

A prospective cross-sectional study to evaluate the economic burden of patients diagnosed with depression in a tertiary care hospital - Femina Dawer- Grant Govt. Medical College

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Introduction

Depression as a disorder has always been attention of attention of researchers in India. Over the last 50-60 years, sizable amount of studies has been published from India addressing various aspects of this commonly prevalent disorder. The various aspects studied included epidemiology, demographic and psychosocial risk factor, neurobiology, symptomatology, comorbidity, assessment and diagnosis, impact of depression, treatment related issues and prevention of depression additionally to the efficacy and tolerability of various antidepressants. Here, we review data on various aspects of depression, originating from India.

Measures:

Health care costs

The charges incurred for relevant services in the UC San Diego Healthcare System were extracted from patients' EMR. Included charges were annual outpatient (ambulatory) office visits, ED visits, hospital visits, and mental health visits.

Depression diagnosis:

Depression diagnosis was extracted from the patients EMR. Consistent with prior studies, 6,10,15-17 patients with an EMR ICD-9 diagnostic code of 296.2, 296.3, 300.4, or 311 were coded as "depressed." In addition, because subthreshold symptoms of depression are clinically important indicators of distress, particularly for newly diagnosed cancer patients, we elected to include codes 309.0, 309.1, 309.28. The inclusion of these codes has support in prior studies examining the impact of depression on health care costs.

The cost-of-treatment is an important issue while making informed choices about provision of psychiatric treatment Services. When the resources are limited, it becomes incumbent upon health-care providers to ensure access to care to as many

individuals as possible. Hence, there is a need to find the costs associated with various treatment options. However, health care costs can be computed in a variety of ways. The direct costs refer to costs incurred by the patients and other agencies for medications, hospital visits and hospitalization. The indirect costs involve intangible expenses like loss of income from work and societal costs. Though direct costs are tangible and can be clearly elucidated, indirect costs are relatively difficult to be uniformly applied, and vary across health systems.

Marked differences are present between developed and developing countries with respect to the structure of service provision, actual service utilization and the economic impact of psychiatric disorders. The studies about cost-of-treatment of psychiatric disorders are relatively fewer from India, an emerging and populous developing country. Further, no study has attempted to explicitly compare the cost-of-treatment to the financial background of the patient population. Hence, this study was conducted to assess the cost of treatment of four severe mental illnesses, which require long term psychotropic medication, and to compare it with the per-capita income of the patient.

Cost estimation

The cost calculations were done in Indian Rupees (INR) per month, and rounded off to the nearest 10 (1 US Dollar was approximately equivalent to INR 60 at the time of the study). For the purposes of the study, the direct cost-of-treatment was sub-divided into cost to the patient and cost to the hospital. The cost to patient included money spent on travel and medication purchased from outside the hospital. Medications were prescribed from outside either because; the medications available from inside the hospital were intolerable or were proved ineffective.

The cost to the hospital was computed by adding the cost of services and infrastructure (hospital consultation estimate) to the hospital pharmacy medication costs.

The costs of medication for every patient were calculated by obtaining the median current market costs of medication as per current drug review. The monthly cost-of-treatment at the median prescribed dose was calculated for every of the medications for representation. one strength of dosing was available for medications available within the hospital pharmacy to attenuate prescription and dispensing errors. For bulk purchases, it's possible that hospital could obtain significant discounts. Hence, additional analyses were conducted with medication cost discounted at 25% and 50%. But still, drug review estimates were used and not the present hospital actual procurement costs, as hospital procurement costs may vary markedly from year to year based upon sealed competitive bidding. For providing a world perspective, the monthly costs of every medication in USA were also enumerated.

Statistical analysis:

The demographic and clinical characteristics of the patients were descriptively represented across the different diagnostic groups. The costs of treatment (both to the patient and the hospital) were calculated for the diagnostic sub-groups. Non-parametric tests were used for comparison of clinical and cost characteristics due to skewed data.

Thereafter, proportion of the per-capita income spent by the patient towards treatment (travel and outside medication) was computed. This was done to assess the burden of the treatment on the patients and their families despite attending to a 'free' government hospital. The proportion was dichotomized on the cut-off of 100% of per-capita income (i.e. spending one person of the family's entire monthly expenses towards treatment).

ABSTRACT

Statement of the Problem: Depression is a common psychiatric disorder having important medical, social

and psychological consequences. It is a disorder associated with enormous burden in terms of reduced quality of life as well as direct and indirect costs. It is a well-known fact that the majority of the economic burden of depression results from non-depression expenditures. Hence, the study was undertaken to evaluate economic burden of depression. The purpose of this study is to evaluate the cost off depression in terms of direct and indirect costs. **Methodology & Theoretical Orientation:** 150 patients diagnosed with depression attending psychiatry OPD at Sir J.J. Group of Hospitals, Mumbai, fulfilling the inclusion criteria were explained about the study. Written informed consent were taken. Direct and Indirect costs were recorded in Structured Case Record Forms by interviewing the patients Cost driving factors were identified. **Findings:** Total annual direct cost was 6,378.16 INR while annual Indirect Cost was INR 16,860. Annual cost of Depression was 1NR 23,238.16/331.97 USD per patient. Total cost was 16.30% of per capita GDP 2018 among Depression patients in India. The annual economic burden of depression in India is 1.2% of GNP of India. **Conclusion & Significance:** The indirect cost was almost thrice the direct costs. Hospitalisation cost and loss of working days due to depression was contributed the most to the direct costs and indirect costs respectively. Economic burden of Depression is found out to be 16.30% of per capita GDP in year 2018-2019. **Recommendation:** Multi-centric studies to evaluate pharmaco-economic burden across the country and analyse the burden of the disease. Thus, shifting the approach to prevention rather treatment reducing the economic burden of the illness.

Treatment costs

On an average, the total monthly direct cost of treatment was INR 770 per patient (95% confidence interval of 725 to 815). The average monthly medication cost-per-patient was INR 390, out of which 87.9% was borne by the hospital pharmacy. The monthly hospital consultation estimate was calculated to be INR 260 per-patient per-month. The

treatment costs for various disorders are depicted in The hospital pharmacy medication costs differed significantly between the diagnostic groups, leading to difference in costs to the hospital (Kruskal Wallis $\chi^2 = 9.303$, $p = 0.026$ for both). The cost to the hospital was 29.6%, 24.1% and 1.8% higher for RDD, BPAD and schizophrenia group than patients with psychosis NOS.