

Health Status in Andaman Islands: Demand & Supply Analysis

Dr. Anita Banerjee¹, Dr. Smeeta Kabadi², Ms. Laxmi Kanta³

Abstract

Importance of health in the present globalised scenario has emerged as one of the main drivers of economic growth as the outbreak of Health pandemic has literally battered the economies of the world. The objective of the present study is to examine health status of people of Andaman and Nicobar Islands based on the secondary data analysis, the supply of health care facilities available in these islands have been taken as the supply side factors and the health outcomes have been taken as the Demand side factors. An analysis of selected health indicators, namely CDR, CBR and IMR, indicates that health outcomes, have not been very positive over the years except CBR, which has shown decline. This study concludes that, the union territory of Andaman and Nicobar needs to improve its services in health care to have better health outcomes, particularly given the recent outbreak of pandemic, has exposed the inadequacy of health care facilities.

Keywords: *CBR, CDR, IMR, Health Status Indicators (Demand side), Population of A&N Islands, Health indicators Analysis*

¹ Associate Professor (Amity University, Tashkent), Email id: anitamondal_isher@Rediffmail.com

² Associate Professor (Amity University, Tashkent), Email id: smeena90039@gmail.com

³ Research Scholar PG and Research Department of Economics Raja Doraisingam Government Arts College Sivagangai- 630 561 Email id: blaxmi675@gmail.com

Introduction

Importance of health in the present globalised scenario has emerged as one of the main drivers of economic growth as the outbreak of Health pandemic has literally battered the economies of the world. Individuals with good health are enabled to serve as active agents of change in the process of development, both within and outside the health sector. (Jennifer Prah, 2003). The adage which states that health before wealth can be understood in the right perspective by looking at the association between ill health and poverty in developing countries. (Jean Lennox and Dag Ehrenpreis, 2003) The bidirectional relation between health and development has been the subject of debates for more than two decades (Berthélemy, J C Josselin T 2013). Health and economic growth are related has been discussed in varied forms starting from Preston (1975), to recent studies (Jennifer R., 2003, David M. et al, 2003). Not just in the global context but also in Indian scenario, there has been studies which show significant relationship between health and economic development, with certain health indicators (Verma CS et.al, 2019, G.Indrani et al, 2004).

Importance of the vital health indicators in assessing the health of the population has been the subject of study by many authors (Robine JM ,2003; Tulchinsky. T et. al, 2014; Etches Vet.al 2006). Global health is usually judged by the burden of diseases, loss of man days due to illness, mortality, besides other factors ,such as crude death rates(CDR), crude birth rates(CBR),infant mortality rates (IMR) , maternal mortality rates(MMR), besides life expectancy.

There have been studies on health status globally using different indicators of health status (Reidpath DD et al, 2003; Karen E. Lasser et al.,2006; David C. et.al, 2006; Rita G. et. al.,2009; Eurostat online publ.,2013; Concepcion Vedral-Perachoetet et.al, 2014; John Muallhy, 2016). Looking within the country, Indian constitution has clearly mentioned health in its holistic form(Panchmukhi PR, 1972). There have been extensive studies on health status drawing on different health indicators, one among them being on the health status in Kerala (T.P. Kunhikannan, 2000). Study on infant mortality trends in Andhra Pradesh (Prasantha Mahapatra et.al., 2002), an extensive study on health status in Udaipur district of Rajasthan was carried out in 2004(Angus Deaton et.al., 2004).

Looking at the vital health status indicators, five BRICS Nations have drawn considerable attention globally because it is home to 40% of the world population. As is evident from the table below, India ranks far below in terms of vital health indicators among the BRICS nations.

Table 1. Health Statuses of BRICS Nations (2013)

Name of the country	Life Expectancy at Birth ¹	Infant Mortality per 1000 live birth ²	Child Mortality under 5 per 1000 live birth ³	Maternal Mortality ratio (per100000 live birth) ⁴
Russian Federation	71	9	10	24
Brazil	74	12	14	69
South Africa	59	33	44	140
China	75	11	13	32
India	66	41	53	190

Source: BRICS, Health and WHO, Country Presence, WHO, 2017

Life expectancy at birth data is of 2012; maternal mortality ratio is of 2010 all the others are of 2013

Though it can be said now that India is going through a transitory phase in terms of economy, demography and also epidemiology. Various recommendations of committees (Bhore, 1946; Mudaliar, 1962; Chadah, 1963) have also been incorporated in the form of health policies in India from time to time. Prominent among them are the National health missions (NRHM and NUHM, which have achieved a significant amount of success. Though a study (IMS, 2012) revealed that many of the primary health centres (PHCs) were under equipped in terms of basic infrastructural facilities such as beds, wards, toilets, drinking water facility, clean labor rooms for delivery, and regular electricity.

There exists a vast contrast in the delivery of health care across India, on one hand there plethora of private health care facilities equipped with all modern facilities and catering to the needs of the elite, while at the other extreme is the Primary Health care centres (PHCs) run by the government devoid of even the basic facilities. Bihar and Uttar Pradesh have the worst health indicators as is evident from the findings of the 'Healthy States Progressive Report' released on 25th June 2019 (Govt. of India). Uttar Pradesh had a score of 28.6% followed by Bihar (32.11%). Health infrastructure is by far overstretched. Measuring health status with the help of two vital indicators, life expectancy at birth and infant mortality ratio, India's infant mortality rate has reduced to 76 % in over 55 years from 165 deaths per thousand children to 38 deaths in 2015. Other countries which performed better in terms of reduction in Infant mortality Rate (IMR) during the period 1960 to 2015 are Brazil which saw a reduction in IMR by 92%, South Korea 92%, Malaysia, China 92% between 1969 and 2015. The only country which was lagging more than India in terms of reduction of IMR was Pakistan (65%). Another significant health status indicator which is reflective of a health system of a country is the life expectancy at birth; India has been able to improve the life expectancy at birth from 41 years in 1960 to 68 years (65.8%) in 2015. So, India still lags behind China in terms of improvement in life expectancy indicator, as in China the life expectancy rose to 76 years (76.7%) in 2015 from 43 years in 1960. During the said period (1960-2015) Brazil registered an increase of 38.8% as its Life expectancy increased to 75 years, South Korea

(54.7%), Malaysia (27%). Therefore, India has still to improve and match up to the global average life expectancy of 71.4 years as per 2015(India Spend, 2017).

Why the Islands of Andaman & Nicobar was Chosen?

The Islands of Andaman & Nicobar are unique in certain aspects, which attracts the attention of not only tourists but also the researchers, because of its location and pristine beauty. Due to perennial influx of migrants from mainland, people here are exposed to not only tourists but also diseases hence it becomes all the more important to examine the health status by means of the vital health indicators. The first settlement in Andaman Islands was in 1789 at Chatham Island. Before Independence, under the rule of the Britishers, these Islands were known for its unfavourable climate and high rates of mortality. However, after independence Government of India announced various policies related to health. In its recently announced health policy of 2017, it emphasized universal health care (UHC) as its main priority. Given the fact that these islands have no connectivity via roads to mainland India, the status of their health becomes even more of a concern.

Objectives and Methodology

The objective of the present study is to examine the health status of people of A&N Islands with the help of health indicators like Crude birth rate(CBR), Crude death rate(CDR) and Infant mortality rate (IMR) based on the secondary data analysis. For the purpose, the supply of health care facilities available in Andaman & Nicobar Islands has been taken as the supply side factors and the health outcomes have been taken as the Demand side factors. The data for the present study has been collected through secondary sources and presented in table forms.

Limitations of the study

Data for the latest period could not be collected as the website for the same has not updated in recent times.

Supply of Health Care Facilities in Andaman Islands

Table 1.1: Number of Government Health Care centres in A & N Islands

Sl. No.	Particulars	A & N Islands			District-Wise 2019		
		2015	2017	2019	S. Andaman	N & M Andaman	Nicobar
1.	Hospitals	4	4	4	2	1	1
2.	Community Health Centre	4	4	4	1	2	1
3.	Primary health Centre (PHC)	22	22	22	10	8	4

4.	Urban Health Centre (UHC)	5	5	3	3	0	0
5.	Sub- Centre	122	122	94	28	34	32
6.	Homeo-Dispensary	7	7	7	1	3	3
7.	Ayurvedic Dispensary	1	1	1	1	0	0
8.	Health and Wellness Centre	Started from 2018-19		30	12	10	08
9.	Beds Available	1075	1075	1269	749	229	221

Source: Basic Statistics 2018

As is evident from Table 1, there hasn't been any noticeable increase in the number of hospitals in the Islands, except that the concept of Health and wellness centre which was introduced since 2018-19 under Ayushman Bharat to expand access to Comprehensive Primary Health Care (CPHC). TamilNadu having the largest number of such Health and wellness centre HWC (1318) followed by Karnataka (548)

Table 1.2: Bed Strength in Hospitals/ CHCs/PHCs (31-03-2019)

Sl. No	Hospital/CHC/PHC	Number	Hospital/CHC/PHC	Number	Hospital/CHC/PHC	Number
1.	Diglipur Tehsil	112	Port Blair Tehsil	562	Ferrargunj Tehsil	129
2.	CHC Diglipur	82	G,B. Pant, Port Blair	476	CHC Bambooflat	70
3.	PHC Kalighat	10	Ayush Port Blair	30	PHC Ferrargunj	10
4.	PHC RadhaNagar	10	PHC Garacharma	18	PHC Tusnabad	10
5.	PHC Kishori Nagar	10	PHC Neil Island	10	PHC Wimberlygunj	21
6.	Mayabunder Tehsil	77	PHC Havelock	18	PHC Manglutan	18
7.	Dr. R.P. Hospital Mayabunder	67	PHC Chouldari	10	Campbell Bay tehsil	45
			Little Andaman Tehsil	58	PHC Campbell Bay	35
8.	PHC Tugapur	10	PHC R. K. Pur	30	PHC Gandhinagar	10
9.	Rangat Tehsil	110	PHC Hut Bay	28		
10.	CHC Rangat	65				
11.	PHC Long Island	10	Car Nicobar Tehsil	112	Nancowry Tehsil	64
12.	PHC Billiground	15	BJR Hospital, Car Nicobar	112	CHC Nancowry	43
13.	PHC Kadamtala	10			PHC Katchal	10
14.	PHC Baratang	10			PHC Teresa	11
					Grand Total	1269

Source: Basic Statistics

Table 1.3: Average Number of Daily in- Patients and out- Patients (G.B. Pant Hospital, Port Blair)

Sl. No.	Particulars	2010-11	2011-12	2012-13	2013	2014	2015	2018
1.	Daily Average In –Patients	57	-	295	292	299	321	24899
2.	Daily Average Out-Patients	1362	-	10155	1357	1579	1738	673621

Source: Basic Statistics

Table 1.4: Ayush Hospital

Ayush Hospital	Daily Average in-patients	Daily Average Out-patients
2014*	17	194
2015	1	285
2018	258	102718

*January to December

Table 1.5: Private Doctors and Hospitals /Clinics/Diagnostic Centres

	2013	2018
Private Hospitals/clinics/ Diagnostic centres	36	63
Doctors	36	84
Private Medicine shops	108	129

Source: Basic Statics 2019

Analysis and Discussion

Trends in Health Status Indicators: (Demand Side): Though health has been defined by WHO as a state of complete physical, mental and social wellbeing and not merely the absence of diseases or infirmity, is for long being accepted as the definition of health, yet the lack of clarity in the terms, social well-being makes it difficult to operationalize concepts in a way that it could be measured (Goldsmith S.B., 1972). Therefore for the sake of simplicity and practicality, commonly accepted indicators of Health status are CBR, CDR, and IMR which have been analysed in the present study, in order to assess outcome in terms of health indicators, which has been treated as the demand side factors.

Population of A & N Islands: There was a sudden spike in population of A & N islands after 1961, when the decadal population growth registered 105 % increase. This increase continued for the subsequent years, due to the continuous influx of immigrants from Bangladesh. Interestingly the decade 2001-2011 witnessed a sudden decline in population to 6.86%, the decline in population further continued post Tsunami in 2004 in the islands

Table 1.6: Population of A & N Islands

Census Year	A & N Islands	% Decadal Variation
1901	24, 649	-
1911	26, 459	(+) 7.34
1921	27,086	(+) 2.37
1931	29,463	(+) 8.78
1941	33,768	(+) 14.61
1951	30,971	(-) 8.28
1961	63,548	(+) 105.19
1971	115133	(+) 81.17
1981	188741	(+) 63.93
1991	280661	(+) 48.70
2001	356152	(+) 26.90
2011	380581	(+) 6.86

Source: Directorate of Economics and Statistics, Port Blair

Table 1.7: Crude Birth Rates (CBR) and Crude Death Rates (CDR) for A&N Islands and All India

Year	CBR (A & N Islands)	CBR (All India)	CDR (A & N Islands)	CDR (All India)
1991	22.34	29.5	3.41	9.8
1992	22.88	29.2	3.53	10.1
1993	22.56	28.7	3.35	9.3
1994	21.40	28.7	3.18	9.3
1995	20.98	28.3	3.15	9.0
1996	18.30	27.5	3.21	9.0
1997	17.84	27.2	3.09	8.9
1998	17.27	26.5	3.12	9.0
1999	18.17	26.0	2.86	8.7
2000	16.09	25.8	2.82	8.5
2001	17.82	25.4	3.46	8.4
2002	17.72	25.0	3.94	8.1
2003	16.65	24.8	4.13	8.0
2004	16.58	24.1	4.22	7.5
2005	14.34	23.8	4.19	7.6
2006	15.30	23.5	4.89	7.5
2007	13.62	23.1	4.27	7.4
2008	13.26	22.8	3.98	7.4
2009	12.39	22.5	4.00	7.3
2010	11.83	22.1	4.09	7.2
2011	14.77	21.8	5.46	7.1
2012	14.29	21.6	5.72	7.0

2013	14.00	NA	5.50	NA
2014	14.69	NA	5.79	NA
2015	13.36	NA	5.57	NA
2016	11.36	NA	5.45	NA
2017	10.67	NA	4.85	NA
2018	10.32	NA	4.96	NA

Source: Vital statistics of Andaman & Nicobar Islands, office of the Chief Registrar of Birth & Deaths, Port Blair and Planning Commission data. NA (not available)

Looking at the table on crude birth rates (CBR) and crude death rates (CDR) for the islands it becomes clear that post liberalization that is after 1991 particularly since 1994 onwards there has been a steady decline in birth rates in these Islands indicating that on the demand side, the health care facilities have been utilized leading to fall in birth rates. This trend in decline is in sync with the all India crude birth rates, reflecting the fact that birth control measures have been successfully adopted and accepted in these islands. As is evident from the above table, there has been a steady decline in the birth and death rates since 2015 onwards.

Infant mortality Rate:

The Infant Mortality Rate (IMR), which is widely accepted as a crude indicator of the overall health scenario of a country or a region, is defined as the infant deaths (less than one year) per thousand live births in a given time period and for a given region. Infant mortality rate has registered a decline over the years as can be seen from the table below:

Table 1.8: Infant Mortality Rate

Years	IMR (per thousand Live birth)
2013	21.41
2014	15.16
2015	20.41
2016	9.8*
2017	18.07
2018	17.19
2019	20.6*

Source: Directorate of Economics and Statistics, A & N Islands

*as per NFHS 5, State Fact Sheet Compendium

It is a matter of concern that there has been an increase in infant mortality rate(IMR) in the islands, which was well on the path of decline. Among the union territories, Andaman & Nicobar, unfortunately is the only one which has registered a rise in the IMR (M. Barkha, 2021)). The same applies to U5MR (Under five mortality rates, which have increased from 13 (per thousand live births) in 2015-16 to 24.5 per thousand live birth in 2019-20 as per NFHS 5. Another indicator which has exhibited a negative trend in the islands relates to increase in the percentage of children who are under weight (low weight for age) in the U5 age group (2.1%) rise.

Estimated Results**Table 1.9: Linear Model Estimation of the Health Indicators**

Health Indicators	Simple Linear Regression Model			
	Regression Coefficients		R ²	Sig
	A	b		
Crude Birth Rate (1991 to 2018)	2038.67	-2.123 (0.161)* (-13.151)**	0.86	0.000
Crude death Rate (1991 to 2018)	1973.92	7.367 (0.870)* (8.467)**	0.73	0.000
Infant Mortality Rate (2013 to 2019)	2016.12	-0.007 (0.238)* (-0.030)**	0.00	0.97

Source: Computed by the researcher from secondary data (figures in parentheses represents the respective standard error*and t value **

From the above tables it can be inferred that the crude birth rate (CBR) has been declining at a steady rate since 1991, with annual rate of change at 2.123%, but the same cannot be said of the CDR (crude death rate) which registered a increase to 4.96%. The IMR (infant mortality rate) has been fluctuating, and is a matter of concern going by the latest trend (20.16%) in 2019. The annual rate of change in both the indicators , that is CBR and CDR are stastically significant, but the same cannot be said of the IMR .Thus it can be concluded that the picture is not very satisfactory when these specific indicators are taken into account.

However, the picture is not so grim, there have been some positive developments in some indicators as well. A&N has witnessed an increase in breast feeding and vaccinations (4.6%) in children in the age group of 12-23 months, reduction in anaemia among U5 from 49% in 2015-16 to 40 % in 2019-20 and also for women in the 15-49 age group from 65.7% to 57.5% in 2019-20 as per NFHS 5.

During the peak of pandemic, the Union territory of Andaman & Nicobar Islands has exhibited extreme caution and though initially it recorded the highest Rt value of 1.70% (number of new cases that are supposed to emerge from one positive case), the UT was also among the states that recorded the highest test per milion(75883) (Bedi M &Sharma S., 2021) Given the overall supply of health care (supply side) scenario and the health outcomes (demand side) reflected in the health indicators, it can be concluded that, the Union territory of Andaman & Nicobar has still miles to go in terms of improving its services in health care. A place which is located at 1200km from mainland India, is beset with several bottlenecks, in terms of infrastructure in health care facilities as well as in the number of health care professionals available. Post Pandemic scenario has thrown up new challenges for these islands, which is grappling with the constrained infrastructure of health care facilities, further aggravated by the, locational inhibiting factors. Therefore, the administration must pull up its

socks to ensure better health indicators in the days to come as the islands of Andaman & Nicobar also happen to be popular tourist destinations.

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