

Disparities in the Prodrome of Serious Mental Illness

Data from a the Rochester Epidemiology Project

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PGY4 - Psychiatry



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Conflict of Interest and Others

- **No conflict of interest**
- Images in the presentation are part of the public domain



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Aim

- To describe and compare through the lens of race the healthcare utilization patterns during the prodromes of bipolar disorder (BD) and schizophrenia (SZ).
- Original aim*



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Background

- A **prodrome** is the period of time characterized by unspecified psychiatric symptoms that precedes the acute clinical phase of an illness. Prodrome can only be fully described after disease onset (i.e., retrospectively).
- Research analyzing healthcare disparities in prodromes has shown that minorities:
 - Are less likely to engage in mental health services before the onset of psychosis.
 - Report stigma about seeking services, barriers (financial) or lack of access as causes leading to a lack of healthcare utilization before the onset of psychosis.



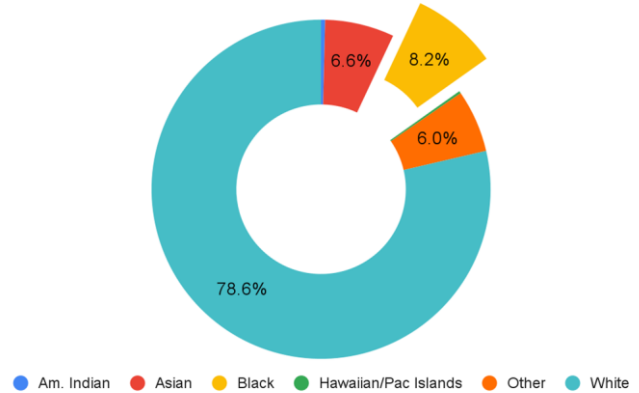
1. Geoffroy, P.A., Scott, J. Prodrome or risk syndrome: what's in a name?. *Int J Bipolar Disord* **5**, 7 (2017).
2. ...

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Olmsted County Population

- The age, sex, and ethnic characteristics of Olmsted County residents are **similar** to those of Minnesota and the Upper Midwest.
- Compared to the US, the population of Olmsted County is **less diverse** and has a **higher socioeconomic status**.

Race Distribution in Olmsted N = 158 027



1. Population overview. Rochester Epidemiology Project. (n.d.). Retrieved January 18, 2022, from <https://rochesterproject.org/for-researchers/population-overview/>

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Methods

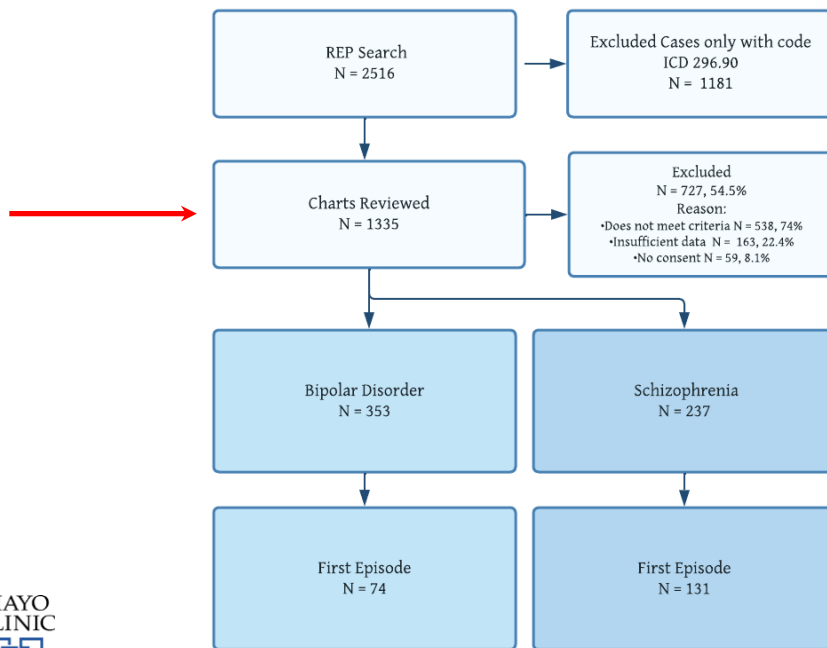


- We used the Rochester Epidemiology Project (**REP**) as the source of patients.
- Retrospective Population Based Cohort
- The Rochester Epidemiology Project is a unique **medical records-linkage system** that encompasses the care delivered to residents of Rochester and Olmsted County, Minnesota.
- One characteristic of the REP is that it has virtually all the health care records for the residents of Olmsted County.
- We searched for **schizophrenia spectrum disorders and bipolar spectrum disorders**.
- We confirmed the diagnosis via inspection of the chart.



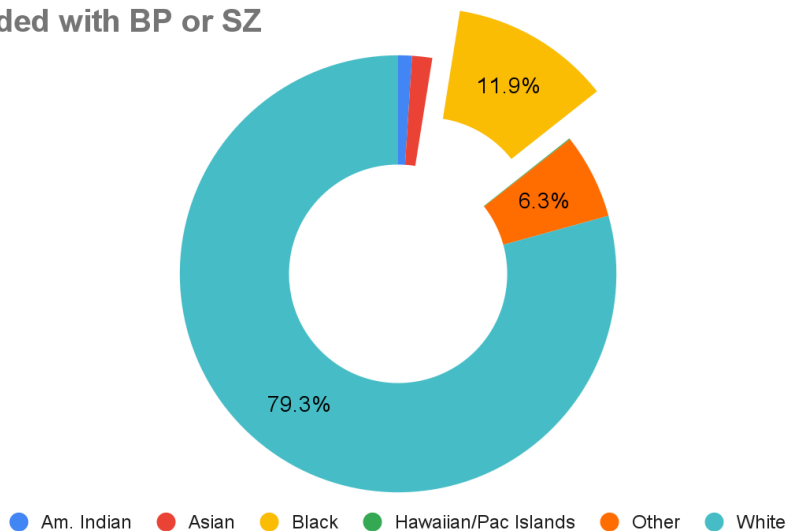
Rocca WA, Yawn BP, St Sauver JL, Grossardt BR, Melton LJ. History of the Rochester Epidemiology Project: Half a Century of Medical Records Linkage in a US Population. *Mayo Clin Proc.* 2012 Nov 8.

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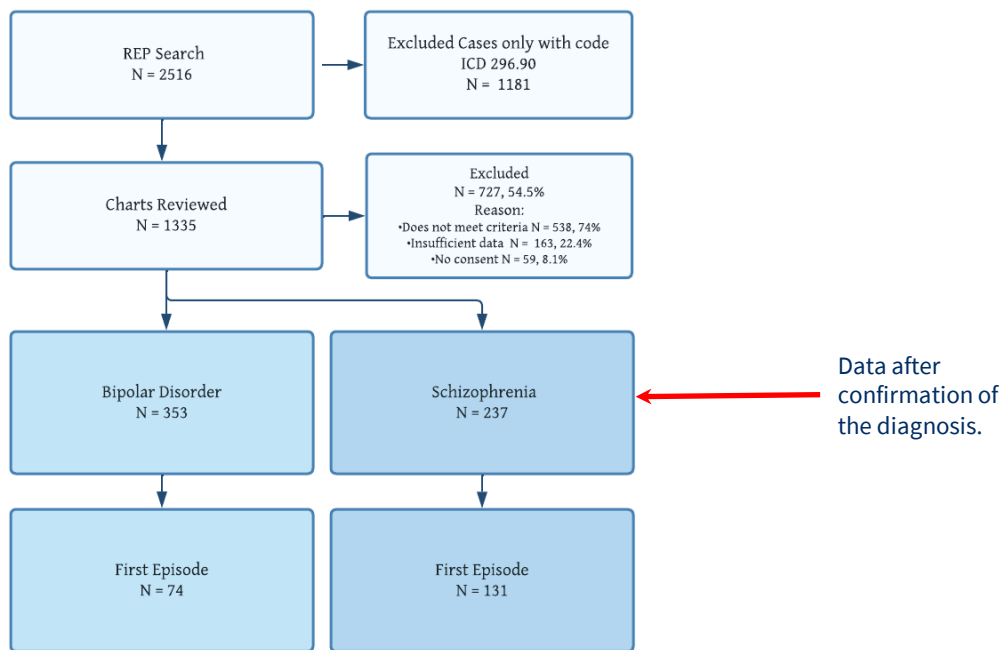
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Coded with BP or SZ



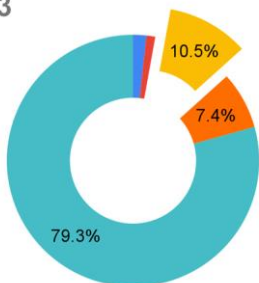
Searching for **SZ** and **BP** codes in the population resulted in around **45% more** (from 8.2 to 11.9%) of Black patients compared to the general population of Olmsted County.

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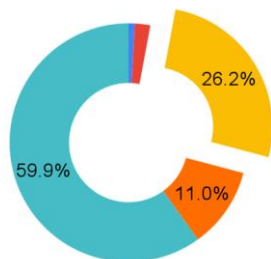
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BD N = 353



Compared to the population in Olmsted County with **8.1%** of Black people, in our schizophrenia and bipolar sample, **26% and 10.5%** of people were black respectively.

SZ N = 237



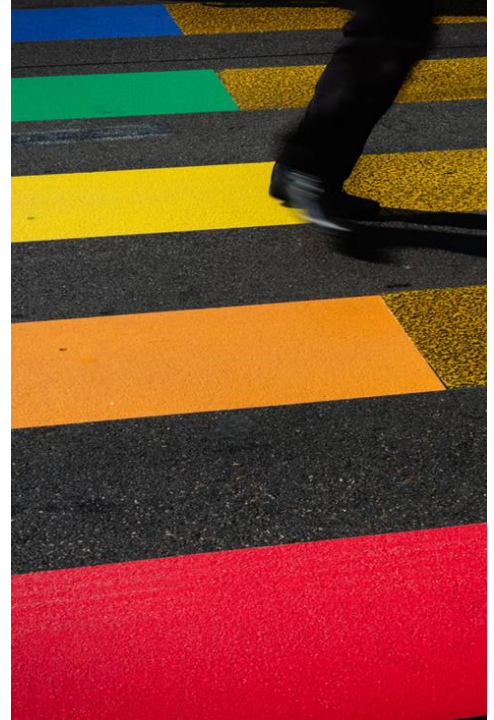
This data is consistent with an American birth cohort in which “African Americans were about 3-fold more likely than whites to be diagnosed with schizophrenia [RR = 3.27; 95% CI 1.71–6.27]. ”

Am. Indian Asian Black Other/Mixed White

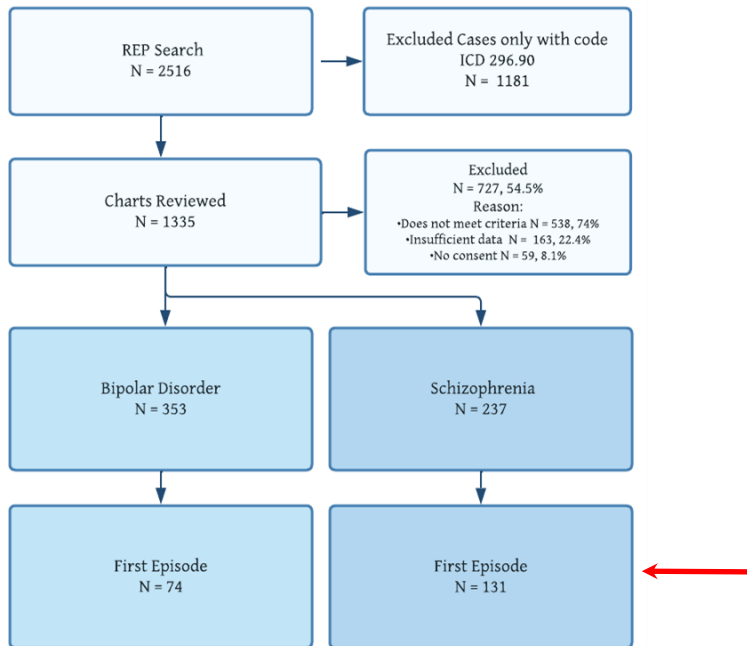
(1) Bresnahan M, Begg MD, Brown A, Schaefer C, Sohler N, Insel B, Vella L, Susser E. Race and risk of schizophrenia in a US birth cohort: another example of health disparity? Int J Epidemiol. 2007 Aug;36(4):754-60.

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What can the prodrome of BP and SZ tell us about healthcare disparities?



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Table 1 Characteristics of the population	Bipolar Disorder		Schizophrenia		P Value
	N = 74	%	N = 131	%	
Sex					0.002943
Male	45	60.8	106	80.9	
Female	29	39.2	25	19.1	
Race					0.36834
White	56	75.7	80	61.1	*
Black / African / African American	13	17.6	31	23.7	
Indian (American)	0	0	1	0.8	
Asian / Asian American	1	1.4	3	2.3	
Other	3	4.1	11	8.4	
Not specified	1	1.4	5	3.8	
Ethnicity					0.266857
Hispanic or Latino	3	4.1	10	7.6	
Not Hispanic or Latino	70	94.6	115	87.8	
Unknown	1	1.4	6	4.6	
Place of Birth					0.044046
Olmsted County	39	51.3	53	40.5	
Minnesota	10	14.1	15	11.5	
United States	19	26.9	30	22.1	
Other country	4	5.1	28	22.1	**
Unknown/Not specified	2	2.6	5	3.8	

The proportion of white patients was significantly higher ($p = 0.048$) in the BD group (76%) compared to the SZ group (61%).

Patients of African ancestry (AA) were more common in the schizophrenia group, but the difference was not statistically significant.

Most patients were born in the United States (BD = 92.3%; SZ = 74.1%), but the SZ group had a larger proportion of foreign-born patients ($p < 0.01$).

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	White (n = 102)	non-White (N = 35)
Age of First Visit (years)	12.44 (6.02)	14.46 (6.31)
Mean Duration of Prodrome (years)	8.55 (6.02)	6.06 (5.63) *
Age of First Episode (years)	21 (3.91)	20.28 (3.50)

*Statistically significant difference $p < 0.05$

In patients with BP or SZ, white patients initially seek help more frequently for developmental problems (41%) vs (20%) of non-whites.



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Health Care Utilization

Events Before the First Episode	Bipolar Disorder	Schizophrenia
	White n = 56 Non-white = 18	White n = 80 Non-white n = 51
Health Care Utilization for Mental Health Reasons	47 (83.9%) 12 (66.7%)	71 (88.8%) 27 (52%)*
Seen by a Mental Health Professional	45 (80.4) 11 (61%)	68 (85%) 23 (45.1%)*
Psychiatric hospitalization	17 (30%) 3 (16.7)	20 (25%) 4 (7.8%)*
Psychiatric Diagnoses	47 (83.9%) 11 (61%)	72 (90%) 21 (42%)*
Substance Use	44 (78.6%) 11 (61%)	58 (72.5) 39 (76.5%)
Medications	40 (71%) 8 (44.4%)	60 (75%) 18 (35%)*

*Statistically significant difference p < 0.05

We did not find **significant** differences, only a trend, in patterns of healthcare utilization for bipolar disorder.

However, Non-White SZ (compared to White) patients have

- **Less healthcare utilization for mental health reasons**
- **Less frequently diagnosed with psychiatric problems**
- **Less psychiatric hospitalizations**
- **Less prescription of medications.**

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Summary of Results

- In Olmsted County, non-whites and immigrants tend to be disproportionately affected by SZ compared to BP disorder.
- Non-whites tend to seek help slightly later in life which makes the prodrome shorter.
- Nonwhite patients with SZ (not BP) have less healthcare utilization before the first episode



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What do I make of this?



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The Team

- Dr. Alastair McKean **(PI)**
- Dr. Mark Frye **(PI)**
- **Dr. Manuel Gardea**
- Dr. Rob Morgan
- Dr. Michael Bostwick
- Dr. Ayşegül Özerdem
- Dr. Raphael Golebiowski
- Peggy Gruhlke, RN
- Santiago Castiello de Obeso, cPhD



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