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MINIREVIEWS

Racial disparities in psychotic disorder diagnosis: A review of empirical literature

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Abstract

Psychotic disorder diagnoses are common in the United States and internationally. However, racial disparities in rates of psychotic disorder diagnoses have been reported across time and mental health professions. This literature review provides an updated and comprehensive summary of empirical research on race and diagnosis of psychotic disorders spanning a 24-year period. Findings reveal a clear and pervasive pattern wherein African American/Black consumers show a rate of on average three to four higher than Euro-American/White consumers. Latino American/Hispanic consumers were also disproportionately diagnosed with psychotic disorders on average approximately three times higher compared to Euro-American/White consumers. In addition, a trend among international studies suggests that immigrant racial minority consumers receiving mental health services may be assigned a psychotic disorder diagnosis more frequently than native consumers sharing a majority racial background. Potential explanations for this phenomenon are discussed, including possible clinical bias and sociological causes such as differential access to healthcare and willingness to participate in mental health services. Directions for future research should include the exploration of disproportionate diagnoses according to race through qualitative interviewing as well as empirical investigation.

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Key words: Race; Ethnicity; Psychosis; Diagnosis; Review

Core tip: An updated review of empirical research related to race and diagnosis of psychotic disorders is provided. This manuscript concludes with addressing potential causes of racial diagnostic disparities with implications for future research. Although the topic of race and diagnosis has received increasing attention in the professional literature, a full review of empirical studies is needed to summarize patterns among research results. Due to the broad consumer implications of psychotic disorder-related misdiagnosis (*e.g.*, social stigma, hospitalizations, psychotropic medications, relational and employment discrimination, and increased risk of suicide) better understanding of this phenomenon is clearly warranted.

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INTRODUCTION

Cultural sensitivity is imperative when providing services to consumers in the field of healthcare, especially mental health care given the priority placed on valuing diversity, objectivity, and the ethical principles of beneficence and nonmaleficence[1,2]. The importance of being a culturally competent and sensitive clinician is necessitated by the mental health field when working with consumers. In particular, mental health professionals have the obligation to ensure cultural sensitivity and objectivity when providing a differential diagnosis. Assigning a mental disorder diagnosis primarily influenced by personal perceptions of or stereotypes about consumers' ethnicity or culture risks inadvertently harming consumers psychologically or socially through misdiagnosis. According to professional standards of care, mental disorders should be characterized by maladaptive patterns of clinically significant disturbances in an individual's cognitions, psychological or emotional states, or behaviors resulting in prominent distress or disability in social, occupational or other important areas of functioning[3]. It is important to note that deviant behaviors, that is behaviors which a clinician deems unusual or out of the norm either statistically or from their own perspective, do not constitute mental disorders. Moreover, a culturally expectable or acceptable pattern of cognitions, psychological or emotional states, or behaviors does not warrant a mental disorder diagnosis[3]. Clinicians therefore have the obligation to utilize updated diagnostic criteria, test their subjective judgments, and clearly document both clinically significant distress or disability associated with a maladaptive disturbance as well as specific symptomatology before assigning a mental disorder diagnosis[4]. As Adeponle *et al*[5] explain misdiagnosis may include identifying a disorder when none is present (overdiagnosis), or mistaking the diagnosis for another condition (misidentification), particularly when culturally normative behavior is mistaken for psychopathology. This risk is most acute when clinicians fail to elicit crucial and accurate diagnostic information because of insufficient attention to cultural and contextual factors that shape maladaptive behaviors.

Increasing attention by consumers, clinicians, researchers, and policy makers has focused on cultural disparities in healthcare over the past several decades. In particular, the President's New Freedom Commission on Mental Health[6] formulated goals for eliminating mental health-related disparities. Relatedly, during its evolution the Diagnostic and Statistical Manual of Mental Disorders has placed increasing emphasis on cultural sensitivity regarding accurate differential diagnoses[7]. The most recent version highlights cultural issues, stressing that psychopathology varies across cultures for specific types of behaviors. Diagnostic and Statistical Manual of Mental Disorders-5[3] explains that clinical significance depends on cultural norms, and "awareness of the significance of culture may correct mistaken interpretations of psychopathology...". The inclusion of cultural information within a diagnostic formulation is critical because a diagnostic judgment leading to a potential misdiagnosis can have several lasting negative effects for consumers, ranging from having an inaccurate healthcare record and complications related to insurance coverage, to being misprescribed psychotropic medications and potential death resulting from self-stigma-induced suicide. Diagnosis is considered to be the springboard of triage and treatment decisions. As one of the first clinical decisions a mental health professional must make, diagnosis can greatly influence the future of a consumer's healthcare, including participation in and trust of the healthcare system generally[8]. Unfortunately, despite widespread calls for cultural sensitivity and culturally formulated updates to diagnostic manuals, decades of research has shown that racial disparities continue to exist regarding the types of mental disorder diagnoses assigned to consumers of difference races.

One of the most consistent research findings related to race and diagnosis is the disproportionately high rate of psychotic disorder diagnoses among consumers of color, specifically African Americans. This phenomenon has been documented despite the absence of genetic evidence indicating a true increase in prevalence in this population[9]. For example, research shows that African Americans are almost five times more likely to be diagnosed with Schizophrenia compared with Euro-Americans admitted to state psychiatric hospitals[10]. Surprisingly, clinicians' own race appears not to alter this diagnostic trend[11]. Although a vast array of race and diagnostic trend-related studies have been conducted, very few literature reviews have complied information for future research or practice purposes.

For example, Neighbors *et al*[12] gave a review suggesting that race influenced the process of diagnostic classification and reported how many psychiatric epidemiologists apply diagnostic instruments developed in Euro-American samples to African American consumers, assuming these instruments measured the same construct. Some studies in the review supported the proposal that African Americans and Euro-Americans differed in presentation of clinical symptoms while others concluded the opposite leading them to believe the contradiction was due to a lack of systematic research on racial differences in presenting complaints. Two contradictory assumptions were described by Neighbors *et al*[12]: (1) African Americans and Euro-Americans display symptomatology essentially the same with diagnostic errors resulting from clinician stereotypes; and (2) African Americans and Euro-Americans display psychopathology differently and diagnosticians incorrectly assume it is the same with diagnostic errors resulting from clinicians being unaware of or insensitive to cultural differences in how the same disorder can be displayed differently according to race. The authors propose having a more structured interviewing procedure compared to one that is unstructured, which is more likely to be influenced by unsubstantiated clinical impressions.

Since the Neighbors *et al*[12] literature review was completed the vast majority of race and diagnosis-related research studies were undertaken. In addition, diagnostic

criteria for psychotic disorders have changed. Thus, Garb[13] completed another literature review, including studies until 1996 in part focused on race and diagnosis however specifically from a racial bias perspective. As an overall conclusion Garb explained that "African-American and Hispanic (Puerto Rican) patients are...more likely to be diagnosed as having Schizophrenia, even when measures of psychopathology do not indicate that a diagnosis of Schizophrenia is justified". Seven citations are provided as a basis for this conclusion. More recently Chien *et al*[14] described literature reflecting racial differences in Schizophrenia. These authors explain that while epidemiological accounts of Schizophrenia suggest a similar prevalence across races, research has shown that Schizophrenia is repeatedly diagnosed at a higher rate in the African American population. Because prior literature reviews in this area were undertaken some time ago, additional research has been completed after the completion of past reviews, diagnostic criteria for psychotic disorders have changed recently, and cultural and professional norms have advanced in contemporary society, an updated literature review is warranted. The purpose of the present review is to provide a fully updated and comprehensive summary of race and diagnosis-related empirical studies, highlighting trends and drawing data-driven conclusions for future research and clinical guidance.

LITERATURE REVIEW SEARCH STRATEGY

We used three separate academic search engines to conduct this review: PsycINFO, Psychology and Behavioral Sciences Collection, and Medline. Because the purpose of this review focused on empirical studies related to race and diagnosis, key terms for all search engines included "psychosis or psychotic or Schizophrenia or schizophrenic" and "race or ethnicity or culture" and "research or study or investigate". Results displayed the following quantity of primary hits for each search engine: PsycINFO, n = 1073; Psychology and Behavioral Sciences Collection, n = 254 results; Medline, n = 725. All initial results were then reviewed for peer-reviewed empirical studies published in journals (dissertations and book chapters excluded) until saturation was achieved. Twenty-six articles over a 24 year period were determined to be representative in discussing the affect of race on diagnosis in psychotic disorders. Interestingly, there appears to be a pattern regarding years and number of empirical studies in this area over time. Between 1989 and 2001 five studies were completed. Perhaps due to these studies highlighting an important issue with real-world consumer implications, the 2001 United States Surgeon General's[15] report on mental health and race, and public policy focusing on race and mental health (*e.g.*, the 2003 President's New Freedom Commission on Mental Health), additional studies were then conducted. Between 2003 and 2008 13 different studies were completed. Perhaps due to the breadth of research over this short period of time, along with generally consistent findings, empirical research was then continued but at a comparative reduced pace. Between 2009 and 2013 eight studies were completed. These representative studies are summarized here.

REVIEW OF AMERICAN RESEARCH ON RACE AND DIAGNOSIS OF SCHIZOPHRENIA

The preponderance of literature clearly shows how African Americans are more frequently misdiagnosed than Euro-Americans, with research findings initially gaining momentum since the early 1980's[16]. In particular, African Americans are disproportionately diagnosed with Schizophrenia with estimates ranging from three to five times more likely in receiving such a diagnosis. Eack *et al*[9] conducted a study with 752 participants and found that even after controlling for other significant demographic and clinical characteristics, African Americans were more than three times as likely to be diagnosed with Schizophrenia than Euro-Americans. Additionally, Eack *et al*[9] reported that after interviews, clinician-perceived honesty was lower for African American consumers, a factor found to be a significant correlate of increased Schizophrenia diagnoses among African Americans. Conversely, increased distrust and a poorer clinical relationship were reported by African American consumers. Barnes[10] researched 2311 persons having a single admission to a state psychiatric hospital with a Schizophrenia diagnosis during an eight-year period. The researcher found that African Americans were four times more likely than Euro-Americans to receive a Schizophrenia diagnosis. Four years later, Barnes[17] explored 2404 persons admitted to Midwestern state psychiatric hospitals, finding that race was the strongest predictor of an admission diagnosis of Schizophrenia after controlling for the influence of other demographic variables. Interestingly, Barnes showed that Schizophrenia subtypes were not equally distributed by race, with African American consumers significantly more likely to receive a diagnosis of Schizophrenia-paranoid subtype or Schizophrenia-undifferentiated subtype than Euro-American consumers.

In hopes of applying semi-structured diagnostic interviews to eliminate racial disparities in diagnosis, Neighbors *et al*[18] analyzed data of 665 African American and Euro-American psychiatric inpatients with results showing that race was related to diagnoses even when utilizing standardized diagnostic criteria and interviewing procedures. The authors reported that African Americans showed a higher percentage of Schizophrenia (44%) diagnoses compared to the Euro-Americans (32%), with a statistically significant relationship between race and the hospital's admitting diagnosis. In comparison to researchers' primary diagnosis and its relationship to race,

Neighbors *et al*[18] showed there was also a statistically significant clinician relationship with showing that African Americans had a higher percentage (33%) of Schizophrenia diagnoses compared to Euro-Americans (24%). These findings show how clinicians perceive symptoms differently by consumer race, particularly when assigning a diagnosis of Schizophrenia.

When looking at Latino American patients, Minsky *et al*[19] speculated that because African Americans were diagnosed with Schizophrenia spectrum disorders at a higher rate, then the same may be true for Latino Americans. To our knowledge these researchers conducted the first systematic study comparing the diagnostic and symptom severity patterns of Latino Americans with those of African Americans and Euro-Americans. With 19219 participants Minsky *et al*[19] showed that African Americans were more likely than Latino Americans or Euro-Americans to be diagnosed as having psychotic disorder (mainly Schizophrenia) by clinicians. However, Minsky et al reported that Latino Americans scored highest on psychosis subscales, as well as self-reported clinical severity. Similarly, Blow *et al*[20] looked at ethnic differences in diagnostic patterns between Latino Americans, African Americans, and Euro-Americans of 134523 veterans while controlling for possible confounding variables. They found that race most strongly predicting a Schizophrenia diagnosis. Results concluded that Latino Americans where more than three times more likely to be diagnosed with Schizophrenia than Euro-Americans. However, Minsky *et al*[19] explained that African Americans continued to reflect being most strongly diagnosed with schizophrenia, which is four times more likely than Euro-Americans.

To date, there are no empirically verified explanations determining why African Americans are overrepresented in having a Schizophrenia diagnosis, although researchers speculate about different possibilities. Some have argued that clinician bias may be an unconscious process stemming from stereotypes and biases resulting in misdiagnosis[21,22]. Others speculate that the underdiagnosis of Major Depressive Disorder and Bipolar Disorder in African Americans could contribute to the overdiagnosis of Schizophrenia[17]. Another possibility proposed is clinicians' own race contributing to diagnostic bias. For example, Trierweiler *et al*[11] examined clinician race differences in diagnostic practices with 292 adult inpatients predominantly from an African American community using a sample distribution of 72% African Americans and 28% non-African Americans. Their results unexpectedly showed no differences between diagnosing Schizophrenia *vs* not-Schizophrenia disorders according to clinicians' race, suggesting equal diagnostic dissemination between the two races. However, Trierweiler *et al*[11] suggested that clinicians of difference races may apply diagnostic criteria differently. For example, they reported that non-African American clinicians generally associated negative symptoms of Schizophrenia (*i.e.*, blunted affect, anhedonia, motor retardation) with a Schizophrenia diagnosis, while African American clinicians associated positive symptoms (*i.e.*, hallucinations, delusions) with a diagnosis of Schizophrenia. Trierweiler *et al*[11] discussed how this shows how diagnostic assignment can be attributed to differences between clinicians' race on a more micro or symptom conceptualization level. While the majority of research explored racial bias in psychiatric diagnoses during hospital admissions, Sohler *et al*[8] investigated whether diagnostic racial bias is influenced by a person being discharged from their first psychiatric hospitalization. Using a sample size of 528 participants after a six month and two year follow-up period, no evidence indicated that a racial bias influenced a Schizophrenia diagnosis. However, Sohler *et al*[8] stated that African American consumers were more often discharged without a definitive diagnosis (*i.e.*, psychosis not otherwise specified) compared with Euro-Americans, with a substantial amount of African Americans meeting criteria for Schizophrenia (which could be a result of clinician difficulty in assigning a conclusive diagnosis).

REVIEW OF AMERICAN RESEARCH ON RACE AND DIAGNOSIS OF OTHER PSYCHOTIC DISORDERS

Given that Schizophrenia is one of several specific psychotic disorders demonstrating race-specific diagnostic disparities, it is important to also consider whether a similar pattern exists among other psychotic disorders. Disorders with psychotic features range from Schizophrenia, more complex disorders such as Schizoaffective Disorder, shorter duration disorders such as Schizophreniform Disorder, disorders with more narrow symptomatology such as Delusional Disorder, and mood disorders with psychotic features[3]. It has been shown that Schizophrenia is disproportionately diagnosed among African Americans, but does the same hold true with race affecting the diagnosis of psychotic disorders in general? Schwartz *et al*[22] conducted a study from a 10-county community mental health agency with 1648 participates, finding that African Americans were significantly more likely to receive a psychotic disorder diagnosis than Euro-Americans. They reported that 27% of all African American consumers assessed were diagnosed with psychotic disorders compared with only 17% of all Euro-American consumers. Schwartz *et al*[22] discussed how African American consumers' symptoms may be more associated with disruptive or socially deviant behavior patterns in arriving at such conclusions. Regarding forensic psychiatric inpatient consumers known for deviant behaviors, Perry *et al*[23] used data from 129 randomly selected evaluations in a pre-trial correctional psychiatric facility and found that Euro-Americans were 78% less likely to be diagnosed with a psychotic disorder than African Americans. The authors reported how high levels of education were associated with decreased odds of being diagnosed with psychotic disorder while length

of stay in the forensic psychiatric facility increased those odds. According to Perry *et al*[23] the predicted probability that African Americans in the forensic psychiatric facility where diagnosed with a psychotic disorder is 56% compared to only 21% for Euro-Americans. They go on to state how behavioral hospitalizations may also be strongly associated with an increased likelihood of being diagnosed with a psychotic disorder. Boa *et al*[24] collected information from 269 inpatient health care facilities, including 102201 consumer discharges, and investigated differences in behavioral inpatients between African Americans and Euro-Americans. Their results showed that African Americans were more than three times as likely to be hospitalized with a primary psychotic diagnosis compared to Euro-Americans. In addition, African Americans accounted for over 50% of all behavioral hospitalizations with a primary psychotic disorder compared to only 23% of Euro-Americans. Perry *et al*[23] go on to state how behavioral discharges of African Americans were twice as likely to reflect a primary psychotic diagnosis compared to Euro-Americans.

Similar to Schizophrenia, there appears to be a relationship between Latino American consumers and racial disparities among psychotic diagnoses. Kales *et al*[25] explored 23758 elderly persons in the VA medical centers identifying how Euro-Americans, Latino Americans, and African Americans compare by rate of diagnosis. Their results showed that Latino American (24%) and African American (25%) persons had significantly higher rates of psychotic disorders in all hospital units compared to Euro-Americans (18%). Even among minors (*i.e.*, those under 18 years of age) in psychiatric emergency centers, Muroff *et al*[26] reviewed 2991 child and adolescent Latino American, African American, and Euro-American records and found that African American and Latino American children and adolescents were twice as likely to receive a psychotic disorder diagnosis compared to Euro-Americans. This confirms the conjecture that Latino American consumers share in experiencing racial disparities of psychotic disorder diagnoses with African Americans.

Psychotic symptoms are more common and milder within the general population compared to meeting full criteria for diagnosis of a psychotic disorder. However, psychotic symptoms usually are illuminating signs of a potential precursor to psychotic disorders. Cohen *et al*[27] looked at a sample of 16423 participants to determine the prevalence of psychotic symptoms among ethnic groups. Results showed that Latino Americans (13%) and African Americans (15%) had a higher lifetime rate of psychotic symptoms than Euro-Americans (9%) and Asians (9%). Additionally, Latino Americans reported more lifetime symptoms than other groups after controlling for other factors according to Cohen and Marino. Similar to Schizophrenia, the prospect of clinician race influencing diagnostic decisions may be a factor in racial disparities of psychotic disorders. Arnold *et al*[28] conducted the first study to our knowledge using blinded evaluations by expert diagnosticians to evaluate ethnicity effects on the assessment of psychotic symptoms. Their results from 193 persons meeting specific criteria showed no significant differences in diagnoses between ethnic groups. However, African American men with psychosis who presented for inpatient hospitalization exhibited significantly higher scores for total psychotic symptoms than Euro-American men, which interestingly did not increase the rate of a Schizophrenia diagnoses even when evaluated by ethnically blinded raters according to Arnold *et al*[28]. They discussed how their findings indicate that psychotic symptom presentation should be evaluated in the context of other symptoms in diagnostic assessments to prevent a misdiagnosis of Schizophrenia.

REVIEW OF INTERNATIONAL RESEARCH ON RACE AND DIAGNOSIS OF PSYCHOTIC DISORDERS

The vast majority of empirical literature related to race and diagnosis of psychotic disorders has included consumer samples and clinicians from the United States. Nevertheless, could the same diagnostic patterns be found internationally? Alexandre *et al*[29] reviewed medical records of 977 patients in Portugal, where 82% of the immigrants were from African Portuguese-speaking countries and only 3.3% from Eastern Europe countries. The term Black is widely used in Portugal and refers to patients of African origin while not suggesting any racial prejudice, according to Alexandre *et al*[29]. Their results showed that Black inpatients where significantly more frequently diagnosed with Schizophrenia and acute and transient psychosis. By contrast, in the Netherlands, Vinkers *et al*[30] examined 21857 pre-trial psychiatric reports comparing Dutch natives with what they termed Black and minority ethnic groups (BME), and Whites from other Western countries (mostly born in Europe). These researchers found that mandated psychiatric hospital admissions were more frequently recommended for BME persons (19.8%) and Whites from other Western countries (19.3%) compared to Dutch natives (9.2%).

According to Vinkers *et al*[30] these findings show how immigrants may encounter an increased risk of psychotic disorders diagnoses and hospital admissions, perhaps related to misunderstanding of or biases about symptomatology.

In Canada, Adeponle *et al*[5] examined 323 persons referred to a cultural consultation service (CCS) to determine factors associated with change in the diagnosis of psychotic disorders *via* the CCS as compared to that of the referring clinician. Results showed that 49% of consumers referred with a psychotic disorder diagnosis were changed to a nonpsychotic disorder diagnosis after CCS assessment. These consumers were significantly more likely to be residing in Canada ten years or less. Surprisingly, Black patients represented the largest

Table 1 Summary of empirical research results of disproportionate diagnoses and race

Ref.	Disproportionate diagnoses found	Disproportionate diagnoses not found
American studies showing diagnosis and race in schizophrenia		
Neighbors *et al*[18]	X	
Minsky *et al*[19]	X	
Sohler *et al*[8]		X
Barnes[10]	X	
Blow *et al*[20]	X	
Barnes[17]	X	
Schwartz *et al*[22]	X	
Eack *et al*[9]	X	
American studies showing diagnosis and race in non-schizophrenia psychotic disorders		
Kales *et al*[25]	X	
Arnold *et al*[28]	X	
Boa *et al*[24]	X	
Muroff *et al*[26]	X	
Cohen *et al*[27]	X	
Perry *et al*[23]	X	
International Studies showing diagnosis and race in schizophrenia or other psychotic disorders		
Al-Saffar *et al*[7]	X	
Alexandre *et al*[29]	X	
Vinkers *et al*[30]	X	
Adeponle *et al*[5]	X	

[1]Disproportionate diagnosis of psychotic disorders among immigrant consumers who were not Black.

percentage (44%) of those patients who had no change of a psychotic disorder diagnosis after CCS assessment. Conversely, only 5% of persons referred with a non-psychotic disorder diagnosis received a final diagnosis of a psychotic disorder. These findings unexpectedly show that prior diagnoses of psychotic disorders were significantly more likely to be changed among persons who are not black. Black consumers in this study were recent immigrants or refugees from Africa or the Caribbean, whereas black samples included in most studies from the United States include more indigenous African American populations and fewer immigrants. This may suggest that misdiagnosis, or more specifically overdiagnosis, of psychotic disorders occurs more frequently with immigrant and refugee patients from all racial-ethnic backgrounds. To possibly better explain this phenomenon, Al-Saffar *et al*[7] in Sweden attempted to describe the distribution of differing ethnic groups in psychiatric outpatient services and the influence of ethnicity on diagnosis. An investigation of 839 persons revealed that Black citizens, a relatively new ethnic group in Swedish society, had a higher rate of receiving a psychotic disorder diagnosis as compared to other ethnic groups. These findings are similar to the previously stated study by reflecting a potential relationship between psychotic disorders with those who are immigrant patients. International studies therefore show a trend toward ethnicity having a strong impact on how diagnoses are given in cross-cultural settings.

CONCLUSION

This review demonstrated how race and ethnicity has in fact influenced the diagnosis of Schizophrenia. Table 1 shows a comprehensive summary of empirical studies over a 24-year period that did and did not report disproportionate psychotic disorder or Schizophrenia diagnoses according to consumer race. Research showed a clear pattern wherein African Americans continued to display a long-term increased rate of Schizophrenia diagnoses, often three to four times as high compared to Euro-Americans. As speculated by previous researchers, Latino Americans were also disproportionately diagnosed at a more than three times higher rate than Euro-Americans with a Schizophrenia diagnosis. In consideration of a psychotic disorder diagnosis more generally, African Americans were more likely to be diagnosed than Euro-Americans. Latino Americans and African Americans both showed an increased lifetime rate of psychotic symptoms in comparison to Euro-Americans and Asians, as reported by clinicians. Even African American and Latino American minor consumers under the age of 18 were twice as likely to be diagnosed with a psychotic disorder as Euro-American youth. Interestingly, one study showed that no differences were found in a diagnosis of Schizophrenia by persons discharged after their first psychiatric hospitalization, although African Americans were discharged more often with an upspecified diagnosis such as psychosis not otherwise specified compared to Euro-Americans (Table 1).

Internationally, there appears to be a similar pattern of racial disparity, but when inspected closely, evidence revealed a different and intriguing dynamic. In Sweden, mental health consumers of African descent compared to other ethnic groups had an increased risk of receiving a psychotic disorder except for Schizophrenia. Dutch psychiatric consumers in the Netherlands were less likely mandated for psychiatric hospitalization compared to BME, and even Whites from other Western countries. This shows that both BME and White consumers from other Western countries are equally mandated

for psychiatric hospitalization when compared to native mental health consumers in the Netherlands. Correspondingly, African immigrants in Portugal were more frequently diagnosed with Schizophrenia. In Canada, immigrants from Africa or the Caribbean that were referred to a CCS determining diagnosis showed the highest percentage of maintaining a psychotic disorder diagnosis and also the lowest percentage of later replacing their initial psychotic disorder diagnosis to a non-psychotic diagnosis. These international trends may suggest how misdiagnosis of psychotic disorders more commonly transpire with immigrant ethnic minority consumers receiving mental health services compared to consumers from communities sharing a majority racial and ethnic background.

Implications for further research include exploring some of the potential explanations that have been suggested in the literature to clarify how race affects the diagnosis of psychotic disorders. Understandably, when considering racial bias in diagnostic disparities, one would likely presume that clinician race would interfere with clinical judgment leading to diagnostic prejudice, but this has been proven inconclusive. Instead, it was suggested in prior literature that diagnostic criteria could be applied differently depending upon clinician race. Some authors suggested that misinterpretation of more socially deviant and disruptive behaviors often associated with African Americans were factors related to misdiagnosis. Other rationales for the long-term trend noted above included unconscious clinician biases and the underdiagnosis of Major Depressive Disorder and Bipolar Disorder among African Americans in favor of a psychotic disorder diagnosis. As Feisthamel *et al*[31] explain, "Most authors assert that the cause involves racial diagnostic bias, which refers to clinicians making unwarranted judgments about people on the basis of their race". They provide a potential pathway for this circumstance, one that would need to occur regardless of treatment setting or professional affiliation given the broad scope of the trends found in prior research. Feisthamel *et al*[31] also propose a different, albeit not uncontroversial hypothesis, that a sociocultural pattern may exist for consumers of color themselves related to a combination of less access to healthcare, more distrust in mental health professionals and systems, higher social stigma associated with mental illness, and more culture-specific methods of addressing personal distress. This pattern may result in increased symptomatology once consumers of color do access mental health treatment, and ultimately more severe (*e.g.*, psychotic disorder) diagnoses by clinicians.

Although it may be difficult to identify concrete contributing factors explaining how race affects a psychotic disorder diagnosis, importantly clinicians and future researchers should be aware of this longstanding and pervasive trend. It should also be noted that although clear evidence supports a longstanding trend in differential diagnoses according to consumer race, this trend does not imply that one race (*e.g.*, African Americans) actually demonstrate more severe symptoms or higher prevalence rates of psychosis compared with other races (*e.g.*, Euro-Americans). Because clinicians are the diagnosticians and misinterpretation, bias or other factors may play a role in this trend caution should be used when making inferences about actual rates of psychosis among ethnic minority persons. Given the fact that similar race-related diagnosis results have been found in empirical studies across time and location indicates that the underlying reasons for the phenomenon should be investigated. A literature review has demonstrated that thus far little empirical research has been devoted to understanding whether clinician racial bias, clinician misinterpretation of symptomatology, or another factor altogether is responsible for this pattern. Or perhaps as Feisthamel *et al*[31] suggest as one possibility, the trend described here may be indicative of real differences in symptomatology presented by consumers of different races. Additional empirical research may help the field get closer to a proven interpretation of these findings resulting in appropriate education for clinicians and consumers that is necessary in combating this persistent phenomenon.

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