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Review Article

Understanding the financial impact of depression: a review of cost of illness evidence from India

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ABSTRACT

India bears a large portion of the societal and economic effects of depression, which is a major contributor to the disease burden. With an emphasis on both direct and indirect costs, this review examines the cost-of-illness (COI) data about depression in India. Clinical depression or major depressive disorder (MDD) is thought to affect 15-20% of people in their lifetime, and gender and poverty are important risk factors. The average yearly direct cost of depression in India is around ₹19,500 per person, which includes both medical (₹13,510 median) and nonmedical (₹6008 median) expenses. However, indirect costs-which make up 56.33% of the total COI-amount to an average of ₹33,800 per year and include factors such as lost work, caregiver stress, and time off for consultations. An estimated ₹59951.33 is the total yearly economic burden per person. Financial barriers to consistent care are highlighted by the fact that patients on regular medication spend much more (₹1,387) than those receiving irregular treatment (₹554). These results highlight the fact that women and lower-income groups are disproportionately affected by depression, and that untreated mental illness leads to significant productivity losses and long-term financial strain. Legislators must prioritize mental health financing, increase insurance coverage, and enhance access by distributing resources fairly and utilizing digital health tools. Planning successful, inclusive, and long-lasting mental healthcare.

Keywords: Cost of illness, Depression, Socioeconomic disparities, Mental health policy, Indirect cost

INTRODUCTION

Depression is a common mental disorder cutting across age, gender, and socioeconomic status in India and across the world. Globally, the burden of depression has been rising, and MDD was the third leading cause of disability in 2015. Depression is one of the most diagnosed mental disorders in primary care settings.¹ In India, it is estimated that nearly one-third of patients seeking help from health care facilities could have symptoms related to depression, and the crude prevalence rate of mood disorder was estimated to vary from as low as 0.5 to as high as 78 per 1000 population.^{2,3} Depression or MDD nowadays is widespread among all age groups. Still, young adults and the age group 45 to 60 have a greater tendency to fall into depression due to very stressful situations. Young adults

have depression due to career and relationship issues, whereas in older adults, depression is due to tension from family and rejection from society.⁴ Whereas some regions are still biochemical and not defined by any cause. But socioeconomic pressure and income status are still major reasons to get any person into depression. Shortage of money or loans is a key factor in depression.⁵ Depression, a disease that not only affects the person who is ill but also affects the whole family in trouble. If a diseased person is the only earning member in the family, then due to depression, he either leaves work or remains absent from work, which also impact his economic status^{6,7}

The cost of treatment is an important issue while making informed choices about the provision of psychiatric treatment services. When the resources are limited, it

becomes incumbent upon health-care providers to ensure access to care for as many individuals as possible. An estimation of cost is needed to make informed decisions for patients and to facilitate further analysis, such as cost minimization analysis, to reduce costs/allocate resources more effectively for patient care and management.^{8,9}

The COI covers the varied aspects of the disease burden on society. It extends beyond the cost of treatment to its effect on life expectancy, morbidity, reduced quality of life, cost of premature death, and disability from the illness.^{10,11} COI studies are regarded as a fundamental evaluation technique in health care systems that help find proper preventive and treatment strategies to reduce the economic burden of health problems.¹²

LITERATURE RESEARCH

This review synthesised literature on the financial impact of depression in India, following a protocol to ensure transparency, reproducibility, and bias minimisation. Eligible studies were peer-reviewed research or review

articles published in English within the last 20 years, conducted exclusively in India, and reporting at least one cost category- direct medical (e.g., hospitalisation, medication, consultation), direct non-medical (e.g., transport, caregiving), or indirect (e.g., productivity loss). Exclusions included studies outside India, non-peer-reviewed work, insufficient COI data, or publications in other languages.

Literature searches were performed from PubMed, Scopus, Web of Science, and Google Scholar using relevant keywords, supplemented by manual reference. Selection involved title, abstract, and result section screening followed by full-text review, resulting in six eligible studies. Data extraction captured study details, including authors, year, design, setting, population, reported cost components, currency/year, and socioeconomic influences. All costs were inflation-adjusted to a common reference year. In addition to cost analysis, the review examined broader contextual factors, including indirect burden dominance, links between severity and total costs, and treatment gap prevalence.

Table 1: Characteristics of studies included in the review.

Authors	Study setting (location)	Study design	Population characteristics
Kondapura et al ¹¹	Academic tertiary care hospital, Karnataka, India	COI, cross-sectional	Outpatients diagnosed with common mental disorders (depression, anxiety, somatoform disorders)
Dhodi et al ¹²	Tertiary care hospital, Maharashtra, India	Prospective cross-sectional	Patients diagnosed with depression per ICD-10 criteria
Arvind et al ⁹	Multisite, India	Population-based cross-sectional survey	Community-dwelling adults screened for depressive disorders
Sarkar et al ¹³	Multicentre, India	Cross-sectional	Clinically stable patients with severe mental illnesses, including depression
Thakral et al ¹⁴	Delhi, India	Cross-sectional	Patients with major mental disorders attending mental health facilities
Patel et al ¹⁵	Community survey, Goa, India	Cross-sectional	Adult women surveyed for depression, anaemia, and reproductive tract infections

DISCUSSION

In this review a total of six Indian studies meeting the predefined inclusion and exclusion criteria were shortlisted for the final COI analysis. The inflation-adjusted total annual treatment costs reported in these studies varied substantially, reflecting differences in study design, cost components included, and regional economic contexts.

The most recent study, by Kondapura et al estimated an inflation-adjusted total cost of ₹97,418 per patient per year, representing the highest value among the reviewed literature. In comparison, Dhodi et al reported an adjusted cost of ₹43,120, while Arvind et al calculated a slightly

lower value of ₹39,792. Two studies published in 2017 reported intermediate costs.^{6,9,10} Thakral et al estimated ₹96,509, and Sarkar et al reported ₹53,184. The earliest study included, conducted by Patel et al estimated an inflation-adjusted cost of ₹29,685, the lowest among the reviewed works.¹³⁻¹⁵

When aggregated, the pooled mean annual treatment cost across these six Indian pharmaco-economic studies was estimated at ₹59,951.33. After inflation correction pooled estimate highlights the considerable financial burden depression imposes on patients and families in the Indian context, underscoring the importance of economic evaluation in mental health policy-making and resource allocation.

Table 2: Comparison of direct, indirect, and total costs of depression across studies.

Authors	Cost in year of publication				Inflation-adjusted cost			
	Direct medical cost	Direct non-medical cost	Indirect cost	Total cost	Direct medical cost	Direct non-medical cost	Indirect cost	Total cost
Kondapura et al ¹¹	11231	NA	66610	77842	14087	NA	83331	97418
Dhodi et al ¹²	6,378	1234	16,860	23,238	11239	2171	29710	43120
Arvind et al ⁹	NA	NA	NA	18000*	NA	NA	NA	39792
Thakral et al ³	9780*	9720*	19488*	38988	24214	24057	48238	96509
Sarkar et al ¹⁴	8400*	1080*	12000*	21480*	20798	2674	29712	53184
Patel et al ¹⁵	1656*	1104*	1824*	4584*	10722	7150	11813	29685
Pooled mean annual treatment cost	5869.66	411.33	27823.33	39517	13510	6008.66	33800.67	59951.33

*-Conversion of cost from a monthly to an annual basis for harmonisation. # -All costs in Indian rupees, @- All costs in the Annual treatment cost of illness, NA- Particular cost not available in the research paper.

Table 3: Financial impact of depression (COI).

COI	Pooled mean annual treatment cost	Percentage of total treatment	Mean±SD	P value
Direct medical cost	13510	22.51%	16,212±6,009.36	0.0441
Direct non-medical	6008.66	10.01%	9,013±10,276	
Indirect cost	33800.67	56.33%	40,560.80±27,157.42	
Total COI	59951.33	100%	58,984.57±27,175.38	

Mean direct medical cost which include hospitalization charges, physician fees, medicine etc, is 13510 (22.51%) mean and SD=16,212±6,009.36, similarly direct non-medical cost that include transportation, food accommodation etc, is 6008.667 (10.01%) mean and SD=9,013±10,276, whereas Indirect cost which include loss of income, loss of productivity is much higher than other cost 33800.67 (56.33%) mean and SD=40,560.80±27,157.42. So, the total COI or burden of disease is 59951.33 mean and SD=58,984.57±27,175.38, with a p=0.0441 observed by one-way ANOVA, indicating that the Financial Impact of Depression is significantly higher due to indirect costs than other direct costs.

Across reviewed Indian pharmaco-economic studies, a clear pattern emerges in the non-monetary dimensions of the economic burden posed by depression and other common mental disorders (CMDs). Indirect costs, driven by productivity loss, occupational disruption, and caregiver time, consistently outweigh direct treatment expenses, highlighting that the societal impact of CMDs extends well beyond healthcare system expenditures. The burden was closely linked to illness severity and functional disability, with total costs rising proportionally to these factors, while direct medical costs alone showed no such association. This reinforces the importance of functional recovery in cost containment. However, a persistent treatment gap-estimated at 79.1% in community surveys-means that most individuals with depression remain untreated, sustaining preventable morbidity and indirect costs.^{16,17}

The reviewed evidence also underscores the vulnerability of certain populations. Women, low-income households, and individuals with chronic or recurrent depression experienced disproportionate financial strain, even when clinically stable, due to compounded socioeconomic and demographic disadvantages. Depression was found to significantly increase the risk of catastrophic health expenditure compared to other common conditions, with risk rising alongside severity. While subsidised psychiatric care and hospital-borne costs offered partial financial relief for some, access to such institutional support was inconsistent. Collectively, these findings indicate a pressing need for policy measures that prioritise depression within national health agendas through early intervention, vocational rehabilitation, caregiver burden reduction, and decentralised community mental health services.¹⁸

CONCLUSION

We conclude this review with six Indian pharmaco-economic studies that demonstrate that depression imposes a substantial economic burden, with a pooled inflation-adjusted mean annual treatment cost of ₹59,951.33, driven predominantly by indirect costs (56.33%) such as productivity loss, occupational disruption, and caregiver time, which significantly exceed direct medical (22.51%) and direct non-medical (10.01%) expenses. The marked variation in reported costs reflects differences in study design, cost components, and regional economic contexts, yet a consistent pattern emerges linking higher total costs to greater illness severity and

functional disability. The persistent treatment gap, affecting over three-quarters of individuals with depression, alongside the disproportionate financial strain on vulnerable groups—particularly women, low-income households, and those with chronic or recurrent illness—underscores the need for targeted interventions. Given depression's association with elevated catastrophic health expenditure risk and the uneven availability of subsidised psychiatric care, policy priorities should include early intervention, vocational rehabilitation, caregiver burden reduction, and expansion of accessible, decentralised community mental health services to mitigate both the financial and societal impact of the disorder.

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