

Research Paper

SDG on Health and Socio-economic Barriers: An Empirical Study in Bihar

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ABSTRACT

Sustainable Development Goal (SDG) on health ensures healthy lives and promotes well-being for all at all ages. Sufficient and equitable distribution of resources is imperative on the one hand while addressing both institutional and non-institutional barriers is also important on the other hand. Among the non-institutional barriers, socioeconomic factors significantly contribute to the health and well-being of an individual. In this paper, the socio-economic barriers to healthcare access are studied in the context of Bihar. The study is based on secondary data that is taken from NSS 75th round survey: consumption on health (2017-18). The logistic regression model is used to check the significance of the relationship between healthcare access and socio-economic factors like Age, Gender, Income, Caste and Religion. The result is presented through Graphs and Charts followed by a discussion and conclusion. The study shows that all the socioeconomic attributes are significantly associated with non-access to healthcare access on all India level. However, in Bihar, only income class and education are significant barriers. Further, 'non-chronic illness' and 'medical services not free' are the two most significant barriers to healthcare access in both India and Bihar. The concentration graph shows a large variation in healthcare access across the income quintiles. It means, the barriers to healthcare access are largely concentrated among the poor and thus, the current health programs are pro-rich. According to the result, appropriate measures are suggested at both the household and state levels to reduce the barriers to healthcare access. A comprehensive and holistic approach to health services can only ensure the achievement of SDG – 3 (Health).

HIGHLIGHTS

- On all India level, all the socioeconomic attributes are significant to barriers to healthcare access.
- In Bihar, Education and Income-class are two significant barriers to healthcare access.
- Chronic illness is the most significant barrier to healthcare access in both India and Bihar.
- Free medical services significantly reduce the cases of non-access to healthcare, especially among the poor.

Keywords: SDG-3, socioeconomic barriers, healthcare access, health inequality

Ensuring health and promoting well-being are essential for the sustainable development of an individual and a nation. Apart from income and wealth, health is an important determinant to ensure productive and efficient human capital that translates wealth and knowledge resources into growth and development. However, a large diversity in health status is observed

across the region and states. According to Bloomberg Global Health Index (2019), Iceland, Japan, Switzerland, Italy, and Sweden are a few of the top healthiest

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countries in the world while African countries like Sierra Leone, Guinea and Liberia are the poorest performers. The condition of India on health is also not appreciable. The poor state of health is not the problem of a specific country or region but its adverse effect spill over the other regions. Globalization and large-scale migration support the global economy and therefore, equitable health and well-being for all are imperative. It is also our moral obligation to ensure good health for all.

The UN's sustainable development goal on Health (SDG – 3) is one of the pioneering steps taken on a global level to ensure health and well-being for all ages. A few of the targets under SDG – 3 are as follows:

- ❖ By 2030, reduce the global maternal mortality rate to less than 70 per 100,000 live births
- ❖ By 2030, reduce the under-five mortality rate to 25 per 1,000 live births.
- ❖ By 2030, end the epidemics like malaria, tuberculosis, AIDS and other tropical diseases.
- ❖ Achieve universal health coverage; access to quality and affordable health services and provide financial protection plan.
- ❖ Support the development of vaccines and medicines for both communicable and non-communicable diseases
- ❖ Strengthening the capacity-building program of countries for early warning, risk reduction and proper management of health risks.

Through the holistic approach and framework of SDG – 3, the health status across the countries is supposed to be significantly improved, although the socio-economic barriers are great challenges to overcome, especially for India where there is large diversity across the different socio-economic attributes like income, caste, class, age, education and others. Further, the interplay of social attributes aggravates the issue of non-access to healthcare services and therefore, the health inequality is deepened among the women from the SC-ST group, women from the poor class and illiterate people from lower caste and class. The unmet need is also caused by family customs and religious beliefs.

Supply-side barriers or institutional barriers are progressively being addressed in India through higher fund allocation to health services, capacity building of institutions and service providers, infrastructure building and specific provisions for the poor and marginalized. Atal Pension Yojana, Rashtriya Swasthya Bima Yojana, Ayushman Bharat Scheme, and Indra Dhanush Scheme for vaccines are some of the major examples of the government's efforts. However, they are not sufficient and a lot more needs to be done. If we look at the performance of states, there is a great variation. According to the Niti Aayog report on SDG (2020-21), Bihar has scored 66 against the national average of 74 on the SDG Health Index, better than Uttar Pradesh and Madhya Pradesh but far behind than rest of the large states.

In this paper, the socioeconomic barriers to healthcare access are studied for Bihar state and it is tried to find how caste, class and gender and age widen the gap in healthcare access between the upper and lower caste, the poor and rich, women and men, and across ages respectively. Further, in light of SDG goal 3 on health, corrective measures are suggested to reduce the socioeconomic barriers. The role of financial protection schemes is also discussed in reducing health inequality.

Literature Review

Several empirical studies have shown a significant relationship between socioeconomic status and health outcomes. On one side, socioeconomic attribute privilege a particular section of society and on the other side, it makes other sections disadvantageous (Braveman & Gottlieb, 2014). Thus, inequality in healthcare access and health status are largely observed. Levin & Leyland (2006) found a significant difference in health status between rural and urban people. In India, low birth expectancy is found in rural India than in urban one due to poor health facilities and services (Asaria *et al.* 2019; Guo *et al.* 2020). Similarly, Infant mortality is found higher in rural India (Kumar & Singh, 2014). Thus, a rural-urban gap is a major barrier to health status and health access. The gender gap is another major barrier to healthcare access. Women are observed to be subjugated to men and usually get a

small pie of benefits and resources including healthcare services (Davidson *et al.* 2011). In the study of Markids (1992), it is found that both men and women face the problem of proper healthcare access but women in low socioeconomic strata suffer most due to their poor health seeking behaviour and perception of illness. Variation in health status and healthcare access are also observed across ages. The need of healthcare access increases with ages but after the age of 85, it starts decreasing (Joe *et al.* 2015). High unmet need among the elderly people of India is observed in the study of Adhikari (2017). High dependence on others and lack of transportation facilities are some of the major causes of poor healthcare access among old people (Bhan *et al.* 2017). Hence, age is another major barrier to healthcare access. Religion and caste are two most prominent socioeconomic barriers to healthcare access in India. Muslims are most deprived religious community in India (Oxfam India report, 2021; Das *et al.* 2016). Low income and poor education are some of the major factors for their poor healthcare access. Caste-wise, the situation of SC-ST is highly alarming. The SC population is around 9.10% and ST is around 9.74% of Bihar's total population. SC-ST and OBC are 54% and 35% respectively less likely to have healthcare access than other castes (Agarwal & Arokiasamy, 2009). The condition of women from the SC-ST group is even worst in healthcare access (Patel, 2018). Income is another major determinant that widens the gap between the poor and rich in healthcare access (Mendes, 2010). Most of the studies have confirmed a positive relationship between the income and healthcare access (Xu Ke *et al.* 2009; Asada & Kephart 2007). According to Niti Aayog report (2021), Bihar is poorest state among the similar size states. Further, high income inequality is observed in Bihar in compare to other states (Oxfame report, 2020). Therefore, the income inequality becomes a major barrier to healthcare access. Similarly, a positive relation is found between education level and healthcare access. Higher education level leads to better health and wellbeing (Hahn & Truman, 2015; Zajacova & Lawrence, 2018; Propam & Tannelli, 2021). The overall literacy in Bihar is 70.9%, lower than national average of 77.7% (Rumi, 2020) and hence, low education level is another major barrier to healthcare access in Bihar.

The above studies show that socioeconomic determinants play a major role is the health status and healthcare access of an individual. The large diversity in age, gender, income, caste and class are some of the major barriers to healthcare access that lead to health inequality and poor health outcome. Hence, they need to be equally addressed for equitable health distribution and achieving SDG goal 3 in time bound manner.

Data and Methods

The study is primarily based on secondary data. The data on out-patients are taken from the NSS 75th round survey on consumption: health (2017-18) for both India and Bihar.

The logistic regression model is used to study the impact of socioeconomic factors/barriers on health access. "Access to healthcare" is taken as a dependent variable that has two outcomes – "Yes" and "No". The different socioeconomic factors like 'Age', 'Income', 'Caste', 'Class', 'Gender' etc are taken as independent variables. The regression model is represented as follow:

$$Y (\text{healthcare not accessed}) = \alpha + \beta (\text{rural-urban}) + \beta (\text{religion}) + \beta (\text{gender}) + \beta (\text{caste}) + \beta (\text{education}) + \beta (\text{age}) + \beta (\text{level of income}) + \beta (\text{whether married}) + \beta (\text{chronic illness}) + \beta (\text{free medical services}) + \epsilon_0$$

Further, the Concentration Index (CI) is determined to measure the inequality in healthcare access across the income-classed. Mathematically, the CI is calculated by suing the formula:

$$C(h | y) = \frac{2 \text{cov}(h_i, R_i)}{\bar{h}} = \frac{1}{n} \sum_{i=1}^n \left[\frac{h_i}{\bar{h}} (2R_i - 1) \right]$$

Where 'h' is the 'non-access to healthcare access' in which we need to measure the inequality across income classes.

RESULTS AND DISCUSSION

Table 1 shows the likelihood of non-access to healthcare services across the different socioeconomic attributes on the All-India level and in Bihar.

Table 1: Regression output: 2017-18

Covariates	All India		Bihar	
	Odd ratio	Sig (α = 0.05)	Odd ratio	Sig (α = 0.05)
Rural (Ref: urban)	1.12	0.006*	0.79	0.273
Religion (Ref: others)		0.001*		
Hindu	0.87	0.021*		
Muslims	0.76	0.000*	0.73	0.227
Gender (Ref: men)	0.92	0.015*	0.94	0.729
Caste (Ref: others0)		0.000*		0.063
SC-ST	1.24	0.000*	1.71	0.095
OBC	1.03	0.502	1.02	0.946
Education (Ref: Illiterate)		0.009*		0.058
Primary & Middle	0.94	0.112	1.63	0.017*
Sec & High. Sec	0.81	0.001*	0.93	0.837
Graduation & above	0.87	0.105	0.79	0.657
Age (Ref: 0-14)		0.000*		0.465
15 - 29 years	1.52	0.000*	1.09	0.799
30 - 44 years	1.72	0.000*	0.74	0.499
45 - 59 years	1.38	0.000*	0.8	0.584
60 and above	1.32	0.000*	1.39	0.359
Income (Ref: rich)		0.000*		0.054
Poor	1.8	0.000*	2.21	0.018*
Middle-income	1.31	0.000*	1.61	0.127
Married (Ref: unmarried & others)	0.87	0.005*	1.3	0.383
Illness is chronic (Ref: yes)	3.75	0.000*	6.11	0.000*
Free medical services (Ref: yes)	1.56	0.000*	2.02	0.013*
Constant	0.02	0.000*	0.02	0.000*

On all India level, all the socio-economic attributes are significant; therefore, they are significantly associated with the non-access to healthcare services. However, in the case of Bihar, the covariates like 'income', 'Education', 'non-chronic illness' and 'medical services not free' are significantly associated with non-access to healthcare.

In the case of Bihar, individuals with primary & middle education are 1.63 times more likely to have non-access to healthcare in comparison to illiterate. However, on all India level, such education level is not significant. Further, the poor are 2.21 times more likely to have

non-access to healthcare services and the likelihood is even higher than the national average of 1.80 times. Therefore, the income gap is a major contributory factor to the differences in health status and healthcare access.

If the illness is not chronic, the likelihood of non-access to healthcare is 6.11 times. On all India levels, such likelihood is 3.75 times. Chronic illness compels people to seek medical assistance despite different barriers, but if the illness is not chronic, the other barriers get more weightage to ignore the medical assistance and hence, non-chronic illness has the highest contribution to non-access to healthcare. Further, if medical services are not free, the likelihood of non-access to healthcare is 2.02 times. It is obvious to have more access to healthcare services if they are free. A large section of people belongs to the poor and middle-income class and therefore, free medical services encourage them to access healthcare services whenever they seek.

The political environment of Bihar has been dominated by caste and class, but socioeconomic variables like Sector, Caste, Religion, and Age are not significantly associated with the non-access to healthcare services. The result is encouraging. 'Non-access to healthcare services if the illness is not chronic' is basically caused by the individual's own perception and beliefs about the illness and treatment and therefore, a comprehensive awareness program about the importance of health and seeking medical services can significantly improve healthcare access. Further, free medical services or at least affordable services can also encourage people to access healthcare services. Hence, Bihar needs primarily to work on these two socioeconomic barriers followed by others.

Table 2: Concentration Index

	No of observations	Index value	Std. Error	Sig. (α = 0.05)
Wagstaff CI (Bihar)	731	-0.07695	0.047998	0.02*
Wagstaff CI (India)	43,240	-0.19514	0.009673	0.00*

Table 2 shows the Concentration Index on All India level and Bihar data (NSS 75th round – 2017-18) on health. The negative value of CI shows inequality in healthcare

access between the poor and rich in both Bihar and India. It means non-access to healthcare services is more concentrated among the poor.

Therefore, income inequality is also a major factor in unequal health status and healthcare access. Financial protection schemes, universal basic income, and targeted budgetary allocation are some of the initiatives the government can take to address income-induced health inequality.

CONCLUSION

The study provides a comparative study of socioeconomic barriers to health between India and Bihar. On all India levels, almost all socioeconomic variables are significant barriers to healthcare access, although, in Bihar, only 'education' and 'income class' are two significant barriers. Further, the absence of chronic illness is the strongest factor of non-access to healthcare followed by the non-availability of free medical services. Better primary and secondary education would help to sensitize all sections of people about the importance of health status and healthcare access while the government's financial protection schemes reduce the burden of OoPE and encourage people to seek health services. Achieving the SDG on the health needs multi-pronged approach including infrastructure building, ensuring adequate manpower, targeted health schemes, financial support and creating awareness about the importance of health. Both demand and supply side barriers need to be addressed for good health and well-being for all.

Limitations and future studies

The paper includes broad analyses of barriers to healthcare access on all India levels and Bihar, although it has also some limitations. First, the paper doesn't examine the health inequality within a particular social status. For example, we are unable to know the status of health inequality in the SC-ST group or poor class. Second, psychological barriers also play a major role in non-access to healthcare services and such barriers are not considered in our analysis. Despite such limitations, the paper provides a comprehensive view of the barriers

to healthcare access and therefore, helps in identifying the root cause of non-access to healthcare. Further studies can be done by considering the interplay of two socioeconomic axes, like class and gender or caste and class. Primary data-based study may also be carried on to reveal the psychological barriers to healthcare access.

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