Quantifying Illness Trajectories in Bipolar Disorder and Schizophrenia Through the Rochester Epidemiology Project (REP): Preliminary findings

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Background

- Evidence suggests that many patients with bipolar disorder (BD) and schizophrenia (SCZ) experience a diagnostic confirmation delay as early symptoms are often unrecognized or are non-specific.

- The controversy is ascertaining whether BD and SCZ prodromes exist, and if so, delineating time-frame from prodrome to diagnosis.

- A well-defined prodrome for BD and SCZ can clarify the trajectory of illness and future potential targets for early interventions.

Hypothesis

Patients with BD with history of psychotic mania and patients with SCZ will have similar illness trajectory as quantified by symptoms of general anxiety, ADHD, insomnia, depression, and psychosis, but will have significantly different illness trajectory as quantified by time from first symptoms to incident case (BDI/BDII vs. SCZ), neurodevelopmental delays, patterns of drug and alcohol use, healthcare utilization and psychotropic drug use.

Aims

To review and analyze:

- Patient demographics

- Longitudinal patterns of symptom endorsement and healthcare utilization

- Lifetime psychiatric diagnoses of people in Olmsted County, MD diagnosed with BD or SCZ.

Methods

- We conducted a search from on Rochester Epidemiology Project (**REP**), a comprehensive medical records linkage system that indexes medical records and other health-related information persons in Olmsted County, MN, and identified 2770 patients with diagnostic codes for SCZ, BD or SCZ-BD.

- **Screening phase:** Evaluate data availability, diagnostic confirmation, identification of index episode of psychosis or (hypo)mania and lifetime comorbid psychopathology and substance use of patients born between 1985-2020 (**n=1792**).
- **Case analysis phase:** Screened positive cases are subsequently fully analyzed for detailed data abstraction. Demographics, perinatal data, family psychiatric and social history, patterns of healthcare utilization and of psychiatric symptoms/diagnoses and psychotropic drugs use prior to the index episode (BD or SCZ) is collected into a case-report form to quantify illness trajectories.

Table 1. Screening Phase (n= 1313); Summary of Findings

Variable	Total	BD	SCZ	Unspecified BD	Unspecified SCZ	Excluded
Male	665(50.4)	100 (41.5)	126 (75.9)	63 (47)	62 (76.5)	311 (44.8)
Female	654(49.6)	141 (58.5)	40 (24.1)	71 (53)	19 (23.5)	383 (55.2)
Mean number of diagnoses	5.77 (2.71)	5.76 (2.55)	6.93 (3.05)	5.89 (2.33)	6.65 (2.87)	5.38 (2.64)
ADHD	494(37.5)	72 (29.9)	46 (27.7)	49 (36.6)	33 (40.7)	293 (42.2)
Other Neurodevelopmental	175(13.3)	19 (7.9)	27 (16.3)	9 (6.7)	18 (22.2)	101 (14.6)
Unspecified Psychosis	361(27.4)	55 (22.8)	126 (75.9)	29 (21.6)	62 (76.5)	89 (12.8)
Depressive Disorder	939(71.2)	182 (75.5)	110 (66.3)	101 (75.4)	49 (60.5)	495 (71.3)
Anxiety Disorder	829(62.9)	168 (69.7)	102 (61.4)	84 (62.7)	43 (53.1)	431 (62.1)
Trauma and related disorder	627(47.5)	124 (51.5)	72 (43.4)	73 (54.5)	28 (34.6)	329 (47.4)
Eating Disorder	114(8.6)	31 (12.9)	12 (7.2)	14 (10.4)	3 (3.7)	54 (7.8)
Borderline Personality Disorder	255(19.3)	46 (19.1)	16 (9.6)	39 (29.1)	16 (19.8)	138 (19.9)
Suicidal Ideation OR Attempt	565(42.8)	116 (48.1)	94 (56.6)	53 (39.6)	39 (48.1)	261 (37.6)
Substance use (%)	882(66.9)	164 (68)	130 (78.3)	106 (79.1)	67 (82.7)	413 (59.5)
Deceased	35(2.7)	3 (1.3)	5 (3)	5 (3.8)	4 (5)	16 (2.3)

Table 2. Case analysis phase (n= 69); Summary of Findings

Variable	BD (n= 28)	SCZ (n=41)
Sex, female n(%)	15 (53.6)	9 (21.9)
Race, white n(%)	19 (67.9)	21 (51.2)
Age of First Episode of Psychosis; mean (SD)	20.57 (3.86)	18.84 (3.62)
Age of First Mental Health Evaluation; mean (SD)	15.05 (6.19)	12.52 (6.61)
Age of First Hospitalization; mean (SD)	17.03 (1.33)	13.8 (3.33)
Age of First Suicide Attempt; mean (SD)	17.03 (1.33)	13.8 (3.33)
Time from first MH complaint to First Episode; mean (SD)	5.86 (5.21)	6.6 (6.37)
Patients with prescription of psychiatric medications n(%)	19 (70.4)	18 (45)

Results

- Preliminary findings of the first **1313** screened records and of the first 69 cases with a recorded incident case are presented and a summary of these findings are shown in **Table 1** and **Table 2**, respectively.

- From the screening phase, 241 patients (58.5% female) for BD and 166 (24.1% female) for SCZ met full criteria + incident case .

- On average, subjects with SCZ diagnosis had more comorbid psychiatric diagnoses (5.76±2.55 vs. 6.93±3.05; p <0.0001) and history of neurodevelopmental disorders (16.3% vs. 7.9%; p= 0.009) than subjects with BD.

- History of substance use (78.3% vs. 68%; p= 0.02) and suicidal ideation/attempts (56.6% vs. 48.1%; p= 0.09) were more common in SCZ. On the opposite. Borderline personality disorder was more frequent in BD subjects (19.1% vs. 9.6%; p= 0.009).

- Among patients with an identified incident case, first episode of psychosis occurred at a younger age (18.8±3.6) than first manic/hypomanic episodes in BD (20.6±3.9), however differences were not statistically significant.