

The Social Patterning of Psychosis

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Early Interventions for Psychosis
National Academies of Sciences, Engineering, and Medicine
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Early Studies Showing Social Patterning of Schizophrenia came from U.S. samples

- **1932 Ødegård:** Norwegian immigrants to the United States were twice as likely to be diagnosed with schizophrenia compared with U.S.-born and those in Norway (***selective migration hypothesis***)

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- **Faris and Dunham (1939):** One of the first to connect the incidence of psychoses to the ecological characteristics of a city (Chicago). (***Urbanicity hypothesis***)
 - Population density, urban areas, poverty associated with higher incidence in White and Black groups. Poverty along with living in social/cultural isolation associated with Paranoid subtype *specifically* for Black groups.

Psychosis in Immigrant Populations: Northern Europe

- **UK:** Incidence rate ratio of psychosis risk was **significantly** higher for **Black Caribbeans (6.7; 95% Confidence Interval (CI = 5.4-8.4) and Black Africans (4.1; CI = 3.2-5.3).**
- **Netherlands:** Incidence studies also find higher rates of schizophrenia in non-Western immigrant groups, i.e. Black African groups from Morocco, Suriname, and the Dutch Antilles.
- **Sweden:** Even among White immigrants to Sweden, there was elevation in psychosis rates compared to White natives. (Hjern, Wicks, & Dalman, 2004)

Racial Disparity: Reveals a Pattern Consistent with Social Environmental Mechanisms

- **UK:** Risk of schizophrenia is greater in second generation Black immigrants compared to first generation Black immigrants. (Cantor-Gracie & Selten, 2005)
- **Caribbean:** Blacks residing in their countries of origin, (e.g., Jamaica, Trinidad, and Tobago) are not at increased risk for schizophrenia and psychosis. (Bhugra et al., 2006)
- No evidence of elevated neurodevelopmental or familial genetic risk factors and exposures



RACE AND
ETHNICITY

SCHIZOPHRENIA

- Black Americans and sometimes Latinx individuals are overrepresented in the patient population with psychosis.
- Meta-analysis shows that Black individuals are 2.4 times more likely to receive a diagnosis of schizophrenia than White individuals (Olbert et al., 2018)
 - Lawson et al., 1994, Inpatient state hospitals
 - Strakowski et al., 1996, Research hospital
 - Minsky et al. 2003, Large Outpatient Health System in NJ
 - Blow et al. 2004, Large VA database
 - Eack et al., 2012, Inpatient hospitals, multi-site MacArthur Violence Risk Assessment Study
- Bresnehan et al., 2009, Birth Cohort study (2-3 fold increase among African Americans compared to White Americans– attenuated when all sociodemographics in the model)

Recent Prevalence Analysis of All of Us Research Program

JAMA Psychiatry | [Brief Report](#)

Prevalence, Comorbidity, and Sociodemographic Correlates of Psychiatric Disorders Reported in the All of Us Research Program

Peter B. Barr, PhD; Tim B. Bigdeli, PhD; Jacquelyn L. Meyers, PhD

[+ Supplemental content](#)

IMPORTANCE All of Us is a landmark initiative for population-scale research into a variety of health conditions, including psychiatric disorders.

OBJECTIVE To analyze the prevalence, comorbidity, and sociodemographic covariates of psychiatric disorders in the All of Us biobank.

DESIGN, SETTING, AND PARTICIPANTS We estimated prevalence, overlap, and sociodemographic correlates for psychiatric disorders as reported in electronic health records for All of Us release 5 (N = 331 380).

EXPOSURES Social and demographic covariates.

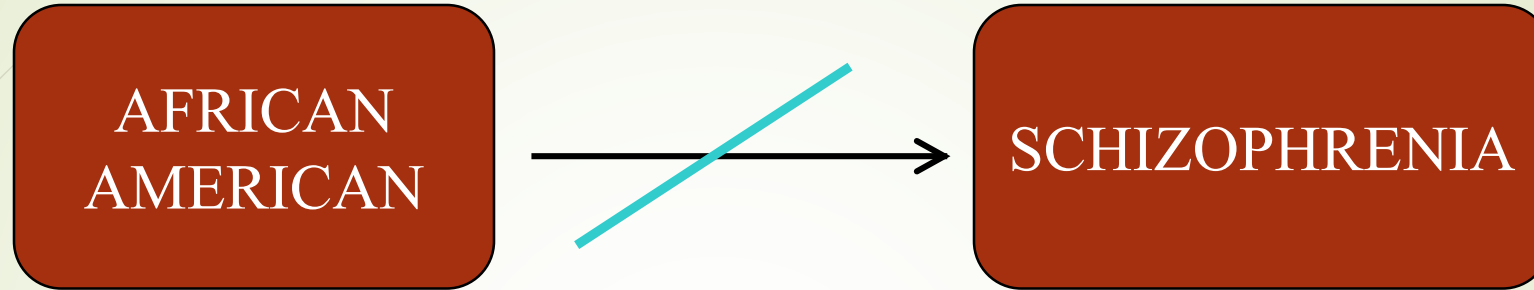
MAIN OUTCOMES AND MEASURES Psychiatric disorders derived from *International Statistical Classification of Diseases, Tenth Revision, Clinical Modification*, codes across 6 broad domains: mood disorders, anxiety disorders, substance use disorders, stress-related disorders, schizophrenia, and personality disorders.

Recent Prevalence Analysis of All of Us Research Program

Table 2. Adjusted Estimates of Risk for Psychiatric Disorders

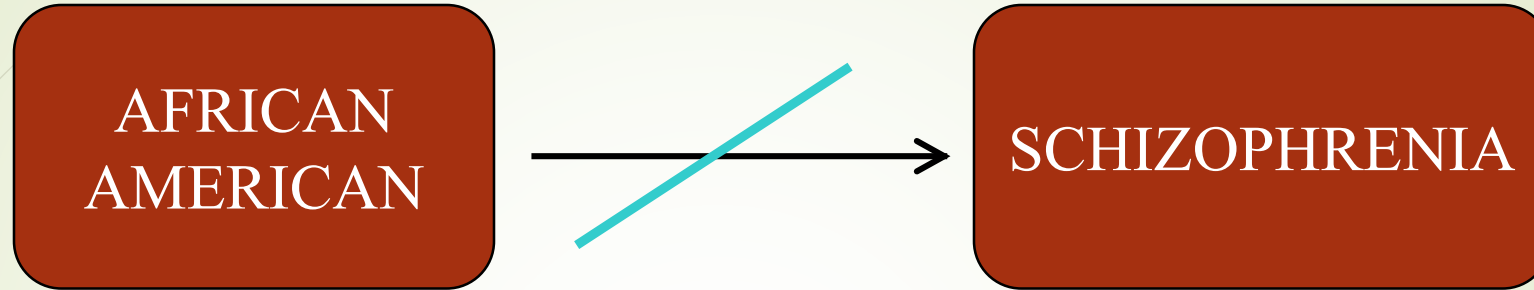
	Any mood disorder		Any anxiety disorder		Any substance use disorder		Any stress-related disorder		Schizophrenia	
	aOR (SE) ^a	95% CI	aOR (SE) ^a	95% CI	aOR (SE) ^a	95% CI	aOR (SE) ^a	95% CI	aOR (SE) ^a	95% CI
Race and ethnicity										
Asian	0.46 (0.05) ^b	0.42-0.51	0.46 (0.05) ^b	0.42-0.51	0.42 (0.09) ^b	0.35-0.50	0.62 (0.09) ^b	0.52-0.74	0.56 (0.20)	0.32-0.98
Black and African American	0.51 (0.02) ^b	0.50-0.53	0.41 (0.02) ^b	0.39-0.42	0.67 (0.02) ^b	0.65-0.69	0.66 (0.03) ^b	0.62-0.70	1.22 (0.05) ^b	1.10-1.36
Hispanic or Latino	0.74 (0.02) ^b	0.71-0.77	0.69 (0.02) ^b	0.66-0.71	0.77 (0.02) ^b	0.73-0.81	0.76 (0.04) ^b	0.71-0.82	1.13 (0.07)	0.98-1.30
Non-Hispanic White	1 [Reference]		1 [Reference]		1 [Reference]		1 [Reference]		1 [Reference]	
Multiracial	0.89 (0.05)	0.82-0.98	0.82 (0.05) ^b	0.75-0.90	1.01 (0.06)	0.90-1.12	1.04 (0.08)	0.89-1.21	1.72 (0.14) ^b	1.30-2.28
Not reported	0.85 (0.04) ^b	0.78-0.92	0.80 (0.04) ^b	0.74-0.87	1.00 (0.05)	0.91-1.09	0.89 (0.08)	0.77-1.04	1.55 (0.12) ^b	1.23-1.95
Other race and ethnicity	0.92 (0.04)	0.84-1.00	0.86 (0.04) ^b	0.78-0.93	1.09 (0.05)	0.99-1.21	1.07 (0.08)	0.92-1.24	1.52 (0.14) ^b	1.16-1.99
Country of origin										
US born	1 [Reference]		1 [Reference]		1 [Reference]		1 [Reference]		1 [Reference]	
Not US born	0.67 (0.02) ^b	0.64-0.70	0.61 (0.02) ^b	0.58-0.64	0.36 (0.03) ^b	0.34-0.38	0.62 (0.04) ^b	0.57-0.67	0.46 (0.09) ^b	0.38-0.55
Not reported	0.94 (0.06)	0.84-1.05	0.91 (0.06)	0.81-1.02	1.09 (0.06)	0.97-1.22	0.90 (0.10)	0.73-1.10	1.12 (0.14)	0.84-1.48

ONE SET OF EXPLANATIONS: MISDIAGNOSIS/CLINICIAN BIAS



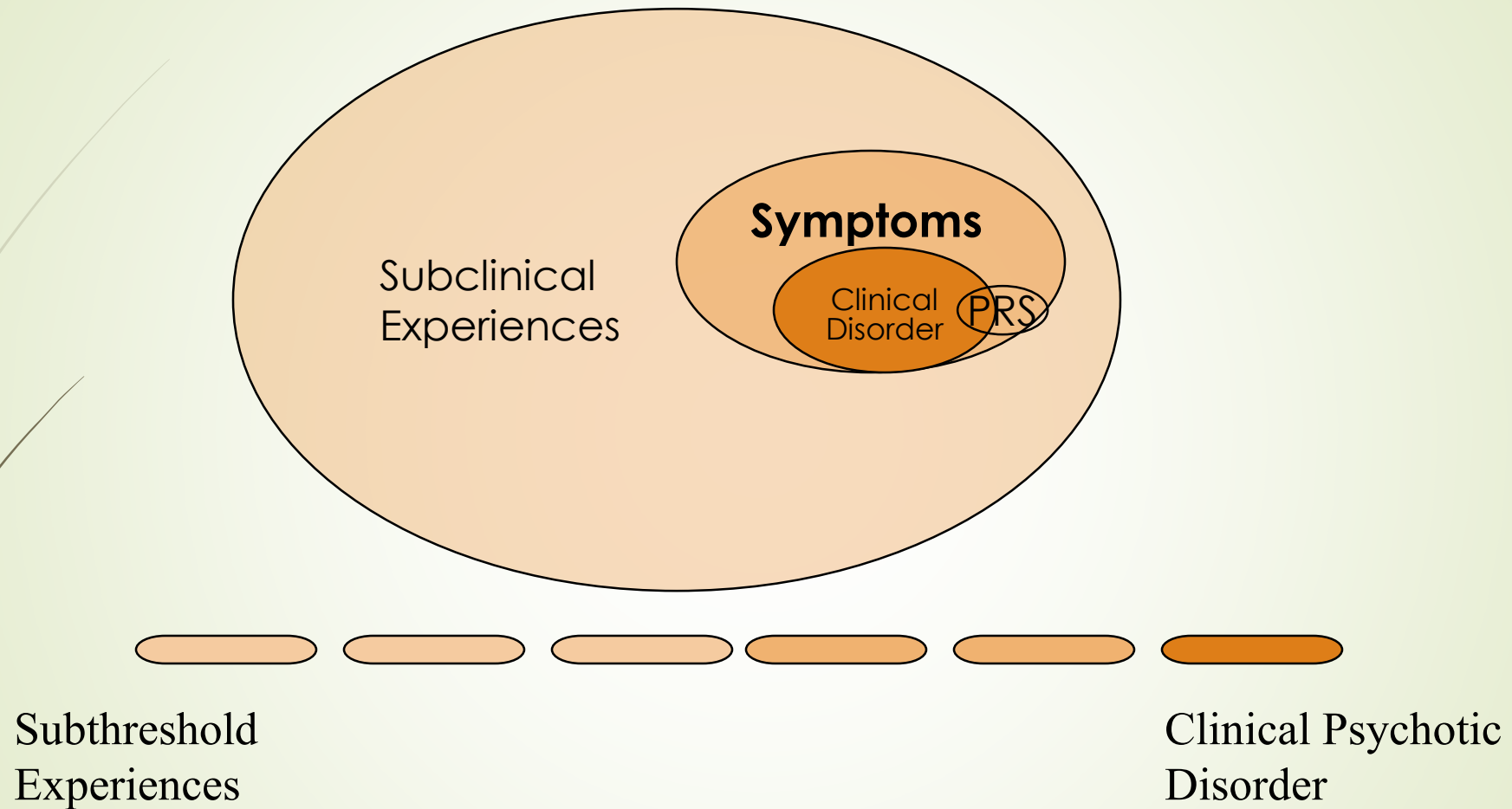
- Adebimbe et al., 1981, racial biases
- Mukherjee et al., 1993, misdiagnosis in bipolar patients
- Strakowski et al., 1993, Missing affective symptoms
- Gara et al., 2018 (Rutgers) Community outpatient clinics, underemphasizing depression

ONE SET OF EXPLANATIONS: CLINICIAN MISATTRIBUTION



- Adebimbe et al., 1981, racial biases
- Mukherjee et al., 1993, misdiagnosis in bipolar patients
- Strakowski et al., 1993, Missing affective symptoms
- Gara et al., 2018 (Rutgers) Community outpatient clinics, underemphasizing depression
- Neighbors et al., 2003; Whaley, 1997; Misattribution; Cultural mistrust
- Anglin & Malaspina, 2008, unstructured diagnoses less reliable with African American patients
- Eack et al, 2012; interviewer-perceived honesty lower for African Americans and this mediated racial disparity (White patients) in schizophrenia diagnosis

THE PSYCHOTIC SPECTRUM



PRS: Psychosis Risk Syndrome (Prodromal)

7.2% median prevalence (Linscott and van Os, 2013) .06-3% disorder (van Os et al., 2011)



CHR Studies-Small Selective Samples

- Brucato et al.'s study (N=200) (2017) – **Asian/Pacific Islander and Black/African American participants had a greater likelihood of conversion** to psychosis compared to White individuals
- Millman et al 2019 (N=108) found **comparable SIPS** identified frequencies across racial groups.
- **Conversion rates were comparable** between Latinx and non-Latinx CHR subjects in Alderman's NAPLS I study (2015)

RACIAL DISPARITIES IN PSYCHOTIC EXPERIENCES AND SYMPTOMS

➤ Epidemiology

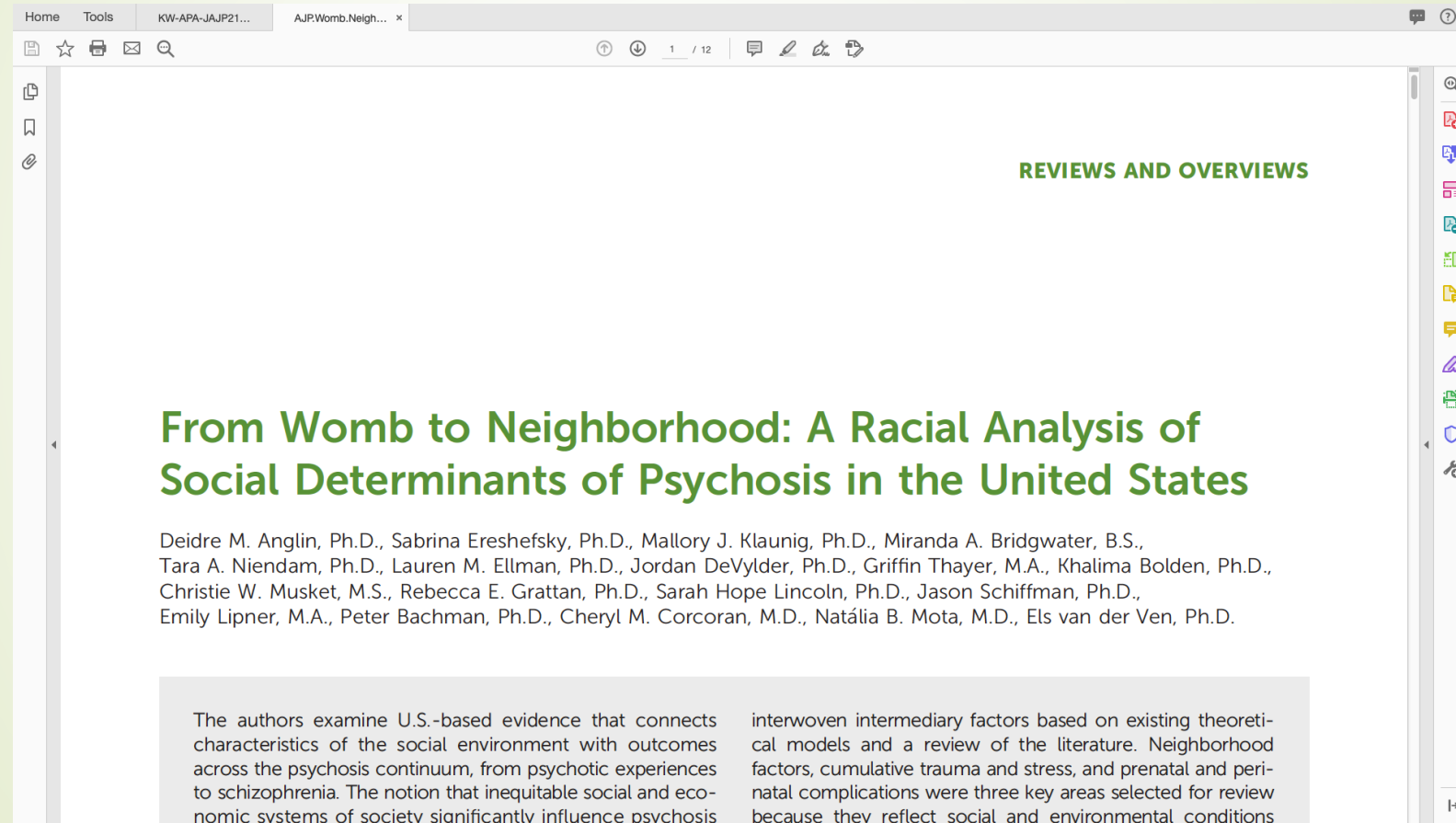
- 9.7% in White Americans, 9.6% in Asian Americans, 13.6% in Latinx Americans and 15.3% in Black Americans (Cohen & Marino, 2013)
- Prevalence of attenuated psychotic symptoms in a U.S.-based representative cohort of youth (Philadelphia) was estimated to be 12.9%.
 - Non-White American youth have 1.68 (1.38-2.05) greater odds of being in psychosis spectrum (Calkins et al., 2014)

RACIAL DISPARITIES IN PSYCHOTIC EXPERIENCES (PE)

➡ Epidemiology

- ➡ **Adolescent Brain Cognitive Development (ABCD) study** The highest prevalence of distressing PEs found among Black and Hispanic children (Karcher et al., in press).
- ➡ **National Survey of Polyvictimization and Suicide Risk (NSPSR; Fedina et al., under review)** Black and Hispanic young adults living in the U.S. show higher prevalence of PE in a cross-sectional nationally representative survey (ages 18-29 years) (DeVylder, under review)

Review Paper Published in *American Journal of Psychiatry*



The screenshot shows a web browser window with a single tab titled 'AJP.Womb.Neigh...'. The browser's address bar and navigation icons are visible at the top. The page content is displayed on a white background with a green header section. The title 'From Womb to Neighborhood: A Racial Analysis of Social Determinants of Psychosis in the United States' is prominently displayed in green. Below the title, the authors' names are listed in a smaller black font. The main body of the text is in a light gray box, starting with 'The authors examine U.S.-based evidence that connects characteristics of the social environment with outcomes across the psychosis continuum, from psychotic experiences to schizophrenia. The notion that inequitable social and economic systems of society significantly influence psychosis interwoven intermediary factors based on existing theoretical models and a review of the literature. Neighborhood factors, cumulative trauma and stress, and prenatal and perinatal complications were three key areas selected for review because they reflect social and environmental conditions'.

Home Tools KW-APA-JAJP21... AJP.Womb.Neigh... x

REVIEWS AND OVERVIEWS

From Womb to Neighborhood: A Racial Analysis of Social Determinants of Psychosis in the United States

Deidre M. Anglin, Ph.D., Sabrina Ereshefsky, Ph.D., Mallory J. Klaunig, Ph.D., Miranda A. Bridgwater, B.S., Tara A. Niendam, Ph.D., Lauren M. Ellman, Ph.D., Jordan DeVlyder, Ph.D., Griffin Thayer, M.A., Khalima Bolden, Ph.D., Christie W. Musket, M.S., Rebecca E. Grattan, Ph.D., Sarah Hope Lincoln, Ph.D., Jason Schiffman, Ph.D., Emily Lipner, M.A., Peter Bachman, Ph.D., Cheryl M. Corcoran, M.D., Natália B. Mota, M.D., Els van der Ven, Ph.D.

The authors examine U.S.-based evidence that connects characteristics of the social environment with outcomes across the psychosis continuum, from psychotic experiences to schizophrenia. The notion that inequitable social and economic systems of society significantly influence psychosis interwoven intermediary factors based on existing theoretical models and a review of the literature. Neighborhood factors, cumulative trauma and stress, and prenatal and perinatal complications were three key areas selected for review because they reflect social and environmental conditions

Increase Precision: What types of discriminatory experiences explain ethnoracial disparities?



Schizophrenia Research

journal homepage: www.elsevier.com/locate/schres

Racial microaggressions and major discriminatory events explain ethnoracial differences in psychotic experiences

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Racism

Psychotic experiences

Racial minority

Ethnicity

ABSTRACT

Few empirical studies have examined whether exposure to major racial discrimination explains ethnoracial disparities in psychosis outcomes and none to our knowledge have done so in the U.S. or have examined the role of other forms of racism such as racial microaggressions. The present study examined ethnoracial differences in self-reported psychotic experiences (PE) among 955 college students in an urban environment in the North-eastern U.S., and the degree to which major experiences of racial discrimination and racial microaggressions explains ethnoracial differences in PE. Mean scores on self-report inventories of PE and distressing PE (i.e., Prodromal Questionnaire (PQ)), major experiences of racial discrimination (EOD), and racial and ethnic microaggressions (REMS) were compared across 4 ethnoracial groups (White, Black, Asian, and Latina/o). Results from parallel mediation linear regression models adjusted for immigrant status, age, gender, and family poverty using the Hayes PROCESS application indicated ethnoracial differences in PE were explained independently by both forms of racism. Specifically, Black young people reported higher mean levels of PE, and distressing PE than both White and Latina/o people and the difference in PE between Black and White and Black and Latino/a young people was significantly explained by both greater exposure to racial microaggressions and major racial discriminatory experiences among Black people. This study re-emphasizes the explanatory role of racism, in its multiple forms, for psychosis risk among Black young populations in the US. Anti-racism interventions at both structural and interpersonal levels are necessary components of public health efforts to improve mental health in Black populations.

Increase Precision: Intersection of ethnoracial group with other important social and clinical factors to understand social patterning of early psychosis

JAMA Psychiatry | [Original Investigation](#)

An Intersectional Approach to Ethnoracial Disparities in Pathways to Care Among Individuals With Psychosis in Coordinated Specialty Care

Els van der Ven, PhD; Nev Jones, PhD; Natalie Bareis, PhD; Jennifer M. Scodes, MSc; Renald Dambreville, MSc; Hong Ngo, PhD; Chackupurackal M. Mathai, AAS; Iruma Bello, PhD; Gonzalo Martínez-Alés, PhD; Franco Mascayano, MPH; Rufina J. Lee, PhD; Wim Veling, MD, PhD; Deidre M. Anglin, PhD; Roberto Lewis-Fernandez, MD; Ezra S. Susser, MD, DrPH; Michael T. Compton, MD, MPH; Lisa B. Dixon, MD, MPH; Melanie M. Wall, PhD

[+ Supplemental content](#)

IMPORTANCE Intersecting factors of social position including ethnoracial background may provide meaningful ways to understand disparities in pathways to care for people with a first episode of psychosis.

OBJECTIVE To examine differences in pathways to care by ethnoracial groups and by empirically derived clusters combining multiple factors of social and clinical context in an ethnoracially diverse multisite early-intervention service program for first-episode psychosis.

DESIGN, SETTING, AND PARTICIPANTS This cohort study used data collected on individuals with recent-onset psychosis (<2 years) by clinicians with standardized forms from October 2013 to January 2020 from a network of 21 coordinated specialty care (CSC) programs in

Cluster 4: Predominantly Asian and Latinx, Depression and Psychotic Symptom Cluster highest suicidality

Cluster 5: Predominantly Black, Structurally Disadvantaged Cluster (more likely to be homeless, living alone and first contact experience being one with law enforcement).

Neighborhood Ethnic Density Hypothesis



Contents lists available at ScienceDirect

Schizophrenia Research

journal homepage: www.elsevier.com/locate/schres

Changes in perceived neighborhood ethnic density among racial and ethnic minorities over time and psychotic-like experiences

Deidre M. Anglin ^{a,b,*}, Florence Lui ^{a,b}, Matthew Schneider ^{a,b}, Lauren M. Ellman ^c

- Proportion of own ethnic group in your neighborhood
- Low neighborhood ethnic density for racial/ethnic minorities in high-income countries ----- increased odds of psychosis

Veiling et al., 2008; Schofield et al., 2001; Das-Munshi et al., 2012; Boydell et al., 2001; Kirkbride et al., 2007; March et al., 2008; Zammit et al., 2010; Stafford et al., 2012

Matrix of Pairwise Mean Differences (SE) in PQ across Ethnic Densities **Before Age 12** Using Tukey tests

<i>F</i> (3, 1295)=10.58, <i>p</i> <.001	1	2	3	4
1. Concordant-Own Racial Group	-			
2. Discordant-Other Racial/Ethnic Minority	3.577 (.86) ^{***}	-		
3. Mixed	-.772(.56)	-4.349 (.89) ^{***}	-	
4. Predominantly White	-2.387 (.94) [*]	-5.964 (1.16) ^{***}	-1.62 (.96)	-

After Age 12

<i>F</i> (3, 1295)=5.43, <i>p</i> <.001	1	2	3	4
1. Concordant-Own Racial Group	-			
2. Discordant-Other Racial/Ethnic Minority	2.377(.83) ^{**}	-		
3. Mixed	-.342(.55)	-2.719 (.80) ^{**}	-	
4. Predominantly White	-1.563 (.86)	-3.939 (1.03) ^{***}	-1.22 (.83)	-

Covariates include % below poverty, immigrant status, racial/ethnic group, and age

Expand Methods: Understand Role of Neighborhood, Social Determinants and Racism in Well-Being among young Black people with a First Episode of Psychosis Using Photovoice

Share your photos and stories in the:

BLACK PHOTOS SPEAK RESEARCH PROJECT



Participant 1 Photo Share: **Environmental Triggers or Environmental Support?**



- (Paraphrased) Seems like a part of parking sign yet it says Stop Killing Black People..thats a big trigger for me because someone put that up assuming its gonna give people a lesson but trying to have a good day and this sign thrown in my face...pretty heavy..what did the person have in mind who put this up?
- “Here is a reminder that my life could be put in danger for no reason”
- “How often do I need to keep being reminded that my life matters?...there is more to me...”
- Led to a discussion of how there could be good triggers and bad triggers in your neighborhood.

Take Home points

- The contribution of structural racism to the social patterning of psychosis risk is a neglected issue in the U.S.
- Funding priorities and training needs to shift to incorporate this framework to improve public health overall
- Intersections of social location with ethnoracial group
- Neighborhood cultural and social context matter in addition to structural factors



THANK YOU!

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- OPAL Pilot Study—Columbia University (NIMH)

CASE LAB Team (former and current members)

Ashley Feng, Neil Allicock, Rona Tarazi, Bassem Barada, Supriya Pandit,