

Out-of-Pocket Expenditure for Health Care in India: A Narrative Review

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ABSTRACT

Background: Out-of-Pocket Expenditure (OOPE) for health care is a clear indicator of the financial strain that households endure. In India, Catastrophic Health Expenses (CHE) have been borne by almost 18% of the households. Over millions of people are pushed into poverty each year as a result of increased cost of health care. This narrative review was undertaken to obtain the current status of OOPE in India. **Methodology:** A comprehensive search of major databases such as PubMed Central, Scopus, Web of Science, Cochrane Library database, Google Scholar was done using keywords relevant to the research question. Articles published in English from 2010 onwards relevant to the review were included. **Results:** About 16 studies were reviewed and their findings are presented. Out-of-Pocket Expenditure was incurred by 75% of the households for Outpatient care and 5% to 28% of the households experienced Catastrophic Health Expenditure. Medications contributed to the largest proportion of the expenses. **Conclusion:** The burden of OOPE for outpatient (OP) & inpatient (IP) care as well as medications were very high, CHE was incurred by a few households for IP care. We recommend inclusion of outpatient treatment for chronic illnesses in the current government-instituted health insurance programs and to expand the coverage. Since the scope of this review is limited, a comprehensive systematic review and meta-analysis is warranted to understand the extent of the problem and the reasons behind.

KEYWORDS

Out-of-Pocket Expenditure; OOPE; Catastrophic Health Expenditure; Distress Financing; Health care

INTRODUCTION

“Out-Of-Pocket Expenditure (OOPE) is any direct outlay by households, including gratuities and in-kind payments, to health practitioners and suppliers of pharmaceuticals, therapeutic appliances, and other goods and services whose primary intent is to contribute to the restoration or enhancement of the health status of individuals or population groups(1).” OOPE directly reflects the burden of expenses that households/individuals bear. Catastrophic health expenditure (CHE) is explained as OOPE more than 40% of a household income after subsistence needs are met, or exceeding 10% of household consumption expenditure or expenditure greater than 10% of annual income(2,3). About 18% of the households incurred CHE according to Consumer Expenditure Survey 2011-12. The high OOPE is partly due to the low share of Government Health Expenditure as percent of GDP which is only 1.28% (2018-19) in India and low coverage of government sponsored insurance scheme; 12.9% in rural and 8.9% in urban area(4). The financial burden for health care drives over 55 million into poverty each year. This increases disease burden as well as rise of informal consultation and drug procurement.

Different studies have been conducted to determine the extent of out of pocket expenditure, but the OOPE varied across parts of the country and area of residence to the services availed. While some studies looked at the relationship of OOPE between different areas of residence, others studied only certain factors. It is imperative to consolidate the information from various studies to obtain an eagle’s eye view about the current status of OOPE in India. This necessitates the need for this review.

MATERIAL & METHODS

Objectives: To review available data on Out-Of-Pocket-Expenditure (OOPE) on health care (IP/OP/Pharmacy) services. This includes

1. Mean/Median OOPE
2. Distribution of OOPE across various domains
3. Proportion of Population incurred Catastrophic Health Expenditure (CHE)
4. Reasons for OOPE

Searches

The search was conducted in following databases – PubMed Central, Scopus, Web of Science, Cochrane

Library database, Google Scholar and snowballing of the references of the articles using keywords along with Boolean operators and wildcards. Publications from January 2014 onwards were incorporated. Non-English records were excluded if translated English version was unavailable.

Types of study included

All articles published in English between January 2014 to December 2022 using the search terms Out of Pocket Expenditure (Individuals/ households/ family) on health care and catastrophic health expenditure were included. OOPE included both direct and indirect expenditure (travel, stay, food, etcetera) borne by the patient either for Modern medicine, alternative medicines and complementary medicines.

The articles from grey literature or other than English language articles and whose full text was not available were excluded.

Domain being studied

Burden of Out-Of-Pocket Expenditure (OOPE) on health care in India

Main outcome

Proportion of households incurring OOPE. Magnitude of Out-of-Pocket-Expenditure in availing health services.

Additional outcomes

To estimate the proportion of households incurring Catastrophic Health Expenditure (CHE).

To estimate the share of expenditure on medicines and other factors.

Strategy for data synthesis

Findings of the included studies structured around the objectives of this review were summarised.

RESULTS

Table 1: Literature Search Tracking Table

Sr. No.	Database	Years Searched	Search Terms	Strings of Terms	Hits
1	PubMed Central	2014 - 2022	- OOPE; India	OOPE AND India	193
2	PubMed Central	2014 - 2022	- OOPE; Catastrophic Expenditure	OOPE AND Catastrophic Health Expenditure	59
3	PubMed Central	2014 - 2022	- OOPE; Proportion; India	OOPE AND Proportion AND India	140
4	PubMed Central	2014 - 2022	- OOPE; India; Breakup	OOPE AND India AND Breakup	4
5	Scopus	2014 - 2022	- OOPE; India	OOPE AND India	89
6	Scopus	2014 - 2022	- OOPE; India; Catastrophic Expenditure	OOPE AND India AND Catastrophic Health Expenditure	42
7	Scopus	2014 - 2022	- OOPE; India; Catastrophic Expenditure; Proportion	OOPE AND India AND Catastrophic Health Expenditure AND Proportion	10
8	Scopus	2010 - 2022	- OOPE; India; Catastrophic Health; Breakup	OOPE AND India AND Catastrophic Health AND Breakup	0
9	Scopus	2014 - 2022	- OOPE; India; Catastrophic Health; Income	OOPE AND India AND Catastrophic Health AND Income	19
10	Web of Science	2014 - 2022	- OOPE; India	OOPE AND India	19
11	Web of Science	2014 - 2022	- OOPE; India; Catastrophic Expenditure	OOPE AND India AND Catastrophic Health Expenditure	8
12	Web of Science	2014 - 2022	- OOPE; India; Catastrophic Expenditure; Proportion	OOPE AND India AND Catastrophic Health Expenditure AND Proportion	2
13	Web of Science	2014 - 2022	- OOPE; India; Catastrophic Health; Breakup	OOPE AND India AND Catastrophic Health Expenditure AND Breakup	0
14	Web of Science	2014 - 2022	- OOPE; India; Catastrophic Health; Income	OOPE AND India AND Catastrophic Health Expenditure AND Income	3
15	Cochrane Library	All Years	OOPE; India	OOPE AND India	9
16	Cochrane Library	All Years	OOPE; India; Catastrophic Expenditure	OOPE AND India AND Catastrophic Health Expenditure	3
17	Cochrane Library	All Years	OOPE; India; Catastrophic Expenditure; Income	OOPE AND India AND Catastrophic Health Expenditure AND Income	2
18	Cochrane Library	All Years	OOPE; India; Income	OOPE AND India AND Income	3
19	Cochrane Library	All Years	OOPE; India; Breakup	OOPE AND India AND Breakup	0
20	Google Scholar	2014 - 2022	- OOPE; India	OOPE AND India	1200

21	Google Scholar	2014 - 2022	-	OOPE; India; Catastrophic Health Expenditure	OOPE AND India AND Catastrophic Health Expenditure	61
22	Google Scholar	2014 - 2022	-	OOPE; India; Catastrophic Health Expenditure; Proportion	OOPE AND India AND Catastrophic Health Expenditure AND Proportion	27
23	Google Scholar	2014 - 2022	-	OOPE; India; Catastrophic Health Expenditure; Breakup	OOPE AND India AND Catastrophic Health Expenditure AND Breakup	9
24	Google Scholar	2014 - 2022	-	OOPE; India; Catastrophic Health Expenditure; Income	OOPE AND India AND Catastrophic Health Expenditure AND Income	8
						32
						6

Table 2: Evidence Table

Sr. No	Title of the Article	Name of Author	Year Published	Study Population	Study Population	Design
1	“Components of Out-of-Pocket Expenditure and Their Relative Contribution to Economic Burden of Diseases in India(20)”	Ambade et al(20)	2022	India	Rural and Urban	Secondary data - NSSO 2018
2	“Determinants and distribution of out of pocket expenditure for health care services in a district of western Maharashtra, India: An Observational Study.(13)”	Kalke et al(13)	2021	Pune	Rural and Urban	Cross Sectional Study
3	“Addressing data and methodological limitations in estimating catastrophic health spending and impoverishment in India, 2004–18(15)”	Mohanty et al(15)	2021	India	Combined	Secondary Data - NSS 2018, Consumption Surveys
4	“Effect of health insurance program for the poor on out-of-pocket inpatient care cost in India: evidence from a nationally representative cross-sectional survey(10)”	Sriram et al(10)	2020	India	Rural and Urban	Secondary Data Analysis - NSSO CES 2014
5	“Determinants of out-of-pocket and catastrophic health expenditure in rural population: A community-based study in a block of Purba Barddhaman, West Bengal(3)”	Dalui et al(3)	2020	West Bengal	Rural	Cross Sectional Study
6	“Prevalence of catastrophic health expenditure and its associated factors, due to out-of-pocket health care expenses among households with and without chronic illness in Bangalore, India: a longitudinal study(14)”	Swetha et al(14)	2020	Bangalore	Urban	Longitudinal study
7	“Household out-of-pocket expenditure on health care - A cross-sectional study among urban and rural households, Puducherry(5)”	Vasudevan et al(5)	2019	Pondicherry	Rural and Urban	Cross Sectional Study
8	“Key Indicators of Social Consumption in India: Health(21)”	NSS 75th Round	2019	India	Rural and Urban	Cross Sectional Study
9	“Role of insurance in determining utilization of healthcare and financial risk protection in India(18)”	Prinja et al(18)	2019	Gujarat, Haryana and Uttar Pradesh	Combined	Cross Sectional Study
10	“Disease-specific out-of-pocket and catastrophic health expenditure on hospitalization	Kastor et al(9)	2018	India	Rural and Urban	Secondary Data Analysis

	in India: Do Indian households face distress health financing(9)?”						- NSSO 71st Round
11	“Out-of-Pocket Health Care Expenditure and Poverty in Assam(8)”	Basumatary et al(8)	2017	Assam	Rural and Urban	Secondary Data Analysis - NSSO 71st Round, NHA, RBI	
12	“Out of pocket expenditure on surgical and nonsurgical conditions in Odisha(11)”	Rout et al(11)	2016	Odisha	Combined	Cross Sectional Study	
13	“Effect of User Charges on Secondary Level Surgical Care Utilization and Out-of-Pocket Expenditures in Haryana State, India(12)”	Balasubramanian et al(12)	2015	Haryana	Combined	Cross Sectional Study	
14	“Health service use, out-of-pocket payments and catastrophic health expenditure among older people in India: The WHO Study on global AGEing and adult health (SAGE)(17)”	Brinda et al(17)	2015	India	Combined	Secondary Data - WHO's Study on global Ageing and adult health in India	
15	“Economic consequences of ill-health for households in northern rural India(19)”	Quintussi et al(19)	2015	Uttar Pradesh, Bihar	Rural	RCT	
16	“Moving to Universal Coverage? Trends in the Burden of Out-Of-Pocket Payments for Health Care across Social Groups in India, 1999–2000 to 2011–12(6)”	Karan et al(6)	2014	India	Combined	Secondary Data Analysis - CES 2012	

DISCUSSION

Proportion of Households Incurred OOPE

According to Vasudevan et al, overall, 67.1% households had incurred OOPE(5). The percentage was 68.3% in rural and 65.8% in urban areas. In rural area, out of IP care, 94.1% incurred OOPE; 67.5% incurred OOPE for OP care and 100% had OOPE for pharmacy. In urban area, out of IP care, 100% incurred OOPE; 63.4% incurred OOPE for OP care and 100% had OOPE for pharmacy. Karan et al. found that households’ OOPE for outpatient care was 78.8% in rural areas and 75.9% in urban areas, respectively while for inpatient care it was 14.02% in rural areas and 14.8% in urban areas, respectively. When combined, it was 81.4% in rural areas and 78.5% in urban areas.(6)

Amount of OOPE For IP, OP Care and Pharmacy Services

According to NSS 75th round (2017-18), mean OOPE for IP care (annual) was Rs. 16,676 in rural and 26,475 in urban per case while mean OOPE for OP care (bimonthly) per episode was Rs. 592 in rural and Rs. 710 in urban area(4). Vasudevan et al found the median OOPE for IP care per visit (in 6 months) was Rs.1,360, OP care (1 month) was Rs.454 and pharmacy (1 month) was Rs.100. The median OOPE per OP visit was Rs.210 in rural and Rs.504 in urban areas. Overall, median OOPE per event of IP admission was Rs.104. It was Rs.450 in rural and Rs.100 in urban areas(5). But the mean OOPE for OP care was Rs.852, from a study by Sriram et al(7).

Study by Basumatary et al shows that the mean IP OOPE per case over 365 days in rural area is Rs. 6966 and

Rs.47064 in urban area with overall Rs.14810(8). The OOPE of Assam is found to be higher than the NER average and the all-India average.

Kastor et al found that the mean OOPE after reimbursement for IP care (1 year) was Rs.19,210 consisting of mean hospitalization expense of Rs.20,370 and mean reimbursement of Rs.1160(9). Similarly Sriram et al found that the annual OOPE for IP care was Rs.8149 while Rout et al observed that in Odisha, the mean OOPE for IP care was Rs.2107(10,11). Whereas in a study by Balasubramanian et al, mean OOPE per IP visit was Rs. 4564, and median Rs. 4290 (1682–6400). Mean expenditure excluding indirect costs is Rs. 3342(5).

According to research by Dalui et al, the median out-of-pocket expense for health care was Rs. 3870. The median indirect health expense was Rs. 2100 (IQR: 600-3550) with Rs. 50 (40 - 500) for transportation, while the median direct expense was Rs. 1780 (3).

OOPE as Percentage of Income

Study by Karan et al where percent of OOPE as household expenditure in 2012 for outpatient was 5.37 in rural and 3.89 in urban respectively while for inpatient it was 2.36 in rural and 1.86 in urban respectively and combinedly it was 7.73 in rural and 5.74 in urban(6).

In a study by Balasubramanian et al, the mean yearly expenditure of 11.6% for health by households as a percent of yearly consumption expenditure (12).

Study by Kalke et al found that 48.75% spent less than 5% of their income on health. It was 35.41% for 5-10% of

income, 13.31% for 10-20% income and 2.55% spending greater than 20% of income(13).

Proportion of Households Incurred Catastrophic Health Expenditure

Percent of household having catastrophic expenditure (>10% of household expenditure) in 2012 for outpatient was 13.31 in rural and 9.91 in urban respectively while for inpatient it was 4.85 in rural and 4.66 in urban respectively and combinedly it was 18.86 in rural and 15.86 in urban; Karan *et al*. Overall households having catastrophic expenditure was 18.9% in rural and 15.9% in urban area(6).

Swetha *et al* found that in OP care, 14.86% households had Catastrophic Health Expenditure during the study period(14). Likewise 5.6% households experienced catastrophic health expenditure for IP care, found in a study by Balasubramanian *et al*(12). A research by Kastor *et al* found 28.6% of the households which availed IP care had incurred CHE(9). Secondary data analysis by Mohanty *et al* from surveys on consumption and health care shows that the incidence of catastrophic health expenditure in Maharashtra was 9.10% in 2018(15).

In the study by Dalui *et al*, overall (Including IP and OP) 16.2% of households faced catastrophic expenditures(3). Similarly according to a research by Zeng *et al*, of 7,450 households surveyed in Zimbabwe, an estimated 12.6% had overall incidence of CHE(16).

There was 7% prevalence of catastrophic health expenditure among older age groups, found Brinda *et al*(17).

According to Prinja *et al*, the prevalence of Catastrophic Health Expenditure(CHE) for hospitalization among the insured and uninsured population was 28% and 26% respectively for IP care while it was 0.52% and 0.50% for insured and uninsured for OP care; overall catastrophic OOPE was 1% for OP care irrespective of the insurance status(18).

Expenditure on Health Services (Breakup of Expenses)

According to NSS 75th round (2017-18), medicines accounted for 70.3% of expenses while diagnostic tests 12.6%, doctor's fee 13.3% of total OP expenses(4).

According to Vasudevan *et al*, medicines contributed to the largest proportion of spending in both rural (80%) and urban areas (76%) for all IP/OP/Pharmacy services followed by consultation fee; 10% in rural and 14% in urban area. Diagnostics contributed to 3% and 4% in rural and urban respectively followed by 3% expense for transportation(5).

The mean health expense for chronic illness was Rs.1155 with drugs and investigations accounting for about 56.09% and 26.16% respectively of direct cost found Swetha *et al* (14).

Quintussi *et al* observed that the medical fees account for 12%, medicines and laboratory 74%, transportation and food 9% of the OOPE for chronic diseases(19). For acute conditions, the breakup was 33% medical fees, 51% medicines and laboratory, 9% for travel. Similarly Rout *et al* found that medicine expenditure was around 24% of the total expenditure(11).

In a study by Ambade *et al*, medications contributed to 60.3% of the OP OOPE while doctor charges were around 12.4%, diagnostic charges were around 9.2%, non-

medical charges were 14.6% and indirect costs constituted about 14.6% of expenses(20).

In an article written by Srinadh *et al*, the 75th round of the National Sample Survey's (NSS) unit-level data (2017-18), pharmacy expense constitute approximately 43%, investigations around 6.8% and 6.28% on transportation(21).

In a study by Balasubramanian *et al*, diagnostics constituted for about 38.4% of the direct expenditure(12).

CONCLUSION

The proportion of households incurred Out-of-Pocket Expenditure for outpatient care was above 75% in literatures reviewed irrespective of area of residence. Mean/median OOPE for IP was higher in urban area. The mean/median OOPE for IP (per-visit) ranged from Rs.1360 to Rs.47064, OP ranges from Rs. 210 to Rs. 852 while pharmacy was Rs.100. About 5% to 28% of the households experienced Catastrophic Health Expenditure. Medications contributed to the largest of the expenses. The low share of Government Health Expenditure, lack of provision for free outpatient care apart from government health facility and low participation in govt. sponsored insurance scheme could be the reason for incurring OOPE and CHE. Since the scope of this review is limited, a comprehensive systematic review and metanalysis is warranted to understand the extent of the problem and the reasons behind.

AUTHORS CONTRIBUTION

All authors have contributed equally.

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CONFLICT OF INTEREST

There are no conflicts of interest.

DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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