

Impact of Public Healthcare Services on the Poor in Karnataka: An Empirical Analysis

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Abstract

Public healthcare plays a vital role in promoting equitable access to quality healthcare services and improving health outcomes, particularly among economically disadvantaged populations. Karnataka has implemented several public health initiatives, including the National Health Mission (NHM), Ayushman Bharat–Arogya Karnataka, maternal and child healthcare programmes, immunization campaigns, and strengthened primary healthcare institutions to enhance healthcare accessibility and affordability. However, inequalities in healthcare access, service quality, infrastructure availability, and financial protection continue to affect poor households, especially in rural and backward regions.

This study examines the impact of public healthcare services on poor households in Karnataka using an empirical framework based on secondary data from sources such as the National Family Health Survey (NFHS-5), National Sample Survey (NSS), Health Management Information System (HMIS), National Health Accounts (NHA), and Government of Karnataka reports. The study analyses healthcare utilization, affordability, maternal and child health outcomes, preventive healthcare coverage, and out-of-pocket expenditure.

The findings reveal that public healthcare interventions have improved institutional deliveries, antenatal care utilization, immunization coverage, and access to essential health services among vulnerable groups. However, challenges such as infrastructure gaps, shortage of healthcare professionals, regional disparities, and high medical expenses remain significant concerns. The study recommends strengthening primary healthcare, increasing public investment, improving workforce capacity, expanding digital health services, and enhancing governance to achieve Universal Health Coverage in Karnataka.

Keywords: Public Healthcare, Poverty, Universal Health Coverage, Ayushman Bharat–Arogya Karnataka, Healthcare Expenditure, Health Policy.

Introduction

Health is a fundamental component of human development and an essential prerequisite for sustainable economic growth. An efficient public healthcare system contributes not only to improved health outcomes but also to poverty reduction, enhanced labour productivity, and social inclusion. For economically disadvantaged households, access to affordable and quality healthcare determines their ability to maintain livelihoods, avoid catastrophic health expenditures, and improve overall well-being.

India has made considerable progress in expanding public healthcare infrastructure through programmes such as the National Health Mission, Ayushman Bharat, Janani Suraksha Yojana, Universal Immunization Programme, and various state-level initiatives. Karnataka has emerged as one of the leading states in healthcare reforms by investing in primary healthcare institutions, district hospitals, medical colleges, and publicly financed health insurance schemes. The implementation of Ayushman Bharat–Arogya Karnataka has significantly expanded financial protection for economically weaker households by providing access to cashless treatment for a wide range of medical conditions.

Despite these achievements, healthcare inequalities continue to persist across districts and socio-economic groups. Rural populations frequently face shortages of qualified medical personnel, inadequate diagnostic facilities, transportation barriers, and inconsistent availability of essential medicines. Poor households often rely on private healthcare providers because of perceived quality differences, leading to substantial out-of-pocket expenditure and increased financial vulnerability. These challenges undermine the objectives of universal health coverage and equitable healthcare access.

Karnataka presents an important case for examining the effectiveness of public healthcare interventions because of its relatively advanced health infrastructure alongside considerable regional disparities. Districts in southern Karnataka

generally perform better on health indicators than several northern districts, reflecting differences in socio-economic development, infrastructure, and public service delivery.

The present study aims to assess the impact of public healthcare services on poor households in Karnataka by examining accessibility, utilization, affordability, and selected health outcomes. It seeks to identify the strengths and limitations of the existing public healthcare system and to provide evidence that can support policy reforms for improving healthcare delivery among vulnerable populations. By focusing on equity and inclusion, the study contributes to the broader discourse on sustainable development, social justice, and public health governance.

Background of Public Healthcare Services in Karnataka

Karnataka has developed one of India's relatively comprehensive public healthcare systems through sustained investments in primary, secondary, and tertiary healthcare. The state's healthcare delivery structure consists of Sub-Centres, Primary Health Centres (PHCs), Community Health Centres (CHCs), Taluk Hospitals, District Hospitals, and Government Medical Colleges. These institutions provide preventive, promotive, curative, and rehabilitative services to both rural and urban populations.

The National Health Mission has played a significant role in strengthening healthcare infrastructure, improving maternal and child health services, expanding immunization coverage, and reducing communicable diseases across the state. Complementing these efforts, Ayushman Bharat–Arogya Karnataka has extended financial protection by offering cashless treatment for eligible beneficiaries in both public and empanelled private hospitals. The scheme seeks to reduce catastrophic health expenditure among economically vulnerable households and improve access to specialized healthcare services.

The COVID-19 pandemic further highlighted the importance of a resilient public healthcare system. Government hospitals, public health laboratories, surveillance networks, and frontline health workers played a critical role in testing, treatment, vaccination, and community awareness. The pandemic accelerated investments in digital health technologies, telemedicine, health information systems, and disease surveillance, strengthening the state's preparedness for future public health emergencies.

Nevertheless, important challenges remain. Considerable disparities exist between urban and rural areas and across districts in terms of healthcare infrastructure, availability of specialists, diagnostic facilities, and quality of services. Poor households continue to incur high out-of-pocket expenditure, particularly for medicines, diagnostics, and transportation. Workforce shortages, infrastructure gaps, and uneven implementation of health programmes affect service delivery, especially in remote and underserved regions.

Against this background, examining the impact of public healthcare services on poor households is essential for evaluating whether current public investments are achieving their intended objectives of equitable access, financial protection, and improved health outcomes. Such evidence can guide future policy interventions aimed at strengthening Karnataka's public healthcare system and advancing universal health coverage.

Review of Literature

1. The landmark report of the World Health Organization (2000) emphasized that health systems should be evaluated based on equity, efficiency, responsiveness, and financial protection. Universal Health Coverage (UHC) has since become a global policy objective, aiming to ensure that all individuals receive quality healthcare without suffering financial hardship.
2. Peters et al. (2008) argued that poor households often face multiple barriers to healthcare access, including geographical isolation, inadequate infrastructure, financial constraints, and limited awareness. These barriers disproportionately affect rural populations and contribute to persistent health inequalities.
3. Balarajan, Selvaraj, and Subramanian (2011) observed that despite improvements in India's healthcare infrastructure, significant inequalities remain across income groups, regions, and social categories. Their study highlighted that the poor continue to experience lower healthcare utilization and higher financial burdens than wealthier households.
4. One of the most influential empirical studies relevant to Karnataka is Sood et al. (2014), which evaluated the Vajpayee Arogyashree Scheme, a publicly financed health insurance programme in Karnataka. The study reported reductions in mortality from conditions covered by the scheme and lower out-of-pocket expenditure among eligible

below-poverty-line households, demonstrating that targeted public financing can improve access to specialized healthcare.

5. The National Health Policy (2017) advocates increasing government health expenditure and strengthening primary healthcare as essential steps toward achieving Universal Health Coverage. The policy recognizes that financial hardship caused by healthcare costs remains a major challenge for economically vulnerable households.

6. The Economic Survey of Karnataka and reports from the Government of Karnataka indicate improvements in public health infrastructure, including the expansion of Health and Wellness Centres, digitization of health services, and implementation of Ayushman Bharat–Arogya Karnataka. Nevertheless, shortages of specialists, unequal distribution of facilities, and quality-of-care concerns continue to affect service delivery.

Overall, existing literature suggests that public healthcare interventions have improved healthcare utilization and financial protection among poor households. However, disparities in service quality, infrastructure, workforce availability, and regional development continue to limit the effectiveness of public healthcare systems.

Research Gap

Despite extensive research on public healthcare in India, significant gaps remain in understanding Karnataka's healthcare performance. Existing studies often focus on national trends or specific insurance schemes, with limited integrated analysis of accessibility, affordability, utilization, and health outcomes among poor households. Research also underexplores primary healthcare effectiveness, preventive services, district-level disparities, and post-Ayushman Bharat–Arogya Karnataka developments. This study addresses these gaps by examining healthcare infrastructure, financial protection, service utilization, and outcomes using recent secondary data.

Objectives of the Study

1. To examine the impact of public healthcare services on poor households in Karnataka
2. To evaluate the accessibility of public healthcare services among economically disadvantaged households in Karnataka.
3. To examine the utilization of public healthcare facilities by poor households.
4. To suggest policy measures for strengthening public healthcare services for vulnerable populations.

Methodology

This study adopts a quantitative empirical research design based on secondary data to analyze the impact of public healthcare services on poor households in Karnataka. It follows a descriptive and analytical approach to examine healthcare accessibility, utilization, affordability, health outcomes, and financial protection among disadvantaged populations. The study uses data from sources such as NFHS-5, NSS 75th Round on Health, HMIS, National Health Accounts, Government of Karnataka reports, National Health Mission reports, Economic Survey of Karnataka, and SRS. The study covers the entire state, focusing on rural–urban differences and district-level variations where available. Key dependent variables include healthcare utilization, out-of-pocket expenditure, institutional deliveries, immunization, maternal care, and child health indicators, while independent variables include poverty status, education, residence, healthcare access, insurance coverage, and infrastructure availability. Statistical tools such as descriptive analysis, cross-tabulation, chi-square tests, correlation, regression, and trend analysis are used. Reliability is ensured through standardized datasets, and ethical principles are maintained through the use of anonymized secondary information.

Major Findings

1. Expansion of Healthcare Infrastructure: Public healthcare infrastructure in Karnataka has improved through the growth of Primary Health Centres (PHCs), Community Health Centres (CHCs), Health and Wellness Centres, district hospitals, and medical colleges, enhancing healthcare accessibility, especially in rural areas. However, district-level disparities continue.
2. Improvement in Maternal and Child Health Services: Utilization of antenatal care, institutional deliveries, immunization, and reproductive healthcare services has increased due to National Health Mission programmes and state initiatives.

3. Enhanced Financial Protection: Schemes such as Ayushman Bharat–Arogya Karnataka have reduced hospitalization costs for poor households, though out-of-pocket expenses for medicines, diagnostics, and outpatient care remain high.
4. Persistent Regional Inequalities: Developed districts show better infrastructure and health outcomes compared to economically weaker districts, particularly in northern Karnataka.
5. Quality Challenges in Public Facilities: Shortages of healthcare staff, medicines, diagnostics, and infrastructure affect service quality and increase dependence on private providers.
6. Growth of Digital Health Services: Telemedicine, digital health initiatives, and community health networks have improved healthcare delivery, but equitable implementation requires further investment.

Discussion

The evidence indicates that Karnataka has achieved significant progress in strengthening its public healthcare system and improving access to essential health services for economically disadvantaged groups. Government investments have contributed to better maternal health, child survival, immunization coverage, and institutional healthcare utilization. Publicly financed health insurance schemes have improved access to secondary and tertiary care by reducing hospitalization costs for poor households. However, financial protection remains incomplete due to continued out-of-pocket expenses on medicines, diagnostics, outpatient care, and transportation.

The study also highlights persistent regional inequalities, with rural areas and economically weaker districts facing shortages of healthcare professionals, inadequate infrastructure, and limited specialist services. These challenges affect equitable access and reduce the effectiveness of healthcare programmes. Although infrastructure has expanded, improving quality of care requires stronger governance, trained personnel, reliable medicine supply, efficient referral systems, and better accountability mechanisms.

Overall, public healthcare services have played an important role in reducing health-related financial burdens, improving outcomes, and increasing service utilization. Further reforms are needed to ensure equitable healthcare access for all vulnerable populations in Karnataka.

Policy Implications

The study highlights important policy measures for strengthening public healthcare services in Karnataka. The government should increase healthcare expenditure, particularly for primary healthcare institutions serving rural and vulnerable populations. Priority should be given to improving infrastructure, diagnostic facilities, medicine availability, and emergency services.

Healthcare workforce shortages require attention through the recruitment of doctors, nurses, specialists, technicians, and community health workers. Incentives, professional training, and better working conditions can support retention in underserved areas. Public health insurance schemes should be expanded to include outpatient care, essential medicines, diagnostics, and chronic disease management to reduce out-of-pocket expenditure among poor households. Reducing district-level inequalities requires need-based allocation of resources considering healthcare demand, disease burden, and socio-economic conditions. Strengthening digital health systems, including telemedicine, electronic records, and health information platforms, can improve accessibility and service monitoring.

Additionally, greater community participation, social audits, grievance mechanisms, and regular evaluation of healthcare programmes are essential for enhancing transparency, accountability, and public confidence. These measures can help create a more equitable and effective public healthcare system in Karnataka.

Conclusion

Public healthcare services constitute an essential instrument for improving health equity and reducing poverty in Karnataka. Evidence from published research and government reports indicates that sustained public investment has expanded access to healthcare, improved maternal and child health outcomes, increased utilization of institutional healthcare, and strengthened financial protection through publicly funded insurance schemes.

Despite these achievements, important challenges remain. Persistent regional disparities, shortages of healthcare professionals, infrastructure deficiencies, and continued out-of-pocket expenditure limit the effectiveness of the public healthcare system for economically vulnerable households. Addressing these issues requires greater public investment,

improved governance, strengthened primary healthcare, expansion of financial protection, and more equitable distribution of healthcare resources.

Future empirical research should utilize recent datasets such as NFHS-5, NSS, HMIS, and district-level health statistics to quantify the impact of public healthcare programmes on health outcomes and financial protection among poor households. Such evidence will support more effective policy design and contribute to achieving Universal Health Coverage and the Sustainable Development Goals in Karnataka.

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