



Healthcare Costs associated with the treatment of Bipolar Disorder: A Systematic Review

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INTRODUCTION

- Bipolar disorder (BD) is defined by the occurrence of mania or hypomania.
- Mania is defined by a euphoric, expansive, or irritable mood that is accompanied by a marked increased in energy which represent a change in an individual's typical behavior.
- The prevalence of bipolar disorder (BD) is approximately 1.0%, according to the National Comorbidity Survey (NCS) in 2005.
- There are higher rates of medical illnesses and premature mortality for individuals with bipolar disorder. [1]
- The economic burden of BD in 2009 was estimated to be 150.1 billion dollars. [2]
- Bipolar disorder is the most expensive behavioral health care diagnosis, both for patients with bipolar disorder and for their insurance plans.
- For every behavioral health care dollar spent on outpatient care for patients with bipolar disorder, \$1.80 is spent on in-patient care, suggesting that better prevention management could decrease the financial burden of bipolar disorder. [3]

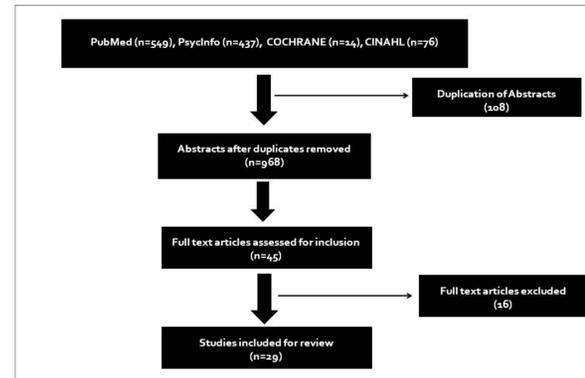
OBJECTIVES

- To review and analyze the direct and indirect medical costs associated with bipolar disorder.

METHODS

- A systematic literature search was conducted through PubMed, PsychInfo, COCHRANE, and CINAHL to identify studies assessing healthcare costs with the treatment of Bipolar disorder.
- Search was conducted using the title followed by the MeSH terms – Bipolar disorder, Cost of Illness, Cost of Treatment, Cost analysis.
- Data were abstracted country of origin of the study, direct and indirect costs, perspective, time horizon and data sources used for cost data.
- Articles published between 2001-2017 in English were included. Articles were excluded if the direct healthcare cost for patients with Bipolar disorder was not reported and cannot be derived

Study Selection



PubMed Search using MeSH Terms

Search	Add to builder	Query	Items found
#6	Add	Search ("Bipolar Disorder"[Mesh]) AND "Efficiency"[Mesh]	13
#5	Add	Search ("Bipolar Disorder"[Mesh]) AND ("Mental Health Services/economics"[Mesh] OR "Mental Health Services/statistics and numerical data"[Mesh] OR "Mental Health Services/trends"[Mesh] OR "Mental Health Services/utilization"[Mesh])	226
#4	Add	Search ("Bipolar Disorder"[Mesh]) AND ("Hospital Costs/statistics and numerical data"[Mesh] OR "Hospital Costs/trends"[Mesh] OR "Hospital Costs/utilization"[Mesh])	3
#3	Add	Search ("Bipolar Disorder"[Mesh]) AND ("Health Care Costs/economics"[Mesh] OR "Health Care Costs/statistics and numerical data"[Mesh] OR "Health Care Costs/trends"[Mesh] OR "Health Care Costs/utilization"[Mesh])	39
#2	Add	Search ("Bipolar Disorder"[Mesh]) AND "Cost of Illness"[Mesh]	205
#1	Add	Search ("Bipolar Disorder"[Mesh]) AND ("Costs and Cost Analysis/economics"[Mesh] OR "Costs and Cost Analysis/statistics and numerical data"[Mesh] OR "Costs and Cost Analysis/trends"[Mesh] OR "Costs and Cost Analysis/utilization"[Mesh])	64

Table 1. Study Characteristics and Healthcare Costs for Bipolar Disorder

Author(s)	Year Published	Study Conducted In	Types of Costs Measured	Direct costs	Indirect costs	Perspective Used	Time Horizon	Data Source Used
Dilsaver	2010	USA	Direct and Indirect	30.7 Billion Dollars	120.3 Billion Dollars	Societal	1991 - 2009	National Comorbidity Survey-Replication (NCS-R)
Das Gupta et al.	2002	UK	Direct and Indirect	86 Million Sterling Pounds	1770 Million Sterling Pounds	Societal	1995 - 2000	National Health Service
Young et al.	2011	UK	Direct	1,045,279,334 Pounds		Societal	2007 - 2008	IMS Disease analyzer, Hospital Episode Statistic, Mental Health Minimum Dataset statistics
Fisher et al.	2006	Australia	Direct	1.59 Billion Dollars (AUD)		Societal	2002 - 2003	SA Public Hospital (SAPH)
Durden et al.	2010	USA	Direct	10,202 Dollars		Payer	2004 - 2006	Thomson Reuters MarketScan Multi-State Medicaid database
Somaiya et al.	2014	India	Direct and Indirect	235.66 Dollars	419.52 Dollars	Provider	2010 - 2011	Cost Assessment Questionnaire
Henderson et al.	2015	UK	Direct			Payer	2009 - 2011	NHS Mental Health Trusts
Menil et al.	2015	Kenya	Direct and Indirect	\$594/per person		Societal		
Knoth et al.	2004	USA	Direct	85 Million Dollars		Payer	2000 - 2001	Medical Claims Data
Parker et al.	2012	Australia	Direct and Indirect	71,169 Dollars (AUD)	279,486.90 Dollars (AUD)	Societal	2008 - 2011	Australian Medicare Schedule Book and Self-Assessment Questionnaire
Williams et al.	2011	USA	Direct	1,356 Dollars		Payer	2004 - 2007	Employer-based health plan, self funded health plan
Zelicourt et al.	2003	France	Direct	8.8 Billion Francs (FF)		Payer	1999 - 1999	Assistance Publique des Hopitaux de Paris, Health Service hospital
Bagalman et al.	2011	USA	Direct	11,628 Dollars		Payer	2004 - 2007	MarketScan Commercial Database
Bryant-Comstock et al.	2002	USA	Direct	10,242 Dollars		Payer	1997 - 1997	Large insurer database
Gonzalez-Pinto et al.	2010	France Spain	Direct	119,383,260 Euros	118,789,895 Euros	Societal	1999 - 2002	Computerized patient charts
Simon et al.	2006	USA	Direct	8,046 Dollars		Payer	1999 - 2000	Health plan administrative records
Olié, J.P	2002	France	Direct	22,297 Euros		Payer	1999 - 1999	Centre Médico-Psychologique (CMP) French system
Hsieh et al.	2012	Taiwan	Direct	13,971		Societal	2006 - 2007	Taiwan National Health Insurance Claims Database
Stender et al.	2002	USA	Direct	8,345 Dollars		Payer	1996 - 1996	Electronic Health Insurance Claims
Berry et al.	2011	USA	Direct	176 Million Dollars	233 Million Dollars	Societal	2003 - 2006	Kids' Inpatient Database (KID)
Tafalla et al.	2010	Spain	Direct	4,345 Euros		Provider	2005-2006	Medical history and patient data
Esposti et al.	2014	Italy	Direct	3,301 Euros		Societal	2008-2009	Health-assisted Subjects', Medications Prescription, Hospital Discharge, Mental Health Information System, Specialist Outpatient Services, No Charges Databases
Strand et al.	2016	Ethiopia	Direct	43.40 Million Dollar		Provider		WHO-CHOICE
Begley et al.	2001	USA	Direct and Indirect	17,556,761 Dollars	14,077,582 Dollars	Societal	1998 - 1998	National Comorbidity Survey, National Institute on Drug Abuse, Insurance Company
Hidalgo-Mazzei et al.	2015	Spain	Direct	4,771 Euros		Payer		
Ekman et al.	2013	Sweden	Direct and Indirect	7,003 Euros	21,008 Euros	Societal	2006-2008	Northern Stockholm psychiatric clinic
Guo et al.	2008	USA	Direct	7,675 Dollars		Payer	1998-2002	Multistate managed care claims database (PharMetrics)
Guo et al.	2007	USA	Direct	13,886 Dollars		Payer	1998-2002	Multistate managed care claims database (PharMetrics)
Dusetzina et al.	2012	USA	Direct	10,372 Dollars		Payer	2005-2007	Thomas Reuters MarketScan database

METHODS

- Reviews, commentaries or editorials, case reports or conference abstracts and articles in other than English language were excluded.

RESULTS

- A total of 29 full text articles were included for the final review.
- Majority of the studies (45%) included in this review were conducted in the United States.
- Twenty four of these studies included direct and indirect costs for their estimates of disease burden with Bipolar disorder.
- The direct costs varied greatly among US studies ranging from over \$7,000 to \$30.7 Billion.
- Cost data were gathered from variety of sources including commercial and national data bases.

CONCLUSIONS

- Bipolar disorder causes significant economic burden to patients, families and society.

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