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A STUDY ON HEALTH STATUS IN ANDHRA PRADESH

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ABSTRACT

Health and education are universally recognized as vital for improving quality of life and as essential human rights, as underscored by indices like the Human Development Index (HDI), which emphasise factors such as life expectancy and education. In India, efforts to balance social development with economic progress have been ongoing since independence. In Andhra Pradesh, indicators of population health have shown improvements over the past decades, including increased life expectancy and reduced infant mortality.

This study examines health metrics and public healthcare expenditure in Andhra Pradesh over the last two decades. Analysing mortality trends, healthcare infrastructure development, and financial disbursements reveals strides made and challenges faced in healthcare delivery. Notable improvements include declining mortality rates and substantial reductions in Infant Mortality Rates (IMR), indicating progress in maternal and paediatric healthcare. Life expectancy has also increased, reflecting better healthcare provision and living standards.

Furthermore, the study highlights the fluctuations in healthcare infrastructure, encompassing metrics such as hospital establishments, bed capacities, medical personnel, and Primary Health Centre (PHC) proliferation. Infrastructural developments signify an expansion, demonstrating the investments in healthcare facilities. From a financial standpoint, the analysis of health expenditure vis-à-vis total expenditure and GSDP underscores a increasing commitment to healthcare. The observed substantial increase in per capita health expenditure stresses concerted efforts aimed at enhancing healthcare accessibility and quality for the populace.

Key Words: Healthcare, Infant Mortality, Life Expectancy, Human Development, Social Sector, Health Expenditure.

INTRODUCTION

Globally, health and education are universally acknowledged as pivotal components in enhancing the quality of life, with equitable access to primary education and healthcare regarded as fundamental human rights. This sentiment resonates with the perspective of Alfred Marshall, [1] who esteemed human capital as the most valuable form of investment. Broadly construed, human development encompasses advancements in human rights, participatory governance, and freedom of choice. Mahbub-Ul-Haq, a prominent economist, notably emphasised the centrality of individuals in the discourse of development, stressing the importance of their participation in and benefit from economic growth. [2]

The conception and popularisation of the Human Development Index (HDI), spearheaded by Haq, has become instrumental in gauging development levels worldwide. The HDI, a composite measure encompassing dimensions like longevity, education, and living standards, epitomises efforts to capture holistic human progress. Amartya Sen, an Indian economist and Nobel laureate, significantly contributed to the conceptualisation of HDI.

Following India's attainment of independence, concerted endeavours were made to foster social development in tandem with economic growth. Despite commendable achievements in various sectors, progress in social development has

[1] Alfred Marshall (1980), *Principles of Economics*, Sixth Edition (1980), Mac Millan, London, p.564.
[2] Mahbub-Ul-Haq (1992), *Human Development in a Changing world*, Occasional Papers, Human Development Report office, New York, p.1.

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been relatively sluggish. As household incomes rise, the capacity to invest in healthcare, education, and nutrition increases, leading to enhanced overall health outcomes, which, in turn, bolster economic advancement.

India's healthcare initiatives trace back to 1943 with the establishment of the Bhore Committee to evaluate the nation's health needs. Upon independence, the health infrastructure, predominantly urban-centric and focused on curative services, necessitated a shift towards preventive healthcare, prompting interventions by the Ministry of Health and Family Welfare.

Assessment of population health in India over the past five decades has revealed substantial improvements, with life expectancy surging from 33 to 68 years and infant mortality rates declining from 148 to 58 per 1000 live births. The Millennium Development Goals (MDGs) and subsequent Sustainable Development Goals (SDGs) embody global commitments towards enhancing human development outcomes, with a particular emphasis on health and other critical domains. These frameworks serve as benchmarks for governments, donors, and non-governmental organizations, guiding collective efforts towards sustainable and inclusive growth.

Some major indicators for measuring the growth of the health sector in Andhra Pradesh include various quantitative and qualitative measures. Which includes - **Infant Mortality Rate (IMR):** The number of infant deaths per 1,000 live births in a given year. A declining IMR indicates improvements in infant health and healthcare access. **Maternal Mortality Ratio (MMR):** The number of maternal deaths per 100,000 live births. A decrease in MMR signifies better maternal healthcare services. **Life Expectancy:** The average number of years a person is expected to live. An increasing life expectancy indicates improved healthcare and living conditions. **Immunisation Coverage:** Percentage of children and adults vaccinated against preventable diseases. Higher immunisation rates indicate better access to healthcare services. **Health Infrastructure:** Number of hospitals, primary health centers, community health centers, and healthcare professionals per capita. Better infrastructure is needed in tune with the increase in the population. **Health Expenditure:** Total expenditure on health as a percentage of GDP or per capita health expenditure. Increased spending may indicate a commitment to improving healthcare services. **Disease Burden:** Incidence and prevalence rates of communicable and non-communicable diseases such as malaria, tuberculosis, diabetes, etc. **Access to Clean Water and Sanitation:** Percentage of population with access to clean drinking water and adequate sanitation facilities, which significantly impacts public health.

Public expenditure plays a dual role in promoting economic development. Firstly, it facilitates the creation of both social and economic infrastructure, thereby enhancing the efficient utilization of available resources in the economy. Secondly, it directs sectoral investments towards activities that boost productivity in production processes and other economic endeavors.[3] Notably, the level, purpose, and pattern of public expenditure in a mixed economy remain dynamic, adapting to evolving socio-economic conditions.

The effectiveness and efficiency of government expenditure in the social sector can vary across regions and development stages. Innovative institutional arrangements and alternative financing mechanisms are being explored to supplement public funds and enhance the impact of social sector investments.[4]

OBJECTIVE OF THE STUDY

With the above brief back drop the present paper aims to study the health status of Andhra Pradesh for two decades i.e., from 2000-01 to 2020 and to examine trends in public expenditure on health.

METHODOLOGY

The present study mainly depends on secondary data and simple statistical tools like percentages, averages, change over the period of time were used. Data collected from State Finances: A study on Budgets, published by Reserve Bank of India, SRS Bulletin, Various Issues, Statistical Abstract: Andhra Pradesh, published by the Directorate of Economic and Statistics, Government of Andhra Pradesh, online journals and websites.

[3]Sibani Datta (1985), *Public Expenditure and Economic Development*, Ashish Publishing House, New Delhi, p.4-5.
[4]Banerjee, A. and E. Duflo (2004), Growth Theory through the Lens of Development Economics, *mimeo*, MIT.

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PERFORMANCE INDICATORS

Performance indicators such as death rates, infant mortality rates, and average life expectancy at birth serve as critical metrics for assessing the health and development of a nation. In an ideal scenario characterised by development and robust health systems, death rates should be minimal. While it is acknowledged that achieving a death rate of zero is unattainable due to the inevitability of mortality, efforts should be directed towards reducing death rates to the lowest feasible level.

Table 1 presents death rates in Andhra Pradesh over a period spanning from 2000-01 to 2019-20., Infant Mortality Rate (IMR) and Life expectancy at Birth.

From 2000-01 to 2009-10, the average death rates were 7.59, IMR 56 and Life expectancy at birth 64.78 of total populations. Over this period, there was a slight decline in death rate and IMR. From 2010-11 to 2019-20 the average still declined to 7.0 in case of death rate, 34.30 with regard to IMR and Life expectancy increased to 68.31. During the total period of study the decline in death rate was only 0.59 points where as in case of IMR is was 21.7 points. With regard to Life expectancy the increase was 3.53 times. Overall, the data indicates a gradual decrease in death rates in Andhra Pradesh, gradual decline in IMR and positive change in average life expectancy during the entire period. It infers that there was significant improvement in health status of Andhra Pradesh.

TABLE 1
SOME HEALTH INCATORS IN ANDHRA PRADESH

Year	Death rates	Infant Mortality Rate	Life Expectancy at Birth
2000-01	8.1	66	63.0
2001-02	8.1	62	63.4
2002-03	8.0	59	63.9
2003-04	7.0	59	64.6
2004-05	7.3	57	65.0
2005-06	7.3	56	65.3
2006-07	7.4	54	65.5
2007-08	7.5	52	65.7
2008-09	7.6	49	65.6
2009-10	7.6	46	65.8
Average	**7.59**	**56**	**64.78**
2010-11	7.5	43	66.3
2011-12	7.4	41	67.0
2012-13	7.3	39	67.9
2013-14	7.3	39	68.5
2014-15	7.1	37	69.0
2015-16	6.8	34	69.6
2016-17	7.2	32	69.7
2017-18	6.7	29	70.0
2018-19	6.4	25	70.3
2019-20	6.3	24	**NA**
Average	**7.00**	**34.30**	**68.31**
Change over first period	**-0.59**	**-21.7**	**3.53**

Source: SRS Bulletin, Various Issues.

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The Table 2 presents data on the number of hospitals and dispensaries, beds, doctors, and Primary Health Centers (PHCs) in Andhra Pradesh over the years from 2000-01 to 2020-21. The figures are categorized by the type of medicine practiced, including allopathic, ayurvedic, homeopathic, and unani.

Key observations from the table include - The number of hospitals and dispensaries fluctuated slightly over the years, with a peak in 2011-12. The number of beds steadily increased over the years, reaching its highest point in 2012-13 before plateauing. The count of doctors generally increased over the years, with notable growth observed in the latter half of the period. The number of PHCs remained relatively stable throughout the period, with a slight increase in recent years.

TABLE 2
NUMBER OF HOSPITALS AND DISPENSARIES, BEDS, DOCTORS AND PHCs DURING STUDY PERIOD [ALLOPATHIC, AYURVEDIC, HOMEOPATHIC AND UNANI]

Year	No. of Hospitals& Dispensaries	No. of Beds	No. of Doctors	PHCs
2000-01	1718 (2.3)	36506 (47.9)	11071 (14.5)	1386 (1.82)
2001-02	1820 (2.4)	36476 (47.3)	10460 (13.6)	1386 (1.80)
2002-03	1771 (2.3)	34948 (44.8)	9610 (12.3)	1386 (1.78)
2003-04	1811 (2.3)	34968 (44.3)	9786 (12.4)	1386 (1.76)
2004-05	1756 (2.2)	36168 (45.3)	9102 (11.4)	1570 (1.97)
2005-06	1740 (2.2)	35734 (44.3)	8848 (11.0)	1580 (1.96)
2006-07	1658 (2.0)	36124 (44.3)	9042 (11.1)	1580 (1.94)
2007-08	1847 (2.2)	37726 (45.8)	9647 (11.7)	1581 (1.92)
2008-09	1918 (2.3)	39059 (47.0)	10794 (13.0)	1581 (1.90)
2009-10	1787 (2.1)	39378 (46.9)	10453 (12.5)	1581 (1.88)
2010-11	2661 (3.1)	43909 (50.5)	10826 (12.8)	1633 (1.93)
2011-12	2690 (3.1)	46653 (53.3)	10975 (12.9)	1634 (1.91)
2012-13	2654 (3.1)	47751 (54.1)	12109 (14.0)	1634 (1.90)
2013-14	1497 (1.7)	26299 (29.9)	5877 (6.8)	1155 (1.33)
2014-15	1500 (1.7)	29078 (32.8)	6303 (7.2)	1075 (1.23)
2015-16	1512 (1.7)	29524 (33.0)	6836 (7.7)	1156 (1.31)

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2016-17	1506 (1.7)	29700 (33.0)	7123 (9.6)	1157 (1.30)
2017-18	1502 (1.7)	29640 (32.7)	8620 (9.6)	1147 (1.28)
2018-19	1499 (1.7)	34600 (37.9)	7169 (7.9)	1145 (1.27)
2019-20	1064 (1.2)	34612 (37.7)	7471 (8.2)	1142 (1.26)
2020-21	1074 (1.2)	37334 (40.4)	7567 (8.3)	1149 (1.26)

Source: Statistical Abstract: Andhra Pradesh, Published by Directorate of Economic and Statistics, Government of Andhra Pradesh, Various issues.

Apart from performance indicators such as death rate, infant mortality rate, and average life expectancy at birth which serves as critical metrics for assessing the health and development of a nation, a couple of financial indicators are also taken for the study. The total health expenditure as a percentage of GSDP or per capita expenditure and increased spending may indicate a commitment to improving healthcare services.

TABLE 3
TRENDS IN HEALTH EXPENDITURE OF ANDHRA PRADESH

Year	Health Expenditure	As % of Total Expenditure	Health as % of SSE	Health as % of GSDP	Per Capita Health Expenditure (in Rupees)	Health Index of AP
2000-01	1334.0	5.17	16.04	1.38	175	0.680
2001-02	1367.5	4.92	15.70	1.31	177	0.687
2002-03	1378.1	4.62	14.63	1.24	177	0.694
2003-04	1484.3	4.36	13.67	1.17	188	0.700
2004-05	1502.3	4.09	13.35	1.06	188	0.706
2005-06	1622.2	3.81	13.17	1.05	201	0.712
2006-07	1860.7	3.62	11.98	1.02	228	0.717
2007-08	2482.2	3.72	13.10	1.12	302	0.722
2008-09	2924.9	4.73	11.55	1.18	352	0.727
2009-10	3279.6	4.25	12.42	1.15	391	0.732
2010-11	4151.7	4.63	12.61	1.24	490	0.739
2011-12	5099.6	4.90	13.13	1.34	597	0.746
2012-13	5427.8	4.61	12.72	1.32	630	0.755
2013-14	5938.7	4.73	12.82	1.28	683	0.763
2014-15	5533.7	4.38	12.40	1.05	632	0.771
2015-16	5207.3	4.73	10.66	0.86	590	0.778
2016-17	6437.7	4.90	12.23	0.94	723	0.784
2017-18	6388.6	4.74	10.30	0.81	713	0.787
2018-19	7400.2	4.98	11.02	0.85	820	0.791
2019-20	7538.3	5.01	10.48	0.78	829	0.779
2020-21	9510.9	5.54	13.36	0.94	1039	0.734
Change 1 (2000-01 to	**2.46**	**0.82**	**0.77**	**0.83**	**2.23**	

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2009-10)						
Change 2 (2010-11 to 2019-20)	**2.29**	**1.20**	**0.83**	**0.63**	**2.12**	
Change 3 (2000-01 to 2020-21)	**7.13**	**1.07**	**0.83**	**0.68**	**5.94**	

Source: State Finances - A study of Budgets, Published by RBI, Various years.

Table 3 delineates the trajectory of health expenditure in Andhra Pradesh from 2000-01 to 2020-21, including various key indicators such as health expenditure as a percentage of total expenditure, as a percentage of Social Sector Expenditure (SSE), health expenditure as a percentage of Gross State Domestic Product (GSDP), and per capita health expenditure in rupees.

Health expenditure in Andhra Pradesh has experienced fluctuations over the years, but it has generally shown an increasing trend in absolute terms. The total health expenditure has surged from Rs. 1334.0 crores in 2000-01 to Rs. 9510.88 crores in 2020-21, indicating a substantial increase of 7.13-fold over the twenty-year period.

The proportion of Heathe expenditure to Total Expenditure ranged between 3.62 per cent in 2006-07 and 5.54 per cent in 2020-21. The spurge in expenditure on health may be attributed to CORONA 19. The increase of health expenditure in total expenditure during first period is not even one-fold during second and total study period marginally higher than one-fold.

The proportion of health expenditure to SSE has shown fluctuations, with notable peaks and troughs over the years. Despite the fluctuations, health expenditure has generally accounted for a significant portion of SSE, reflecting the state's emphasis on healthcare provisioning. It ranged between 16.04 per cent in 2000-01 and 10.30 per cent in 2017-18. But the increase during the two sub-periods and total period of study are not even one-fold.

Similarly, health expenditure as a percentage of GSDP has exhibited fluctuations, indicating variability in the prioritisation of healthcare relative to the state's economic output. It is very less and not crossed 1.38 per cent during the study period. The increase as proportion of GSDP is less than one-fold. However, there is an overall increasing trend, suggesting a growing commitment to healthcare investment over time.

Per capita health expenditure has witnessed an upward trajectory over the years, reflecting increased allocation of resources per individual towards healthcare. It increased to Rs.1039/- on 2020-21 from Rs.175/- in 2000-01. It increased 2.2-fold from 2000-01 to 2000-01 to 2009-10, 2.1- fold from 2010-11 to 2019-20 and 5.9-fold from 2000-01 to 2020-21. Health Index improved from 0.680 in 2000-01 to 0.734 in 2020-21. This signifies efforts to improve access to healthcare services and enhance the quality of healthcare delivery for the population.

CONCLUSION

The comprehensive analysis in this paper sheds light on the dynamics of healthcare and mortality trends in Andhra Pradesh over the past two decades. These tables encapsulate various facets of health indicators, ranging from death rates and infant mortality to life expectancy and health expenditure.

Some of the Mortality Trends highlight a gradual decline in death rates of total populations of Andhra Pradesh from 2000-01 to 2019-20. This decline signifies improvements in healthcare accessibility, advancements in medical technology, and enhanced public health interventions. The steady decrease in death rates underscores the effectiveness of concerted efforts aimed at improving healthcare outcomes in the state.

Likewise, the Infant Mortality Rates elucidate a substantial reduction in IMR over the study period, indicative of significant progress in maternal and child healthcare. It is reflecting improvements in healthcare infrastructure, maternal education, and access to essential healthcare services.

The Life Expectancy demonstrates a positive trend in life expectancy at birth for both males and females in Andhra Pradesh. The increase in life expectancy signifies improvements in overall health, living conditions, and healthcare delivery systems. Factors contributing to this upward trajectory may include better disease management,


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increased access to healthcare services, and improvements in socio-economic indicators such as education and income levels.

Healthcare Infrastructure and Expenditure provides insights into healthcare infrastructure and expenditure patterns in Andhra Pradesh. While there have been fluctuations in the number of hospitals, beds, doctors, and PHCs over the years, overall, there appears to be a positive trend indicating expansions in healthcare infrastructure. However, the variability in capital expenditure underscores the need for consistent investment in healthcare infrastructure development to meet evolving healthcare needs adequately.

Analysis of health expenditure as a proportion of total public expenditure and GSDP reveals the importance of sustained financial commitment to healthcare.

Sustained investments in healthcare infrastructure, human resources, and public health programmes are essential to consolidate the gains achieved and address emerging health challenges effectively. Additionally, further research and policy interventions are warranted to address underlying socio-economic determinants of health and enhance the resilience of healthcare systems in Andhra Pradesh to future shocks and crises.

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