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Socio-Economic Disparities in the Financial Burden of Child Health Expenditures: A Study of Households in Visakhapatnam City

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Abstract:

The study examines the socio-economic disparities in the financial burden of child health expenditures among households in Visakhapatnam City, India. Through a cross-sectional survey of diverse socio-economic groups, the research investigates how varying income levels, education, and access to healthcare services influence families' out-of-pocket spending on children's health. The study highlights the unequal distribution of healthcare costs, with lower-income households disproportionately affected due to limited access to affordable healthcare services and increased dependency on private healthcare providers. The findings underscore the financial strain on economically weaker households, leading to potential compromises in child health outcomes. By identifying key drivers of expenditure disparities, this research contributes to the discourse on equitable healthcare policies, calling for interventions that reduce financial barriers to essential child healthcare services in urban India. The study advocates for targeted healthcare reforms and enhanced social protection mechanisms to address the financial inequalities exacerbated by socio-economic status.

Keywords: child health, socio-economic disparities, healthcare expenditure, Visakhapatnam, financial burden, equitable healthcare policies.

Introduction

The socio-economic status of a family has a profound impact on the health expenditure of children. Studies have consistently shown that children from lower socio-economic backgrounds experience poorer health outcomes and have higher health expenditure compared to their counterparts from higher socio-economic backgrounds [1, 2]. The inverse relationship

between socio-economic status and health expenditure is attributed to various factors, including limited access to healthcare services, poor living conditions, and inadequate nutrition [3, 4].

Over the past two decades, India has implemented several key public health initiatives aimed at reducing childhood morbidity and mortality. These measures include the introduction of new vaccines as part of the Universal Immunization Program, strengthening the health system through the National Health Mission, and launching government-sponsored insurance schemes to improve access to hospital care [5]. These initiatives have also focused on providing financial risk protection to disadvantaged and low-income households, ensuring more equitable access to healthcare services [6].

In spite of these measures by the government, still childhood infections pose a significant threat to the health and financial well-being of households in India. Not only do they result in poor health outcomes, but they also impose a severe financial burden on families and society as a whole [7]. The absence of robust financial risk protection and social security measures in India exacerbates this issue, leading to a substantial proportion of treatment and care-related expenditures being incurred as out-of-pocket expenditures (OOPE) by households [8]. These OOPEs often become catastrophic and impoverishing, particularly in the event of hospitalization. The sudden and unpredictable nature of infectious disease-related expenses leaves households with limited opportunities to mitigate the financial shock, forcing them to resort to desperate measures such as dis-savings, borrowing, and selling assets [9]. Disparities in healthcare utilization and OOPE further disproportionately affect poor households, exacerbating existing health and economic inequalities [10].

Objective of the Study

To analyse the socio-economic disparities in the financial burden of child health expenditures among households in Visakhapatnam City, with a focus on identifying the factors that contribute to these differences and assessing their impact on healthcare access and financial well-being. Additionally, it will explore potential strategies to alleviate the financial strain, particularly for vulnerable households, in order to inform policies that promote equitable healthcare access and financial protection.

Methodology

Visakhapatnam City has been chosen for this study due to its status as a major city in Andhra Pradesh, characterized by a diverse socio-economic population resulting from its strong industrial and service sector presence. The sample population was selected using stratified random sampling to ensure representation across different socio-economic groups. Data collection was carried out using a pre-tested survey schedule to gather comprehensive and reliable information.

A total 250 sample population surveyed for this study. The sample population comprised children under 5 years of age who visited hospitals for outpatient services or were hospitalized. We estimated the mean expenditure for each outpatient visit and each hospitalization episode. Using annual household consumption data, calculated the proportion of children's health expenditure relative to the total household consumption expenditure.

Results

The data revealed multiple dimensions of children's healthcare and associated expenditures. It provided insights into the frequency and cost of healthcare utilization, including outpatient visits and hospitalization episodes, and highlighted the financial burden placed on households. Additionally, the analysis shed light on the disparities in health expenditure across different socio-economic groups, and access to healthcare services. The study also explored how household income, parental occupation, caste and the availability of healthcare facilities influenced both the likelihood of seeking medical care and the level of expenditure incurred.

Prevalence of Disease and Health Care Utilisation

The data illustrates in table shows the prevalence of common health issues among children under 5 years of age, as well as the distribution of healthcare utilization across private and government sectors for both outpatient visits and hospitalizations.

Table - 1
Prevalence of Common Health Issues and Healthcare Utilization Among Children

Health Issue	Prevalence		Out-Patient				Hospitalisation			
			Private		Govt		Private		Govt	
	No	%	No	%	No	%	No	%	No	%
Respiratory Infections	41	16.4	19	46.34	7	17.07	10	24.39	5	12.20
Diarrhoea	59	23.6	31	52.54	9	15.25	14	23.73	5	8.47
Skin Problems	27	10.8	16	59.26	6	22.22	3	11.11	2	7.41
Injuries	18	7.2	5	27.78	3	16.67	7	38.89	3	16.67
Viral Hepatitis	8	3.2	2	25.00	1	12.50	4	50.00	1	12.50
Ear Infections	26	10.4	16	61.54	8	30.77	0	0.00	2	7.69
Dental Issues	31	12.4	23	74.19	8	25.81	0	0.00	0	0.00
Fevar & Other Infections	58	23.2	16	27.59	7	12.07	28	48.28	7	12.07

Source: Field Survey

Respiratory infections and diarrheal diseases are the most prevalent conditions, affecting 16.4 percent and 23.6 percent of the sample, respectively. Diarrhoea had the highest hospitalization rate, particularly in private hospitals (23.73%). Skin problems, dental issues, and ear infections showed a higher preference for outpatient care in private facilities, with over 60 percent of patients opting for private treatment. Meanwhile, injuries and viral hepatitis cases had a notable hospitalization rate in private hospitals. Fever and other infections led to a significant hospitalization rate (48.28%), with most cases treated in private hospitals. The data reveals a clear preference for private healthcare for outpatient services across most conditions, while government hospitals remain an essential provider for certain hospitalization cases.

Out of Pocket Expenditure

The data highlights the significant disparity in out-of-pocket expenditure for outpatient care and hospitalization for childhood infections across private and government healthcare facilities. Private healthcare consistently incurs higher costs for both outpatient and hospitalization services.

Table – 2

Per episode Out of Pocket Expenditure on Outpatient care and Hospitalisation for Childhood Infections (in Rs.)

Health Issue	Out-Patient		Hospitalisation	
	Private	Govt	Private	Govt
Respiratory Infections	830	80	8400	810
Diarrhoea	850	110	7100	660
Skin Problems	620	120	5700	300
Injuries	780	130	9100	1020
Viral Hepatitis	2400	460	12050	900
Ear Infections	780	70	NA	300
Dental Issues	650	80	NA	NA
Fevar & Other Infections	1020	160	8600	570

Source: Field Survey

For outpatient care, viral hepatitis represents the highest expenditure in private hospitals at ₹2,400, while government facilities charge significantly less at ₹460. Similarly, hospitalization costs for viral hepatitis in private hospitals are the highest at ₹12,050, compared to ₹900 in government hospitals. Injuries and respiratory infections also show substantial cost differences, with private hospitalization costing ₹9,100 and ₹8,400, respectively, while government hospital costs remain much lower at ₹1,020 and ₹810. Outpatient care in government hospitals is much more affordable across all conditions, with most conditions costing below ₹200 per episode, indicating a stark difference in financial burden between private and public healthcare for childhood infections.

Table - 3
Average Share of Household Expenditure on Childhood Infections by Socio-Economic Conditions

Category	Sub-Category	below 5%		5-10%		11-15%		16-20%		20% & above		Total	
		No	%	No	%	No	%	No	%	No	%	No	%
Caste	General	26	34.67	29	38.67	8	10.67	7	9.33	5	6.67	75	100.0
	OBC	31	30.10	32	31.07	21	20.39	11	10.68	8	7.77	103	100.0
	SC	8	16.67	9	18.75	17	35.42	9	18.75	5	10.42	48	100.0
	ST	7	29.17	9	37.50	4	16.67	3	12.50	1	4.17	24	100.0
Annual Income	below 100000	8	27.59	10	34.48	6	20.69	3	10.34	2	6.90	29	100.0
	100001-150000	10	15.15	17	25.76	20	30.30	11	16.67	8	12.12	66	100.0
	150001-200000	16	22.86	22	31.43	17	24.29	10	14.29	5	7.14	70	100.0
	200001-300000	18	40.91	16	36.36	4	9.09	4	9.09	2	4.55	44	100.0
	Above 3000000	20	48.78	14	34.15	3	7.32	2	4.88	2	4.88	41	100.0
Occupation	Regular Salaried	34	41.98	27	33.33	8	9.88	7	8.64	5	6.17	81	100.0
	Casual Worker	18	20.45	23	26.14	20	22.73	17	19.32	10	11.36	88	100.0
	Self-Employee	20	24.69	29	35.80	22	27.16	6	7.41	4	4.94	81	100.0

The data in Table 3 presents the distribution of household expenditure on childhood infections across different socio-economic groups in Visakhapatnam, categorized by caste, annual income, and occupation. Among caste groups, General and OBC households tend to have a relatively lower share of expenditure, with the majority spending below 10 percent of their total household expenditure on childhood infections. In contrast, SC households show a higher financial burden, with over 35 percent spending between 11-15 percent, while ST households have a more mixed distribution, with some households incurring higher costs.

When analysed by annual income, households earning above ₹300,000 annually have a lower share of expenditure, with nearly half spending less than 5 percent. In comparison, lower-income households (below ₹150,000) face a more significant burden, with a higher percentage

spending between 10-20 percent or more on childhood infections. This reflects the higher financial vulnerability of lower-income groups.

Occupationally, regular salaried households generally spend a lower proportion of their income on childhood infections, with 42 percent spending less than 5 percent. Casual workers, however, experience a higher financial strain, with a substantial percentage spending over 10 percent, while self-employed individuals show a more even distribution, though a significant portion still spends between 5-15 percent. This analysis highlights the socio-economic disparities in healthcare expenditure, with lower-income and marginalized groups bearing a heavier financial burden.

Conclusion

The analysis reveals significant socio-economic disparities in healthcare expenditure on childhood infections, with lower-income, marginalized, and casual worker households bearing a disproportionately higher financial burden. Private healthcare facilities, particularly for outpatient care and hospitalization, incur significantly higher costs compared to government hospitals, further straining vulnerable groups. This financial burden is particularly evident for conditions like viral hepatitis, injuries, and respiratory infections. To address these disparities, policy interventions should focus on expanding access to affordable and high-quality healthcare services in government facilities, especially for outpatient care, where costs are much lower. Strengthening public healthcare infrastructure, increasing financial risk protection through insurance schemes, and enhancing outreach to marginalized groups could help alleviate the financial strain on lower-income households. Additionally, targeted subsidies or cash assistance for healthcare expenses, particularly for vulnerable groups such as SC and ST households, could further reduce the economic impact of childhood infections. Encouraging partnerships between public and private sectors to regulate healthcare costs and improve accessibility across socio-economic groups is also essential for equitable healthcare outcomes.

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