

AN EXPLORATORY STUDY ON HEALTH STATUS INDEX IN NORTH-EASTERN STATES OF INDIA

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Abstract

The article discussed the Health Status Index in north-eastern states of India. It has been found that health status indices reveal the condition of health of people in the region/state. Sikkim have overall health better infrastructure index and it is the lowest in Arunachal Pradesh. The health limitation indices reveal that Sikkim, Mizoram and Tripura are the better health performing states. The ranking of Composite Health Status Index shows that Sikkim, Mizoram and Manipur are the better health performing states; Tripura, Meghalaya, and Nagaland are the moderate health performing states; Assam and Arunachal Pradesh are low health performing states. Therefore, Governments of low health performing States should implement policies for improving the health status of the concern state.

Keywords: Children, Health Status Index, Hospitals, Infrastructure, and Quality of life.

INTRODUCTION

Health is an important entitlement that enhances capabilities of the people. It is the fact that attaining better health is regarded as both an end and a means of economic growth. Attaining better health largely depends on education, nature of work, level of income, access of health care services etc. Health is a diverse concept. Health of the people are influenced by factors like poverty, unemployment, sanitation, drinking water, availability of food, income, nutrition, life style, housing, climate, education, health infrastructure and per capita health expenditure etc. that effect the well-being of people. Apart from income, the level of literacy and consumption expenditure also influences health. Illiteracy is also more associated with the ill health.

The health scenario in India reflects diversity among the states. There is wide disparities health among the groups. Gender disparity in health outcomes is particularly prominent in India. More recent evidence from the ministry of health indicates that the supply of services of doctors, nurses and health infrastructure is improving over time but there is shortage of hospitals, beds and dispensaries in least developed countries. Improvement of nutrition status, poverty, social justice and gender issues, quality of health delivery system, availability of skilled medical personnel and accountability in the public health sector are the daunting challenges to the government. At present in India, more health related resources are located in urban areas. More urban population are using potable water and hygienic toilet facilities.

The major problem for health is lack of adequate infrastructure that unfavorably affecting the economic condition. The health status can be easily realised from the high prevalence of poverty and backwardness of the state. Providing good care facilities is the primary function of the hospitals. Controlling diseases are important for enhancing the quality of life. Health insurances are useful for covering the treatment cost of diseases because medical expenses are increasing in the state over the years. The objective of this paper is to study the status of health status index in north-eastern states of India.

METHODS AND MATERIALS

- **Study area description:** Northeast India comprises eight states. The region shares an international border China, Bhutan, Bangladesh, and Myanmar. It is connected with the rest of mainland of the country by the Siliguri Corridor. The total area of the region is 262,184 square kilometers.



- **Design and approach:** The present study is based on the secondary data. The data has been collected from reports of National Family Health Survey-4, and National Health Profile, Govt. of India. Various journals and books have also been referred in the present study.
- **Method of analysis:** To examine the Composite Health Standard Index, and Composite Health Quality Index in general and the Health Standard Index, Health Infrastructure Indices and Health Limitation Indices in particular, different methods of quantitative and qualitative analysis comprising of coefficient of variance, tabulation and text analysis were performed.

RESULTS AND DISCUSSION

India is a well-diversified country in culture, language, religion and food. Health status of the states is also well diversified in the country. The southern state like Kerala has relatively better health status. The health status is also varied across the regions, and groups like Scheduled Caste (SC), Scheduled Tribe (ST), Other Backward Communities (OBC) and Others of each state. Generally, women, children and others are vulnerable to different diseases due to under-nourishment. Hence, the Health Status Indices reveal the condition of health of people in the region/state.

Development of health infrastructure includes qualified and trained workforce, health centres and hospitals, providing safe drinking water and better sanitary facilities, updated information system and to assist the agencies involved in public health. Inadequate health infrastructure limits the access to health facilities and also contributes to poor quality health services.

Table-1: State-wise Estimates of Different Health Status Indices for the North-Eastern States

State	MMI	UFCMI	UNPI	HSI	Rank of HSI
Arunachal	2.93	9.62	72.00	11.72	7
Assam	3.90	6.50	22.67	3.49	8
Manipur	20.49	47.63	66.83	40.61	2
Meghalaya	12.68	11.88	60.50	21.92	5
Mizoram	9.76	33.88	73.83	32.22	3
Nagaland	1.46	19.13	60.50	20.34	6
Sikkim	14.15	49.88	85.33	42.68	1
Tripura	10.24	26.00	42.17	22.93	4
All NES	9.45	88.89	113.73	62.08	
All India	51.38	44.87	43.33	47.17	
CV (NES)	68.36	25.20	17.38	21.79	

Source: Author's calculation based on data collected from the Reports of National Family Health Survey-4, 2015-16 and National Health Profile, 2019. Note: MMI: Maternal Mortality Index; UFCMI: Under-Five Child Mortality Index; UNPI: Under-Nutrition Prevalence Index; HIS: Health Status Index and NES: North Eastern States. Rank-1 indicates the best performance and Rank-8 indicates the lowest performance.

The above table (1) demonstrates the state-wise estimates of different health status indices for the north-eastern states. It has been found that Manipur is leading in maternal mortality index followed by the Sikkim and Meghalaya. Nagaland has the lowest maternal mortality index preceded by Arunachal Pradesh. Sikkim has the highest under-five child mortality index followed by the Manipur and Mizoram. Assam has the lowest under-five child mortality index preceded by Arunachal Pradesh. Sikkim has the highest under-nutrition prevalence index and Assam has the lowest under-nutrition prevalence Index precedes by Tripura. Sikkim has the highest health status index followed by Manipur and Mizoram and it the lowest in Arunachal Pradesh preceded by Assam. Form the ranking of health status index of north-eastern states, it is concluded that Sikkim, Mizoram and Manipur are the states with better health performance; Tripura, Meghalaya and Nagaland are the states with moderate health performance.

Table-2: State-wise Estimates of Different Health Infrastructure Indices for the North-Eastern States

State	HEI	SBAI	CVI	PTPI	SWFI	SFI	HII	Rank of HII
Arunachal	42.92	33.86	11.71	43.30	82.14	87.73	34.93	8
Assam	26.31	63.29	24.43	17.53	76.86	85.20	41.00	7
Manipur	35.23	67.43	51.14	44.33	56.57	98.27	50.20	4
Meghalaya	29.23	34.00	44.86	20.62	54.14	89.87	43.39	5
Mizoram	56.92	76.57	29.57	43.30	87.71	98.80	61.29	2
Nagaland	38.00	16.14	7.71	17.53	72.29	97.73	43.31	6
Sikkim	20.15	95.86	75.71	48.45	96.57	99.60	64.82	1
Tripura	29.38	72.71	35.00	34.02	81.86	97.20	51.67	3
All NES	34.77	57.48	35.02	33.63	71.02	94.30	48.83	
All India	17.20	75.92	51.00	18.27	82.28	68.27	47.43	
CV (NES)	32.84	46.59	63.34	39.08	35.53	6.08	20.99	

Source: Author’s calculation based on data collected from the Reports of National Family Health Survey-4, 2015-16 and National Health Profile, 2019. Note: HEI: Health Expenditure Index; SBAI: Skilled Birth Attendance Index; CVI: Child Vaccination Index; PTPI: Physician per Thousand Population index; SWFI: Safe Water Facility Index; SFI: Sanitation Facility Index; HII: Health Infrastructure Index and NES: North Eastern States. Rank-1 indicates the best performance and Rank-8 indicates the lowest performance.

The above table (2) depicted the state-wise estimates of different health infrastructure indices. It has been found that Mizoram is leading in health expenditure index followed by Arunachal Pradesh and Manipur. Sikkim has the least health expenditure index preceded by Assam. But Sikkim has highest both in Skilled Birth Attendance Index and child vaccination index followed by Manipur. Nagaland has the lowest both in Skilled Birth Attendance Index and child vaccination index preceded by Arunachal Pradesh. Sikkim has the highest physician per thousand population index followed by Manipur and it is the lowest in Nagaland and Assam. Sikkim has the highest safe water facility index followed by Mizoram. Sikkim is also leading in Sanitation facility index and it is the least in Assam preceded by Arunachal Pradesh. Sikkim have overall health better infrastructure index and it is the lowest in Arunachal Pradesh preceded by Assam. Except health expenditure index, Sikkim has the highest value in all other indices but Assam has the lowest value in most of these indices. Form the ranking of different indices on health infrastructure, it is concluded that Sikkim, Mizoram and Tripura are the better health performing states; Manipur, Meghalaya and Nagaland are the moderate health performing states; Arunachal Pradesh and Assam are the low health performing states.

Health limitation indicators and indices are considered as challenges for the improvement of health facilities in a region/state which may be due to social and personal constrains of the people of this region/state. Poverty, illiteracy, smoking etc. are correlated with the health status of people. Improving the socio-economic and moral conditions of people is crucial for reducing the health limitation indicators and indices.

Table-3: State-wise Estimates of Different Health Limitation Indices for the North-Eastern States

State	PII	AII	CPI	SPI	HII	Rank of HII
Arunachal	13.25	32.57	60.00	48.47	45.89	2
Assam	20.00	38.65	66.81	46.27	48.56	1
Manipur	14.75	44.32	51.70	25.47	40.52	5
Meghalaya	64.25	55.14	70.64	15.20	41.47	4
Mizoram	49.00	48.51	48.72	22.40	38.32	7
Nagaland	52.75	54.73	52.89	44.13	42.87	3
Sikkim	42.50	40.41	34.89	26.35	36.16	8
Tripura	45.00	49.32	40.85	26.40	38.88	6
All NES	44.69	59.21	64.81	33.17	50.33	
All India	54.42	50.62	59.90	55.27	54.23	
CV (NES)	61.71	31.16	27.46	57.41	23.29	

Source: Author’s calculation based on data collected from the Reports of National Family Health Survey-4, 2015-16 and National Health Profile, 2019. Note: PII: Poverty Incidence Index; AII: Adult Illiteracy Index; CPI: Contraceptive Prevalence Index; SPI: Smoking Prevalence Index; HII: Health Limitation Index and NES: North Eastern States.

The above table (3) reveals the state-wise estimates of different health limitation indices for the north-eastern states. It has been found that Meghalaya has the highest poverty incidence index followed by Nagaland. Manipur has the lowest poverty incidence index preceded by Arunachal Pradesh. Meghalaya is leading in Adult illiteracy index and it is the least in Arunachal Pradesh preceded by Assam. Meghalaya has the highest contraceptive prevalence index and Sikkim has the lowest contraceptive prevalence index preceded by Tripura. Arunachal Pradesh has the highest smoking prevalence index followed by Assam, and

Meghalaya has the lowest smoking prevalence index preceded by Mizoram. Assam is least in Health Limitation index and it is least in Sikkim preceded by Mizoram. From the ranking of different health limitation indices, it is concluded that Sikkim, Mizoram and Tripura are the better health performing states with relatively lower values of these indices; Manipur, Nagaland, and Meghalaya are the moderate health performing states with moderate values of this index; and Assam and Arunachal Pradesh are the low performing states with higher values of this index.

Health indicators are mixture of measures of health status in a region/state. Health indicators are the way of measuring specified health characteristics of people in a region/state. Health indicators have quantifiable characteristics which the researchers have used it as the evidence of fitness of humans in a region/state. The Composite Health Status Index is the composite index of health status index, health infrastructure index and the health limitation index. The different dimensional indices of Health Status Index along with its composite indices varied significantly in the north east region.

Table-4: State-wise Estimates of the HIS, HII, HLI and CHSI for the North-Eastern States of India

States	HIS	Rank	HII	Rank	HLI	Rank	CHSI	Rank
Arunachal	11.72	7	34.93	8	45.89	2	33.06	7
Assam	3.49	8	41.00	7	48.56	1	31.71	8
Manipur	40.61	2	50.20	4	40.52	5	45.62	3
Meghalaya	21.92	5	43.39	5	41.47	4	40.36	5
Mizoram	32.22	3	61.29	2	38.32	7	53.28	2
Nagaland	20.34	6	43.31	6	42.87	3	36.02	6
Sikkim	42.68	1	64.82	1	36.16	8	59.87	1
Tripura	22.93	4	51.67	3	38.88	6	45.04	4
All NES	24.49		48.83		50.33		43.12	
All India	47.17		47.43		54.23		49.06	
CV (NES)	55.23		20.99		23.29		22.91	

Source: Author’s calculation based on data collected from the Reports of National Family Health Survey-4 (2015-16) and National Health Profile, 2019. Note: HIS: Health Status Index; HII: Health Infrastructure Index; HLI: Health Limitation Index; CHSI: Composite Health Status Index and NES: North Eastern States. Higher Rank indicates states with the better health performance and lower Rank indicates the states with low health performance.

The above table (4) illustrates state-wise estimates of the HIS, HII, HLI and CHSI for the north-eastern states. It has been found that Sikkim has the highest rank whereas Assam has the lowest rank preceded by Arunachal Pradesh in Health Status Index. Sikkim has also the highest rank and Arunachal Pradesh has the lowest rank preceded by Assam in Health Infrastructure Index. The Assam have the highest rank of Health Limitation and it is the lowest in Sikkim preceded by Mizoram. Sikkim have the highest rank of the Composite Health Status Index trailed by Mizoram and it is the lowest in Assam preceded by Arunachal Pradesh and Nagaland. From the ranking of different Composite Health Status Index, it is concluded that Sikkim, Mizoram and Manipur are the better health performing states; Tripura, Meghalaya, and Nagaland are the moderate health performing states; Assam and Arunachal Pradesh are the low health performing states.

Children are more sensitive segment of the population in terms of health. Poor health and nutrition are considered as basic obstacle for the growth of health of the children. Immunization considers as vital for the fitness of the children. It protects children from various life-threatening morbidities and death. First two year of birth of children are more important for the vaccinations. Stunting, underweight and wasting signify the nutritional status of children. Health of mother is important for the birth of a healthy baby. The health of women are influences by the gender discrimination, immobility of women, lack of access of wealth, and patriarchal control. Khasi tribes of Meghalaya is well-known for their matrilineal and matriarchal societies. Multi-nutritional deficiencies are common among the women in India. Women’s malnutrition is the percentage of women with BMI not in the range from 18.5 kg/m² to 25 kg/m². Overall health status, nutritional status is also equally responsible. Secure and provide health care facilities to the women during their most critical phase of life i.e. pregnancy. The Composite Health Quality Indices (CHQI) for north-eastern states are estimated using these indicators of the respective states and the estimated indices are presented in Table-5.

Table-5: State-wise Index Scores of the Composite Health Quality Index in the North-Eastern States of India

SN	State	CHHQI	Rank	WHQI	Rank	HIQI	Rank	CHQI	Rank
1	Arunachal	0.60	7	0.56	7	0.35	8	0.55	6
2	Assam	0.64	5	0.65	5	0.39	7	0.52	7
3	Manipur	0.70	1	0.58	6	0.42	4	0.62	3
4	Meghalaya	0.62	6	0.66	4	0.42	5	0.44	8
5	Mizoram	0.65	4	0.73	1	0.47	1	0.63	2

6	Nagaland	0.60	8	0.51	8	0.42	6	0.60	5
7	Sikkim	0.68	2	0.68	2	0.44	3	0.65	1
8	Tripura	0.66	3	0.67	3	0.45	2	0.61	4
	All NES	0.64		0.63		0.42		0.57	
	CV (NES)	5.68		11.57		8.82		11.65	

Source: Hemant Goyal and Amit Kumar Goyal: Composite Health Quality Index: Assessing the State of Public Health in the Districts of North Eastern States of India. Note: CHHQI: Children Health Quality Index; WHQI: Women Health Quality Index; HIQI: Health Infrastructure Quality Index; CHQI: Composite Health Quality Index

The above table (5) depicts the state-wise index scores of the Composite Health Quality Index for the north-eastern states. It has been found that Manipur has the highest rank in the Children Health Quality Index. Mizoram have the top rank in Women Health Quality Index followed by Sikkim and Tripura. Nagaland also has the bottom rank both in Children Health Quality Index and Women Health Quality Index preceded by Assam. Mizoram has the highest rank in Health Infrastructure Quality Index trailed by Sikkim. Arunachal Pradesh has the lowest rank of Health Infrastructure Quality Index preceded by Assam. The rank of the Composite Health Quality Index is the highest in Sikkim followed Mizoram and Manipur and it is the lowest in Meghalaya preceded by Assam and Arunachal Pradesh. Form the ranking of different indices on health quality index, it is detected that Sikkim, Mizoram and Manipur are providing better quality of health services; Tripura, and Nagaland are providing moderate quality of health services; Meghalaya, Assam and Arunachal Pradesh are providing lower quality of health services.

CONCLUSION

The health scenario in India reflects diversity among the states. Health status index indications that Sikkim, Mizoram and Manipur are states with better health performance; Tripura, Meghalaya and Nagaland are the states with moderate health performance. Health infrastructure index concluded that Sikkim, Mizoram and Tripura are the better health performing states; Manipur, Meghalaya and Nagaland are the moderate health performing states; Arunachal Pradesh and Assam are the low health performing states. Health limitation indices decided that Sikkim, Mizoram and Tripura are the better health performing states with relatively lower values of these indices; Manipur, Nagaland, and Meghalaya are the moderate health performing states with moderate values of this index; and Assam and Arunachal Pradesh are the low performing states with higher values of this index. The Composite Health Status Index determined that Sikkim, Mizoram and Manipur are the better health performing states; Tripura, Meghalaya, and Nagaland are the moderate health performing states; Assam and Arunachal Pradesh are the low health performing states. Health quality index detected that Sikkim, Mizoram and Manipur are providing better quality of health services; Tripura, and Nagaland are providing moderate quality of health services; Meghalaya, Assam and Arunachal Pradesh are providing lower quality of health services. Therefore, Sikkim, Mizoram, Tripura and Manipur have the better conditions than the other states of the region.

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