PHYSICAL AND MENTAL COMORBIDITIES AMONG EMPLOYEES WITH BIPOLAR DISORDER: ANALYSIS OF AHRQ 261 SPECIFIC CATEGORIES

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Abstract

Objective: To compare the costs associated with specific concurrent conditions among employees with and without bipolar disorder.

Methods: Retrospective analysis of an employer database. Cost and utilization of services among individuals with and without bipolar disorder were examined using the Agency for Healthcare Research and Quality (AHRQ) 261 specific categories in 2001 and 2002. Student *t*-tests and 95% confidence intervals were used to assess cost differences between employees with and without bipolar disorder.

Results: Data were available for 761 employees with bipolar disorder and 229,145 employees without the illness. Costs for people with bipolar disorder were higher in 53% (138) of the 261 categories, 22 of which were significantly higher ($P<0.05$). Categories significantly more costly for employers of individuals with bipolar disorder include (annual cost difference in parentheses): affective disorders ($1582); intervertebral disc disorders ($126); other mental conditions ($119); schizophrenia and related conditions ($110); poisoning medical/drugs ($62); alcohol-related mental disorders ($52); abdominal pain ($47); substance-related mental conditions ($43); dissociative/personality disorder ($41); headache including migraine ($39); other nontraumatic joint disorders ($19); residual codes-unclassified ($18); thyroid disorders ($17); other upper respiratory infections ($17); medical examination/evaluations ($12); other psychoses ($11); and hyperlipidemia ($11).

Conclusions: Patients with bipolar disorder have significantly more costly comorbidities (including physical and mental) than patients without bipolar disorder. Many of the more costly categories are central nervous system-related. Persons with bipolar disorder are more likely to have co-existing mental illness, warranting appropriate treatment and management. Caring for patients with bipolar disorder requires a focus on total health management, not just on the patient's mental health.

Objective

To compare the health benefit costs associated with specific concurrent conditions among employees with and without bipolar disorder from an employer's perspective

Introduction

Bipolar disorder is a chronic disorder that is characterized by alternating episodes of mania or hypomania and depression, which can lead to impairments in functioning and poor health-related quality of life. There is also a high prevalence of concurrent medical illnesses in patients with bipolar disorder, particularly psychiatric comorbidities,[1] that can worsen the course and outcome of the illness and increase health benefits costs.[2] A cost-of-illness study in the United States found that the lifetime cost for patients with new cases of bipolar disorder in 1998 was $24 billion.[3] Recently it has been reported that employees with bipolar disorder have higher annual medical costs in most health benefits cost categories, such as medical, prescription drug, sick leave, and short- and long-term disability, than employees without the illness.[4] However, few studies have examined the economic impact of specific concurrent conditions in employees with bipolar disorder. The results from a retrospective study of a large database of employees with and without bipolar disorder are described here.

Methods

Data Sources

- Data were obtained from the Human Capital Management Services Research Reference Database (HCMS RRDb) on 2001-02 adjudicated claims, payroll, and demography for more than 230,000 employees who had medical and prescription drug coverage and were employed at several large US-based employers in retail, service, manufacturing, and financial industries
- The index date for the cohort with bipolar disorder was a subject's first diagnosis in 2001 and for the non-bipolar disorder cohort was the average index date from the bipolar disorder cohort in 2001
- Costs per category are across the entire population cohort, not just those persons with claims for the category

Data Analyses

- Costs for medical care and pharmaceuticals were assigned to categories using the Agency for Healthcare Research and Quality (AHRQ) 261 specific categories and were measured during the year immediately following the index date in 2001
- Student *t*-tests, means, and 95% confidence intervals (CI) were calculated for each of the 261 specific categories for each cohort
- Costs were considered to be statistically different between cohorts if there was no overlap between their 95% CIs, yielding statistically significant differences at $P \leq 0.05$ level

Results

Employee Characteristics

- Data were available for 761 employees with bipolar disorder and 229,145 employees without bipolar disorder
- **Table 1** shows that employee demographics and all categories, except annual salary, were significantly different between the two groups ($P \leq 0.05$)

Costs for Employees With and Without Bipolar Disorder

- Costs for employees with bipolar disorder were higher in 53% (138) of the 261 categories, and 22 of these categories were significantly higher ($P<0.05$)
- The categories from AHRQ that were more costly for employees with bipolar disorder than those without bipolar disorder were acute myocardial infarction, which was 9 times higher, intervertebral disk disorders, coronary atherosclerosis, nutrition/endocrine/metabolic disorders, and hyperlipidemia, which were more than 2 times higher, and headaches and migraine, which were more than 3 times higher (**Table 2**)
- There were significant ($P \leq 0.05$) differences between employees with and without bipolar disorder on the mental health-specific diagnostic categories of AHRQ, including affective disorders, alcohol-related mental disorders, dissociative/personality, mental health behavior/observation/screening, other mental conditions, other psychoses, schizophrenia and related disorders, and substance-related mental conditions (**Figure**)
- There were significant ($P \leq 0.05$) differences between employees with and without bipolar disorder on selected physical health-specific diagnostic categories of AHRQ (**Table 3**)

Table 1. Employee Demographics

	Employees with bipolar disorder (n=761)	Employees without bipolar disorder (n=229,145)
Age at index date, y	41.2	40.4
Annual salary, $	47,351	48,468
Gender, %		
Female	54.4	44.5
Male	45.6	55.5
Married,[a] %	46.2	56.0
Ethnicity,[b] %		
Caucasian	83.5	65.1
African-American	9.1	21.3
Hispanic	4.1	8.0
Exempt, %	21.2	27.3
Full-time, %	89.1	85.7

[a]The percentage married data are based on 676 employees with and 206,343 employees without bipolar disorder.

[b]The racial (ethnicity) data are based on 340 employees with and 152,124 employees without bipolar disorder.

Table 2. AHRQ Categories That Were More Expensive for Employees With Bipolar Disorder

AHRQ category	Annual difference between employees with and without bipolar disorder, $
Affective disorders*	1582
Acute myocardial infarction	131
Intervertebral disc disorders*	126
Other mental conditions*	118
Schizophrenia and related conditions*	110
Poisoning medical/drugs*	62
Coronary atherosclerosis	54
Alcohol-related mental disorders*	52
Abdominal pain*	47
Substance-related mental*	43
Dissociative/personality*	41
Headache including migraine*	39
Nutrition/endocrine/metabolic disorders	26
Other nontraumatic joint disorders*	20
Residual codes – unclassified*	18
Thyroid disorders*	17
Other upper respiratory infections	17
Medical examination/evaluations*	12
Other psychoses*	11
Hyperlipidemia*	11

*$P<0.05$

Figure. Annual medical costs per person by selected AHRQ mental health-specific diagnostic category

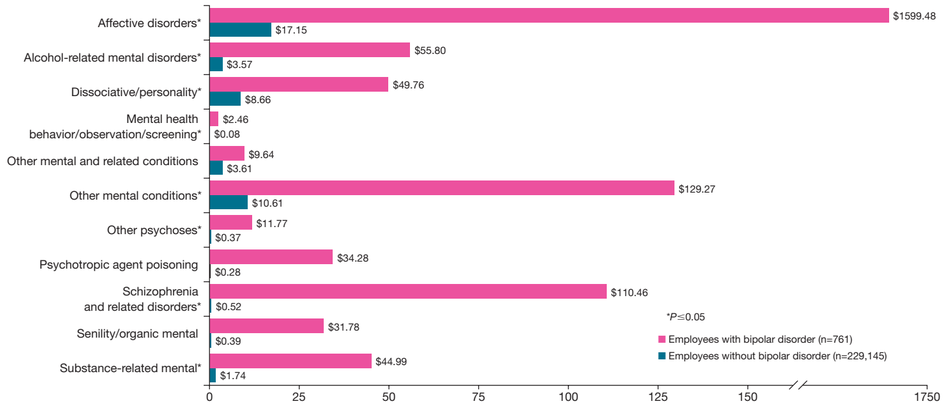

Table 3. Mean Annual Medical Cost ($) per Person by Selected AHRQ Physical Health-Specific Diagnostic Category

AHRQ specific diagnostic category	Employees with bipolar disorder (n=761)	Employees without bipolar disorder (n=229,145)
Abdominal pain*	83.74	36.44
Acute myocardial infarction	147.35	16.32
Contraceptive/proactive	13.37	8.21
Headaches including migraine*	55.60	16.92
Hyperlipidemia*	21.41	10.28
Intervertebral disc disorders*	242.30	116.15
Medical examination/evaluation*	27.69	15.68
Nonmalignant breast conditions*	5.53	4.98
Normal pregnancy/delivery*	8.02	23.84
Other mental and related conditions	9.64	3.61
Open wounds, extremities	27.77	5.89
Open wounds, head/neck/trunk	13.48	3.00
Other connective tissue disorders	115.60	46.29
Other nontraumatic joint disorders*	47.53	28.07
Other skin disorders	20.77	13.61
Other upper respiratory disorders	8.09	22.90
Other upper respiratory infections*	40.98	23.82
Pneumonia, not TS, STD	21.50	8.20
Poisoning medicines/drugs*	62.97	0.89
Poisoning nonmedicinal substance	2.88	0.57
Psychotropic agent poisoning	34.28	0.28
Skull and face fractures	111.09	2.30
Thyroid disorders*	27.94	10.75

*$P \leq 0.05$

Conclusions

- **Employees with bipolar disorder have significantly more costly comorbidities than employees without the illness, including some comorbidities that are more physical than mental in nature (these significances may actually be lower because the differences were identified based on the 95% CIs and *P* values are stated as $P \leq 0.05$)**
- **Many of the more costly categories are central nervous system-related**
- **Employees with bipolar disorder are more likely to have co-existing mental illness, warranting appropriate treatment and management**
- **Caring for employees with bipolar disorder requires a focus on total health management, not just on the patient's mental health**

References

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