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Differences in Duration of Untreated Psychosis for Racial and Ethnic Minority Groups with First-Episode Psychosis: An Updated Systematic Review & Meta-Analysis

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Abstract

Purpose: Ethnic minority groups with early psychosis may have longer treatment delays, potentially leading to poorer outcomes. We updated a previous systematic review of the literature on racial and ethnic differences in duration of untreated psychosis (DUP) among people with first-episode psychosis.

Results: Six of seventeen studies described significant differences across aggregated racial groups; however, the pooled estimates did not show differences across groups. Additional data from this update allowed for disaggregated analyses, finding that Black-African groups have a shorter DUP, whereas Black-Caribbean groups have longer DUP, relative to White groups.

Conclusions: These findings highlight the importance of in-depth research on disaggregated ethnic groups to inform targeted early intervention strategies for minority populations.

Keywords: first-episode psychosis, duration of untreated psychosis, ethnicity, race, treatment delay, early intervention

Background

The duration of untreated psychosis (DUP) is the period between the onset of psychotic symptoms and the initiation of treatment, and efforts to minimize DUP are essential for improving outcomes and reducing the psychosocial consequences of illness [1-4]. Ethnicity could potentially affect DUP through access to care, as differences in pathways to care and patterns of mental health service use are well established for some ethnic minority groups [5], and it follows that these differences could have consequences for treatment delay. However, evidence on the role of ethnicity in DUP is less clear – our previous systematic review and meta-analysis, completed in 2013, found no differences in DUP across racial and ethnic minority groups defined by race (e.g. Black, Asian), but was limited in its ability to examine the role of ethnicity due to aggregation of ethnic categories into racial groups in the primary studies [6]. Since 2013, a number of additional studies have been published on racial and ethnic differences in DUP, which increases the potential for more specific group-level analyses. Therefore, we sought to update this prior systematic review and meta-analysis with additional data to potentially explore disaggregated ethnic differences in DUP among minority groups with first-episode psychosis (FEP).

Methods

A detailed description of the review methods is available in the previous article [6]. Briefly, an updated electronic search of the EMBASE, MEDLINE, and PsycINFO databases using the OvidSP platform was conducted for the period January 2013 to March 2018. Each study was reviewed for the following inclusion criteria: (a) the study measured DUP among people with FEP; (b) the study reports DUP estimates by race or ethnic group; (c) the study was conducted in a high-income country, defined by the

World Bank Group as countries in which the 2017 GNI per capita was $12,055 or more[7]; (d) the study was published in a peer-reviewed journal. We only considered research conducted in high-income countries to increase comparability, given that the availability and accessibility of services varies across health systems in low-, middle-, and high-income countries [6]. Two independent reviewers extracted data from the included studies and assigned a quality assessment score using a scale from previously published research on ethnic differences in pathways to care [7, 8]. Discrepancies were resolved by consensus. Authors of included studies were contacted to obtain log-transformed estimates of the mean and standard deviation for DUP, and those who did not provide the data were excluded from the meta-analysis. We calculated the standardized mean difference (SMD) with 95% confidence intervals (CI) using Cohen's *d* for each racial or ethnic group, relative to the majority racial or ethnic group, and used the *metan* procedure in Stata 15 to meta-analyze these effect estimates.

Results

After full-text screening of 25 new studies, 7 studies met the inclusion criteria. In addition to the 10 studies meeting the criteria in the previous review [6], a total of 17 studies met our inclusion criteria, of which 12 had data available for the meta-analysis (Online Supplement 1).

Study Characteristics

Detailed information on characteristics and findings of included studies, as well as quality assessment ratings, are provided in Online Supplement 2 to 4. The studies were conducted in Canada (n=3), the United Kingdom (n=8), the United States (n=3), Singapore (n=2), and New Zealand (n=1), using data from early intervention services (n=10), inpatient services (n=3), mental health services (n=2), a

population-based incidence study (n=1), or health administrative databases (n=1). The study samples were predominantly comprised of people with non-affective psychoses (median across studies = 89%, range = 64% to 100%). The first episode of psychosis was defined based on the use of antipsychotic medication in eight studies, first contact with services in four studies, and first inpatient admission in two studies (Online Supplement 2). Most studies (n=11) used a standardized instrument for measuring DUP and nearly all (n=15) used multiple data sources to corroborate information. All but one study used the onset of positive psychotic symptoms as the start point for measuring DUP, whereas the end point for DUP varied, including: entry into early intervention program (n=1), initiation of antipsychotic treatment (n=10), contact with secondary mental health services (n=1), treatment compliance (n=1), definite diagnosis (n=2), or first hospital admission (n=1). Eleven studies described how race or ethnicity was measured, with six studies using self-report, three studies using staff-assigned groups, and one study using both. Only five studies performed analyses on specific ethnic groups without amalgamation by race (Online Supplement 3). None of the studies met all criteria for methodological quality, with the most common issues being adequacy of sample size, adjustment for confounders, the quality of ethnicity measurement, and use of aggregated categories in the analysis (Online Supplement 4).

Racial or Ethnic Differences in DUP

Six of seventeen studies reported significant differences in DUP across racial or ethnic minority groups. Five studies found that in high-income countries, Black patients have a shorter DUP relative to White patients [7, 9–12]. Two studies found a significantly shorter DUP for Asian or South Asian patients compared to White patients [11, 12], whereas one study reported Asian patients had a longer DUP [10]. Another study reported that Indian ethnic groups had a longer DUP than the majority Chinese ethnic

groups [14]. The remaining studies did not find a statistically significant association between race or ethnicity and DUP [14, 15, 24, 16–23].

In keeping with our previous meta-analysis, we did not find evidence of differences in DUP for aggregated Black or Asian racial groups, relative to White groups (Online Resource 5). However, the meta-analysis did show evidence of differences in DUP when Black racial groups were disaggregated. Specifically, Black-African groups had a shorter DUP (SMD = -0.23; 95% CI = -0.40, -0.06), whereas Black-Caribbean groups had a longer DUP (SMD = 0.16; 95% CI = -0.01, 0.34), relative to White groups (Figure 1). Disaggregated analyses for Asian ethnic groups were not possible due to the heterogeneity in the categories used for Asian ethnicity.

Discussion

The results of this updated systematic review and meta-analyses are consistent with our prior review in finding no differences in DUP at the first episode of psychosis for aggregated Black or Asian racial groups, relative to White groups. However, additional data from this new search allowed for analyses by disaggregated ethnic groups, which showed that Black-African groups tend to have shorter DUP, whereas Black-Caribbean groups tend to have a have longer DUP, relative to White groups. Thus, it is not surprising that analyses using an aggregated Black racial group failed to find evidence of differences in DUP across groups, given that these trends would cancel out when data are pooled.

Our finding of longer treatment delays among Black-Caribbean groups is consistent with previous reports, which suggest that Black-Caribbean people tend to delay contact with mental health services once the symptoms of psychosis begin to emerge [26]. Recent evidence has found that patients with FEP from Black-Caribbean groups are at a particularly high risk of experiencing poorer clinical, social, and

service use outcomes [27], highlighting the need to better engage these groups in mental health services. Qualitative research suggests that Black-Caribbean groups with FEP may wait longer to ask for help to avoid the shame and stigma associated with having a serious mental illness that impacts both the individual and their family members, which is pervasive within Caribbean communities [28]. Although many people with mental disorders face shame and stigma associated with their illness, there is evidence to suggest that this operates differently across ethnic minority groups [28], thus highlighting the need for in-depth research on specific ethnic groups to inform targeted early intervention strategies for minority populations.

Our finding of shorter duration of untreated psychosis among Black-African groups also aligns with previous findings. Morgan and colleagues found evidence that Black-African people experienced shorter periods of untreated psychosis than White British people [11]. Although a more recent study did not find a significant difference in DUP between the Black-African and White groups [17], they did find that Black-African people had greater odds of first help-seeking contact with the emergency department, which may contribute to shorter DUP in this group.

There are a number of limitations to note when interpreting our findings. Our review identified only seventeen studies that reported data on race or ethnicity and DUP, despite vast literature reporting DUP estimates, which may suggest publication bias. The studies included in the review varied in the confounding factors they adjusted for, potentially obscuring the true association between race or ethnicity and DUP. There was a large amount of heterogeneity across the studies in the definitions of DUP (i.e., start- and end-points) and the tools used for measurement. Similarly, the composition of ethnic groups also varied between studies, limiting generalizability to specific racial or ethnic groups. Five of seventeen studies did not provide the necessary data for the meta-analysis and thus our findings do not

include all existing evidence. Future research should focus on using a standardized and validated measurement of DUP to decrease heterogeneity in findings, and measure ethnicity in greater detail to allow for disaggregated sub-group analyses. Qualitative or mixed methods research could be employed to further explore explanations for longer DUP and how we can better engage minority populations with appropriate mental health services.

Understanding differences in pathways to care and DUP among ethnic minority groups may help improve detection and referral rates, potentially reducing negative and coercive pathways to care and providing more timely access to psychiatric services. This is crucial for informing culturally appropriate and equitable mental health services and reducing disparities in access to care, especially in minority populations. The findings from this study demonstrate the importance of in-depth research on disaggregated ethnic or racial groups to inform targeted early intervention strategies.

Figure 1: Meta-analysis of the log-transformed standardized mean difference (SMD) in duration of untreated psychosis for Black-African and Black-Caribbean groups, relative to White groups.

Electronic Supplementary Material:

ESM_1: Flow chart of the search strategy and exclusion process for the systematic review

ESM_2: Characteristics of studies included in systematic review (n = 17)

ESM_3: Findings on duration of untreated psychosis and ethnic/racial group for studies included in the systematic review (n = 17)

ESM_4: Quality assessment ratings for studies included in the systematic review (n = 17)

ESM_5: Meta-analysis of the log-transformed standardized mean difference (SMD) in duration of untreated psychosis for Black and Asian groups relative to White

The authors declare that they have no conflict of interest.

References

1. Perkins DO, Gu H, Boteva K, Lieberman JA (2005) Relationship between duration of untreated psychosis and outcome in first-episode schizophrenia: A critical review and meta-analysis. Am J Psychiatry 162:1785–804.
2. Marshall M, Lewis S, Lockwood A, Drake R, Jones P, Croudace T (2005) Association Between Duration of Untreated Psychosis and Outcome in Cohort of First-Episode Patients : A Systematic Review. Arch Gen Psychiatry 62:975–83.
3. Norman RMG, Malla AK, Verdi MB, Hassall LD, Fazekas C (2004) Understanding delay in treatment for first-episode psychosis. Psychol Med 34:255–66.
4. Mcgorry PD, Killackey E, Yung AR (2007) Early intervention in psychotic disorders: Detection and treatment of the first episode and the critical early stages 187:S8–10.
5. Anderson KK, Flora N, Archie S, Morgan C, Mckenzie K (2014) A meta-analysis of ethnic differences in pathways to care at the first episode of psychosis. Acta Psychiatr Scand 130:257–68.
6. Anderson KK, Flora N, Archie S, Morgan C, McKenzie K (2014) Race, ethnicity, and the duration of untreated psychosis: A systematic review. Soc Psychiatry Psychiatr Epidemiol 49:1161–74.
7. Bhui K, Stansfeld S, Hull S, Priebe S, Mole F, Feder G (2003) Ethnic variations in pathways to and use of specialist mental health services in the UK: Systematic review. Br J Psychiatry 182:105–16.
8. Sass B, Moffat J, Bhui K, Mckenzie K (2009) Enhancing pathways to care for black and minority ethnic populations: A systematic review. Int Rev Psychiatry 21:430–8.
9. Haas GL, Garratt LS, Sweeney JA (1998) Delay to first antipsychotic medication in schizophrenia: Impact on symptomatology and clinical course of illness. J Psychiatr Res 32:151–9.

10. Morgan C, Fearon P, Hutchinson G, McKenzie K, Lappin JM, Abdul-Al R, et al (2006) Duration of untreated psychosis and ethnicity in the ÆSOP first-onset psychosis study. Psychol Med 36:239–47.

11. Ghali S, Fisher HL, Joyce J, Major B, Hobbs L, Soni S, et al (2013) Ethnic variations in pathways into early intervention services for psychosis. Br J Psychiatry 202:277–83.

12. Dominguez M de G, Fisher HL, Major B, Chisholm B, Rahaman N, Joyce J, et al (2013) Duration of untreated psychosis in adolescents: Ethnic differences and clinical profiles. Schizophr Res 150:526–32.

13. Basu S, Subramaniam M, Abdin E, Poon LY, Verma S (2015) Does ethnicity have an impact on duration of untreated psychoses: A retrospective study in Singapore. Int J Soc Psychiatry 61:623–30.

14. Van Der Ven E, Bourque F, Joober R, Selten J-P, Malla A (2012) Comparing the clinical presentation of first-episode psychosis across different migrant and ethnic minority groups in Montreal, Quebec. Can J Psychiatry 57:300–8.

15. Singh SP, Brown L, Winsper C, Gajwani R, Islam Z, Jasani R, et al (2015) Ethnicity and pathways to care during first episode psychosis: The role of cultural illness attributions. BMC Psychiatry 15:1–8.

16. Pek E, Mythily S, Chong S (2006) Clinical and social correlates of duration of untreated psychosis in first-episode psychosis patients. Ann Acad Med Singapore 35:24–6.

17. Archie S, Akhtar-Danesh N, Norman R, Malla A, Roy P, Zipursky RB (2010) Ethnic diversity and pathways to care for a first episode of psychosis in Ontario. Schizophr Bull 36:688–701.

18. Drake RJ, Haley CJ, Akhtar S, Lewis SW (2000) Causes and consequences of duration of untreated

psychosis in schizophrenia. Br J Psychiatry 177:511–5.

19. Turner M, Smith-Hamel C, Mulder R (2006) Pathways to care in a New Zealand first-episode of psychosis cohort. Aust N Z J Psychiatry 40:421–8.

20. Compton MT, Chien VH, Leiner AS, Goulding SM, Weiss PS (2008) Mode of onset of psychosis and family involvement in help-seeking as determinants of duration of untreated psychosis. Soc Psychiatry Psychiatr Epidemiol 43:975–82.

21. Brunet K, Birchwood M, Lester H, Thornhill K (2007) Provision of child and adolescent mental health in-patient services in Englad between 1999 and 2006. Psychiatr Bull 31:408–10.

22. Addington J, Heinssen RK, Robinson DG, Schooler NR, Marcy P, Brunette MF, et al (2015) Duration of Untreated Psychosis in Community Treatment Settings in the United States. Psychiatr Serv 66:753–6.

23. Reichert A, Jacobs R (2018) Socioeconomic inequalities in duration of untreated psychosis: Evidence from administrative data in England. Psychol Med 48:822–33.

24. Anderson KK, Flora N, Ferrari M, Tuck A, Archie S, Kidd S, et al (2015) Pathways to First-Episode Care for Psychosis in African-, Caribbean-, and European-Origin Groups in Ontario. Can J Psychiatry 60:223–31.

25. Harrison G, Holton A, Neilson D, Owens D (1989) Severe mental disorder in Afro-Caribbean patients: Some social, demographic and service factors. Psychol Med 19:683–96.

26. Morgan C, Fearon P, Lappin J, Heslin M, Donoghue K, Lomas B, et al (2017) Ethnicity and long-term course and outcome of psychotic disorders in a UK sample: The ÆsOP-10 study. Br J Psychiatry 211:88-94.

27. Ferrari M, Flora N, Anderson KK, Tuck A, Archie S, Kidd S, et al (2015) The African, Caribbean and

European (ACE) Pathways to Care study: a qualitative exploration of similarities and differences between African-origin, Caribbean-origin and European-origin groups in pathways to care for psychosis. BMJ Open 5:1–12.