios (Exponential of β) are a very useful alternative in this case (Howell, 2002). But, the multiplicative effects in the form of elicited parametric estimates on the odds-ratios in the MNLR model[8] need cautious interpretations as increasing odds ratios may not necessarily ensure increase in probability of the response category compared with the reference category, as is the case in binary logit model (hereafter BLM). In BLM the sum of the probabilities in the numerator and denominator add up to one and hence increase in odds-ratio automatically implies increase in the probability, as the probability is a monotonically increasing function of the odds-ratio. In MNLR model, the sum of probabilities on numerator and denominator do not add up to unity and thus increase in odds-ratio could be possible even when both the probabilities in numerator and denominator are decreasing with proportionate decline in the numerator being less than proportionate decline in the denominator (Gulati et al, 2010).

Considering above mentioned qualities of MLR, predictors of Illness as well as sought curative care is fitted with the maximum likelihood method using MNLR model. The reference category for the MNLR model of illness is ST children who experienced any of the above mentioned illness in preceding 30 days with respect to *Other*, OBC and SC children who have reported as fallen ill with the same illness. To highlight the net effect of individual characteristics, maternal factors, household economic status and household environment are considered as predictor variables in MNLR model. For the treatment of the said illness, reference category is ST children who avail the curative care with respect to *Other*, OBC and SC children. Individual, maternal and economic status and infrastructural factors are included as predictors to demonstrate the net effect curative care behaviour.

[8] For further details on formulations, estimation procedures and proper or cautious interpretations of the multiplicative effects in the multinomial logit model one can look in technical literature "Statistical Models for Causal Analysis" (Retherford and Choe, 1993).

Result of the Study

Social Disparity in Illness Prevalence in Rural India

1. Estimates of Illness and their Social Differentials in Rural India

Morbidity at early age is a major encumbrance for later development of an individual, and some diseases like acute respiratory infection (hereafter ARI), diarrhoea, etc. are very perilous at an early age. Also, these diseases are responsible for high mortality at childhood age in developing world including India (WHO, 1998; Black et al, 2003). Morbidity situation in rural India has revealed that around 27 percent children (weighted approx 28 percent) in 0-5 years have experienced some short term morbidity in thirty days preceding the survey, ranging from around 22 percent (weighted 23 percent) among ST children to 27 and 28 percent (weighted around 30 percent and 29 percent) among OBC and SC children (Table 1 & A1).

Table 1: Illness Prevalence Rate among different social groups in rural India

Prevalence Rate	*Other*	OBC	SC	ST	Total
Fever	246	258	256	179	247
ARI	130	127	140	77	126
Diarrhoea	91	114	108	63	102
IPR*	284	298	292	226	286

Source: Authors' calculation using IHDS Data.

Figures in table represent bivariate relationship are statistically significant based on Chi-square test ($p>0.05$).

* Illness Prevalence Rate per 1000 Children based on weighted case during last 30 days.

Estimates of prevalence rate for short term morbidities (hereafter STM) and diseases included under STM for rural India are provided in Table 1. As can be seen from the table, the overall illness prevalence rate (hereafter IPR) is 286 per 1000 children in rural India, and varies from 247 per 1000 for fever to 102 per 1000 for diarrhoea. A study by Duraisamy (2001) for rural India has found IPR of 239 per 1000 for 0-4 year children in the country with same reference period of 30 days. Comparing our findings with other well known studies in national domain like National Sample Survey (NSS) and National Family Health Survey (NFHS) is clumsy due to various reasons. For example, NSS 60th round (2004) considered children aged upto 14 years and the reference period was 15 days. Even in case of NFHS, although the age group was 0-4 years (our study age group is 0-5 years) reference period was only 15 days. Moreover, during NFHS-3 round, prevalence rates for fever and diarrhoea were 151 and 90 per 1000 children respectively for rural India, and in the case of ARI, it was 60 per thousand for rural India, but according to our study, it is 126 per 1000 for the same period. The apt explanation for the difference in estimates is that ARI and diarrhoea are more sensitive to seasonal variation than fever. Secondly, these questions in NFHS-3 were been asked to women in regard to their last three children but in IHDS these questions were asked to all family members in the households. Thirdly, reference period was 30 days for IHDS and 15 days for NFHS study. Even, different rounds of NFHS can't be

compared[9] (IIPS, 2007). The use of different definitional, conceptual and methodological strategy for these studies makes comparison pointless for short term morbidity in the Indian context[10], and therefore calls for the use of a universal methodology for this purpose. The study has also calculated the estimates of IPR for all the states and caste groups therein (Table A1) according to which high difference in illness prevalence exists, ranging form of 406 per 1000 children (highest) in Bihar in north rural India to 117 per 1000 children in Karnataka (lowest) in south rural India, although there exist wide caste group differentials across states and castes.

Table 1 also provide the estimates of prevalence differentials for different morbidities among each social group. Overall IPR varies form 298 per 1000 children among OBC to 226 per 1000 among ST children. For fever, it varies from 258 per 1000 in OBC children to 179 per 1000 per ST children; 140 per thousand SC to 77 per 1000 in ST children for ARI; and 114 per 1000 in OBC children to 63 per 1000 in ST children for diarrhoea. The highest prevalence rate of fever than any other mentioned illness rate across all caste groups is perhaps due to the fact that fever is the first symptom for the other more severe ailments, and easily perceivable due to rise in body temperature, though it may not be the correct diagnosis all the time. Among other reasons, the highest response of prevalence of any illness among children of OBC/*Other* could be due to higher perceiveness while the lower response among ST children could be due to lower perceiveness, poor recognition and meagre social and economic development of ST compared to the rest of the caste groups. Here, morbidity prevalence can't be compared as most studies have looked at disparity on the line of SC/ST and Non-SC/ST population.

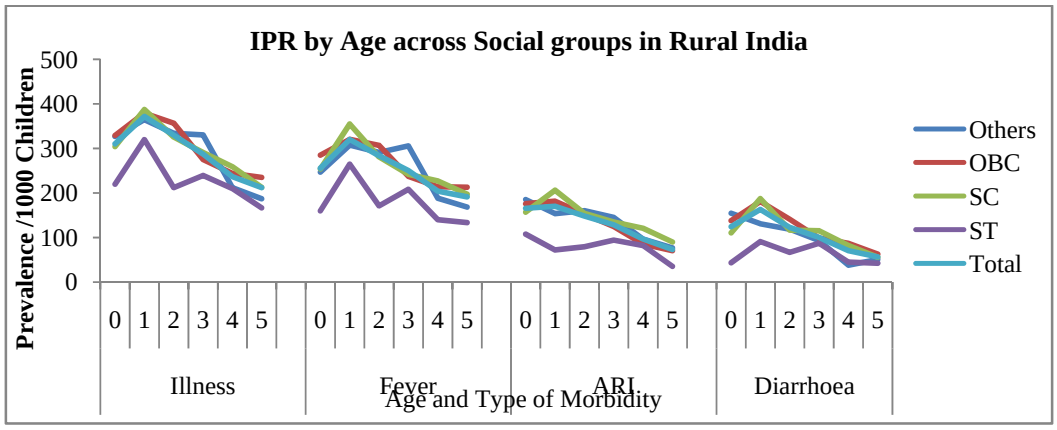
2. Social Differentials in Age pattern of Morbidity

Age pattern of morbidity provides a better understanding of IPR of children in 0-5 age group in rural India. First one year after birth is more critical for an infant, their health being always at risk due to myriad circumstances, responses of high morbidity and mortality is high among them. This notion of existing circumstances at early age supports the age pattern of morbidity in rural India also. Across all social groups, IPR, fever, ARI and diarrhoea prevalence rate is the highest at age one with some exceptions. Overall IPR varies from 372 per 1000 at age one to 212 per 1000 children at age five. Moreover, below age one it is 310 per 1000 children. Same is the pattern found among all social groups (Figure 1).

[9] International Institute for Population Sciences (2007): National Family Health Survey-3 (NFHS-3): 2005-06. Mumbai: IIPS. Chapter-9, pp. 234.

[10] Gumber Anil and Peter Berman (1997): Measurement and Pattern of Morbidity and the Utilization of Health Services: Some Emerging Issues from Recent Health Interview Surveys in India. *Journal of Health and Population in Developing Countries*. Vol. 1 (1), Fall 1997, pp. 16-43.

Figure 1: Social Differentials in Illness Prevalence Among 0-5 Years' Children in Rural India



Considering different short term illnesses separately, the highest prevalence is found either at age zero or one across all social group. Like in case of ARI and diarrhoea, children among *Other* caste groups have highest prevalence rate at age zero among all the social groups. Regarding age variation between highest and lowest prevalence of any illness across the social groups, it is the SC children who have highest age variation for all the above mentioned illnesses. It is 175 for overall IPR, 157 for fever, 116 for ARI and 132 for diarrhoea. The lowest variation is found among ST children and it is for ARI and diarrhoea. It may be due to cultural perceiveness of the sickness as a disease followed by under reporting and lack of knowledge and exposure to the same. In a nutshell, age pattern of child morbidity in rural India is in an inverted sickle shape in the diagram. However, some studies have mentioned it as being in J-shape of U-shape (Duraisamy, 2001). Here, it is worth to mentioning that the shape of age pattern of morbidity depends upon age group of the sample population.

3. Seeking Treatment Differential among Social group in Rural India

There is no doubt that every individual require curative care, but there is the possibility that every individual undergoes/receives the required treatment. The demand for curative care depends upon availability, accessibility and affordability of health services apart from perceiveness of severity of the illness, as is apparent form of treatment seeking behaviour for the above discussed ailments discussed above (Table 2). It is found that around 95 percent of children have undergone treatment for some illness, i.e., it varies from 95.4 percent for fever, 94.1 percent for ARI and 94.7 percent for diarrhoea. It is much higher than the figures reported by any other study for short term childhood illness. In contrast, the figures reported by NFHS third round are 60-70 percent for Fever, ARI and diarrhoea (IIPS, 2007). According to the study by Duraisamy (2001), 80% of sick children have undergone for treatment. There may be three possible explanations for the high variation in these studies. First, as a well though well known and reliable sources for morbidity data, NSS and NFHS do not include self medication, treatment by traditional healer or taking across-the counter drugs as a part of seeking treatment for any illness. If these healthcare providers are excluded, it will come down to around 90 percent in the study. Second is about the type, number of morbidities and their reference period under illness category to which treatment has been sought is not readily available. Third, variation in age

group of population for which treatment is sought is also not clear. One important lacuna in treatment seeking behaviour for short term morbidities in IHDS data is that question has not been posed separately for each short term illness; therefore it might be possible that individual has undergone treatment for any one of the mentioned illness or for all the said illnesses. So the likelihood of inflated numbers can't be ruled out, and this needs to be looked into.

Table 2: Seeking Treatment for Different Illness in Rural India

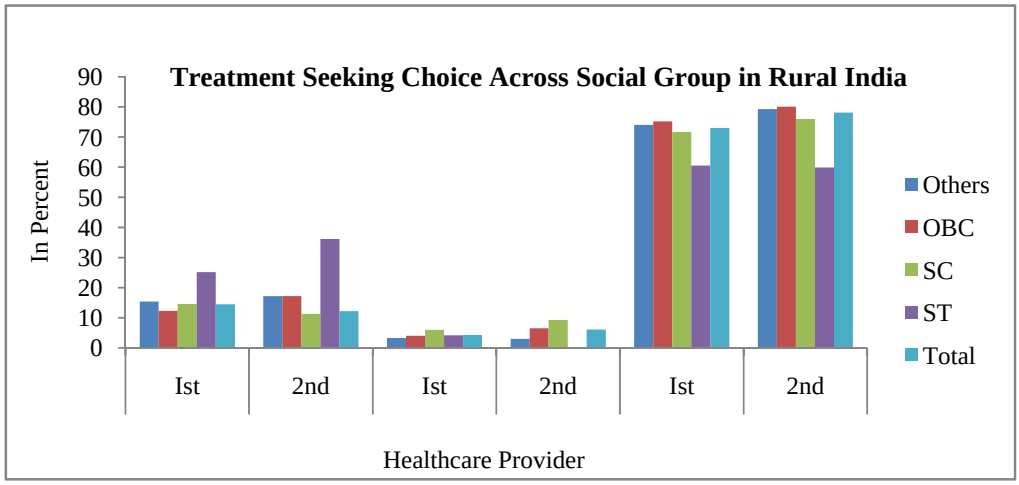
Treatment	*Other*	OBC	SC	ST	Total
Fever	94.9	96.6	94.8	92.3	95.4
ARI	94.9	96.3	91.7	90.2	94.1
Diarrhoea	95.0	95.6	93.7	91.8	94.7
All	**95.0**	**97.1**	**94.5**	**88.1**	**95.3**

Source: Authors calculation using IHDS Data

* Figures in table represent bivariate relationship are statistically significant based on Chi-square test (p>0.05).

Regarding caste group differential in seeking treatment, it varies from 97 percent among OBC children to 88 percent among ST children. For different illnesses it varies from 97 percent to 92 percent for fever, 96 percent to 90 percent for ARI and 96 to 92 percent for diarrhoea among OBC and ST respectively. Findings show that highest treatment seeking behaviour is among OBC children (Table 2). Availability of healthcare facilities within the village and road connectivity from the village are significantly influences the health-care seeking behaviour of the poor. Findings also highlight the fact that more and SC and ST children are seeking treatment currently than earlier. For example, around 25 percent more SC children and 18 percent more ST children have undergone treatment after the village received road connectivity (Table not shown here).

Figure 2: Healthcare Choice among Social Group in Rural India



* A- Govt. Health Personal, B- Govt. Health Personal in Private, C- Private Health Personal

4. Social Disparity in Source of Treatment in Rural India

Selection of treatment source by respondents to avail curative care- type of treatment and also two of their visits for treatment outside the village have been considered to see the variation in accessibility of treatment source across different caste groups. It is found that maximum number of children got treated by private healthcare personnel, followed by public healthcare personnel during both the visits (Figure 4). The study also found that 73 percent of cases took treatment from private health care personnel in the first instance of ailment compared to 14 percent from government health care personnel. In regard to children who needed treatment for a second time, the use of private healthcare personal increased by 5 percent as against a 2 percent decrease in taking treatment from government healthcare personal. It is also observed that the practice of seeking treatment from government health personnel who worked in private health facilities increased from 4 percent to 6 percent while getting treatment for the second time. The practice of taking medicines from drug-stores or traditional healers was around 8 percent during the first instance of seeking treatment, but it decreased to 4 percent during the second instance of seeking treatment. Interestingly, utilization of these types of treatment and self medication decreased with repetition of visits for treatment (Table A5). Table A5 indicates that the percentage of children getting treatment for fever etc. was the highest among ST and the lowest among OBCs during both first and second instances of seeking treatment. Highest percentage of ST children has got treatment by government health personal as against of lowest among OBC children for fever at both visits.

It is evident from the responses from respondents that even though government health care system has expanded considerably, there still exist several constraints that deter the poor from accessing government health facilities in rural India. The more significant constraints are availability of time, distance to government health facility, and callous treatment at government facilities. OPD services at government health facility are termed as sheer wastage of time. Indifferent approach and callous treatment at government facilities compel patients to approach private health-care facilities, although the former are better for indoor treatment than the later (Dhillon & Srivastava, 1986). Further, government health facilities are not easily accessible and also not in accessible distance from the village; therefore, in most instances patients are rush to private health facilities. The Coverage Evaluation Survey conducted in Bihar has found that the average distance to government health facilities is around eight kms (UNICEF, 2010). Higher distances from primary health centres/ health sub centres in rural India deter women from visiting such centres and rather compel them to make higher use of private health care facilities for healthcare purposes. It is distance to govt. health facilities that discourage utilization of such facilities and opt for closer private health facilities (Gulati et al, 2010).

Thus, lack of faith in government health personnel and poor availability of government health facilities increase the likelihood of higher utilisation of private health facilities. It can also be clearly observed from figure 2 that private health facilities are contributing the highest in providing healthcare than the rest, although figure 2 also shows that this trend is true for both first and second visits to seek treatment. Furthermore, figure 2 illustrates the social disparity in accessing of health-care facilities between two consecutive visits. It is clear from figure 2 that the highest percentage of children getting treatment from government health-care personnel for 1st and 2nd visits together are from ST category

and the percentage of second time visit of ST children is found to increase from 25 to 36 percent. It is OBC children who are seeking the lowest percentage of treatment from government health personnel. Treatment by private health personnel has increased by 20 percent among OBC during second visit. This finding is also in line with that of other studies which have found high utilization and reliance on government health services by poor households, and that it declines with increasing socio-economic status (Gumber & Burmen, 1997; NSSO, 2004; IIPS, 2007). The share of OBC children seeking government health care facilities decreased by 5 percent while this percentage for ST children increased by 11 percent for second visit for use of government health service. Overall, the higher use of private healthcare services may be attributed to easy access, shorter waiting time, longer or flexible openings hours, better availability of staff and better attitude and behaviour with patients in comparison to government healthcare providers (Bhattia & Cleland, 2001).

5. Differentials in Place of Treatment among Social Group in Rural India

Physical distance of the available health facility and time taken to reach the health facility undoubtedly influence the health seeking behaviour on one hand, and is governed by household economies on the other hand. Interestingly, an analysis based on visits to more than one place for seeking treatment reveals that for the first visit most of the households across all social groups have used the services available in villages of their residence (same village). However, health facility is public or private is a different issue and is not the concern of this study. The proportion of children seeking treatment in the same village (first time visit) varies from 58 percent among SC children to 41 percent among ST children (Table 3). It is possible that due to non availability of healthcare facilities in the village of residence, people of seek health services in other places/villages. Many earlier studies have found that use of health care facilities diminishes with increase in distance to such facilities. Findings of our study is in line with earlier studies in that it is totally true for first visits for treatment and even for second visits the same is true, though health facilities available in another neighbouring village is found preferred over such facilities in other towns or the district Head quarters. Our finding is similar to the finding of Gautham et al (2011) which established that most rural persons sought first level curative care at health facilities closer the home although study was based on the situation in Odisha and old Andhra Pradesh.

Table 3: Two consecutive Place of Treatment among Social Group in Rural India

Treatment Place	*Other*		OBC		SC		ST		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Same Village	49.7	38.5	49.8	17.9	57.5	34.8	41.9	38.5	51.1	29.0
Another Village	34.7	38.8	34.0	49.3	29.1	39.9	35.4	45.2	33.1	43.7
Other Town	11.5	12.7	10.8	20.4	9.5	17.9	19.2	12.3	11.3	17.3
District Town	4.1	10.1	5.5	12.3	3.9	7.4	3.5	3.9	4.6	10.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Authors calculation using IHDS Data.

* Figures in table represent bivariate relationship are statistically significant based on Chi-square test (p>0.05).

It is seen that there is a marked increase in the percentage of people going to another village, another town or district town at the second and consequent visits to get treatment either in government or private facilities. Percentage wise, such visits to another village have increased by 10 percent; to other towns by 5 percent and to district towns by 5 percent (Table 3). On the scale of differentials in utilization of services across different social group, the maximum variation is found for OBC who are the maximum users of available services in other villages at second visits. It is also important to point out here that visits by ST people other towns for getting treatment have decreased by 7 percent than the rest of the social groups. It seems that poor economies as well as accessibility problems are deterring ST households from seeking curative care in rural India.

Parametric Estimates of Illness and Curative Care across Different Social Group in Rural India

1. Assessing Multinomial Logistic Regression Model Results and Illness Probability estimation across the Social Groups

Relative risk of falling ill and the degree of seeking curative care across social group is one of the important yardsticks to measure the enduring factors catalysing inequality and disparity among them. Although poor socio economic status have been found significant in contributing to high illness and poor curative care behaviour among the social groups, their relative risk among each social group is still not measured properly. Given this backdrop, this section is focused on parametric estimates of relative risk based on selected constraining parameters of being ill and curative care, using odd ratio generated through multinomial logistic regression. For illustrating the results of multinomial logistic regression used to analyse the odds ratio of relative risk among different social groups, ST has been used as a reference group. Here, the point should be kept in the mind that multinomial regression odds ratio (expβ) compares the relative risk or probability, *one to one*, i.e., fixing one category of dependent variable as reference category and generating odds ratio for the rest of the categories of response variable, holding predictor variables as constant.

Table 4A: Model Fitness for Illness across Caste Groups in Rural India

Model	Model Fitting Criteria			Likelihood Ratio Test		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	9541.284	9560.470	9535.284			
Final	8584.525	9064.182	8434.525	1100.759	72	.000
Goodness of Fit						
				Chi-Square	df	Sig.
Pearson				10736.85	8244	0.000
Deviance				7557.664	8244	1.000

Source: Authors' model fitting information based on IHDS data

Ahead of analysing the relative risk (expβ) of being ill (Table 4 C), model fitness for illness across the social group as well as probability of being ill has been calculated and provided in Table 4 A

and 4 B. Although there are several ways to access the model fitting, what is most commonly used is the likelihood ratio test. Likelihood ratio tests were examined to determine the improvement over null model/intercept-only model (model without any predictor variables). According to Peng et al. (2002), "An intercept-only model serves as a good baseline as it does not contain any predictors". Here, a larger amount of change between the two models, namely intercept only and final (Larger Chi square value: 9535.284 - 8434.525= 1100.759), provides ground for greater improvement in the model fit. It is also important to add here that a larger chi square suggests a larger contribution of the predictor variables to the outcome variables than the null model. Here, the final model is significant and significantly different from the intercept only model ($p<0.001$). Here, Pearson chi-square has also been found significant ($p<0.001$) with high value supports the predictors variable in explaining well about illness across the social groups.

Table 4B explains the probability of being ill across the social groups; controlling for a set of individual, maternal and household variables has been exercised using two other types of binary logit model (BLM) also in consideration with MLR for better understanding. MNLM and one BLM use ST as reference category whereas the other one uses *rest* as reference category. As it is well known, the better off caste groups are doing well on health indicators compared to poor caste groups like SC and ST and to some extent to OBC (Nayar, 2007). In all three models, probability of falling ill is much less for *Other* caste groups (0.11-0.20) whereas SC and OBC have much higher probability of falling ill. An analysis of BLM1 which used *rest* as reference category, has shown that ST have high probability of falling ill than *Other,* but a low probability compared to SC and OBC caste groups. It is possible that the poor perceiveness and recognition ability for reporting any sign or symptom of ailment as 'illness' of ST is the reason for their reporting low probability of falling ill compared to SC and OBC.

Table 4B: Using Different Type of Logit Model Estimated Probability of Being Ill across Social Group with reference to ST/Rest in Rural India

Model Type*	Ref Cat.	ST	SC	OBC	*Other*
MNLM	*ST*	NA	0.32	0.54	0.20
BLM1	*Rest*	0.19	0.28	0.59	0.11
BLM2	*ST*	NA	0.89	0.90	0.11

*MNLM: Multinomial Logit Model, BLM: Binary Logit Model

Source: Authors' model fitting estimation based on IHDS data.

1. Odds Ratio Estimates of Illness among Different Social Group in India

Based on the results from MNLR provided in Table 4C, the relative risk of falling ill using odds ratio ($exp\beta$) is elaborated in this section. The odds ratio indicates how the risk of the outcome falling in the comparison group compared the same falling in the referent group changes when manipulating for a set of variables keeping other factors constant. First, relative risk of falling ill or reporting sick among *Other* verses ST children is explained here. Coming to children's age and illness probability, it is found that early ages are more risky except for age one among *Other* compared to ST children; however it is found highest at age two (odds ratio of 1.263). At age one, relative risk of falling sick is the lowest (odds ratio

of .648) among *Other* children compared to ST children. On the other hand, it can be said that ST children at age one are at more risk of falling ill although it is statistically insignificant. For males compared to females, the relative risk of falling ill is high among *Other* children ($p<0.005$) than ST children controlling for other variables in the model. Increase in women's age shows increase in reporting child illness among *Other* compared to ST with decreasing significance from $p<0.005$ at age 15-29 years (relative risk of 0.310) to $p<0.05$ at age 30-39 years (relative risk of 0.485) compared to 40-49 years.

The level of education posing varying risk of illness comparing *Other* to ST children but have not found significant. Comparing higher secondary and above educated women to rest of the education level, illiterate women having odds ratio of 0.789, secondary educated having odds ratio of 1.328 for *Other* household women to ST household women. Comparing poorest wealth index to richest one, poorest children having relative risk of 0.064 ($p<0.005$) than richest one among *Other* compared to ST. It increases with increase in wealth index among *Other* comparing to ST. However, it does not mean that with increasing wealth index, reporting of illness decreases but the increase being proportionate in not found true. In a comparison between HHs with main source of income from business and those with main income from service occupations, it is found that the relative risk of illness is very high of 5.904 ($p<0.005$) among business households among *Other* compared to ST business households. Even agricultural and labourer household have reported high odds of illness but their share is less than business household, compared to service households among *Other,* relative to ST.

Assessing household cleanliness & hygienic conditions (water source, kitchen availability, use of clean fuel and toilet facility) and their relative implications on illness it is found that there is significant effect on illness among *Other* compared to ST. Unclean water source is found having odd ratio of 0.419 ($p<0.005$) among *Other* children compared to ST children; ST children are more likely to fall ill on using unclean water. Coming to health implications of cooking space, it is seen that having space for cooking inside shows less probability of being ill ($p<0.005$) among *Other* compared to ST children. It is also clear that those who use modern toilets facility, have a health advantage over those without modern toilets, the former's odds ratio being 0.411 ($p<0.005$) among *Other* children. ST children without modern toilet facility are more likely to get short term illness compared to those with modern toilet facilities. On the other hand, traditional verses modern toilet facility shows high probability of 3.099 ($p<0.05$) falling ill for *Other* compared to ST children.

Table 4C: Odds ratio of Multinomial Logistic Regression of Being Ill Using ST as Reference Category among Social Group in Rural India

	Other Vs ST		OBC Vs ST		SC Vs ST	
	β	Exp(β)	β	Exp(β)	β	Exp(β)
Intercept	5.101 (.820)		4.586 (.801)		3.324 (.833)	
Age of Child (r=5 Years)!						
<1 year	.195 (.254)	1.215	-.077 (.228)	.926	-.077 (.241)	.926
1 year	-.434 (.236)	.648	-.456 (.209)	.634*	-.450 (.222)	.638*
2 year	.234 (.245)	1.263	.065 (.222)	1.067	.215 (.233)	1.240
3 year	.167 (.230)	1.182	-.286 (.209)	.751	-.190 (.221)	.827
4 year	.052 (.253)	1.053	-.184 (.229)	.832	.037 (.242)	1.038
Sex of Child (r=Female)						
Male	.453 (.134)	1.574***	.416 (.121)	1.516***	.370 (.128)	1.448***
Women's Age (r=40-49 Years)						
15-29	-1.170 (.330)	.310***	-.784 (.311)	.457*	-.669 (.322)	.512*
30-39	-.724 (.343)	.485*	-.573 (.323)	.564	-.638 (.335)	.528
Women's Education (r=Higher Secondary and Above)						
Illiterate	-.237 (.426)	.789	.175 (.417)	1.191	.200 (.447)	1.221
Primary	.118 (.431)	1.125	.143 (.422)	1.154	.097 (.453)	1.102
Secondary	.284 (.443)	1.328	.390 (.436)	1.477	.263 (.467)	1.301
Wealth Index (r=Richest)						
Poorest	-2.756 (.613)	.064***	-2.437 (.602)	.087***	-1.805 (.626)	.164***
Poor	-1.700 (.607)	.183***	-1.551 (.600)	.212*	-.871 (.624)	.419
Middle	-1.329 (.618)	.265*	-1.384 (.611)	.251*	-.749 (.635)	.473
Rich	-1.136 (.586)	.321*	-1.127 (.583)	.324	-.640 (.604)	.527
Source of HH Income (r=Service)						
Agriculture	.427 (.270)	1.533	.465 (.259)	1.592	-.799 (.272)	.450***
Labour	.226 (.279)	1.254	.507 (.265)	1.661	.632 (.271)	1.880*
Business	1.776 (.428)	5.904***	2.077 (.418)	7.981***	1.565 (.425)	4.784***
Source of water (r=Clean)						
Not Clean	-.869 (.157)	.419***	-.626 (.135)	.535***	-1.111 (.151)	.329***
Kitchen Availability (r=Living Space)						
Outdoors	1.218 (.188)	3.381***	.923 (.165)	2.517***	.778 (.174)	2.178***
Separate	.017 (.172)	1.017	-.148 (.147)	.863	.018 (.157)	1.018
Use of Clean Fuel (r=Yes)						
No	-1.567 (.491)	.209***	-1.308 (.488)	.270**	-.811 (.502))	.445
Toilet Facility (r=Modern)						
No	-.888 (.323)	.411**	-.057 (.320)	.945	-.033 (.333)	.968
Traditional	1.131 (.511)	3.099*	1.415 (.508)	4.115***	.585 (.531)	1.794

The Reference category for MNLR is: ST
! Last category of all the parameter is set to Zero because it is Redundant.
Significance Level (p): ***$p \leq 0.005$, **p: ≤ 0.01 level and *$p \leq 0.05$.
Number in parentheses is standard error.

Relative risk of illness among OBC and SC children with reference to ST children is found at almost identical level as *Other,* but with varying probabilities and significance level. First, comparing relative risk of illness among OBC with ST including age of children by keeping rest of the predictor at constant, illness at age one compared to illness at age five is 0.634 ($p<0.05$) among OBC children compared to ST children. It means that at age one ST children are more likely to fall ill compared to OBC children. Male children compared to female have odds ratio of 1.561 ($p<0.005$) among OBC compared to ST children. In other words, OBC male children are more likely to fall ill than ST male children. Although, maternal factors like women's age and education are found to influence variability in relative risk of illness, only women's age 15-29 ($p<0.05$) is found to contributing significantly to variability. Poorest children compared to richest ones among OBC have a probability of 0.087 ($p<0.005$) to fall ill and the probability increases with increase in wealth index; rich are found having odds ratio of 0.324 compared to the richest among OBC relative to ST children. On other hand, it also reveals that when we consider wealth index as a predictor by keeping rest of the variables constant, then with increasing economic well being relative risk of illness however decreases, but ST children compared to OBC children are found more at the risk of being ill. In a comparison of OBCs with HH income from service occupations with those whose income is from business, it is seen that the risk of OBCs falling ill is 7.981 ($p<0.005$). Adding household environment variables as predictors to those mentioned above, among OBC, all components are found highly significant ($p<0.005$) to less significant (0.05) compared to ST children, making it clear that hygiene and sanitation components matter more for ST than OBC (Table 4C).

In the ongoing comparison of relative risk of illness among different caste group, now we turn on SC verses ST children. Age does not contribute significantly more to sickness probability except at age one (odds ratio of 0.638 at $p<0.05$) compared to age five. Males are found having relative risk of 1.448 ($p<0.005$) compared to female among SC relative to ST children. Considering main source of household income by keeping rest of the predictors' constant, child sex has been found significant. For instance, children from agricultural households have a risk of 0.450 ($p<0.005$); from labour household the risk is 1.880 ($p<0.05$) and risk of 4.784 ($p<0.005$) compared to service households among SC children compared to ST children. In other words, labourer households among ST are more likely to get illness relative to SC. Moving on to households' hygienic and sanitation condition, excepting toilet facility rest of the predictors are found significantly contributing more to illness among ST children relative to SC children.

2. Assessing Multinomial Logistic Regression Model Results and Curative Care Behaviour across the Social Groups

Curative care for an illness includes two major regulators- structural and individual predictors. The logic behind the inclusion of a structural component under curative care is to observe the structural advancement of healthcare facilities and services, their accessibility and caste group responses towards those services. Comparison has been made separately for *Other*, OBCs and SC with reference to ST children and results has been tabulated in Table 5 A, B & C. Before analysing parametric estimates, effectiveness of the model has been explained. Controlling for a set of predictor on structural, individual

and household variables keeping other factors aside, a larger amount of change between the two models, namely intercept only and final (Larger Chi square value: 9299.094 - 8368.048= 931.046), provides ground for greater improvement with a larger contribution of the predictor variables with high significance level ($p<0.001$) to the model fit (Table 5A). Further, goodness of fit statistics assess the fit of a MNLR model against the actual classification of a caste group sought curative care i.e., *Other*, OBC, SC and ST with high significance level ($p<0.001$).

Table 5A: Model Fitness for Curative Care across Caste Groups in Rural India

Model	Model Fitting Criteria			Likelihood Ratio Test		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	9305.094	9324.250	9299.094			
Final	8524.048	9022.101	8368.048	931.046	75	.000
Goodness of Fit						
				Chi-Square	df	Sig.
Pearson				9613.483	8364	0.000
Deviance				7527.563	8364	1.000

Source: Authors' model fitting estimation based on IHDS data

3. Odds Ratio Estimates of Curative Care and their Predictors

Table 5B illustrates the probability of accessing curative care for said illnesses. First, a comparison of curative care behaviour among *Other* with reference to ST is made. Odds ratio of road connectivity to village shows that *Other* in villages having no road connectivity have 5.324 ($p<0.005$) times more chance of seeking treatment *Other* compared to ST. In other words, it can be said that villages without road connectivity are much less likely to seek treatment. Statistics of treatment from different healthcare services shows that *Other* relative to ST are having odds ratio of 2.043 ($p<0.005$) for private health facility compared to other available health care services, and *Other* children compared to ST are less likely to use government health facility for the treatment. Coming to place of treatment, seeking treatment in same village compared to district town is found to have an odds ratio of 1.481 among *Other,* compared to ST. Here, it is important to keep in mind that it does not mean ST children are less likely to seek treatment from the same village. The score of odds ratio may possibly be due to variation in change of numerator and denominator of both the comparing and reference group. Our findings call for a relook at the healthcare and community infrastructure development matters more of ST than *Other*.

Table 5B: Parametric Estimates of Curative Care among Social Group in Rural India

	Other Vs ST		OBC Vs ST		SC Vs ST	
	β	**Exp(β)**	**β**	**Exp(β)**	**β**	**Exp(β)**
Intercept	3.948 (.850)		4.238 (.861)		2.457 (.857)	
Road Accessibility (r=Yes)						
No	1.672 (.351)	5.324***	.984 (.343)	2.675***	1.009 (.358)	2.743***
Treatment for first time (r=Rest)						
Govt. health personal	-.205 (.272)	.815	-.559 (.241)	.572*	-.170 (.260)	.843
Govt. personal in Pvt.	-.161 (.411)	.851	-.163 (.369)	.850	.560 (.382))	1.751
Pvt. health personal	.714 (.242)	2.043***	.598 (.241)	1.818***	.743 (.232)	2.103***
Place of treatment for first time (r=District Town)						
Same Village	.393 (.367)	1.481	-.174 (.330)	.841	.199 (.350)	1.221
Another Village	.186 (.372)	1.204	-.456 (.334)	.634	-.428 (.356)	.652
Other Town	-.607 (.394)	.545	-1.101 (.354)	.332***	-.862 (.378)	.422*

The Reference category for MNLR is: ST

! Last category of all the parameter is set to Zero because it is Redundant.

Significance Level (*p*): - ****p*≤ 0.005, ***p*: ≤0.01 level and **p*≤0.05.

Number in parentheses is standard error.

Moving on to accessing curative care among OBC and SC compared with ST, Table 5B shows that road connectivity gives an odds ratio of 2.675 (p<0.005) for OBC relative to ST and 2.743 (p<0.005) for SC relative to ST. This provides ground for a rethink about the significance of road connectivity in respect of all the caste groups. ST is less likely to seek treatment when village is not connected to road. Further, availability of different healthcare facility and place of available services also matter more for ST than any other caste group in rural India. For example, higher use of private health facility for treatment than other source of treatment is more at 1.818 (p<0.005) among OBC and at 2.103 among SC relative to ST.

Further, moving on to individual and household parameters of curative care behaviour; children, women and household specific characteristics have been modelled and results are provided in table 5C. First, it is seen that children are treated more in early age than at later age with some exception (age one for instance) among *Other* relative to ST, although the findings are insignificant. A comparison of curative care for male children with female children reveals that among *Other*, OBC and SC group's male children get treated more compared to ST children. The probability of seeking treatment among *Other* is 1.621 (p<0.005); among OBC, it is 1.469 (p<0.005) and among SC, it is 1.461(p<0.005) relative to ST children. Comparing Women's age, younger women are less likely to seek treatment for their children than older ones. Among *Other*, women in 15-29 and 30-39 age group *Other* have an odds ratio of 0.225 (p<0.005) and 0.397 (p<0.01), compared to women in 40-49 age group compared to ST. Considering household's wealth index of household provide evidences that poor children among *Other* compared to rich ones *Other* seek treatment much less. Odds ratio score (Table

5C) shows that for poorest, poor, middle compared to richest among *Other,* relative to ST, the probability of getting treated is 0.021 (p<0.005), 0.056 (p<0.005) and 0.191 (p<0.01). But, it doesn't mean that ST children are getting treated more among the poorest, poor and middle compared to richest. It is possible that among *Other* compared to ST, less children are in different wealth index category compared to richest one.

Table 5C: Parametric Estimates of Curative Care among Social Group in Rural India

	Other Vs ST		**OBC Vs ST**		**SC Vs ST**	
	β	**Exp(β)**	**β**	**Exp(β)**	**β**	**Exp(β)**
Intercept	3.948 (.850)		4.238 (.861)		2.457 (.857)	
Age of Children (r=5 Years)!						
<1	.085 (.263))	1.089	-.133 (.239)	.876	-.114 (.254)	.892
1	-.257 (.243)	.773	-.348 (.220)	.706	-.217 (.233)	.805
2	.156 (.254)	1.169	.040 (.233)	1.041	.285 (.244)	1.329
3	-.170 (.235)	.844	-.533 (.251)	.587**	-.385 (.229)	.681
4	.054 (.268)	1.056	-.122 (.246)	.885	.132 (.260)	1.141
Sex of Child (r=Female)						
Male	.483 (.138)	1.621***	.384 (.126)	1.469***	.379 (.133)	1.461***
Women's Age (r=15-29 Years)						
15-29	-1.365 (.343)	.255***	-.807 (.326)	.446**	-.812 (.336)	.444*
30-39	-.924 (.353)	.397**	-.567 (.335)	.567	-.750 (.347)	.472*
Women's Education (r=Higher Secondary & Above)						
Illiterate	-.325 (.476)	.722	.008 (.465)	1.008	.195 (.492)	1.216
Primary	.097 (.482)	1.102	.099 (.472)	1.104	.219 (.500)	1.244
Secondary	.456 (.491)	1.578	.382 (.483)	1.465	.462 (.511)	1.586
Source of Income for HH (r=Service)						
Agriculture	.077 (.261)	1.080	.282 (.282)	1.326	-.746 (.268)	.474***
Labour	-.041 (.271)	.959	.379 (.257)	1.461	.759 (.267)	2.136**
Business	1.74 (.430)	5.705***	2.039 (.420)	7.682***	1.783 (.429)	5.949***
Wealth Index (r=Richest)						
Poorest	-3.863 (.575)	.021***	-2.901 (.568)	.055***	-2.186 (.588)	.112***
Poorest	-2.885 (.572)	.056***	-2.046 (.567)	.129***	-1.306 (.587)	.271*
Middle	-1.658 (.605)	.191**	-1.191 (.600)	.304*	-.582 (.620)	.559
Rich	-1.726 (.569)	.178***	-1.321 (.567)	.267*	-.845 (.586)	.430

The Reference category for MNLR is: ST

! Last category of all the parameter is set to Zero because it is Redundant.

Significance Level (*p*): - ****p*≤ 0.005, ***p*: ≤0.01 level and **p*≤0.05.

Number in parentheses is standard error.

In the comparison of the rest of the caste groups with ST for the same parameters, odds ratio estimates provide more or less same probability of getting curative care if other parameters are held constant; so interpretation in regard to the rest of the social groups is not elaborated here. One can easily observe the odds ratio score and their significance level easily from Table 5C.

Discussion

Reporting of morbidity or Illness is a complex phenomenon and depends on many factors simultaneously such as the settings of the study, study population, reference period, timing and duration of data collection, the notion of illness and their perceiving ability, bias in reporting etc. which results in dissimilarity in illness prevalence in the country. Several previous studies have mentioned about this problem including the much acclaimed survey data on short term child illness prevalence by national Family Health Survey in India, which found the ambiguity at about 8-11 percent (IIPS, 2007). However, our study has found this much higher than the IIPS figures. It is possible that the difference in high illness prevalence rate (28.6 percent) as well as high prevalence found by this study is due to reporting about all children within the household in the age group regardless of children of eligible women in the household. Compared to the latest (third) survey of NFHS, it considers the last three children of women who were selected for the interview and who have given birth in preceding five years. Other studies have also found that morbidity reporting has increased in India over the period (Gumber et al, 2013).

There is increasing realization that measuring social disparity by considering caste groups as units of analysis is not both feasible and fruitful academically in the Indian context. Most studies have found that affluent castes are better place on health outcome and healthcare behaviour than their poor caste like SC and ST and to some extent OBC (Nayar, 2007). It is not surprising that caste group comparison has become more complex particularly if the study is focused the health outcome and curative care behaviour separately for each caste group as morbidity is a complex term to define and measure. This complexity is compounded by the fact that diverse factors simultaneously contribute to shaping the outcome (morbidity). Suppose, an individual is economically poor and is also an illiterate, his/her health outcome is bound to be comparatively poor. Like IPR across different caste groups adding this notion of variability as it has found in the study; it varies from 298/1000 among OBC group to 226/1000 among ST group. Is does not mean that the performance of ST is better than that of other caste groups. The reasons behind this need some explanation: Perceiveness and recognition as a human behaviour plays important role in ensuring reliability to self reported health status. Sometimes it works jointly and sometimes it works independently. Quite often even after perceiving any symptoms or signs as indication of illness, one's the poor economic status may come in the way of his reporting the illness, but makes him to bear with the problem till it reaches the unbearable level. This is probably why poor people report less of any illness even though their suffering is indeed acute. This finding is in line with the finding of World Bank study on measurement of living standard which postulated that self perceived morbidly rate increases with rising income level (Murray, et al, 1992). In India, it is SC and ST who are poor as per many indicators of socio economic development (Nayar, 2007); it finds reflection in the fact that there is less IPR of SC and ST than the rest. However the probability of falling ill has been

found to be lowest among *Other* as against rest of the caste groups but highest probability of falling ill or reporting ill on their part is due to high awareness and recognition abilities among them.

Age pattern of morbidity shows the highest prevalence at age, the probable explanation being that the first year of a child's life is most vulnerable, and with increasing age vulnerability decreases till adult age, and as interaction with outer environment increases during infancy and beyond, it makes their life more prone to health hazards. Moving on to the odds ratio of parametric estimates based on predictors used to the study, it can be seen that there is gender differentials in reporting of illness. It can also be understood from odds ratio of *Other*, OBC and SC relative to ST that illness among male children is 1.574, 1.516 and 1.448 compared to female children ($p<0.005$). Here, it is also worth noting that the gap is decreasing in the case of SC and ST. Coming to the maternal characteristics, mainly women's age and education, it is observed that education is not a significant predictor of health outcome among any of the caste groups. However, compared to women in 40-49 years age group, women in younger age group (15-29 years) are more forthcoming in perceiving, recognising and reporting illness. Arguably, at later age very few women will have children below five years, but the household may include children born not only to the women concerned but also to other members of the household and therefore, reporting illness of not one's own children but also of the rest in the household. It may be biological as well as social exposure, experience and understanding about the illness. Biological explanation suggest that at early age, women's reproductive system would not be properly and adequately developed to produce healthy children so the immune system of the baby of younger mother will not developed so developed as to fight contamination and infections. Therefore, children of young mother are always at high risk of morbidity and mortality. Exposure, understanding and experience come about at higher age in women and such women will take more preventive care and also report about illness properly. As a woman at this age is so experienced socially to take care of health of her baby prevalence of illness and reporting would be less. Moreover, this study has not found education contributing significantly to illness reporting, though many studies have found education level as a significant contributor (positively or negatively) as per the focus of the study. Household economic status is found significant for all caste groups and it supports the notion of getting increasing ability to report illness with increase in economic status. This study is in line with the findings of earlier studies that contribution of parameters of household environment in health outcome is quite significant and has a sure bearing particularly on child health.

In regard to disparity in healthcare behaviour across caste groups in rural India, the study finds that availability, accessibility and affordability parameters are quite significant to health care and illness reporting outcome. On the supply side, due to poor functioning of government health facility, better off sections choose private health facility regardless of distance to such available health services. For example, road connectivity matters more for people like ST as compared to rest of the caste groups. ST are much less likely ($p<0.005$) to seek treatment compared to *Other* when villages do not have road connectivity, and the same is found true for OBC and SC. Further, maximum users of available government health care services are from ST than any other group even in case of opting for a different healthcare provider for the second visit. Instances of using government health services for a second visit increased by 11 percent among ST. Availability of curative care services in the village or a nearby

village matters for all social groups. Odds ratio of parametric estimates show that household economies directly impact the utilisation of available healthcare services, as well off people prefer to take treatment in private facilities unlike the poor who are dependent on government health facilities to get the curative services. Gumber et al (2013) study also confirms that percentage of people reporting lack of access to medical facility is more in rural areas. Supporting the above evidences, Gulati et al (2010) study has added that there is a possibility of ensuring better quality of healthcare services for poor as better off can possibly afford private healthcare services but not the poor.

The scenario of persisting disparity in perceived short term morbidities among children up to five years of age in rural India, particularly among ST, can be rationalized from the fact that ST population mostly reside in isolation from the mainstream and in poorly developed social and economic conditions, and their poor awareness/responsiveness find reflection in their poor record of illness reporting as well as availing curative care. It may be borne in mind that among the different social group, ST households have reported lowest prevalence of childhood morbidities, which may in fact be due to their differential perception, perceiveness and knowledge about the same in comparison to the rest. But when we also consider different social, economic and demographic predicting parameters for the study, it can be seen that as economic status increases, the reporting of illness increases even among SC and ST. Further, the highest reporting of illness found among OBC may be due to the higher awareness among them. So, the priority should be to make people mainly in the area where poor people live, aware of health implications of hygiene, sanitation and other life-style areas as also the availability of government health care facilities in their village, neighbouring villages or district/*taluk* towns. It should also be possible to make easily available government healthcare services accessible to the needy without imposing any user fee. It should also be possible to make available, free of cost, generic medicines for short term morbidities in rural India where over 69% India lives, as per 2011 census. As of today, there are very few studies on caste group comparison at the country level and therefore calls for more work on this topic to strengthen our findings. It is also required to develop a universal definition, reference periods and methods to measure short term morbidities more accurately and make it comparable in order to streamline the findings about disparities among the four major caste groups with more authenticity.

Limitation of the Study

1. Study is based on self reported short term morbidity in aggregation (Fever, ARI and Diarrhoea) across the caste groups in rural India.
2. Study is confined to all children in 0-5 years age, who are *de jure* members of the particular household at the time of survey, and not only the children of the interviewed women.
3. Although ST population generally live in poor socio economic conditions due their cultural barriers, it may be possible that their perceiveness about any illness is different from the caste groups; this finds reflection in their poor reporting of short term morbidities.
4. ST are not equally distributed across the states in the country; so when conducting state level studies and using all four caste groups as a response category under dependent variable, it should be with abundant caution to avoid absurd outcomes.

5. The proportion of ST population are much less in the population than the other caste groups, but in order to observe the variation in the prevalence of illness and curative care behaviour among ST, they have deliberately not been clubbed with SC caste groups as has been done by many earlier studies.

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Appendix

Table A1: Sample Characteristics in Rural India

Characteristics	**No. of Observations**
Number of Villages	1503
Total Households	27011
Total Individuals	144705
Total Children (0-5 years)	17127
Caste Composition of Children	
Scheduled Caste	4000
Scheduled Tribe	1921
Other Backward Classes	7020
Other/Forward Castes	4182
Experienced Morbidity (0-5 years)	
Any Morbidity	4595 (26.8)*
Scheduled Caste	1108 (27.7%)
Scheduled Tribe	421 (21.9%)
Other Backward Classes	1926 (27.4%)
Other/Forward Castes	1140 (27.3%)

Source: Authors calculation using IHDS Data

***** Figure in parentheses is the percent of children who have experienced any type of illness in the preceding 30 days at the time of survey based on unweighted cases.

Table A2: Background Characteristics of children 0-5 years in rural India

	Unweighted Case					Weighted %			
	Other	**OBC**	**SC**	**ST**	**Total**	***Other***	**OBC**	**SC**	**ST**
Children Age									
Zero	542	869	519	246	2176	20.9	43.3	24.7	11.1
One	561	1030	619	297	2507	19.2	45.9	23.9	10.9
Two	696	1215	706	335	2952	21.4	41.9	27.3	9.4
Three	800	1317	723	372	3212	22	44.6	23	10.4
Four	720	1221	662	297	2900	23.6	42.8	24.1	9.5
Five	863	1368	775	374	3380	23.2	43.5	23.4	9.9
Sex									
Male	2259	3673	2045	971	8948	22.5	44	23.9	9.6
Female	1923	3347	1959	950	8179	21.2	43.2	24.9	10.7
Wealth Index									
Poorest	522	1556	1253	1026	4357	12.4	39.3	30.1	18.2
Poor	719	1854	1043	505	4121	17.1	45.9	26.2	10.7
Middle	569	971	537	189	2266	22.2	44.9	24.9	7.9
Rich	1146	1715	822	150	3833	27.7	47.9	20.3	4.1
Richest	1226	924	349	51	2550	47.7	39.5	11.1	1.6
Religion									
Hindu	2789	5992	3712	1484	13977	17.5	45.2	27.8	9.5
Muslim	1081	909	39	5	2034	50.4	47.2	2.2	0.1
Christian	123	34	34	145	336	37.7	10	12.6	39.7
Sikh	178	85	162	0	425	38.7	17.1	44.2	0
Rest	11	0	57	287	355	4.1	0	15.2	80.7
Total	**4182**	**7020**	**4004**	**1921**	**17127**	**21.9**	**43.6**	**24.4**	**10.1**

Source: Authors calculation using IHDS Data

Table A3: State Variation in IPR in Rural India

State	*Other*	OBC	SC	ST	Total
Jammu & Kashmir	262	140	235	0**	249
Himachal Pradesh	289	219	272	335	276
Uttarakhand	364	302	342	0**	334
Punjab	292	249	257	0*	266
Haryana	274	215	224	0**	235
Delhi	305	166	565	0*	278
Uttar Pradesh	281	287	325	219	295
Bihar	379	408	417	206	406
Jharkhand	176	267	266	240	250
Rajasthan	152	181	128	228	166
Chhattisgarh	507	318	272	270	299
Madhya Pradesh	236	286	295	205	263
Northeast	348	331	332	245	292
Assam	171	327	154	185	192
West Bengal	384	308	453	305	400
Orissa	249	349	247	233	291
Gujarat	342	284	249	211	277
Maharashtra, Goa	264	267	241	221	256
Andhra Pradesh	154	264	206	225	225
Karnataka	83	144	92	74	117
Kerala	328	332	304	294	327
Tamil Nadu	138	353	195	154	273
India	**284**	**298**	**292**	**226**	**286**

Source: Authors calculation using IHDS Data

* No ST Population has found.

** Have not reported for any short term morbidities in specified age group (0-5 years).

Table A4: State Differentials in treatment Seeking Behaviour in Rural India

State	*Other*	OBC	SC	ST	Total
Jammu & Kashmir	100.0	100.0	100.0	0.0**	100.0
Himachal Pradesh	94.4	100.0	100.0	100.0	96.9
Uttarakhand	100.0	100.0	87.5	0.0**	93.1
Punjab	100.0	100.0	100.0	0.0*	100.0
Haryana	100.0	100.0	100.0	0.0**	100.0
Delhi	100.0	100.0	100.0	0.0*	100.0
Uttar Pradesh	97.7	96.7	91.5	85.7	95.4
Bihar	100.0	97.4	97.5	100.0	97.7
Jharkhand	83.3	93.9	90.0	89.1	91.2
Rajasthan	100.0	98.8	92.1	100.0	97.8
Chhattisgarh	100.0	96.9	88.0	82.3	91.2
Madhya Pradesh	97.5	92.6	97.0	78.7	92.1
Northeast	85.7	93.8	100.0	84.2	89.1
Assam	84.2	100.0	50.0	77.8	82.5
West Bengal	91.3	100.0	95.0	100.0	93.8
Orissa	92.3	96.9	92.7	81.3	92.6
Gujarat	74.2	98.6	94.7	87.5	87.8
Maharashtra, Goa	97.4	99.2	94.4	97.4	97.8
Andhra Pradesh	100.0	100.0	98.6	100.0	99.6
Karnataka	100.0	100.0	92.3	100.0	98.6
Kerala	96.5	100.0	100.0	100.0	98.3
Tamil Nadu	100.0	96.7	100.0	100.0	97.9
India	**95.0**	**95.6**	**93.7**	**91.8**	**94.7**

Source: Authors calculation using IHDS Data

* No ST Population has found.

** Have not reported for any short term morbidities in specified age group (0-5 years).

Table A5: Seeking Treatment and Health Personal among Social Group in Rural India

Treated by	*Other*		OBC		SC		ST		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Public Health Personal	15.4	17.2	12.3	7.5	14.6	11.3	25.2	36.2	14.5	12.2
Pub. Health Personal in Pvt.	3.3	3.0	4.0	6.5	6.0	9.3	4.2	0.0	4.3	6.1
Private Health Personal	74.0	79.3	75.2	80.1	71.7	76	60.5	59.9	73.0	78.1
Pharmacy	4.5	0.5	5.7	5.9	5.2	1.7	6.7	3.9	5.4	3.2
Others source	2.8	0.0	2.7	0.0	2.4	1.7	3.4	0.0	2.7	0.5

Source: Authors calculation using IHDS Data

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