

# Patient Characteristics, Diagnostic History, and Treatment Journeys Among Patients With Newly Diagnosed Bipolar II Disorder

Atreyee Majumder<sup>1</sup>, Chang Xu<sup>1</sup>, Zhiwen Liu<sup>1</sup>, Alex Z. Fu<sup>1</sup>, Brahim Bookhart<sup>1</sup>, Madhav Namjoshi<sup>1</sup>

<sup>1</sup>Johnson & Johnson, Titusville, NJ, USA

## Introduction

- Bipolar disorder (BD) is a chronic mood disorder characterized by recurrent depressive and manic or hypomanic episodes. Depressive episodes account for much of the disease burden and functional impairment associated with BD<sup>1</sup>
- Bipolar II disorder (BD-II) is frequently misdiagnosed as major depressive disorder (MDD) because depressive symptoms often precede or overshadow hypomanic symptoms<sup>2</sup>
- Delayed diagnosis of BD-II may lead to prolonged exposure to antidepressant-based treatment and complex treatment journeys<sup>3-5</sup>
- However, real-world evidence on diagnostic history and treatment pathways prior to BD-II diagnosis remains limited

## Objective

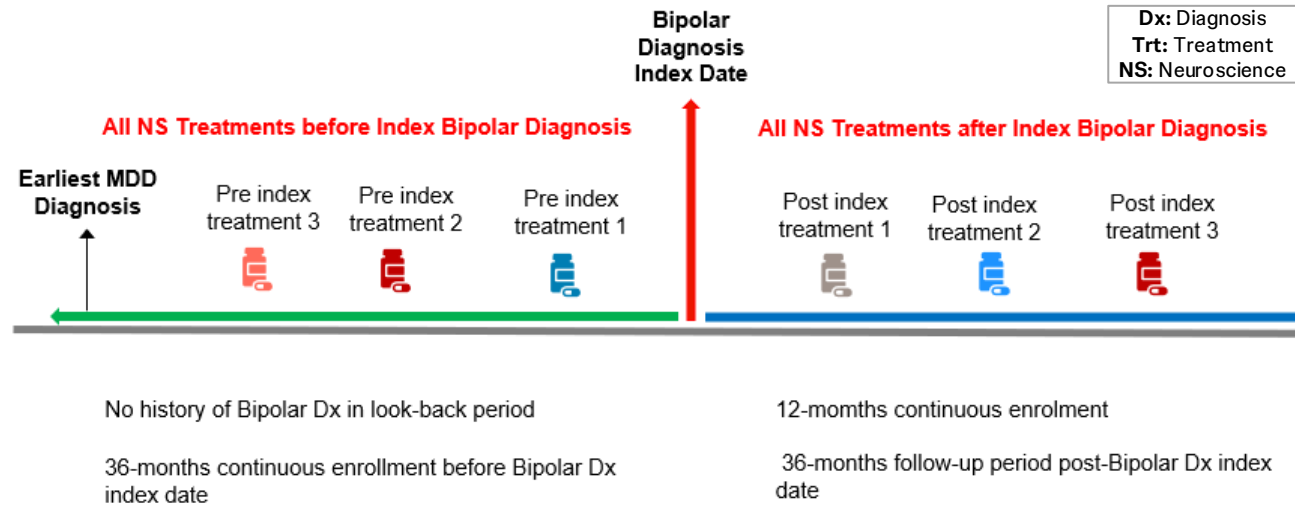
- To describe the demographic and clinical characteristics of patients with newly diagnosed BD-II, identify demographic and clinical factors associated with a prior MDD diagnosis, and characterize MDD treatment patterns before and after BD-II diagnosis among patients with newly diagnosed BD-II

## Methods

### Study design and data source

- A retrospective observational cohort study using de-identified HealthVerity Comprehensive Closed Claims data (01/01/2016-12/31/2025; **Figure 1**)

**Figure 1. Study design**



### Study population

- Adult patients (≥18 years) were eligible if they met the following criteria:
  - Newly diagnosed with BD between January 1, 2019, and July 31, 2024 (intake period)
  - Had ≥1 inpatient or ≥2 outpatient BD-II diagnoses separated by ≥30 days; the first BD-II diagnosis during the intake period was defined as the index date
  - Had ≥36 months continuous enrollment before the index date and ≥12 months continuous enrollment after the index date
- Patients with a prior history of BD, schizophrenia, or schizoaffective disorder before the index date were excluded

### Outcome measures

- Patient baseline characteristics, including demographics, comorbidity burden, payer type, and treating healthcare provider specialty
- Proportions of patients with newly diagnosed BD-II who had a prior MDD diagnosis, had no prior MDD diagnosis, had prior MDD diagnosis and received treatment during the 3-year pre-index period
  - Patients with ≥1 inpatient or ≥2 outpatient MDD diagnoses separated by ≥30 days during the baseline period were classified as having a prior MDD diagnosis
  - Patients with ≥1 qualifying MDD treatment during the baseline period were considered to have received prior MDD treatment
- Treatment journeys from MDD to BD-II during the 3-year pre-index period among patients with BD-II who had a prior MDD diagnosis and received treatment

### Statistical analysis

- Patient characteristics, prior MDD diagnosis, and treatment patterns were summarized using descriptive statistics
- Multivariable logistic regression was used to evaluate associations between baseline characteristics and the likelihood of receiving an MDD diagnosis before BD diagnosis. Covariates included patient demographics, comorbidities, health plan type, healthcare provider specialty, and clinically relevant psychiatric and physical comorbidities identified during the 3-year pre-index period

## Results

### Patients

- Among 71,079 patients with newly diagnosed BD-II, 24,996 (35.2%) had a prior MDD diagnosis during the 3-year pre-index period, while 46,083 (64.8%) had no prior MDD diagnosis. Patient baseline characteristics are summarized in **Table 1**
- Among patients with a prior MDD diagnosis, 20,268 (81.0%) received MDD treatment during the 3-year pre-index period. The median time from the MDD diagnosis to BD-II diagnosis was 1.29 years
- Approximately 22% of BD-II diagnoses were made by psychiatry specialists, whereas 16% were made by nurse practitioners

**Table 1. Baseline characteristics of patients with newly diagnosed BD-II**

| Characteristics                   | Patients with prior MDD diagnosis during the 3-year pre-index period (N= 24,996 , % = 35.2) | Patients without prior MDD diagnosis during the 3-year pre-index period (N= 46,083 , % = 64.8) |
|-----------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Age, mean (SD)                    | 33.5 (13.9)                                                                                 | 33.9 (13.9)                                                                                    |
| Age group, n (%)                  |                                                                                             |                                                                                                |
| 18–34 years                       | 15,203 (60.8)                                                                               | 22,514 (48.9)                                                                                  |
| 35–49 years                       | 5,935 (23.7)                                                                                | 12,642 (27.4)                                                                                  |
| 50–64 years                       | 3,252 (13.0)                                                                                | 8,878 (19.3)                                                                                   |
| ≥65 years                         | 606 (2.4)                                                                                   | 2,049 (4.4)                                                                                    |
| Gender, n (%)                     |                                                                                             |                                                                                                |
| Female                            | 17,680 (70.7)                                                                               | 32,828 (71.2)                                                                                  |
| Race and Ethnicity, n (%)         |                                                                                             |                                                                                                |
| White                             | 16,233 (64.9)                                                                               | 30,955 (67.2)                                                                                  |
| Black/African America             | 2,330 (9.3)                                                                                 | 4,093 (8.9)                                                                                    |
| Hispanic                          | 3,196 (12.8)                                                                                | 5,423 (11.8)                                                                                   |
| Asian                             | 378 (1.5)                                                                                   | 617 (1.3)                                                                                      |
| Other/Unknown                     | 2,859 (11.4)                                                                                | 4,995 (10.8)                                                                                   |
| Payer type, n (%)                 |                                                                                             |                                                                                                |
| Commercial                        | 13,171 (52.7)                                                                               | 21,863 (47.4)                                                                                  |
| Medicare Advantage                | 699 (2.8)                                                                                   | 2,505 (5.4)                                                                                    |
| Medicaid                          | 8,415 (33.7)                                                                                | 16,058 (34.8)                                                                                  |
| Other (including multiple payers) | 2,711 (10.8)                                                                                | 5,657 (12.3)                                                                                   |
| Comorbidity burden                |                                                                                             |                                                                                                |
| QCCI score, mean (SD)             | 0.58 (1.15)                                                                                 | 0.61 (1.19)                                                                                    |

Abbreviations: BD-II, bipolar II disorder; QCCI, Quan-Charlson Comorbidity Index; MDD, major depressive disorder; SD, standard deviation.

### Baseline characteristics associated with a prior MDD diagnosis

- Patients aged ≥35 years were less likely than patients aged 18 to 34 years to have a prior MDD diagnosis before BD-II diagnosis
- Male patients were less likely than female patients to have prior MDD diagnosis (odds ratio=0.86; p<0.001)
- Greater comorbidity burden was associated with increased odds (15%) of prior MDD diagnosis
- Anxiety disorders, sleep-wake disorders, and substance-related and addictive disorders are significantly correlated with a prior MDD diagnosis

### Treatment patterns

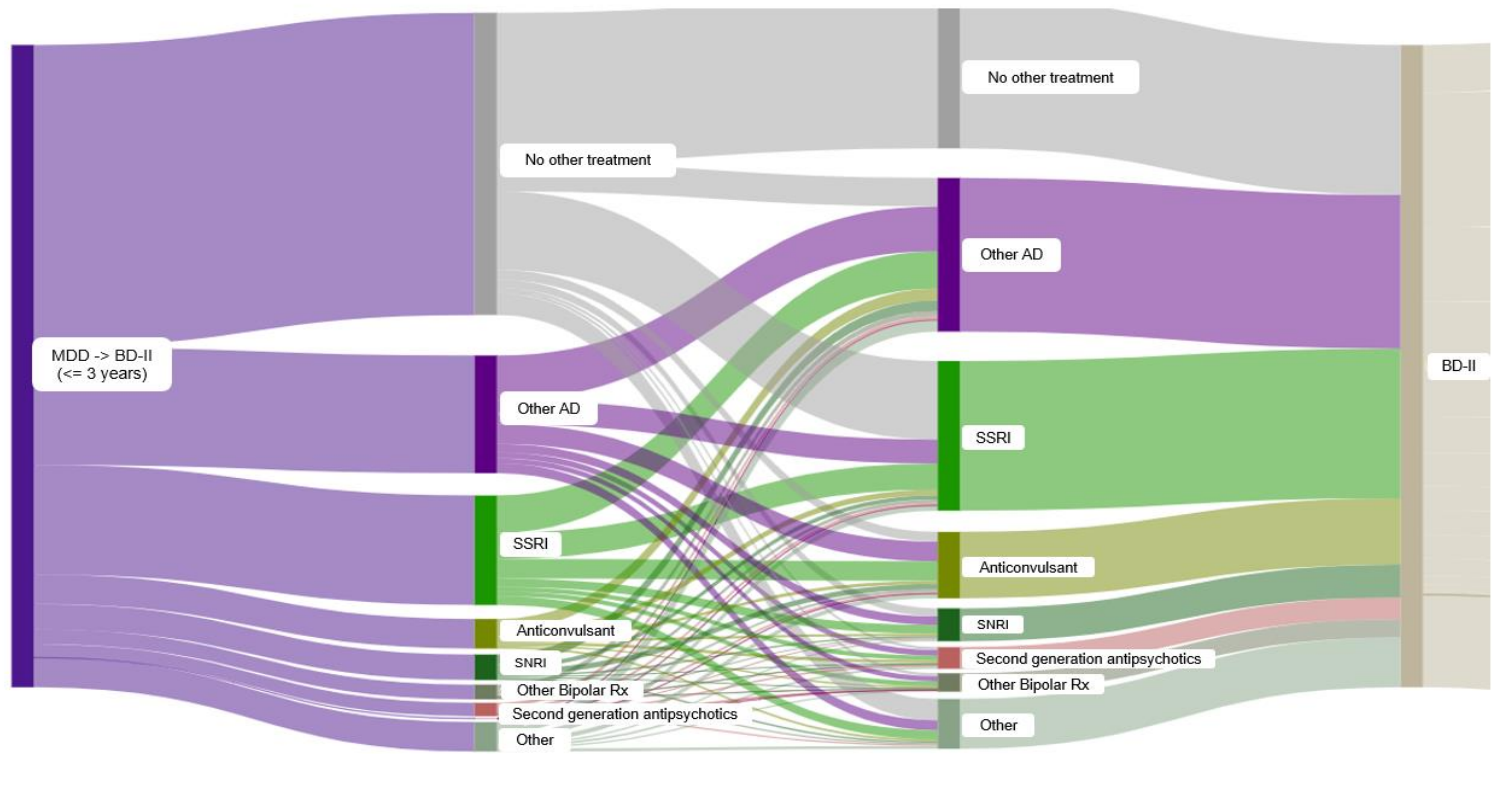
- Antidepressants were the most commonly used treatment class during the 36-month pre-BD-II period (**Table 2**)
- Selective serotonin reuptake inhibitors were used by 53.8% of patient, followed by serotonin modulators (18.7%), norepinephrine and dopamine reuptake inhibitors (18.5%), and serotonin-norepinephrine reuptake inhibitors (17.6%; **Table 2**)
- Overall, patients with newly diagnosed BD-II, particularly those diagnosed with MDD prior to their BD-II diagnosis, experienced complex treatment journeys (**Figure 2**)

**Table 2. Distribution of treatment classes used before BD-II diagnosis among patients who had an MDD diagnosis during the 36-month pre-index period**

| Broader treatment class  | Treatment class                              | N (%)         |
|--------------------------|----------------------------------------------|---------------|
| Antidepressant           | NaSSA                                        | 1,419 (5.7)   |
|                          | NDRI                                         | 4,617 (18.5)  |
|                          | Serotonin modulator                          | 4,681 (18.7)  |
|                          | FGA plus tricyclic antidepressant            | 1 (0.0)       |
|                          | MAOI                                         | 11 (0.0)      |
|                          | N-methyl-D-aspartate receptor antagonist     | 24 (0.1)      |
|                          | SGA plus SSRI                                | 7 (0.0)       |
|                          | Tricyclic antidepressant plus benzodiazepine | 1 (0.0)       |
|                          | Tricyclic or tetracyclic antidepressant      | 1,538 (6.2)   |
|                          | SSRI                                         | 13,445 (53.8) |
| Antipsychotic            | SNRI                                         | 4,392 (17.6)  |
|                          | SGA plus opioid antagonist                   | 5 (0.0)       |
|                          | SGA long-acting injectable                   | 54 (0.2)      |
|                          | SGA short-acting injectables                 | 46 (0.2)      |
|                          | Second-generation oral antipsychotic         | 6,754 (27.0)  |
| Anticonvulsant           | FGA long-acting injectables                  | 5 (0.0)       |
|                          | FGA short-acting injectables                 | 328 (1.3)     |
|                          | First-generation oral antipsychotic          | 143 (0.6)     |
| Anticonvulsant           | Anticonvulsant                               | 5,743 (23.0)  |
| Benzodiazepine           | Benzodiazepine                               | 5,812 (23.3)  |
| Mood stabilizer          | Mood stabilizer                              | 497 (2.0)     |
| Other bipolar Medication | Alpha-2 adrenergic agonist                   | 2,170 (8.7)   |
|                          | Calcium channel blocker                      | 112 (0.4)     |
|                          | Selective estrogen receptor modulator        | 21 (0.1)      |
|                          | Xanthine oxidase inhibitor                   | 141 (0.6)     |

Abbreviations: FGA, first-generation antipsychotic; MAOI, monoamine oxidase inhibitor; NDRI, norepinephrine and dopamine reuptake inhibitors; NaSSA, noradrenergic and specific serotonergic antidepressant; SGA, second-generation antipsychotic; SNRI, serotonin-norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor.

**Figure 2. Real-world treatment journeys of patients with newly diagnosed bipolar II disorder**



### Limitations

- BD-II diagnoses were identified using administrative claims and may be subject to coding inaccuracies
- Claims data do not capture symptom severity, episode polarity, treatment response, or clinical rationale for treatment decisions
- Medication use was inferred based on dispensing claims and may not reflect actual adherence
- Residual confounding may affect findings
- With a 36-month baseline, the true MDD-to-BD-II interval is likely longer than the observed 1.3 years.

## Key Takeaways

- More than one-third of patients with newly diagnosed BD-II had a documented history of MDD before their BD-II diagnosis
- Approximately 8 in 10 patients with prior MDD received MDD-directed treatment before BD recognition
- Antidepressant exposure before BD-II diagnosis was common. Use of other psychotropic medications was also common, whereas mood stabilizer use was relatively low
- Median time interval between MDD and BD-II diagnoses exceeded one year
- These findings suggest opportunities for earlier recognition of bipolarity and optimization of treatment pathways

## Conclusions

- In this claims-based study, a substantial proportion of patients with newly diagnosed BD-II had a preceding MDD diagnosis and subsequently received antidepressant treatment
- The median time of approximately 1.3 years between MDD and BD-II diagnoses highlights ongoing challenges in recognizing bipolarity in routine clinical practice
- Earlier identification of BD-II, particularly among younger patients, may help reduce inappropriate treatment exposure and improve clinical outcomes

### Acknowledgments

Medical writing and editorial support, under the direction of the authors, were provided by Cobbs Creek Healthcare, LLC., and funded by Johnson & Johnson.

### Funding

This research was funded by Johnson & Johnson.

### Disclosures

Atreyee Majumder, Chang Xu, Zhiwen Liu, Alex Z. Fu, Brahim Bookhart and Madhav Namjoshi are Johnson & Johnson employees and own company stocks and stock options.

## Neuropsychiatry



### Scan the QR code

The QR code is intended to provide scientific information for individual reference, and the information should not be altered or reproduced in any way.

### References:

- Singh B, et al. *Lancet*. 2025;406(10506):963-978.
- Ahmed JO. *SN Compr Clin Med*. 2025;7(1):38.
- McIntyre RS, et al. *Curr Med Res Opin*. 2019;35(11):1993-2005.
- Jain R, et al. *Adv Ther*. 2022;39(6):2578-2595.
- Park JH, et al. *J Affect Disord*. 2025;369:404-410.