Estimating the Prevalence of Acute Agitation Associated with Schizophrenia and Bipolar Disorder Resulting in Emergency Department Visits in the US

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INTRODUCTION

- Episodes of acute agitation pose challenges for the patient and staff in emergency settings, complicate care, and may escalate into situations with risk of harm to the patient and others[1]
- Agitation is a nonspecific symptom and is most likely underreported due to variability in coding
- There is no single, agreed to definition of agitation in clinical guidelines[2]
- Although acute agitation associated with psychiatric illness is common in US emergency departments (ED), its prevalence in these settings is poorly characterized[3]

OBJECTIVES

To estimate the prevalence of agitation associated with schizophrenia or bipolar disorder that contributes to US emergency department visits using US populations data, published literature, administrative claims data, and US National Comorbidity Survey Replication data

METHODS

- Systematic literature review was conducted using MEDLINE, Embase and PsychInfo to identify data published between January 2000 and January 2021
- Estimated annual prevalence of diagnosed schizophrenia was based on data from California Medicaid, privately insured, and dually eligible Medicaid/Medicare adults diagnosed with schizophrenia during 1999 to 2003 (ICD-9 codes 295.xxx)[4]
- Estimated annual prevalence of bipolar disorder was derived from US National Comorbidity Survey Replication data from 2000-2002, including adults aged ≥ 18 years with bipolar disorder[5]
- Symphony claims data from 2017-2020 were used to estimate the percentage of adult patients (aged > 18 years) with schizophrenia or bipolar disorder presenting with agitation[6]
- In Symphony data, schizophrenia and bipolar disorder were defined by at least two ICD 10 codes of F20-F29 and patients with at least two ICD 10 codes of F30, F31, F32.3, F33.3, F34, F39, respectively
- Patients with agitation were defined as those with at least one ICD 10 Dx code of R45.0, R45.1, R45.4, R45.5, R45.6, R45.87, R46.3, R46.7, F43.8

Table 1. Estimated Annual Prevalence ED visits Resulting from Acute Agitation

Variable	Input	Output	Source
Schizophrenia			
Total US Adult population	259,000,000		World Population Prospects[7]
Patients with diagnosed schizophrenia	0.51%	1,320,900	Wu et al.[4]
Patients presenting with any agitation	25%	330,225	BioXcel Data[6]
Bipolar disorder			
Total US adult population	259,000,000		World Population Prospects[7]
Patients with bipolar disorder	2.80%	7,252,000	Merikangas et al.[5]
Patients with diagnosed bipolar disorder	82.9%	6,011,908	BioXcel Data[6]
Patients presenting with any agitation	21%	1,262,501	BioXcel Data[6]

RESULTS

- Estimated annual prevalence of diagnosed schizophrenia was .51% based on published claims data from California Medicaid, privately insured, and dually eligible Medicaid/Medicare adults diagnosed with schizophrenia from 1999 to 2003 (ICD-9 codes 295.xxx)[4]
- Estimated annual prevalence of bipolar disorder was 2.8% using US National Comorbidity Survey Replication data from 2000-2002, including adults aged ≥ 18 years with bipolar disorder, (defined as bipolar disorder I, bipolar disorder II, or subthreshold bipolar disorder)[5]
- Symphony claims data from 2017-2020 were used to estimate the percentage of adult patients (aged ≥ 18 years) with schizophrenia or bipolar disorder presenting with agitation (25% and 21%, respectively)[6]
- Patients with agitation defined as those with at least one diagnostic code (index date) for any type of agitation along with a diagnosis or prescription claim during 12 months before and after the index date
- Final sample consisted of patients that met the agitation definition and had two diagnostic claims for either schizophrenia or bipolar disorder, any type, from 2017-2020
- Estimates derived from Symphony and the literature were applied to total US adult population as projected by the UN World Population Prospects to estimate the total prevalence[7]
- Prevalence of patients presenting to US EDs with acute agitation associated with schizophrenia or bipolar disorder is estimated to be approximately 325 thousand for schizophrenia and 1.2 million for bipolar disorder

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SUMMARY & DISCUSSION

- There are limited data regarding national prevalence of hospital ED visits by patients with agitation associated with schizophrenia or bipolar disorder
- Analysis of data from multiple sources, suggests that episodes of agitation associated with schizophrenia or bipolar disorder are prevalent in US emergency settings (325,000 and 1.2 million, respectively)
- Due to coding variability, available data may underestimate the actual prevalence
- Further investigation is needed to understand the scope of impact on other resources within the ED setting