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The Performance Of Public Health Care System In Kerala – The Role Of Government Interventions

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Abstract

This study explores the empirical relationship between State Health Policy (SHP) and the Performance of Government Hospitals (PGH) by conducting research in the State of Kerala. The research findings indicate a strong positive correlation between SHP and PGH, with a direct and significant effect of the SHP on the PGH. This research establishes that the State of Kerala's proactive health policy interventions have a considerable impact on the performance of the public healthcare system and, in particular, government hospitals. These findings are not only of local significance but also hold relevance for healthcare policy development and implementation in similar contexts worldwide. The positive associations unveiled in this study underscore the pivotal role of state health policy as a potent predictor of public healthcare system effectiveness, notably in enhancing the performance of government hospitals. This empirical evidence emphasizes the essential role of state-level health policy in strengthening the public healthcare infrastructure and improving the overall healthcare outcomes, reinforcing the social necessity for proactive and well-structured health policies to advance the quality of healthcare services provided by government hospitals.

Keywords: Public healthcare, government intervention.

1. Introduction

Kerala has a comprehensive public health care system compared to other states in India. Kerala stands out to be one of the few regions that has made significant progress in the realm of health (Saswat Barpanda (2020). It is characterized by a network of government-run hospitals such as primary health centers, community health centers and tertiary level hospitals. The state places a strong emphasis on preventive care, primary healthcare, and health education. This system, often considered a model for the country, offers accessible and affordable medical services, including free treatment in many cases. Kerala's healthcare achievements include low infant mortality rates and high life expectancy. Kerala has become a model Indian state in terms of low birth and death rates, low infant and maternal mortality rates, high life expectancy at birth and favourable sex ratio among other achievements (Kumar, 1993). The state's approach prioritizes equity and has garnered attention for its successful public health initiatives, making it a notable example of efficient public healthcare system in India.

The superior performance of the public healthcare system in Kerala can be largely attributed to the proactive and effective interventions of the state government. Kerala stands out as a model for healthcare in India, and this achievement is a testament to the state's commitment to public health and well-being. The Kerala government consistently allocates a significant portion of its budget to healthcare, prioritizing the sector. This financial commitment enables the system to function efficiently, maintain infrastructure, and ensure the availability of essential medical supplies and services. Kerala has invested extensively in establishing a robust primary healthcare network, comprising primary health centres, sub-centres, and community health centres. These facilities serve as the first point of contact for most healthcare needs, focusing on preventive care, early detection, and basic treatment.

The state government provides a range of healthcare services either for free or at highly subsidized rates. This includes essential medicines, diagnostic tests, and surgeries, making healthcare accessible to even the economically disadvantaged sections of society. Kerala government places great emphasis on health education and awareness. Programs are designed to educate the public on various health issues and promote a health-conscious population. This has contributed to early disease detection and a reduction in risky behaviours. The government invests in training and retaining a skilled healthcare workforce, including doctors, nurses, and paramedical staff. This ensures quality care delivery across the state. The government has introduced health insurance schemes to provide financial protection to vulnerable populations. These initiatives reduce the financial burden on patients and promote timely treatment seeking. Kerala's decentralized governance structure allows local communities to actively participate in healthcare decision-making. This bottom-up approach ensures that healthcare services align with the specific needs and priorities of different regions. The consistent

political will and stability in Kerala have contributed to the long-term planning and execution of healthcare initiatives. This continuity has been pivotal in achieving sustained healthcare improvements. The superior performance of Kerala's public healthcare system is a result of the state government's persistent commitment to the health and well-being of its citizens. By allocating resources, promoting preventive care, and fostering a culture of health consciousness, the government has set a commendable example for other states in India and underscores the significance of government interventions in achieving better public health outcomes.

The performance of public health care system in Kerala

Kerala, a state in southern India, has gained international recognition for its exceptional performance in the public healthcare sector. This accolade is not without merit, as Kerala consistently achieves impressive health outcomes. According to the NITI AYOG Report-2021 Infant Mortality Rate (IMR): Kerala has the lowest IMR in India, with a rate of 7 deaths per 1000 live births as of 2020. This is well below the national average of 32. Maternal Mortality Rate (MMR): Kerala has one of the lowest MMRs in India, with a rate of 42 deaths per 100,000 live births as --of 2017-2019. This is also below the national average of 113. Kerala has the highest life expectancy in India, with an average life expectancy of 75 years as of 2019. This is higher than the national average of 69.7 years. The success of Kerala's public healthcare system can be attributed to various factors. The state government's commitment to health is exemplified by its substantial budget allocation for the healthcare sector, which is nearly double the Indian national average. A robust primary healthcare network, including primary health centers and community health centers, ensures widespread access to healthcare services. Additionally, Kerala provides numerous essential healthcare services for free or at highly subsidized rates, making healthcare accessible to all.

Health education and awareness programs have also played a pivotal role in Kerala's healthcare success. The state government has actively promoted a health-conscious population, leading to better health-seeking behaviours and early disease detection. These measures have contributed to the state's low maternal mortality rate and a commendable track record in managing infectious diseases, as demonstrated during the Nipah virus outbreak in 2018 and Covid pandemic in 2020. Kerala's healthcare system is further bolstered by a well-trained healthcare workforce, and the state has introduced health insurance schemes to protect vulnerable populations from financial burdens associated with healthcare expenses. Kerala's exemplary performance in public healthcare is a result of a combination of factors, including strong government commitment, financial investment, a focus on primary healthcare, health education, and a robust healthcare infrastructure. These elements have led to notable health outcomes, setting a high standard for healthcare in India and serving as a reference point for other states to emulate.
The public health care system in Kerala has been recognized as one of the best in India, with high levels of performance and effectiveness. According to the sources provided, the public health care system in Kerala has been recognized as one of the best in India, with high levels of performance and extensive coverage. Kerala's focus on early precautionary measures, and a strong public health infrastructure has contributed to its success in managing health issues effectively and efficiently (Karim et al., 2016). The performance of public health care system is reflected in Performance of Government Hospitals.

The role of Government Interventions in Public Health care system in Kerala
In this context it is imperative to have a proactive and interventionist approach taken by the government of Kerala, along with social mobilization and public participation, played a crucial role in the successful management of public health system in the state. Additionally, the transformation of primary health centers into family health centers with specialized clinics for non-communicable diseases, mental health, respiratory health, stroke and hypertension management reflects the government's efforts to address the burden of diseases and provide comprehensive healthcare services at the community level in Kerala (Ismail et al., 2022). It is also important to note that Kerala's community-based healthcare model, along with the contribution of social workers in localities and communities, played a significant role in mitigating the impact of the pandemic and maintaining a high level of health status in Kerala. The role of Government Interventions in Public Health care system in Kerala is reflected in State Public Health Policy.

Objectives of the study

1. To assess the performance of the public healthcare system.
2. To identify and analyse the factors influencing the performance and service quality of government hospitals.
3. To assess the relationship between State Health Policy and role of government intervention in the Performance of Government Hospitals.

Theoretical background and research hypotheses

Another vital component is to measure the performance of the public health care system is closely tied to the role of government interventions. Government interventions play a crucial role in shaping the performance of the public health care system. These interventions can include policies, regulations, funding allocation, and quality control measures. Government interventions can determine the limits of government responsibility in public health, such as the extent of coverage and services provided. Additionally, government interventions allocate resources for public health care, ensuring that sufficient funding is available to support healthcare facilities, infrastructure, and medical supplies. Government interventions also influence the distribution of costs within the public health care system. Furthermore, government interventions can impact the recruitment procedures and pay of health care workers. The government interventions are crucial in ensuring the effectiveness and efficiency of the public health care system. Overall, the performance of the public health care system is closely tied to the extent and effectiveness of government interventions. These interventions are crucial in shaping the structure and functioning of the public health care system, as well as determining the quality and accessibility of services provided. It is evident from the literature that the role of Government Interventions through state health policy is positively correlated to the performance of public health care system and in turn the Performance of Government Hospitals. Hence following hypothesis is proposed, relating these variables.

Research hypotheses

H1: State Health Policy (SHP) has positively correlated to the Performance of Government Hospitals (PGH).
H2: State Health Policy (SHP) has positive direct effect on the Performance of Government Hospitals (PGH).

Methodology

A survey was conducted to measure the relationship between State Health Policy (SHP) and the Performance of Government Hospitals (PGH) in the state Kerala. For the study researcher adopted structured questionnaire and data were collected from 235 patients/respondents across the south state of Kerala consist of the district Trivandrum, Kollam and Alappuzha using stratified random sampling procedure.

Questionnaire

The questionnaire is designed to capture the relevant demographic viable of the respondents along with the items in five-point Likert scale reflecting State public Health Policy (SHP) as independent variables and Performance of Government Hospitals (PGH) as dependent variable.

Measures

The role of Government Interventions in Public Health care system in Kerala is reflected in State Public Health Policy (SHP). It is measured by using five items: (i) Supportive Policy on Public Healthcare system, (ii) Funding support to the Public Healthcare system (iii) Availability of medical and paramedical personnel (iv) Availability of qualified staff (v) Provision of specialty services and equipment.

The performance of public health care system is reflected in Performance of Government Hospitals (PGH). It is measured by using five items: (i) Level of commitment at the health Centre, (ii) Level of benefits received from the Centre (iii) Reliable Treatment information and advice (iv) Level of relief on treatments (v) Clean and calm environment.

All the items are measured by using five-point Likert scale ranging from Very Low (scale weightage value =1) to Very High (scale weightage value =5) based on the perceptions of respondents. The summated scale scores of State Public Health Policy and Performance of Government Hospitals are utilised for further data analysis.

Data collection and Sample

A total of 235 respondents were chosen using stratified random sampling procedure and the structured questionnaires were distributed. From among them, 206 participants effectively responded to the survey. This sample size is reasonably adequate for statistical data analysis (Andy Field, 2009; Ranjit Kumar, 2009; Rick and Paul, 2004; Crimp and Wright, 1995). The respondents' demographic profile, specifically, age groups, marital status, gender, education, and income are presented in Table 1.

Table 1.*Sample characteristics*

Demographic Variables		**Frequency**	**Percentage**
Age Group	<25 years	26	12.62
	25 - 35 years	41	19.9
	35 - 45 years	42	20.39
	45 - 55 years	57	27.67
	>= 55 years	40	19.42
	Total	206	100
Marital Status	Married	131	63.59
	Unmarried	75	36.41
	Total	206	100
Gender	Male	88	42.72
	Female	118	57.28
	Total	206	100
Education, Highest Level of Achievement	Degree Level and Above	23	11.17
	12^{th} Standard	38	18.45
	10^{th} Standard (Matriculate)	85	41.26
	Below 10^{th} Standard (Non-Matriculate)	60	29.13
	Total	206	100
Annual Income	Low (<= Rs 100000)	81	39.32
	Lower Middle (Rs 100000 to Rs 500000)	68	33.01
	Upper Middle (Rs 500000 to Rs 1000000)	40	19.42
	High (>= Rs 1000000)	17	8.25
	Total	206	100

Source: Primary Survey.

Reliability and validity

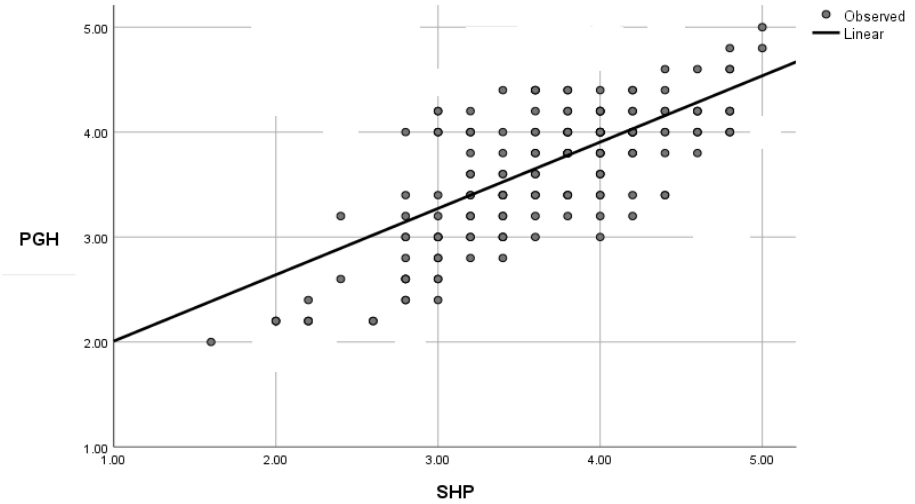
The reliability of the variables, namely State Health Policy (SHP) and Performance of Government Hospitals (PGH) are assessed by computing Cronbach's alpha coefficients. The computed alpha values are 0.901and 0.921 respectively, for SHP, PIH and PGH. All these values are greater than 0.7 and therefore indicate strong evidence for reliability as suggested by Nunnally (1978). The criterion validity of the constructs is evaluated by means of item-to-total correlation coefficients and are more than 0.622.

The correlation value greater than 0.622 indicates the acceptable limit of good criterion validity (Kerlinger, 1999). Utmost care has been taken to ensure the face validity and content validity of items measuring the main variables State Health Policy (SHP) and Performance of Government Hospitals (PGH).

Testing of hypothesis: Correlation analysis

The dependent variable Performance of Government Hospitals (PGH) and the independent variable State Health Policy (SHP) are linearly related. The figure shows the linear association of PGH and SHP.

Figure 1.: Linear relationship between Performance of Government Hospitals (PGH) and the independent variable State Health Policy (SHP)



The correlation analysis is performed using Pearson Correlation coefficient ascertain the relationship between the variables State Health Policy (SHP) and Performance of Government Hospitals (PGH). The test results are shown in table 2.

Table 2: State Health Policy (SHP) and Performance of Government Hospitals (PGH): correlation analysis

Correlations - Pearson Correlation coefficient			
Details		SHP	PGH
SHP	Pearson Correlation	1	.630**
	Sig. (2-tailed)		.000
	N	206	206
PPHCS	Pearson Correlation	.630**	1
	Sig. (2-tailed)	.000	
	N	206	206
**. Correlation is significant at the 0.01 level (2-tailed).			

The test results indicate that the correlation is significant and the State Health Policy (SHP) has high positive correlation (correlation coefficient 0.630) with and Performance of Government Hospitals (PGH).

Testing of hypothesis: Simple Linear Regression.

The effect of the independent variable State Health Policy (SHP) on the dependent variable Performance of Government Hospitals (PGH) is assessed using simple linear regression. The Model Summary and Parameter Estimates are shown in table 3 and 4 respectively.

Table 3: Model Summary– the effect of independent variable SHP on dependent variable PGH.

	Model Summary						
R	R Square	Adjusted R Square	Std. Error of the Estimate	F	df1	df2	Sig.
.630	.397	.394	.58877	134.487	1	204	0.000

Table 4: Parameter Estimates – the effect of independent variable SHP on dependent variable PGH.

Parameter Estimates					
Details	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.376	.200		6.896	.000
SHP	.632	.055	.630	11.597	.000

The regression analysis indicates that the independent variable State Health Policy (SHP) positively influences the dependent variable Performance of Government Hospitals (PGH). The effect is statistically significant (p-value < 0.00) with a standardised beta coefficient of 0.630 and R square value of 0.397.

Discussions

The correlation coefficient of 0.630 between the State Health Policy (SHP) and the Performance of Government Hospitals (PGH) indicates a significant and strong positive correlation. This means that as the state's health policy initiatives improve, the performance of government hospitals also tends to increase significantly. The positive correlation suggests that effective health policies have a direct and beneficial impact on the performance of public healthcare institutions, emphasizing the importance of well-crafted state health policies in enhancing the quality and efficiency of government hospitals.

The regression analysis reveals a crucial relationship between the independent variable State Health Policy (SHP) and the dependent variable Performance of Government Hospitals (PGH). This analysis demonstrates that changes in the state's health policy have a discernible and positive impact on the performance of government hospitals.

The statistical significance of this relationship is evident from the incredibly low p-value (p-value < 0.001), signifying that the observed effect is highly unlikely to be due to chance. In other words, the influence of the State Health Policy on the Performance of Government Hospitals is real and robust.

The standardized beta coefficient of 0.630 further underscores the strength of this relationship. It suggests that for each unit increase in the State Health Policy score, we can anticipate a 0.630-unit increase in the Performance of Government Hospitals. This quantifies the practical significance of the State Health Policy's influence on hospital performance.

The R square value of 0.397 informs us that approximately 39.7% of the variability in the Performance of Government Hospitals can be attributed to the State Health Policy. This demonstrates that the State Health Policy explains a substantial proportion of the variations observed in hospital performance.

The regression analysis provides compelling evidence that the State Health Policy (SHP) has a highly significant and positively influential role in shaping the Performance of Government Hospitals (PGH), emphasizing the critical role of policy in healthcare system outcomes.

The results established that SHP is an influential dimension in the Performance of Government Hospitals in Kerala. The statistically significant results proved the reality of the hypotheses set for the study.

H1: State Health Policy (SHP) has positively correlated to the Performance of Government Hospitals (PGH).

H2: State Health Policy (SHP) has positive direct effect on the Performance of Government Hospitals (PGH).

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Conclusion

The findings from both the correlation analysis and the regression analysis underscore the pivotal role of the State Health Policy (SHP) in influencing the Performance of Government Hospitals (PGH). The correlation coefficient indicates a significant and strong positive correlation, highlighting the direct and beneficial impact of effective health policies on public healthcare institutions in the state. Moreover, the regression analysis reaffirms this relationship with statistical robustness. The remarkably low p-value, the standardized beta coefficient, and the R square value are collectively providing compelling evidence that the State Health Policy is not only influential but also explains a substantial proportion of the variations in hospital performance.

These findings have significant implications for healthcare policymakers and administrators. They emphasize the importance of well-crafted state health policies in enhancing the quality and efficiency of government hospitals. It suggests that investments and improvements in healthcare policies can lead to tangible and positive changes in the performance of healthcare institutions, ultimately benefitting the population's health and well-being. In a broader context, this discussion highlights the critical role of policy in healthcare system outcomes, serving as a reminder of the potential impact that informed, effective, and well-implemented policies can have in shaping the healthcare eco-system and improving the overall quality of care.

Limitations and Scope for Future Research

The study focused on a specific institution in the state. One notable limitation of this study is that it is based on the data collected, and its findings may not be easily generalizable to the entire healthcare systems while considering the socioeconomic conditions, or cultural contexts. The relationship between State Health Policy (SHP) and the Performance of Government Hospitals (PGH) could be influenced by various local factors that might not apply universally. Therefore, caution should be exercised when attempting to apply these findings to other regions or countries.

The study offers a valuable foundation for further research in the field of healthcare policy and hospital performance. Future studies could explore the specific elements within State Health Policies that have the most significant impact on hospital performance. Additionally, research could delve into the role of healthcare management, resource allocation, and the attitudes and behaviors of healthcare professionals in mediating the relationship between health policy and hospital performance. Comparative studies across different regions and healthcare systems can help in understanding the generalizability of these findings and provide insights into the factors that may modify this relationship. Furthermore, as healthcare policies and practices evolve over time, longitudinal studies could track changes in the correlation between health policy and hospital performance, allowing for more dynamic and nuanced policy recommendations.

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