

Direct And Indirect Costs of Outpatient Care in India: A Systematic Review

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Abstract

In India, the cost of outpatient care is much more expensive than inpatient care, placing a heavy financial burden on the family. Outpatient treatment accounts for 80–85% of total healthcare spending. Despite the fact that the federal and state governments have implemented subsidized policies to lower the cost of outpatient care, they are ineffective. Therefore, a thorough investigation is required to determine if the higher outpatient expenditure is caused by direct or indirect costs. A systematic review of two objectives has been conducted to explore the issue.

1. To comprehend how different diseases and conditions in India affect the direct and indirect costs of outpatient treatment. 2. To understand the main variations in outpatient care's direct and indirect costs between private and public hospitals. Consequently, this study has identified several potential research directions for future Indian-based investigations.

Keywords: Outpatient care, direct cost, indirect cost, medical cost, nonmedical cost, productivity loss, and absenteeism

1. Introduction

The term catastrophic health expenditure indicates an exorbitant cost of healthcare, above a certain threshold of total household expenditure. High catastrophic spending can constrain other important consumption expenditures and push households into poverty, especially lower-middle-class families. A larger proportion of households in India are catastrophically affected by outpatient expenses relative to inpatient expenses. In India, outpatient expenses contribute most to impoverishment than inpatient care (Thakur & Faizan, 2021); C. C. Garg & Karan, 2009). 80% to 85% of catastrophically affected households

incur OPD (outpatient department) expenses compared to 45% to 50% for IPD (inpatient department) — a difference of 35 percentage points (Sarwal & Kumar, 2021). The average annual out-patient expenditure for a family of 5 is much higher – between Rs. 5000 to Rs. 12,000 – compared to in-patient expenditure.

Outpatient care plays a crucial role in India's healthcare system, catering to a significant portion of the population's healthcare needs. As a mixed health system, India relies on a combination of public and private healthcare providers to deliver medical services. Understanding the cost associated with outpatient care is essential for policy formulation and decision-making in the country's healthcare landscape. Basically, the cost accompanied with outpatient care is divided into two parts. The direct cost of outpatient care encompasses the expenses directly borne by both patients and healthcare providers. The cost primarily consists of medical consultations, diagnostic tests, medications, medical supplies, transportation, and other essential healthcare services provided during outpatient visits. Nevertheless, it is crucial to understand that India's healthcare system is comprised of a mix of public and private providers, each with their own cost structures and funding arrangements. As such, understanding the direct cost associated with outpatient care requires a comprehensive examination of the expenses incurred by different types of healthcare providers.

Apart from the direct cost, the indirect cost of outpatient care must also be taken into consideration. The indirect costs are associated with the financial burden placed on patients and their families due to healthcare seeking behaviour and treatment seeking activities. These costs may include expenses related to loss of wages or productivity for both patients and accompanying family members, and other opportunity costs tied to accessing healthcare services. Such indirect costs can significantly impact households, particularly in low- and middle-income countries like India, where health insurance coverage may be limited or absent.

As India endeavours to achieve universal health coverage, understanding the direct and indirect costs of outpatient care assumes even greater significance. Universal health coverage, as mandated by the Indian constitution, obliges the government to ensure the "right to health" for all citizens. While various government-funded health insurance schemes have been implemented to improve coverage for specific population groups, chronic underfunding in healthcare continues to pose challenges. Assessing the financial implications of outpatient care, particularly for low-income individuals and households, is essential for developing effective and equitable healthcare policies.

2. Objectives:

The objective of this systematic literature review is to understand the direct and indirect costs of outpatient care that vary across different diseases and conditions in India. Another one is To understand the main variations in outpatient care's direct and indirect costs between private and public hospitals. Based on two objectives several literatures have been studied from 1 January to 30 June 2023. Preliminary work for this study included a broader look at literature estimating the cost of outpatient care. Literature that was published after 2000 and up to the end of 2023 was examined and this timeframe is reflected in the searching and identification of relevant papers for the current review.

3. Methods

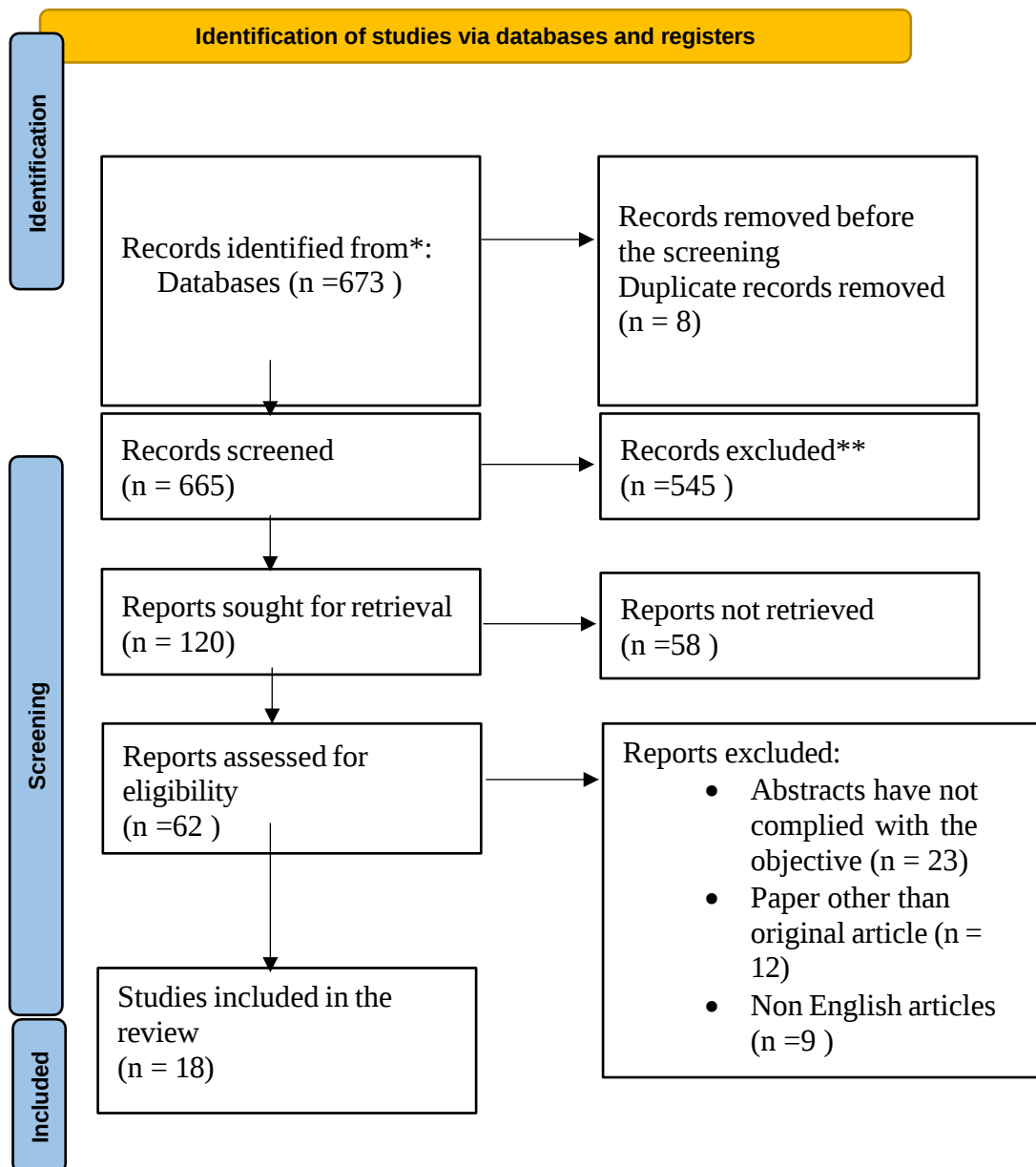
A systematic review was discussed according to PRISMA guidelines. Our quantitative literature review was conducted throughout June 2023, focusing on the web of science, scoups, and PUBMED databases, using search terms related to ‘outpatient care’, “direct cost”, “indirect cost” “Medical cost”, “nonmedical cost”, “productivity loss”, and “absenteeism”. After reviewing the publications published only between 2000 and 2023, 673 articles satisfied the eligibility criteria.

3.1 Study Selection

Our inclusion criteria were as follows: (i) original empirical research, (ii) publication indexed in the web of science, Scopus and PUBMED databases, (iii) specific research term used, (iv) written in English, and (v) publication date between 2000 and 2023. We excluded books, conference proceedings, editorial materials and review papers from our analysis. Ethical approval was not required as we derived and analysed publicly accessible academic articles for evidence. After eliminating controversial findings, outcomes not replicated , imprecise materials, and articles with similar titles, we finally selected 18 generally empirical sources for our analysis.

3.2 Quality Assessment

The procedure for reporting and estimating expenses were the focus of the quality assessment. The Consolidated Health Economics Evaluation Reporting Standards(CHEERS) statement served as the foundation for the quality assessment (Husereau et al., 2022). The following four requirements of the CHEERS statement were followed: (1) sources used for resource quantities and unit costs were clearly described; (2) dates of estimated resource quantities and unit cost were reported; (3) methods for adjusting unit costs to the reporting year and performing currency conversion were clearly explained; and (4) mean values for the main categories of estimated costs reported were recorded



4 Result

4.1 Direct and indirect costs of outpatient care across different diseases and conditions in India.

Managing outpatient care is economically more advantageous than hospitalization (Mullerpattan et al., 2019). Supporting the statement Cavassini et al., (2012) mentioned that when dealing with pregnant women with diabetes or mild hyperglycemia outpatient care is more advantageous. By managing pregnant women with diabetes and mild hyperglycemia through outpatient care, there was a decreased need for hospital stays, resulting in cost savings for both patients and healthcare providers (Elek et al., 2019). Furthermore, outpatient management provided various noneconomic advantages, such as avoiding psychological and social trauma for the patient and family, preserving the family unit by allowing the patient to remain at home and enabling the patient to continue working. Overall, managing pregnant women with diabetes or mild hyperglycemia through outpatient care has proven to be beneficial from both economic and noneconomic perspectives. As such, outpatient care should be considered a preferred option in managing these conditions, considering both direct and indirect cost involved in the process.

4.1.1 The direct cost of outpatient care

Outpatient care is significantly influenced by direct costs. Even though the direct cost of inpatient care is higher for a given visit, the overall economic burden of outpatient care is higher NSSO Survey (2018). Therefore, a sizable study should be taken into consideration to evaluate the financial impact of outpatient treatment in India. We have reviewed several research on the financial burden of outpatient treatment in India, accounting for various diseases and conditions. It was discovered that direct costs made up 71.25% of total costs while indirect costs made up 28.75%. The majority of direct costs, or 42.38% of the total, came from patients' medicine purchases (Chandra et al., 2014; Mullerpattan et al., 2019; Grover, 2005). The direct cost of outpatient care varies depending on the type of condition. According to Kamat et al., (2018) the primary factors influencing the expense of CP are medication and hospitalization. Pancreatic enzyme replacement treatment (PERT) accounted for 72% of the drug cost and 54% of the overall direct cost. According to the survey, 7.7% of patients didn't follow their treatment regimens because it was too expensive. The annual cost of PERT ranges from INR 18,068 to INR 95,922 among the many brands that are offered in India. However, Tate et al., (2009) has estimated yearly costs of rotavirus disease in India range from Rs 1.8-3.2 billion (US\$ 37.4 to 66.8 million) for direct medical expenses to Rs 107-176 million (US\$ 2.2-3.7 million) for direct non-medical costs. This demonstrates that direct non-medical costs, in addition to direct medical costs, are a significant contributor to the rise in outpatient treatment. In 2014, (Chandra et al.) discovered a link between rising costs and the length of diabetes. By making up over half of the direct expenses, medication costs were by far the largest financial burden, followed by surgical procedures (12.6%) and laser treatments (3.2%). Concentrating particularly on juvenile idiopathic arthritis (JIA) in India and other nations. The results imply that the cost of JIA rises with disease activity, duration, and the interval between the beginning of symptoms and the first visit to a pediatric rheumatologist. A significant portion of the entire direct healthcare cost burden in JIA is made up of medication costs, such as the price of medications. According to studies, inpatient cost can be much lower in JIA than outpatient costs (Khatun et al., 2021). More than hospitalization, outpatient care makes a considerable financial contribution to the high cost of cancer treatment. Given that India's current publicly funded health insurance programs do not cover outpatient cancer care, this study emphasizes the need to address outpatient cancer care costs (Prinja et al., 2023). According to a recent study by Kansra & Oberoi, (2023), the yearly median direct and indirect overall costs of diabetes in India are 34,100 and 4,200, respectively. These figures are consistent with those of a population-based study carried out in Shillong, Meghalaya. Medical expenses and diagnostic costs are the main factors influencing treatment costs, especially for outpatient care. High-income levels, educational background, comorbidities, and prior diabetes all contribute to the escalating expense of managing diabetes. Due to sedentary lifestyles and insufficient physical activity, people with high per capita incomes and literacy rates are more susceptible to developing diabetes. (Mullerpattan et al., 2019) revealed that 37% of the total cost of treating MDR-TB goes towards drug expenses, which make up a sizable amount of the whole cost. Other elements consist of indirect expenditures brought on by income loss (20%), travel expenses (2%), and physician consultation fees (5%). The cost of bipolar disorder drugs made up a sizeable fraction of the overall direct cost in the current study, ranging from 47.13% to 57% (Somaiya et al., 2014). In India, the price of renal replacement therapy (RRT), which includes renal transplant (RT), continuous ambulatory peritoneal dialysis (CAPD), and maintenance haemodialysis (MHD), is astronomically high. Basic triple immunosuppressive medicines have a relatively high cost of immunosuppression. In India, only a small portion of ESRD patients (3%–

5%) receive any kind of renal replacement treatment (RRT) (Agarwal, 2005). Another study made by Bhatia, (2001) realised that pregnant women were more likely to travel farther to seek private practitioners, primarily because of confidence in the effectiveness of their care. Clinical examinations were substantially more frequently carried out by private practitioners than by their public sector counterparts. The majority (80%) of consultations involved travel expenditures and private medical practitioners. In the Bangalore, India neighbourhood of KG Halli, 69.6% of households paid out-of-pocket for chronic illness outpatient care. OOP payments caused 16% of households to experience financial catastrophe, which is defined as spending more than 10% of their income on outpatient care. Medication costs (66.3% of OOP payments for chronic diseases in KG Halli) and lab test costs made up the majority of these payments (Bhojani et al., 2012). Diabetes costs are split equally between inpatient and outpatient care, with ambulatory care making up 65% of the overall expense. The cost of therapy, which includes particular anti-diabetic medications, accounts for 31% of the total cost; the other 34% of the costs are made up of additional expenses including routine clinic visits, doctor monitoring, and other unspecified charges. All diabetes patients paid an average of INR 4724 for outpatient care annually. According to Kapur, (2007) the cost of patients with fewer than three difficulties was 48% greater than that of patients with three or more issues. Estimates based purely on official reporting substantially underestimate the economic toll of dengue fever in India. Dengue fever is thought to cost India's economy on average \$1.11 billion annually, or \$0.88 per person. This covers both direct medical and direct non-medical expenses (such as travel). In India, direct medical expenses would account for 49% of total disease costs (Shepard et al., 2014).

4.1.2 Indirect cost of Outpatient care

Diseases of any kind can have an impact on both direct and indirect costs. Although outpatient care's direct costs have a substantial impact on overall costs, indirect costs are also important when making decisions about health care. Diabetes-related indirect expenses were higher for low-income patients receiving care in government clinics in metropolitan areas than for those receiving it directly (Sharma et al., 2016). Because patients with higher education may have had higher incomes, total indirect expenses were lower for patients with lesser education. All sorts of costs and the number of hospital visits were connected, indicating that cutting back on visits would be a good method to cut costs. The majority of the indirect expenses were attributable to the patients' and their families lost income. As is typical in Western studies, indirect costs were roughly 1.7 times greater than direct expenses. The costs of treatment were closely related to the severity of the sickness and the degree of disability. Costs were higher for people who were more acutely ill and disabled (Agarwal 2005; Grover et al., 2005). Bipolar disorder has substantially greater indirect expenses than direct expenditures, which account for 64% of the overall cost as opposed to 36% for bipolar disorder. This shows that people with bipolar disorder experience significant lost productivity, both personally and professionally. Only a little amount (4%) of the overall costs in the study were attributable to hospital services. Patients and their families paid more than 96% of the entire cost (Somaiya et al., 2014).

4.2 Differences in direct and indirect costs of outpatient care between public and private hospitals

Individuals in government hospitals in rural areas made direct expenditures comparable to those made in commercial settings, demonstrating that a portion of the rural population possessed sizable purchasing power (Sharma et al., 2016). The average cost of an outpatient episode of care for formal for-profit

providers, who collectively handled 39.3, 37.9, and 22.9% of episodes, was INR 2643, compared to INR 400 for public providers, INR 586 for informal private providers, and INR 400 for public providers. The average cost to government and households when using official for-profit providers was greater than when using formal for-

fit providers (S. Garg et al., 2021). Compared to those in Gujarat's Umbergaon block, leprosy sufferers in Dadra & Nagar Haveli visited the OPD more frequently. The entire cost of the government hospital is less than the Umbergaon, but they prefer it. Private health facilities were reportedly more expensive than government facilities in both research sites, and older patients typically have greater out-of-pocket costs to address the expenses of outpatient cancer care, particularly because outpatient cancer care is not currently covered by India's publicly funded health insurance programs (Tiwari et al., 2018). Compared to the commercial sector, cancer care provided by the public sector offers more financial risk protection (Prinja et al., 2023). Because private practitioners were substantially more likely to conduct clinical assessments than their public sector colleagues, the cost of outpatient care is higher in private settings compared to public settings (Bhatia, 2001). The cost of laboratory investigations and medications made up the majority of out-of-pocket expenses for chronic conditions, but patients were forced to use private pharmacies and laboratories due to the lack of access to and out-of-stock status of necessary medications in government facilities, which resulted in high OOP payments (Bhojani et al., 2012). In India, the private sector accounts for the vast majority of dengue expenditures, primarily borne by households (Shepard et al., 2014).

5. Conclusion

Outpatient care in India is significantly influenced by direct costs, accounting for 71.25% of the total costs. The majority of direct costs (42.38% of the total) come from patients' medicine purchases. Specific conditions may have varying direct costs. For example, in the case of pancreatic enzyme replacement treatment (PERT), 72% of the drug cost and 54% of the overall direct cost were attributed to PERT. The direct cost of outpatient care for diseases like diabetes, rotavirus, juvenile idiopathic arthritis (JIA), cancer, tuberculosis (MDR-TB), bipolar disorder, and renal replacement therapy (RRT) significantly impacts the overall financial burden of outpatient treatment. Indirect costs are also important factors when considering health care decisions, constituting 28.75% of the total costs. Indirect costs may include income loss, travel expenses, and physician consultation fees, among others. Diseases like bipolar disorder have substantially higher indirect expenses (64% of the overall cost) than direct expenditures (36% of the overall cost). Outpatient care costs in public and private hospitals may vary significantly. Government hospitals in rural areas may have comparable direct expenditures to private facilities, indicating some purchasing power in rural populations. Out-of-pocket payments for outpatient care in private settings can be higher, leading to financial risks for patients. Public-sector cancer care offers more financial risk protection compared to private-sector cancer care.

Over 80% of Indians do not have health expenditure coverage through health insurance, whether in rural or urban areas. The low insurance coverage is concerning as more people are accessing private healthcare, which can be relatively more expensive than public facilities. The findings indicate a need for robust public healthcare policies, especially in terms of providing financial protection and access to outpatient care. The government should consider strengthening the public healthcare system and expanding insurance

coverage to reduce the financial burden on patients. Future research should focus on identifying the unmet needs among different geographical regions and vulnerable population sub-groups. Moreover, there should be continuous monitoring and analysis of healthcare cost trends to inform policy decisions and ensure equitable and affordable healthcare for all.

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