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Original Research

Pathways to First-Episode Care for Psychosis in African-, Caribbean-, and European-Origin Groups in Ontario

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Celebrating 60 years
Nous célébrons 60 ans

Objective: To compare the pathways to care and duration of untreated psychosis (DUP) for people of Black-African, Black-Caribbean, or White-European origin with first-episode psychosis (FEP).

Methods: We recruited a sample of 171 patients with FEP of Black-African, Black-Caribbean, and White-European origin from hospital- and community-based early intervention services (EIS) in the cities of Toronto and Hamilton. We compared the 3 groups on DUP and key indicators of the pathway to care.

Results: We observed differences in pathways to care across the 3 groups. Black-Caribbean participants had an increased odds of referral from an inpatient unit to EIS (OR 3.33; 95% CI 1.46 to 7.60) and a decreased odds of general practitioner involvement on the pathway to care (OR 0.17; 95% CI 0.07 to 0.46), as well as fewer total contacts (exp[β] 0.77; 95% CI 0.60 to 0.99) when compared with White-European participants. Black-African participants had an increased odds of contact with the emergency department at first contact (OR 3.78; 95% CI 1.31 to 10.92). The differences in the DUP between groups were not statistically significant.

Conclusions: Our findings suggest that there are significant differences in the pathways to EIS for psychosis for people of African and Caribbean origin in our Canadian context. It is essential to gain a comprehensive understanding of the pathways that different population groups take to mental health services, and the reasons behind observed differences, to inform the development of equitable services, targeting patients in the critical early stages of psychotic disorder.

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Les trajectoires vers les soins de premier épisode de psychose chez les groupes d'origine africaine, antillaise et européenne en Ontario

Objectif : Comparer les trajectoires des soins et la durée de la psychose non traitée (DPNT) pour les personnes d'origine noire-africaine, noire-antillaise, et blanche-européenne souffrant d'un premier épisode de psychose (PEP).

Méthodes : Nous avons recruté un échantillon de 171 patients ayant un PEP d'origine noire-africaine, noire-antillaise, et blanche-européenne dans des services d'intervention précoce (SIP) hospitaliers et communautaires des villes de Toronto et de Hamilton. Nous avons comparé la DPNT dans les 3 groupes et les indicateurs clés de la trajectoire vers les soins.

Résultats : Nous avons observé des différences de trajectoires des soins entre les 3 groupes. Les participants d'origine noire-antillaise avaient des probabilités accrues d'être adressés aux SIP par une unité d'hospitalisation (RC 3,33; IC à 95 % 1,46 à 7,60) et une probabilité réduite

qu'un omnipraticien ait participé à la trajectoire de soins (RC 0,17; IC à 95 % 0,07 à 0,46), ainsi que moins de contacts totaux (exp[β] 0,77; IC à 95 % 0,60 à 0,99), lorsqu'on les compare aux participants d'origine blanche-européenne. Les participants d'origine noire-africaine avaient des probablilités accrues de visite au service d'urgence comme premier contact (RC 3,78; IC à 95 % 1,31 à 10,92). Les différences de DPNT entre les groupes n'étaient pas statistiquement significatives.

Conclusions : Nos résultats suggèrent qu'il y a des différences significatives dans les trajectoires aux SIP pour la psychose chez les personnes d'origine africaine et antillaise dans notre contexte canadien. Il est essentiel d'obtenir une pleine compréhension des trajectoires qu'empruntent différentes populations vers les services de santé mentale, et les raisons derrière les différences observées, afin d'éclairer le développement de services équitables, qui ciblent les patients aux premiers stades critiques du trouble psychotique.

The need to improve mental health services and outcomes for Canada's diverse population has been identified as a national priority.[1] Gaining a comprehensive understanding of the patterns of mental health service use by different parts of the population is crucial for improving access to services and providing equitable care.

The term pathways to care is used to describe the often complex series of help seeking contacts made by patients and their family members in response to the symptoms of a mental illness.[2] The patterns of health service use by patients with FEP have been of particular interest because the delay between the onset of psychotic symptoms and the start of treatment, known as the DUP, has been associated with poor clinical and functional outcomes.[3–5]

Both pathways to care and DUP may be influenced by ethnic, cultural, or racial group membership. A person's cultural background may influence their beliefs about the cause of psychiatric symptoms and the most appropriate course of action.[6,7] There may be differences between groups in the services and supports that are available and accessible when help is needed.[8,9] Language barriers or a lack of information on available services may impede a person's ability to seek help.[10] In addition, some groups may view mainstream services as not culturally competent or untrustworthy, and they may fear differential treatment based on their perceived race.[11]

We recently conducted a systematic review and meta-analysis of ethnic differences in pathways to care and DUP, focusing on FEP.[12,13] Our findings suggest that people of African and Caribbean origin are less likely to have the involvement of a GP on the pathway to care, and more likely to have police or criminal justice involvement and to have an involuntary admission.[12] Three larger studies from the United Kingdom reported a shorter DUP for ethnic minority groups[14–16]; however, we found little evidence overall that differences in the pathway to care translated into differences in the DUP.[13] Many of the studies included in our review were not designed or adequately powered to examine the differences linked to specific cultural, ethnic, or racialized group membership, although there have been notable exceptions.[14,15]

Our study aims to investigate pathways to care and DUP in 2 multicultural cities in Ontario. In our study, we disaggregated the African-Caribbean population into those of African origin and those of Caribbean origin, reflecting differences between these groups in culture, history of immigration, and socioeconomic conditions.[17] Compared with people of Caribbean origin, people of African origin in Toronto are more likely to be refugees, to live in poverty, to have lower levels of educational attainment, and to speak English as a second language.[17] Each of these factors is associated with negative pathways to care among patients

Abbreviations

BIC	Bayesian Information Criterion
CAMH	Centre for Addiction and Mental Health
DUP	duration of untreated psychosis
ED	emergency department
EIS	early intervention services
FEP	first-episode psychosis
GP	general practitioner
PPHS	Psychiatric and Personal History Schedule
SCID	Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
TDSB	Toronto District School Board

Clinical Implications

- There is some evidence to suggest that GPs may play a key role in mitigating aversive pathways to care and that they could be a potential target for reducing ethnic disparities in patterns of service use.

- Careful consideration will need to be given to the degree that various strategies aimed at improving pathways to care are acceptable and effective for different ethnic groups to prevent further exacerbating the disparities in access to care.

Limitations

- The ethnic groupings that we used were pragmatic and attempt to reflect the identities of different groups in Toronto; however, they mix country of origin and race and do not have a clear conceptual basis.

- We were unable to attain complete case ascertainment from the programs included in our study, as our recruitment strategy relied on referrals from the staff at participating EISs. Consequently, we do not know how many eligible people were missed from each program and how many people disengaged from EIS prior to being referred to our study.

with FEP.[18] We compared these 2 groups to a White group of European ancestry, as this is the most prevalent group in Ontario.

Methods

Study Site

More than 5.5 million people reside in the Toronto metropolitan area, and nearly 400 000 are of African or Caribbean origin.[19] There are nearly 2000 people with FEP being treated by 11 hospital- and community-based programs in the Toronto Early Intervention in Psychosis Network, and these programs receive more than 700 new referrals each year. Some programs serve defined catchment areas within Toronto and surrounding area, whereas others are open, and most programs require that patients have received less than 1 year of antipsychotic treatment.

Over 700 000 people live in the Hamilton metropolitan area, and there are 19 000 people of African or Caribbean origin.[19] There are about 300 people being treated by the Cleghorn Early Intervention Program, and the program receives about 100 new referrals each year. To be eligible for the program, patients must have received less than 6 months of prior antipsychotic treatment.

Study Sample

Participants were recruited between 2011 and 2013 from participating EISs. The case managers at each EIS would approach clients who met the inclusion criteria for our study. If the client was interested in participating, the research assistant would phone the client or meet with him or her at the EIS to complete the screening questionnaire and set up a time for the interview. A small number of participants were also recruited via recruitment posters and the research registry at CAMH.

Participants were included in the study if they met the following inclusion criteria: aged 14 years or older; diagnosis of nonaffective psychosis or bipolar disorder; less than 1 year of antipsychotic treatment prior to EIS; and self-assigned ethnicity of Black-African, Black-Caribbean, or White-European and White–North American. All participants provided informed consent to participate in the study, and ethics approval was obtained from the Research Ethics Board at CAMH and from each participating hospital site.

Data were collected by study research assistants who were trained in the use of the instruments, and data quality checks were administered to help ensure consistency across the interviewers. The interview gathered data on sociodemographic factors, diagnosis, and pathways to care. Translation services were available, if required; however, all interviews were conducted in English, with the exception of one interview conducted in American Sign Language. Additional information on the pathway to care was obtained from medical records and key informants, where available.

Participants were asked to self-assign their ethnic group based on the categories developed by the TDSB. Prior work

on the reliability of the TDSB categories has shown that people often move between the White-European and White–North American groups, and that those in the White–North American group are of European origin. These groups were combined in our analyses. Participants were classified as first-generation immigrants if they were born outside of Canada, as second-generation immigrants if they were born in Canada and at least one of their parents was born outside of Canada, and as third-generation immigrants if both parents were born in Canada.

Participants' living arrangement at first service contact was dichotomized as living with others or living alone. Participants' highest level of education was categorized as less than high school, completed high school, or completed post-secondary.

Standardized diagnoses were assigned using the SCID.[20] Diagnoses were dichotomized as nonaffective psychosis or affective psychosis. Clinical diagnoses were used in lieu of the SCID in 10% of cases where the SCID diagnosis was unavailable.

Data on clinical presentation and symptoms were collected using the PPHS.[21] This included information on the mode of onset of psychosis, dichotomized as acute (<1 month) or insidious, as well as binary variables indicating whether the client had self-reported a past history of self-harm or of violent or aggressive behaviour toward others.

Information on the pathway to care was collected using the Encounter Form.[22] Two binary indicators were constructed based on prior literature[12]; whether there was GP involvement and whether there was any police or crisis team involvement. The proportions of patients seeking help from each type of service provider at first contact and at the source of referral to an EIS were also calculated. We observed trends across the groups in the likelihood of having first contact with the ED and of being referred to an EIS from an inpatient admission; therefore, we converted these to binary variables and conducted post hoc analyses to determine whether group membership was an independent predictor. We also obtained information on who initiated the help seeking process, and this was categorized as self, family or friends, and others. Finally, we calculated the total number of contacts prior to entry into EIS, and this variable was used as a continuous measure with log transformation owing to the positively skewed distribution.

Information on symptom onset and duration was obtained from the PPHS.[21] The DUP was calculated as the time from the onset of delusions, hallucinations, or thought disorder to contact with an EIS, and the referral delay was calculated as the time from the first contact that fell within the DUP to contact with an EIS. Both variables were used as a continuous measure with log transformation owing to the positively skewed distribution.

Data Analysis

Descriptive information on study participants is presented as proportions for count data and as medians with interquartile range for continuous data, owing to its skewed distribution.

Multivariable logistic regression was used to estimate adjusted associations between ethnic groups and the binary outcomes of contact with police or criminal justice agencies, GP involvement, first contact with the ED, and inpatient referral to an EIS. For the continuous measures of total contacts, DUP, and referral delay, we obtained adjusted estimates using multivariable linear regression. The BIC method was used to select the variables to include in models,[23] and the model with the smallest value for BIC was selected as optimal.[24] Ethnic group was forced into the BIC models as the primary exposure of interest, and the models also tested variables previously shown to be predictors of the pathway to care,[18] including sex, age, education, diagnosis, history of violence, history of self-harm, initiation of help seeking, GP involvement on the pathway to care (except for the model where this was an outcome measure), and the study site. The models for total contacts, DUP, and referral delay also included the type of first contact to see if this impacted on overall pathway trajectories.

Results are presented as odds ratios for logistic regression, with 95% confidence intervals. The beta coefficients and 95% confidence intervals of the analyses using a log-transformed outcome variable are presented as exp(β), which can be interpreted as the relative effects on the outcome of interest. All regression analyses were performed using Stata SE Version 12.1 (StataCorp LP, 2012), and R version 2.12.1 (R Foundation for Statistical Computing, 2010) was used for the BIC model selection.

Results

During the recruitment period, 299 people agreed to be screened for the study, and 208 met the inclusion criteria. Among eligible people, 18 declined participation, 12 could not be contacted, 2 withdrew after consenting, and 5 had incomplete interview data. The final sample included 171 participants (Black-African = 41; Black-Caribbean = 40; White-European = 90). More than 85% ($n = 150$) of the sample came from Toronto, and 82% ($n = 141$) were receiving care from a hospital-based EIS. Participants had been in EIS for a median of 11 months (IQR 3 to 30) at the time of the interview. The sociodemographic characteristics of the sample are presented in Table 1.

Differences in the Pathway to Care

The proportion of participants who made first contact with each type of service provider is shown in Figure 1. Black-African participants had nearly 4 times the odds of having first contact with the ED, relative to White-European participants (OR 3.78; 95% CI 1.31 to 10.92); however, the difference was not statistically significant for Black-Caribbean participants (OR 2.42; 95% CI 0.85 to 6.89) (Table 2). Additionally, participants who had GP involvement on their pathway to care had lower odds of having first contact with the ED (OR 0.13; 95% CI 0.05 to 0.33), as were those whose help seeking was initiated by somebody other than family or friends (OR 0.10; 95% CI 0.01 to 0.64) (Table 2).

Nearly one-half of all participants had contact with police or crisis teams on the pathway to care (Table 3). There was no evidence of differences across the groups (Black-African OR 0.94; 95% CI 0.44 to 1.97; Black-Caribbean OR 0.88; 95% CI 0.42 to 1.87) (Table 2).

Only 35% of Black-Caribbean participants had contact with a GP on the pathway to care, compared with 51% of Black-African and 62% of White-European participants (Table 3). The difference across ethnic groups was significant for the Black-Caribbean group, who had much lower odds of having GP involvement in the pathway to care, relative to European participants (OR 0.17; 95% CI 0.07 to 0.46; Black-African OR 0.70; 95% CI 0.29 to 1.70) (Table 2). Participants whose help seeking was initiated by family members or friends (OR 0.16; 95% CI 0.05 to 0.49), or by other people (OR 0.06; 95% CI 0.02 to 0.24), also had lower odds of GP involvement on the pathway to care (Table 2).

Participants in the White-European group had a median of 6 total contacts on the pathway to care (IQR = 4 to 9), whereas both the Black-African and the Black-Caribbean groups had a median of 4 total contacts (Black-African IQR = 3 to 6; Black-Caribbean IQR = 3 to 7) (Table 3). The difference across ethnic groups was significant for Black-Caribbean participants only (exp[β] = 0.77; 95% CI 0.60 to 0.99; Black-African exp[β] = 0.83, 0.65 to 1.06) (Table 2). Additionally, people who had a diagnosis of an affective psychotic disorder had a greater number of total contacts (exp[β] = 1.29; 95% CI 1.03 to 1.62) (Table 2).

The proportion of participants who were referred to EIS by each type of service provider is shown in Figure 2. Black-Caribbean participants had more than 3 times the odds of being referred to an EIS by the inpatient unit (OR 3.33; 95% CI 1.46 to 7.60), with no significant difference for Black-African participants (OR 2.04; 95% CI 0.94 to 4.44). Having a diagnosis of an affective disorder was an independent predictor of referral from the inpatient unit (OR 2.61; 95% CI 1.25 to 5.42).

Differences in Duration of Untreated Psychosis and Referral Delay

The Black-Caribbean group had a median DUP of 16 months (IQR 6 to 46), compared with a median of 7 months for the White-European group (IQR 2 to 34) and 9 months for the Black-African group (IQR 3 to 28) (Table 3). These differences were not statistically significant (Black-African exp[β] = 1.10; 95% CI 0.60 to 2.03; Black-Caribbean exp[β] = 1.49; 95% CI 0.82 to 2.69) (Table 2). Older participants also tended to have a longer DUP (exp[β] = 1.08; 95% CI 1.03 to 1.14). People who had a history of violent or aggressive behavior had a DUP that was about twice as long as those who did not (exp[β] = 2.05; 95% CI 1.24 to 3.35) (Table 2).

The median referral delay was four months for the White-European and Black-African groups (IQR 2 to 17 and 1 to 8, respectively) and 3 months for the Black-Caribbean group (IQR 1 to 21) (Table 3), and this difference was not

Table 1 Demographic and clinical characteristics of the sample of people with first-episode psychosis from 3 ethnic groups in Ontario, *n* = 171

Variable	White-European *n* = 90 *n* (%)	Black-African *n* = 41 *n* (%)	Black-Caribbean *n* = 40 *n* (%)
Sex, male	54 (60)	31 (76)	29 (73)
Immigration status[a]			
1st generation	15 (17)	25 (61)	14 (35)
2nd generation	41 (45)	14 (34)	24 (60)
≥3rd generation	34 (38)	2 (5)	2 (5)
Education			
<High school	16 (18)	10 (24)	9 (23)
Completed high school	42 (47)	22 (54)	24 (62)
Completed postsecondary	31 (35)	9 (22)	6 (15)
Living alone at first contact	7 (9)	5 (13)	5 (13)
Affective psychotic disorder	31 (34)	11 (27)	5 (13)
History of violence	41 (46)	12 (29)	23 (58)
History of self-harm	29 (32)	11 (27)	10 (25)
Acute mode of onset (<1 month)	40 (50)	22 (55)	24 (63)
Initiation of help seeking			
Self	14 (18)	6 (17)	11 (30)
Family and (or) friend	46 (61)	22 (61)	21 (57)
Other	16 (21)	8 (22)	5 (13)
Age at program entry (median, IQR)	21 (19 to 27)	21 (19 to 23)	22 (20 to 26)

Values do not sum to total, owing to missing data.

[a] Difference across groups is statistically significant.

statistically significant (Black-African exp[β] = 0.97; 95% CI 0.52 to 1.81; Black-Caribbean exp[β] = 1.55; 95% CI 0.84 to 2.83) (Table 2). People with a history of violent or aggressive behaviour had a referral delay that was nearly twice as long as those with no history of such behaviour (exp[β] = 1.94; 95% CI 1.16 to 3.22) (Table 2).

Discussion

Our findings suggest that people in the Black-Caribbean group experience more aversive pathways to care, with an increased odds of referral to EIS from an inpatient admission, a decreased odds of GP involvement on the pathway to care, and fewer total contacts. People in the Black-African group had an increased odds of making first contact with an ED. We did not find significant differences between the ethnic groups in DUP or referral delay.

Few studies have examined ethnic differences in pathways to care in FEP, and ours is the most extensive Canadian study to date. Our findings are strengthened by the use of disaggregated analyses for African- and Caribbean-origin groups. We also measured the pathways to care using instruments that have been used in international studies across different cultures and service contexts.[25–28] Prior findings on this topic have been inconsistent,[18] leading some to suggest that observed differences between groups arise only after the first episode of psychosis,[29,30] possibly owing to negative experiences with services or differences in the

degree or type of stigma from within ethnic communities.[30]

We found that Black-African participants had a greater odds of first contact with the ED. Most people in this group were first-generation immigrants, and the heavy reliance on the ED at first contact may reflect a lack of knowledge regarding the availability of services and how to navigate them.[10] Indeed, immigration status has been previously found to be associated with the propensity to use emergency services by people with FEP.[15,31] We also found that the involvement of the GP on the pathway to care was an independent predictor of a reduced odds of making first contact with the ED, which is consistent with prior Canadian findings.[32,33]

We found little evidence to suggest that there are ethnic differences in having police involvement on the pathway to care, in contrast to prior reports from the United Kingdom.[15,29,34,35] Canadian studies have found a trend toward an increased likelihood of police involvement for Black racial groups, but these findings did not reach statistical significance.[33,36] Jarvis et al[37] in Montreal found that Black patients with psychotic disorders in the ED were more likely to be brought by police or ambulance; however, their study looked at psychotic disorders generally rather than FEP specifically. These differences across different countries, and even across different jurisdictions within the same country, could reflect differences in mental health legislation and local laws. Also, we neither recruited

Figure 1 The first contact on the pathway to care for people with first-episode psychosis from 3 ethnic groups in Ontario, *n* = 171
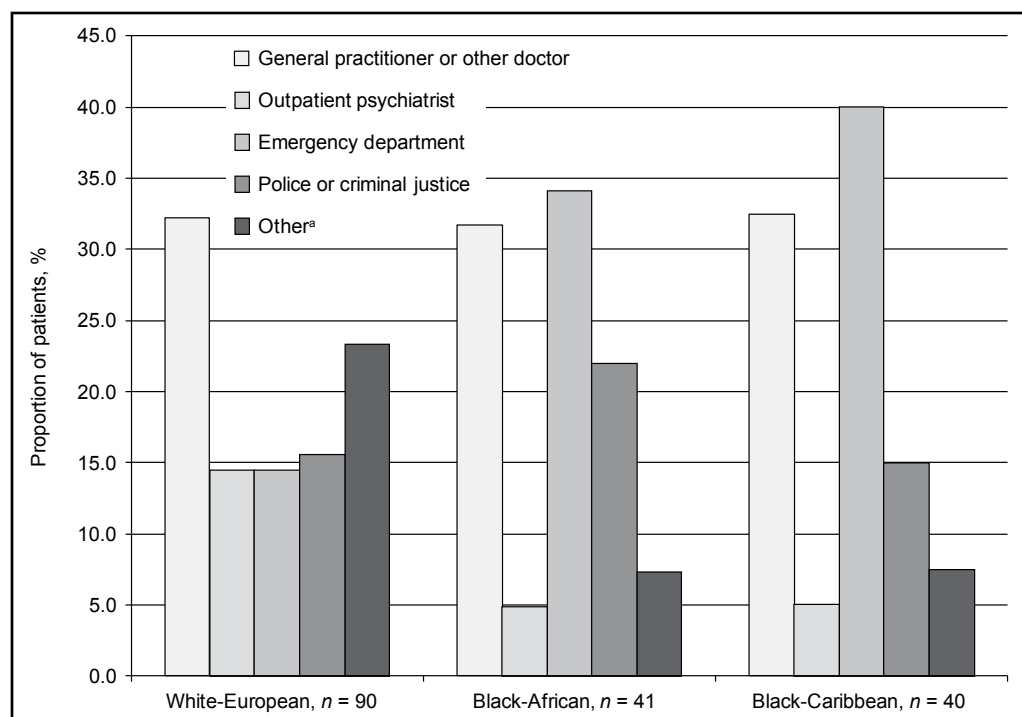
a Includes psychologists, social workers, nurses, school counsellors, priests, alternative and (or) native healers, and community organizations

participants from forensic services who would be expected to have the most extensive degree of police involvement, nor did we measure the frequency of experiencing other types of coercive pathways, such as involuntary hospitalizations or the use of seclusion or restraints.

Black-Caribbean participants in our sample had much lower odds of having GP involvement on their pathway to care. This is consistent with prior studies from the United Kingdom,[15,34] although Black-African people have also been found to have a reduced likelihood of GP involvement.[34] We speculate that this could be reflective of more negative attitudes toward primary care from ethnic minority groups, disparities in access to family physicians, or a greater tendency to delay help seeking to the point where emergency services are needed. Involvement of the GP on the pathway to care has been associated not only with a reduced frequency of contact with emergency services[32,33] and of compulsory admission and contact with police[30] but also with an increased number of total contacts and a longer treatment delay.[31–33]

We found that Black-Caribbean participants were more frequently referred to an EIS by the inpatient unit. This differential referral for the Black-Caribbean group could be a consequence of the reduced odds of GP involvement for this ethnic group, although this variable was not selected for inclusion in our optimal regression model. Alternatively, it could represent a more severe clinical presentation necessitating an inpatient admission, although there were no differences across the groups in the median number of

inpatient admissions (data not shown), and prior research has not found evidence of ethnic differences in clinical presentation at the first contact for FEP.[38]

Our findings indicate that people in the Black-Caribbean group may have a longer DUP than those in the White-European group, although this did not reach statistical significance. The 2 previous Canadian studies looking at differences in DUP for African and Caribbean people reported no evidence of differences compared with the White-Canadian population[36,38]; however, the studies lumped these 2 ethnic groups together as Black, which would obscure any differences between specific ethnic groups. Previous studies from the United Kingdom suggest that Black-African patients have a shorter DUP when compared with White-British patients, with no difference for the Black-Caribbean group.[14,15] These discrepant findings could be explained by differences in the social context of the African and Caribbean communities across the 2 countries. Interestingly, we did not find a difference between the ethnic groups in the time between the first contact after the onset of psychotic symptoms and entry into an EIS. These findings point toward ethnic differences in the sub-phases of DUP, specifically, the help seeking delay from the time of symptom onset to first contact with health services, and the referral delay from first contact to entry into an appropriate treatment program.[39–41] Research from the United Kingdom found that contact with mental health services came later for Black-Caribbean patients, but, once contact was made, this group received psychiatric care sooner.[35]

Limitations

The patterns we observed may not be representative of all people who use EISs. We were unable to attain complete case ascertainment from the programs included in our study, as our recruitment strategy relied on referrals from the staff at participating EISs. Consequently, we do not know how many eligible people were missed from each program, how many were missed from programs that were not participating in our study, and how many people disengaged from EISs prior to being referred. We also do not have demographic information on people who refused screening, and therefore, we do not know if this was differential by ethnic group. Our sample is composed of people who have been successful at obtaining specialized care, and it is possible that the likelihood of receiving care from other health and social service providers differs across the 3 groups.

Our data were measured retrospectively, and thus are subject to recall errors and biases; however, we corroborated information with other sources, including medical records and family members, in an effort to improve accuracy. We did not assess the reliability of our data collection methods, and therefore, we cannot eliminate the possibility of systematic differences across the interviewers, or differential assessment methods across the ethnic groups. We did not have information on several factors that may impact the pathway to care, such as social support, substance use, and symptom severity, so residual confounding may remain. We also cannot rule out the possibility that observed ethnic differences are moderated by age, gender, or socioeconomic status, which has been reported previously,[29,35,42] as we did not have sufficient power to examine interaction terms in our analyses.

A further limitation is the categorization of the ethnic groups that we used. The categories used by the TDSB are pragmatic and attempt to reflect the identities of different groups in Toronto. It mixes country of origin and race, and does not have a clear conceptual basis. The use of these groups is informative for those involved in the development of services, although it is only one method to consider group categorization.

Conclusions

In summary, our findings suggest that there are significant differences in the pathways to EIS for psychosis for people of African and Caribbean origin in our Canadian context. There is some evidence to suggest that GPs may play a key role in mitigating these aversive pathways to care and that they could be a potential target for reducing ethnic disparities in patterns of service use. Other strategies for improving the pathways to care include hastening the care pathways, removing negative pathways to care, or adding beneficial alternative routes,[43] and examples of interventions aimed at improving the pathway to care for ethnic minority groups are available.[44] However, careful consideration will need to be given to the degree that various strategies are acceptable and effective for different ethnic groups to prevent further exacerbating the disparities in access to care.

Table 2 Results of the multivariate logistic and linear regression models, with variables included in each model chosen using the Bayesian Information Criteria method[24]

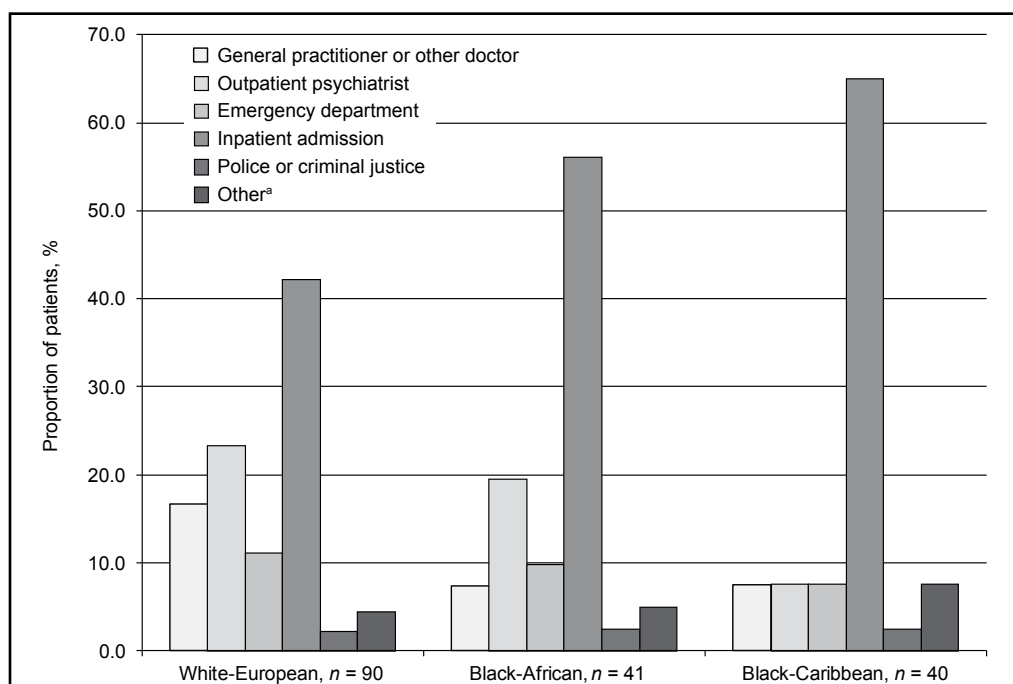| Variable	First contact with ED OR (95% CI)	Police involvement OR (95% CI)	GP involvement OR (95% CI)	Inpatient referral OR (95% CI)	Total contacts exp(β) (95% CI)	DUP exp(β) (95% CI)	Referral delay exp(β) (95% CI)
Ethnic group[a]							
African	3.78 (1.31 to 10.92)	0.94 (0.44 to 1.97)	0.70 (0.29 to 1.70)	2.04 (0.94 to 4.44)	0.83 (0.65 to 1.06)	1.10 (0.60 to 2.03)	0.97 (0.52 to 1.81)
Caribbean	2.42 (0.85 to 6.89)	0.88 (0.42 to 1.87)	0.17 (0.07 to 0.46)	3.33 (1.46 to 7.60)	0.77 (0.60 to 0.99)	1.49 (0.82 to 2.69)	1.55 (0.84 to 2.83)
Age at entry	—	—	—	—	—	1.08 (1.03 to 1.14)	—
Diagnosis[a]							
Affective				2.61 (1.25 to 5.42)	1.29 (1.03 to 1.62)	2.05 (1.24 to 3.35)	
History of violence[a]							
Yes							1.94 (1.16 to 3.22)
GP involvement[a]							
Yes					1.17 (0.96 to 1.44)		
Initiation of help seeking[a]							
Family and (or) friend	1.52 (0.48 to 4.81)						
Other	0.10 (0.01 to 0.64)						

DUP = duration of untreated psychosis; ED = emergency department; GP = general practitioner

[a] Reference group is European, nonaffective diagnosis, no history of violence, no GP involvement, and self-initiation of help seeking

Table 3 Indicators of the pathway to care of people with first-episode psychosis across 3 ethnic groups in Ontario, *n* = 171

Variable	European *n* = 90	African *n* = 41	Caribbean *n* = 40
Police or criminal justice involvement, *n* (%)	41 (46)	18 (44)	17 (43)
General practitioner involvement, *n* (%)	56 (62)	21 (51)	14 (35)
First contact with emergency department, *n* (%)	13 (14)	14 (34)	16 (40)
Referral source inpatient admission, *n* (%)	38 (42)	23 (56)	26 (67)
Total number of contacts, median (IQR)	6 (4 to 9)	4 (3 to 6)	4 (3 to 7)
DUP, months, median (IQR)	7 (2 to 34)	9 (3 to 28)	16 (6 to 46)
Referral delay, months, median (IQR)	4 (2 to 17)	4 (1 to 8)	3 (1 to 21)
DUP = duration of untreated psychosis			

Figure 2 The referral source to early intervention services people with first-episode psychosis from 3 ethnic groups in Ontario, *n* = 171

[a] Includes psychologists, social workers, nurses, school counsellors, priests, alternative and (or) native healers, and community organizations

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