

## Ethnic Diversity and Pathways to Care for a First Episode of Psychosis in Ontario

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**Objective:** To examine ethnic variations in the pathways to care for persons accessing early intervention (EI) services in Ontario. **Method:** The pathways to care and the duration of untreated psychosis were assessed for first-episode psychosis patients who entered specialized EI services in Ontario. The sample was assigned to the following ethnic classifications: the White (Caucasian), Black (African descent), and Asian (ancestry from the continent) groups, plus all the “other ethnicities” group. **Results:** There were 200 participants: 78% were male; 61% from the White, 15% Black, 13% Asian, and 11% were from the other ethnicities group. At the first point of contact, more participants used nonmedical contacts (12%), such as clergy and naturopathic healers, than psychologists (8%) or psychiatrists (7%). There were no ethnic differences for duration of untreated psychosis (median 22 weeks) or for initiation of help seeking by family/friends (53%), police (15%), or self (33%). After adjusting for relevant clinical and demographic factors, the Asian and other ethnicities groups were 4 and 3 times (respectively) more likely than the White or Black groups ( $P = .017$ ) to use emergency room services as the first point of contact in the pathways to care. Participants from the Asian group experienced less involuntary hospitalizations ( $P = .023$ ) than all the other groups. Yet overall, there were many more similarities than significant differences in the pathways to care. **Conclusion:** EI services should monitor the pathways to care for young people of diverse ethnic backgrounds to address any disparities in accessing care.

**Key words:** first-episode psychosis/pathways to care/schizophrenia/schizophreniform/DUP/early intervention in psychosis/help seeking

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Early intervention (EI) services are widely believed to promote control of psychotic symptoms<sup>1</sup> through early detection,<sup>2</sup> use of low doses of antipsychotic medications,<sup>3</sup> family education,<sup>4</sup> and psychosocial supports.<sup>5</sup> Although EI services are thought to reduce treatment delay<sup>6,7</sup> and, ultimately, improve access to care for a first episode of psychosis, it remains unclear whether EI services are able to produce similar outcomes when the population is ethnically diverse. To address this question, clinicians will need to better understand the social and cultural determinants that help shape access to care. Cauce et al<sup>8</sup> theorize that culture and ethnicity shape the definition and recognition of mental health problems, affect the decision to get help, and influence the pathways to care. The pathways to care are the formal and informal supports and social networks sought to obtain help for a mental health problem.<sup>9</sup> For the purposes of this model and the present study, the term “ethnicity” was broadly defined to include the concepts of race, ancestry, and identity.<sup>8</sup> By investigating whether ethnicity is associated with help seeking, pathways to care, and treatment delay, we hope to identify in a first-episode psychosis (FEP) sample any ethnic differences or similarities in access to EI services.

The literature concerning access to care challenges the axiom that all people, regardless of ethnic background, experience equal access to mental healthcare.<sup>10–13</sup> Compared with white patients living in the United States or the United Kingdom, black patients were less likely to access mental healthcare services from healthcare professionals.<sup>10,13</sup> In fact, the surgeon general in the United States released a report in 2001 outlining disparities in access to mental healthcare for numerous ethnic groups including African Americans, Latinos, Asian Americans, and Native Americans compared with white patients.<sup>12</sup> The first study of pathways to care on African American FEP patients living in the United States revealed high rates of police contacts with relatively low rates of primary care involvement.<sup>14</sup> Also, compared with white British patients, African Caribbeans living in the United Kingdom were more likely to access care through the criminal justice system<sup>10,15</sup> or involuntary hospitalizations.<sup>10,15–18</sup> These relatively negative routes to psychiatric care have raised concerns that people of African heritage experience longer treatment delays.<sup>11</sup> Treatment delay among people of African descent has been associated with perceived discrimination,<sup>19</sup> although a recent study from the United

Kingdom found no differences between black and white groups regarding the duration of untreated psychosis (DUP).<sup>20</sup> Despite the controversy, most of the studies on access to care have found significant ethnic differences concerning social factors, such as employment, living situation, family supports, or general practitioner involvement,<sup>10,15,16</sup> social factors that have been shown to be important indicators of DUP and pathways to care.<sup>21</sup>

Although most of the studies described above involved large epidemiological samples of psychiatric patients,<sup>10,13,15–17,20</sup> many of the participants had chronic illnesses, so these participants would not meet criteria for an FEP.<sup>13,15,17</sup> Some of the studies did not control for severity of symptoms or dysfunction.<sup>10,13,16,17</sup> Finally, some studies did not address use of alternative treatments or nonmedical contacts.<sup>13,18,22</sup> Because of these limitations, FEP studies are needed that explore the issue of equity in access to care for people who are from ethnic groups that have traditionally been more vulnerable to adverse routes to care. In addition, community or regional differences in pathways to care<sup>23</sup> may exist, so FEP studies should be conducted at different centers and locations around the world.

Given Canada's distinction of being one of the most multicultural nations in the world,<sup>24</sup> [www12.statcan.ca/English/census06/analysis/immcit/index.cfm](http://www12.statcan.ca/English/census06/analysis/immcit/index.cfm) December 4, 2007 with its increasing immigration of predominantly nonwhite populations,<sup>25</sup> it is surprising that so few Canadian studies address the issue of ethnicity and access to care for mental health problems. The first Canadian study examining the use of healthcare services for psychological distress by different ethnic groups found that fewer Vietnamese and Filipino immigrants living in Montreal accessed mental health services compared with Canadian-born citizens from the same community.<sup>26</sup> A qualitative study showed that immigrants from the West Indies had concerns about the excessive prescribing practices of Canadian physicians,<sup>27</sup> concerns that could impact upon help-seeking behavior. One of the few Canadian studies to address the sensitive issue of ethnicity and access to care found that Afro-Canadians, compared with Asian or white patients, were significantly more likely to be referred to emergency psychiatry services via ambulance or police.<sup>28</sup> However, this study relied upon a retrospective chart review for determining ethno-racial status, and as a result these findings may need to be replicated. Although previous Canadian FEP studies have suggested that many patients have little contact with nonmedical supports,<sup>29,30</sup> the few reports that exist regarding pathways to care for First Nations and Aboriginal youth, as well as nonnative youth living in rural regions of Canada, suggest that these youth sometimes seek help from informal and traditional supports such as counsellors and traditional healers.<sup>8,31</sup> Cultural conflicts and identity problems may magnify the impact of stigma and may impair mental healthcare utilization.<sup>32</sup>

In light of the ethnic disparities in access to mental healthcare documented in the United Kingdom<sup>10,16</sup> and the United States,<sup>13,14</sup> as well as the dearth of Canadian research on this topic that might address this issue within the context of a publicly funded healthcare system, the purpose of the present study was to address whether there are ethnic differences in help-seeking, DUP, and pathways to care among clinic samples of patients from Ontario who are experiencing a first episode of psychosis. This study represents a preliminary investigation into this question and is more exploratory than explanatory in nature. We investigated whether the use of emergency room (ER) services, involuntary hospitalizations, and the criminal justice system was more common in the pathways to care among FEP patients who were from black, Asian, or other ethnic backgrounds, compared with those FEP patients who identified themselves as white.

## Methods

The present study involves a secondary analysis of a database used to track service use and outcomes for FEP patients treated at 4 major EI services in Ontario.<sup>1,33</sup> The design was a cross-sectional survey of 200 patients referred to 4 specialized early intervention (EI) services for psychosis in Toronto, London, Ottawa, and Hamilton. Each consecutive but eligible patient and their family member, who presented to one of the EI services, were invited to participate in the study. The study was approved by the Research Ethics Board at each program's institution, and informed consent was obtained from each participant.

The primary variables of interest for the present study included the following indices: (a) the first and last services contacted by participants before entry to the EI services, (b) DUP in weeks, and (c) the person or person responsible for initiating help-seeking which could be the patient, their family member(s)/friend(s), or the police. Participants were interviewed as to sociodemographic and clinical characteristics, pathways to care, hospitalizations, and arrests. The assessments were conducted within 30 days of entry into the EI services. All participants spoke English. Research staff members at each centre were trained in the proper use of all the instruments at the coordinating centre (London, ON).

## Participants

Each consecutive eligible patient was invited to participate. Eligible patients had voluntary status at the time of enrollment. Participants who were in hospital on an involuntary basis were not invited to participate in the study until their status was changed to voluntary due to ethical considerations. The participants were between 16 and 50 years of age and had a *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*,<sup>34</sup>

diagnosis of schizophrenia, schizoaffective disorder, delusional disorder, or psychotic disorder not otherwise specified. Diagnosis was confirmed using the Structured Clinical Interview for *DSM-IV* axis I Disorders (SCID).<sup>35</sup> Each participant had a “first episode of psychosis” defined as the first illness episode involving psychotic symptoms in a patient who had received less than 1 month of antipsychotic medication prior to involvement at the clinic. Because the population of interest was restricted to patients with a schizophrenia-spectrum disorder, the study excluded patients who had experienced a remission of symptoms for greater than 3 months prior to entry to minimize including patients who would be re-diagnosed with an affective psychosis at 1 year. The study also excluded, based upon the SCID, patients with psychosis symptoms who had a primary diagnosis of mental retardation, developmental disorder, or psychosis due to a general medical condition. Therefore, participants with a dual diagnosis of personality disorder or concurrent substance use were still eligible for the study providing they also had a schizophrenia-spectrum disorder.

### Sites

Many of the principal urban centers in the province of Ontario were represented by the study sites. Each program was affiliated with a university centre and represented a specialized service for the treatment of FEP patients living within the service catchment area. The programs accepted referrals from family physicians, ER visits, inpatient units, and in some cases self-referrals. All programs treated patients with a first-episode schizophrenia-spectrum disorder, with the exception of the program from Hamilton that also included patients with affective psychosis in the clinic but not in the study. The First Episode Psychosis program at the Centre for Addiction and Mental Health in Toronto served a population of 2.5 million people. The Prevention and Early Intervention Psychosis Program<sup>36</sup> in London served a population of approximately 400 000 people. At the time of the study, the Psychotic Disorders Clinic<sup>37</sup> at McMaster Hospital, Hamilton Health Sciences, consisted of an outpatient clinic and provided services to people living in the west end of Hamilton, a population of about 200 000. The Ottawa First Episode Program at the Ottawa General Hospital was a new service that offered care to the 1.2 million people living in the Champlain District of Eastern Ontario.

### Measures

*Community Mental Health Evaluation Initiative.* Socio-demographic characteristics such as age, gender, marital status, ethnicity, educational level achieved, and employment status at entry into the study were collected based on interviews that used the questionnaire developed by the Community Mental Health Evaluation Initiative

(CMHEI) in Ontario.<sup>38</sup> The CMHEI questionnaire was also used to collect information about the person who initiated help, hospitalization, and arrests within 6 months of entering the relevant early intervention program.

The CHMEI questionnaire was based on the same ethnic categories as the Statistics Canada census conducted in 2001.<sup>39</sup> Participants chose the ethnic identity of their choice: white, black, Latin American, First Nations and Aboriginal, West Asian, Southeast Asian, Chinese, Japanese, Filipino, South Asian, Korean, Arab, plus an “other category” for all other racial or ethnic groups that were not listed. These ethnic classifications were collapsed into the following groups: white, black, Asian, and the “other ethnicities” group. We constructed the ethnicity variable, in part, based on color. “One of the few logical reasons for demarcating groups using color as a basis is to investigate the impact of discrimination and racism and to investigate equity in access to healthcare.”<sup>40</sup> We recognize the inherent difficulties in ignoring the immense cultural differences among such diverse peoples classified into each group,<sup>41, 42</sup> but this important limitation was overlooked in order to increase the power to explore whether participants from various ethnic groups experience more adverse routes to care.

Consistent with Statistics Canada, we assumed that participants who self-assigned themselves to the White group represented European or Caucasian ancestry. Similarly, people of African Canadian, African American, African Caribbean, or African descent could have identified themselves as black. This identity is popular and widely adopted by people who consider themselves to be of African descent or ancestry in Canada<sup>43</sup> and is more commonly used by lay people than the terms “Afro-Canadian” or “African American,” which are more widely used by researchers.<sup>40</sup> Many black people in Ontario emigrated from the Caribbean during the 60s but not all—there is a subgroup whose descendants go back to the time of the Underground Railroad and, a more recent wave of black immigrants who came from the continent of Africa.<sup>44</sup> Black participants were classified into one group because the study had sufficient numbers of black participants for statistical analysis and because the literature on pathways to care has consistently focused on people of African, African Caribbean, or African American descent even though there are significant differences in culture between these people.

People representing the many diverse languages, cultures, and backgrounds of Asia were combined into one group. Therefore, the participants who identified themselves as West Asian, Southeast Asian, Chinese, Japanese, Filipino, South Asian, and Korean were combined to form the Asian group. (The one individual who identified him or herself as Arab was included in the West Asian group, to be consistent with the Statistics Canada category.) It would have been preferable to identify separate subgroups, eg, a Chinese or South East Asian group, but

our study sample did not have sufficient numbers to accommodate such a classification. By 2006, people from the continent of Asia represented the third and most recent wave of immigrants to Canada, surpassing people from the continent of Europe, who were the first, and the Caribbean, the second wave.<sup>25,45</sup> ([www.statcan.ca/bsolc/English/bosolc?catno=97-562-X2006001](http://www.statcan.ca/bsolc/English/bosolc?catno=97-562-X2006001). April 2, 2008).

Because Canadian society is a mosaic made up of many different ethnic groups, and because each ethnic group represents a very small proportion of the overall ethnic mix of the society,<sup>46</sup> we thought it was reasonable to classify all the remaining people of diverse ethnic heritages into the one group called the other ethnicities. Any participants who did not choose one of the white, black, or Asian identities were categorized into the other ethnicities group. Individuals who are typically coded as “Hispanic” under US classifications could endorse the category titled “Latin American.” The number of participants who were Latin American was insufficient to form a separate group, even though they formed the largest ethnic identity within the Other ethnicities group, followed next by First Nations people also known as people of Aboriginal or Native American descent.

#### *Circumstances of Onset of Symptoms and Relapse Schedule.*

The Circumstances of Onset of Symptoms and Relapse Schedule (CORS)<sup>30,47</sup> is a semistructured questionnaire that measures the pathways to care and the DUP for young people experiencing their first episode of psychosis. The questionnaire has been used in first-episode studies<sup>1,6,30,48,49</sup>. The CORS has demonstrated an interrater reliability (intraclass correlation) of 0.80 for DUP<sup>30</sup>. A detailed description of the CORS and its properties has been reported previously<sup>30,50,51</sup>.

This questionnaire uses 4 main sources of information to outline the pathways to care: the participant, a family member, the clinical charts, and a therapist/case manager. The main variables derived from the CORS included the following indices: onset of psychosis, the type of service contacted, the temporal sequence of services consulted, and the date treatment was initiated. The CORS outlines the sequence of all the formal services and informal supports contacted by participants seeking help for a first episode of psychosis. The types of services contacted in the pathways to care were classified into the following categories: ER, family doctor/walk-in-clinic, clergy/homeopathic practitioners/other non-medical contacts, psychologists, psychiatrists, school counselors, and psychiatric admissions. The first and last contacts are the most clinically relevant and the focus of most FEP studies.<sup>21</sup> The first contact may have a lasting influence on the individual’s adherence to treatment<sup>52</sup> and may contribute to delays in referral to specialized EI services if the participant is treated within the general mental health system.<sup>30,48</sup> The last contact may be the one that actually results in the referral to EI services.

DUP was estimated by determining the time between the onset of psychosis and the date of initiation of treatment. Initiation of treatment was defined as the date the participant started receiving antipsychotic medications for at least 1 month or the date the participant entered one of the EI services, whichever event occurred first.

The research coordinator and a principal investigator from the coordinating centre in London, who were experienced in using the CORS, explained the procedures based on the CORS manual. All research staff were trained to follow the CORS guidelines. The research staff had the opportunity to contact the research coordinator for guidance during the study whenever there were marked discrepancies between the 4 sources of information (patient, family, chart, and therapist).

#### *Statistical Analysis*

The data were analyzed using the SPSS version 14. Chi square was used to compare ethnic groups regarding clinical and demographic characteristics, ER use, hospitalizations, involuntary hospitalizations, and arrests within 6 months of EI services, as well as initiation of help seeking by self vs family/friends vs police. The data were also stratified by site to assess for significant differences between the samples regarding clinical and sociodemographic data. The percentage of patients taking the first step in the pathways to care was calculated for the total sample and for each group. Chi-square analyses were calculated to assess differences between groups in the use of services for the first and last contacts in the pathways to care. More specifically, a separate chi-square test was conducted to determine whether the proportion of participants in each ethnic group was equal in the use of each service contact (eg, ER use) vs all the other service contacts combined. All variables were combined with appropriate adjacent categories whenever 20% of cells for the chi-square analysis had an expected count of less than 5. Mean, median, and SD values were reported for age and DUP. One-way analysis of variance was used to calculate significant differences in mean age between the groups.

Logistic regression analysis was used to estimate the odds ratio of the first contact identified (eg, ER, family physician, etc) in the pathways to care. The following sociodemographic factors were included in the analysis: age, gender, marital status, ethnicity, employment status, educational level, diagnosis, and site. The following categories served as the reference group in the analysis for the previous categorical variables: “female,” “single,” “white,” “full-time,” “less than high school,” “schizophrenia,” and “Toronto.” Because DUP was not normally distributed, the nonparametric Kruskal-Wallis test was used to determine whether there were significant differences between the groups regarding DUP. All *P* values presented are 2-tailed, and *P* < .05 was considered statistically significant, with the exception of the analyses

for the first and last services contacted. These analyses involved multiple chi-square testing (7 times), therefore an adjusted  $P$  value of 0.007 ( $0.05/7 = 0.007$ ) was used based on the Bonferroni adjustment.

## Results

### *Clinical and Demographic Characteristics*

A total of 335 patients were admitted to the services and had agreed to care between December 2001 and December 2003. Two hundred and ninety seven patients (89%) met inclusion criteria, but only 200 participants (67%) were actually included in the study. The following reasons were provided for excluding the 97 participants:

1. 25 (26%) were deemed ineligible because they had received treatment for greater than 30 days or their IQ was below 70 (exclusion criteria);
2. 28 (29%) were not approached for pragmatic reasons: severity of paranoia or hostility, status of treatment “drop out,” limited fluency in English, brevity of psychotic episode, or involuntary status at a time when consent was required;
3. 44 (45%) eligible patients declined to participate.

Of the 200 participants included in the analysis, data on ethnicity were missing for 1 participant (0.5%). A majority of participants answered all questions, but data were missing for up to 5.5% for each analysis, with the exception of 29 participants (14.4%) for the analyses involving the proportion of people who initiated help seeking. Missing data represent information from items that could not be obtained from participants, their family members, or the charts. The proportion of missing data for each analysis was noted in the relevant tables. There were no significant differences in any of the clinical or demographic characteristics listed in table 1 between the participants for whom data were missing and for whom the data were complete.

Two hundred participants completed the study; 156 (78%) of them were male. A total of 121 participants (60.2%) identified themselves as white and 31 participants (15.4%) as black. Twenty-five participants (12.5%) identified with one of the following Asian groups: West Asian 5 (2.5%), Southeast Asian 5 (2.5%), Chinese 4 (2%), Japanese 3 (1.5%), Filipino 3 (1.5%), South Asian 2 (1.0%), Korean 2 (1.0%), and Arabian 1 (0.5%). The remaining 22 participants (11%) from the other ethnicities group were from various diverse ethnic groups: Latin American 8 (4.0%), First Nations and Aboriginal 5 (2.5%), along with the 9 participants (4.5%) who preferred to ascribe themselves to an ethnicity not listed above: Tibetan, Moroccan, Chinese/Trinidadian, West Indian, Guyanese, West Indian/Guyanese, Ethiopian, Croatian, and Somalian.

Table 1 shows there were no significant differences between the groups in terms of clinical and demographic

factors, but significant site differences were found. Toronto had the highest and Hamilton the lowest proportion of black participants; Hamilton and Toronto had the highest proportion of Asian participants; London had the highest proportion of participants from the other ethnicities group. The clinical and demographic characteristics of the sample were also analyzed by site and diagnosis (the data were not shown but are available upon request). With the exception of ethnicity, there were no significant differences between the sites for any of the sociodemographic variables and the same was true for diagnosis.

Even though the sample from Toronto had a greater proportion of people from the black group, compared with the 3 other sites (table 1), there were no significant differences between the sites in terms of the proportion of participants diagnosed with schizophrenia (Toronto had 45 [50.6%]; London 25 [45.5%]; Hamilton, 11 [32.4%]; and Ottawa, 17 [65.4%];  $\chi^2 = 6.851$ ;  $df = 3$ ;  $P = .08$ ). Nor were there significant site differences in the proportion of participants who accessed ER as their first point of contact (Toronto had 18 [23.4%]; London, 19 [35.8%]; Hamilton, 7 [20.6%]; and Ottawa, 12 [46.2%];  $\chi^2 = 7.185$ ;  $df = 3$ ;  $P = .07$ ).

### *Pathways to Care and Ethnicity*

Table 2 shows there were no significant ethnic differences regarding the people who initiated help seeking for psychosis.

Table 3 displays the first and the last contacts in the pathways to care as a separate panel for each group. Even though ER visits and family physicians were the most common contacts for all groups, participants from the Asian and the other ethnicities groups were more likely to use ER services as their first point of contact, compared with the black or white groups. As shown in table 3, twice as many participants from the Asian (41.7%) and the other ethnicities groups (52.4%) used ER services compared with participants from the black (22.2%) or the white (23.9%) groups, but this finding represented a trend.

At the first point of contact, more participants used nonmedical contacts, such as clergy, homeopathic, and naturopathic healers than psychologists or psychiatrists. There were no significant differences between the groups for this pattern. When the black, Asian, and other ethnicities groups were combined to decrease the proportion of cells with small expected counts, then a trend emerged suggesting that a greater proportion of participants from the white group accessed psychologists as the first point of contact compared to participants from the combined group ( $\chi^2 = 5.305$ ;  $df = 1$ ;  $P = .021$ ). Table 3 also displays the prevalence of participants who used each service contact as the last step in the pathways to care, by ethnicity. Admissions, psychiatrists, family physicians,

**Table 1.** Demographic Characteristics of the First-Episode Psychosis Sample by Ethnic Groups, *N* (%)

Demographic Characteristic	Ethnic Groups				Chi-square or Analysis of Variance Test ( <i>P</i> Value)
	White, <i>n</i> = 121	Black, <i>n</i> = 31	Asian, <sup>a</sup> <i>n</i> = 25	Other, <sup>b</sup> <i>n</i> = 22	
Gender					
Male	95 (60.9)	26 (16.7)	17 (10.9)	18 (11.5)	$\chi^2 = 2.297, df = 3, P = .513$
Female	26 (60.5)	5 (11.6)	8 (18.6)	4 (9.3)	
Mean age, <i>y</i> ( <i>SD</i> )	24.1 (6.7)	24.2 (4.8)	26.8 (8.7)	22.6 (5.3)	$F = 1.718, df = 3, P = .165$
Marital status					$\chi^2 = 11.218, df = 6, P = .082$
Married	11 (68.8)	0 (0.0)	4 (25.0)	1 (6.3)	
Separated /divorced	3 (30.0)	4 (40.0)	2 (20.0)	1 (10.0)	
Single/never married	107 (61.8)	27 (15.6)	19 (11.0)	20 (11.6)	
Highest education <sup>c</sup>					$\chi^2 = 11.561, df = 6, P = .073$
Less than high school	42 (60.9)	15 (21.7)	4 (5.8)	8 (11.6)	
Completed high school	29 (61.7)	8 (17.0)	4 (8.5)	6 (12.8)	
Any post secondary	50 (61.0)	8 (9.8)	17 (20.7)	7 (8.5)	
Employment status					$\chi^2 = 8.599, df = 9, P = .475$
Full time	40 (60.6)	14 (21.2)	6 (9.1)	6 (9.1)	
Part-time regular	26 (61.9)	4 (9.5)	7 (16.7)	5 (11.9)	
Part-time casual	4 (33.3)	4 (33.3)	2 (16.7)	2 (16.7)	
No job	46 (63.0)	9 (12.3)	10 (13.7)	8 (11.0)	
DSM-IV diagnosis <sup>d</sup>					$\chi^2 = 7.266, df = 3, P = .065^b$
Schizophrenia	53 (55.8)	21 (22.1)	9 (9.5)	12 (12.6)	
Schizophreniform	19 (57.6)	3 (9.1)	7 (21.2)	4 (12.1)	
Schizoaffective	15 (75.0)	2 (10.0)	2 (10.0)	1 (5.0)	
Delusional disorder	5 (71.4)	1 (14.3)	1 (14.3)	0 (0.0)	
Brief psychotic disorder	4 (80.0)	0 (0.0)	0 (0.0)	1 (20.1)	
Psychosis NOS	23 (62.2)	4 (10.8)	6 (16.2)	4 (10.8)	
Site <sup>e</sup>					$\chi^2 = 35.524, df = 9, P > .001$
Hamilton	25 (73.5)	1 (2.9)	6 (17.6)	2 (5.9)	
London	41 (73.2)	3 (5.4)	1 (1.8)	11 (19.6)	
Ottawa	17 (68.0)	3 (12.0)	3 (12.0)	2 (8.0)	
Toronto	38 (45.2)	24 (28.6)	15 (17.9)	7 (8.3)	

<sup>a</sup>The Asian groups included participant who identified themselves as West Asian 5 (2.5%), Southeast Asian 5 (2.5%), Chinese 4 (2%), Japanese 3 (1.5%), Filipino 3 (1.5%), South Asian 2 (1.0%), Korean 2 (1.0%), and Arab 1 (0.5%).

<sup>b</sup>The other ethnicities group included participants who identified themselves as Latin American 8 (4.0%), First Nations and Aboriginal 5 (2.5%), and ethnicities not listed as a choice: Tibetan, Moroccan, Chinese/Trinidadian, West Indian, Guyanese, West Indian/Guyanese, Ethiopian, Croatian, and Somalian.

<sup>c</sup>For the statistical analysis involving education, ethnicity was reclassified as white vs black vs all other categories to avoid cells with less than 5 expected values.

<sup>d</sup>For the statistical analysis involving diagnosis, the diagnoses were reclassified as schizophrenia vs all other schizophrenia-spectrum disorders to avoid cells with less than 5 expected values.

<sup>e</sup>For the statistical analysis involving site, ethnicity was reclassified as white vs all other categories to avoid cells with less than 5 expected values.

and ER services were the most commonly used as the last service contacts. No ethnic differences in the rate of use of these services were observed.

Table 4 presents the odds ratios for ER use (first point of contact only) by sociodemographic variables found to be associated with same while adjusting for the following independent variables: age, gender, marital status, education, ethnicity, employment status, diagnosis, and site. (All references to ER in this paragraph refer to the first point of contact.) The odds ratio of ER use for men in the sample was 4.80 times greater than that for women, which means that men were more than 4 times as likely

to use ER compared with women. Ethnicity was also a strong independent risk factor for ER use. The odds ratio of going to the ER for the Asian group was 4 times greater than that of the white group, and it was 3 times greater for the other ethnicities group compared with the white group. The odds ratio was approximately the same when comparing the black and white groups. Site differences were found in ER use. Participants from the London and Ottawa groups were significantly more likely to use ER as the first point of contact than the participants from the Toronto or Hamilton centers. Diagnosis did not emerge as a significant predictor of ER use.

**Table 2.** Initiation of Help Seeking, by Ethnicity and Total Sample, *N* (%)

Help Seeking					
Ethnicity	Initiated by Self	Initiated by Family or Friend	Initiated by Police	Total <sup>a</sup>	Chi-square Test
White group	36 (33.3)	58 (53.7)	14 (13.0)	108	$\chi^2 = 8.877$ , $df = 6, P = .181$
Black group	9 (40.9)	8 (36.4)	5 (22.7)	22	
Asian group	8 (40.0)	8 (40.0)	4 (20.0)	20	
Other ethnicities	3 (14.3)	16 (76.2)	2 (9.5)	21	
Total	56 (32.7)	90 (52.6)	25 (14.6)	171	

<sup>a</sup>Data are missing for 29 participants or 14.5% of the sample.

Table 5 shows that the rates of ER use (at any point in the pathways to care) ranged from 63.6% to 80.0% and the rates of hospitalization prior to EI services ranged from 41.9% to 63.6%. There were no significant differences between the groups in the proportion of participants who required ER services or hospitalization. Participants from the Asian group experienced significantly lower rates of involuntary hospitalization compared with the other groups. No significant differences were observed

in the rates of arrests within 6 months prior to entering EI services.

The median DUP for the sample was 22 weeks (table 6), and there was no evidence of significant differences between the 4 groups. The median number of service contacts was higher for the white group compared with the other groups. Participants from the white group reported a median of 3 treatment contacts prior to entering EI services, while the other groups reported only 2 contacts.

**Table 3.** First and Last Service Contacts in the Pathways to Care by Ethnic Group and Total Sample, *N* (%)

Ethnic Group	Emergency <sup>a</sup> Room	Family Doctor/ Walk-in Clinic	Clergy <sup>a</sup> / Homeopaths <sup>b</sup>	Psychologists	Psychiatrists	School counsellors <sup>a</sup>	Psychiatric Admissions <sup>c</sup>
First service contacted vs all other contacts combined <sup>d</sup>							
White group	28 (23.9)	35 (29.9)	14 (12.0)	14 (11.6)	9 (7.4)	7 (6.0)	9 (7.4)
Black group	6 (22.2)	10 (37.0)	5 (18.5)	2 (6.5)	3 (9.7)	0 (0.0)	1 (3.2)
Asian group	10 (41.7)	6 (25.0)	4 (16.7)	0 (0.0)	1 (4.0)	2 (8.3)	1 (4.0)
Other ethnicities	11 (52.4)	7 (33.3)	0 (0.0)	0 (0.0)	1 (4.5)	1 (4.8)	1 (4.5)
Total	55/189 (23.9)	58/189 (30.7)	23/189 (12.2)	16/199 (8.0)	14/199 (7.0)	10/189 (5.3)	12/199 (6.0)
$\chi^{2e,f}$ ( <i>P</i> value)	<i>P</i> = .023 NS <sup>g</sup>	<i>P</i> = .806	<i>P</i> = .223 <sup>h</sup>	<i>P</i> = .100	<i>P</i> = .820	<i>P</i> = .557	<i>P</i> = .772
Last service contacted vs all other contacts combined <sup>d</sup>							
White group	19 (16.4)	14 (12.1)	0 (0.0)	4 (3.4)	20 (17.2)	3 (2.6)	48 (41.4)
Black group	2 (6.9)	5 (17.2)	0 (0.0)	1 (3.4)	7 (24.1)	2 (6.9)	10 (34.5)
Asian group	4 (17.4)	4 (17.4)	0 (0.0)	0 (0.0)	2 (8.7)	0 (0.0)	10 (43.5)
Other ethnicities	1 (4.8)	5 (23.8)	0 (0.0)	0 (0.0)	4 (19.0)	5 (2.6)	8 (38.1)
Total <sup>a</sup>	26/189 (13.8)	28/189 (14.8)	0/189 (0.0)	5/189 (2.6)	33/189 (17.5)	5/189 (2.6)	76/189 (40.2)
$\chi^{2e,f}$ ( <i>P</i> value)	<i>P</i> = .319	<i>P</i> = .513	<i>N/A</i>	<i>P</i> = .669	<i>P</i> = .539	<i>P</i> = .357	<i>P</i> = .896

<sup>a</sup>Data are missing for 5.5% of the sample.

<sup>b</sup>The title “homeopaths” includes homeopathic practitioners and traditional medicine healers.

<sup>c</sup>Data are missing for 0.5% of the sample.

<sup>d</sup>The numbers and percentages for the variable of “all other service contacts combined” were not displayed for each chi-square test to simplify the table. The row percentages for each group represent the percentage of participants from each ethnicity group that used the relevant service contact. The total of the row percentages (not shown) may be different from 100 because of missing information for some service contacts. The row percentages for each category labeled “total” represents the total percentage of that sample who used a given service contact.

<sup>e</sup>Each chi-square analyses compare the 4 groups with respect to the first service contacted or last service contacted (whichever is relevant) vs all other contacts combined.

<sup>f</sup>Table 3 involves multiple chi-square testing therefore an adjusted *P* value of .007 (.05/7 = 0.007) was used based on the Bonferroni adjustment.

<sup>g</sup>The use of emergency room as the first point of contact represents a trend (*P* = .023) based on the Bonferroni adjustment.

<sup>h</sup>When the black, Asian, and other ethnicities groups are combined to decrease the proportion of cells with small expected counts, a trend emerges ( $\chi^2 = 5.305$ ;  $df = 1$ ;  $P = .021$ ).

**Table 4.** Adjusted Odds Ratios of ER Use as the First Point of Contact, by Clinical and Demographic Characteristics

Variable	Adjusted Odds Ratio <sup>a</sup>	95% CI	P Value
Gender			.004
Female <sup>b</sup>	1.00		
Male	4.80	1.64–14.12	
Site			
Toronto <sup>b</sup>	1.00		.051
Hamilton	0.95	0.33–2.75	.919
London	2.75	1.14–6.65	.025
Ottawa	2.76	0.97–7.87	.058
Ethnicity			
White group <sup>b</sup>	1.00		.017
Black group	1.11	0.37–3.27	.857
Asian group	3.97	1.39–11.34	.010
Other ethnicities	3.27	1.16–9.18	.025

<sup>a</sup>The variables entered into the logistic regression included age, gender, marital status, education, ethnicity, employment status, diagnosis, and site.

<sup>b</sup>Reference group.

## Discussion

This study explored whether there were any inequities in accessing EI care for FEP patients in Ontario. After adjusting for relevant sociodemographic factors, participants from the Asian and the other ethnicities groups were 4 times more likely to use ER as their first point of contact compared with participants from the white or black groups. (The other ethnicities group included participants identified as Latin American and Aboriginal). This finding should raise concerns. Participants from the Asian and other ethnicities groups experienced disproportionately high, yet early, ER exposure, experiences that have been shown to promote future hospitalizations and to deter outpatient engagement.<sup>53</sup>

It is conceivable that there may be cultural practices adopted by these 2 groups that make them vulnerable to ER use as the first point of contact. Unfortunately, explanations or discussions on the role of cultural practices based on this study's findings may be misleading or even inaccurate given the limitations in the design; this study assigned people of diverse cultures into each group. However, there were no significant ethnic differences in education, employment status, or any demographic factors that could be considered proxies for socioeconomic status. The lack of interaction between ethnicity and sociodemographic factors suggests that social disadvantage was not an important issue, but replication of this finding is warranted with a larger sample and a more culturally valid classification system.

In attempting to understand the higher use of ER by the Asian and other ethnicities groups,<sup>12</sup> one should consider the role of problems with the healthcare system, in particular, the language barriers faced by patients and the

level of cultural competency demonstrated by the healthcare professionals. One might argue that a critical mass of patients from a particular ethnic group may be needed before healthcare professionals obtain the requisite experience needed to provide culturally and linguistically appropriate services. Given the large number of different Asian languages and cultures within Canada, and the relatively small proportion of people who represent each Asian culture, (the same argument could be made for the other ethnicities group), it may be a challenge for each healthcare service to develop the requisite cultural competency. The same issues apply to the cultures represented by the "other ethnicities group." Communities that have a lower proportion of participants from these ethnic groups may be more vulnerable to these problems, and hence, more apt to direct these patients to ER services. For example, in our study, London and Ottawa had the lowest proportion of participants from the Asian group; participants from London and Ottawa were twice as likely to use ER services, compared with Toronto and Hamilton.

Other studies suggest that ER services are utilized more often by ethnic groups if language poses a significant barrier to usual mental healthcare services.<sup>12</sup> Although all participants spoke sufficient English to enter this study, previous work suggests that some bilingual individuals with psychosis lose some of their proficiency in their non-dominant language during an acute bout of psychosis.<sup>54</sup> The nuances of verbal communication are more important for mental health than physical health problems, conceivably because mental health assessments of psychosis are more reliant upon language than assessments of physical health. Along related but different lines, knowledge about how to access the system may be more limited for ethnic groups who represent more recent arrivals to Canada. On the surface, these hypotheses appear plausible, but they all require the scrutiny of future research to assess their usefulness in understanding the differential use of ER.

Economic factors are considered to be significant determinants of disparities in accessing healthcare in a privately funded healthcare system<sup>12</sup>; however, these factors may also be important in a publicly funded system, such as the one in Ontario. A trend emerged suggesting that psychologist services, as the first point of contact, were more common among participants from the white group. Psychologists are not covered by the universal healthcare plan in Ontario. Although we failed to collect data on private insurance coverage, this trend suggests that there may be ethnic disparities in private healthcare coverage in Ontario. This trend warrants further investigation into whether disparities exist in accessing psychologist and counseling services. Nevertheless, other causes for this disparity, such as cultural or social factors, should be investigated; eg, patient attitudes toward psychologists and counseling services. In comparison to their



**Table 5.** Prevalence of Hospital-Based Services and Arrests<sup>a</sup> Prior to Early Intervention (EI) services, by Ethnicity and Total Sample

Variable	White Group, n (%)	Black Group, n (%)	Asian Group, n (%)	Other Ethnicities, n (%)	Total, n (%)	Chi-Square Statistic <sup>b</sup> (P Value)
ER <sup>c</sup> vs no ER visits	78 (64.5), 43 (35.5)	20 (64.5), 11 (35.5)	20 (80.0), 5 (20.0)	14 (63.6), 8 (36.4)	132 (66.3), 67 (33.7)	$\chi^2 = 2.398$ , $df = 3$ , $P = .494$
Hospitalization <sup>d</sup> vs no hospitalization	69 (61.6), 43 (38.4)	13 (41.9), 18 (58.1)	15 (62.5), 9 (37.5)	14 (63.6), 8 (36.4)	111 (58.7), 78 (41.3)	$\chi^2 = 4.349$ , $df = 3$ , $P = .226$
Involuntary <sup>e</sup> vs voluntary hospitalization	54 (72.0), 21 (28.0)	9 (69.2), 4 (30.8)	6 (37.5), 10 (62.5)	12 (85.7), 2 (14.3)	81 (68.6), 37 (31.4)	$\chi^2 = 9.500$ , $df = 3$ , $P = .023$
Arrested 6 mo prior to EI <sup>f</sup> vs no arrests	14 (11.7), 106 (88.3)	6 (19.4), 25 (80.6)	1 (4.0), 24 (96.0)	2 (9.1), 20 (90.9)	175 (88.4), 23 (11.6)	$\chi^2 = 3.358$ , $df = 3$ , $P = .340$

<sup>a</sup>Arrests within 6 months prior to entry to early intervention services were included in the analysis.

<sup>b</sup>The chi-square analyses compare the 4 groups with respect to the proportion who used the service vs those who did not use the relevant service.

<sup>c</sup>ER refers to emergency room use at any point in the pathways to care. Data are missing for 1 participant or 0.5% of the sample.

<sup>d</sup>Data are missing for 11 participants or 5.5% of the sample.

<sup>e</sup>Note that 40.8% of the total sample was never hospitalized prior to EI services; therefore, the comparison was between involuntary vs voluntary hospitalization.

<sup>f</sup>Data are missing for 2 participants or 1.0% of the sample.

white counterparts, Asian and black patients with non-affective psychosis in the United States were less likely to believe their problems were psychological in nature and less likely to perceive themselves as needing treatment for psychiatric problems.<sup>10,13,22</sup>

On the other hand, compared with the other groups, participants from the white group had significantly more service contacts before entering EI services. This finding may reflect better engagement with service contacts who may share the same cultural perspective as the participants from the white group.<sup>40,55</sup> In addition, it may also reflect a surprising tendency for mental health services to delay treatment of a first episode of psychosis if the individual is already in the system for treatment of prodromal symptoms when they convert to psychosis,<sup>30</sup> even though this delay in accessing EI services may not be sufficient to lead to an overall increase in DUP.<sup>56</sup>

Overall, our study findings suggest there were many more similarities than significant differences in the pathways to care for the various ethnic groups. Family physicians and ER services were commonly accessed by all groups as the first point of contact. Two Canadian studies have already demonstrated the prominent role that ER services and family physicians play in facilitating more direct pathways to care.<sup>29,30</sup> In contrast, unlike these 2 previous Canadian studies, a considerable proportion of participants from our study also approached naturopaths, clergy, and other nonmedical supports as their first point of contact in their pathways to care. In fact, clergy, naturopathic healers, and other nonmedical contacts were used more commonly as the first point of contact than psychiatrists and psychologists. Although many patients from developing countries and from ethnic minority communities seek help from both medical and alternative therapy practices,<sup>32,57</sup> current research suggests that nonmedical contacts may be sought preferentially by patients if there is denial about the presence of a medical illness or if there is a greater sense of stigma associated with accessing mental health services.<sup>58</sup> Regardless, there is a growing trend towards use of traditional healing practices and alternative therapies for psychiatric problems,<sup>59</sup> and our findings may reflect this reality.

We also found high rates of family physician and family member involvement for all ethnic groups. Some studies conducted in the United States have found high rates of involvement by family physicians for African Americans,<sup>53</sup> while other studies have found low rates of involvement by family members for an episode of psychosis.<sup>10,15</sup> On the other hand, this discrepancy between our findings and previous work could be a result of regional differences in engagement, cultural sensitivity, or acculturation, but it may simply represent differences in sampling methods.

In the present study, DUP was comparable across the 4 groups, a finding that was first obtained in the Aetiology

**Table 6.** Treatment Delay (wk), Total Number of Services Contacted in the Pathways to Early Intervention (EI) Services

Index	White Group	Black Group	Asian Group	Other Ethnicities	Total Sample	Chi-Square Test <sup>a</sup>	
DUP in wk <sup>b</sup>	Mean (SD), median, <i>n</i>	57.2 (111.2), 22.4, 118.0	87.6 (152.0), 31.3, 30.0	63.2 (87.4), 29.4, 25.0	37.2 (46.5), 19.5, 20.0	60.6 (111.2), 22.1, 193.0	<i>P</i> =.483
Total contacts prior to EI	Mean (SD), median, <i>n</i>	3.3 (2.2), 3.0, 121.0	2.2 (1.7), 2.0, 31.0	2.5 (1.3), 2.0, 46.0	2.4 (1.3), 2.0, 22.0	2.9 (2.0), 3.0, 200.0	<i>P</i> =.012

Kruskal-Wallis Test was performed to compare the 4 groups.  
DUP, Data are missing for 3.5% of the sample.

and Ethnicity in Schizophrenia and Other Psychoses.<sup>20</sup> Even though most previous studies found more compulsory admissions among people of African descent compared with the white majority,<sup>11</sup> in our study, participants from the black group did not experience inequities in the use of involuntary admissions or arrests, compared with participants from the white group. These findings are quite inconsistent with results of previous work<sup>10,16,17,60</sup> including the Canadian study conducted in Montreal<sup>28</sup> and may reflect the high levels of family physician and family member involvement experienced by our sample. Instead, in our study, participants from the Asian group experienced significantly less involuntary hospitalizations but more ER use. Additional research is needed to understand this finding. What is the role of language barriers, cultural competencies, and cultural stereotypes? Is there evidence to support ethnic differences in clinical presentations of psychosis?

Of note, a relatively high proportion of black participants were present in the study sample. Black participants made up 15.5% of the total sample and 25% of the subsample from Toronto, and yet, in 2001, the Canadian Census revealed that individuals who identified themselves as black comprised 6.7% of the population in Toronto, the greatest proportion of black people in Ontario.<sup>61</sup> ([www12.statcan.ca/English/profil/o2.www12.statcan.ca/English/profil/01/cpo1/details/page.cfm?](http://www12.statcan.ca/English/profil/o2.www12.statcan.ca/English/profil/01/cpo1/details/page.cfm?)) Sampling bias is the most probable cause for the relatively high proportion of black participants. Nevertheless, in the future, Canadian studies should address this issue because Canadian data are lacking. Patients of African descent, compared with patients of East Indian descent, were over-represented in a first-episode program in Trinidad.<sup>62</sup> Other studies conducted in the United States<sup>63–65</sup>, the United Kingdom,<sup>16,66,67</sup> The Netherlands, and Sweden<sup>68</sup> have also reported a higher diagnostic distribution of schizophrenia among people of African descent. However, ethnic differences in diagnosis were absent in a previous study where raters were blind to ethnicity,<sup>63</sup> suggesting that rater bias or cultural differences may play a role.<sup>69</sup> These diagnostic controversies highlight the need to examine the social, environmental, and cultural factors that are associated with schizophrenia.<sup>70,71</sup>

#### Limitations of the Study

Because the present study involved a convenience sample, the design should be viewed as exploratory, the results should be considered as preliminary, and the findings should be interpreted cautiously. Generalization of the findings to other regions or to nonclinic samples is not warranted. Despite these limitations, this study is of value because it is the first one, to the best of our knowledge, to examine ethnic differences in the pathways to care in Canada, and it is fairly representative of first episode

of psychosis patients treated at EI services in large urban centers in Ontario.

The actual case finding rate for this study is unknown but may be short of the annual incidence rate of 7–14 per 100 000 population, aged 15–54 years, reported for schizophrenia.<sup>57</sup> We did not conduct a leakage study to estimate the proportion of eligible persons who were missed. Uncontrolled site factors, such as the referral practices and the degree of competing services in the area, as well as the level of awareness of a new EI service, could have limited case finding for all eligible patients.<sup>1</sup>

The degree of rater drift and interrater reliability of the CORS for pathways to care was not established. This is a common limitation that exists in other pathways to care studies.<sup>10,16</sup> In fact, a recent review revealed that none of the studies disclosed information on the psychometric properties of the measures used to specifically assess pathways to care.<sup>21</sup>

Our study excluded non-English speaking patients, thereby setting up a language barrier for entry of some patients, most likely immigrants less fluent in English. At the same time, we failed to collect data on the language spoken in the home or the immigration status of participants.

For statistical purposes, the present study classified many individuals from different ethnic communities into 4 groups. Therefore, the findings fail to represent any one specific ethnic identity or culture. The heterogeneity within each of the 4 groups may obscure the true meaning of the findings. In many ways, the findings raise more questions than they answer, but they also highlight the need for future studies on a much larger scale with classifications that are more culturally valid.

We have chosen to use the term ethnicity rather than race for the present study because the ethnic differences were conceptualized as cultural and fluid, as opposed to innate or biological. We acknowledge that there are many different ways to group people from different ethnic groups and races and that the ethnic classification that we used was somewhat subjective, arbitrary, and did not necessarily reflect the diversity of perspectives or identities represented by the participants from each group. Many researchers struggle with the operationalization of ethnicity<sup>8,41,72</sup>; researchers want definitions that are scientifically valid yet capture the preferences of the individuals involved. Nevertheless, ethnic classifications are continually changing because they are inherently contextual, historical, often political, and somewhat sensitive and controversial.<sup>8</sup> Because of these limitations, future research needs to better delineate the concepts of ethnicity and race and yet remain relevant within a pluralistic society. Unless future research adopts more culturally valid groupings, science will fail to advance our understanding of the reasons behind ethnic differences. Despite these limitations, society needs to support research on ethnicity to better understand the impact of culture and discrimination upon healthcare utilization and out-

comes and to document any inequalities for vulnerable groups, so that these disparities can be addressed.

## Conclusions

Research needs to establish the reliability and validity of the empirical tools that are designed to assess the pathways to care. Better research methods are needed to operationalize ethnicity and to define the degree of cultural diversity that exists within and between groups. Future research should examine whether regional differences exist regarding access to care for certain ethnic groups. Rates of admission for hospitalization and ER use need to be examined for a first episode of psychosis by different ethnic groups around the world and within a Canadian context.

Overall, few ethnic disparities were found in the pathways to care, but the disparity in ER use as the first point of contact, if replicated, may have implications for healthcare providers and the system. There may be a need not only to assess recent immigrants in all their languages and dialects to fully gauge the nuances of their histories for psychosis but also to improve rapport and engagement.<sup>54</sup> The practice of relying upon family members or untrained volunteers for translation needs to be replaced with cultural interpretation services that meet government standards. High standards and excellent quality of care for EI services may not be sufficient for those programs that serve diverse ethnic communities; more healthcare providers may need to be hired who reflect the diversity of cultures and languages represented in the communities served in order to improve engagement and cultural sensitivity. In general, the healthcare system may need more specific information from ethnic leaders or elders about some of the more complex backgrounds and diverse experiences faced by certain ethnic groups to better serve and engage these populations. Clinicians may need to learn more details about the nonmedical supports and networks young people may seek help from to work more effectively with these youth and their networks. By identifying these important social and community supports, healthcare providers may be able to help young people navigate through the complicated mental healthcare system. Clinicians and researchers could approach these networks to help educate the various ethnic communities about psychosis and to streamline access to early intervention services for vulnerable groups who have traditionally experienced challenges accessing the healthcare system. These practical recommendations will need to be evaluated in their own right to assess whether they are feasible and whether they make a meaningful difference in accessing care.

In conclusion, the extent to which ethnic variations in pathways to care are a result of the practices of mental health practitioners, the structure and composition of our healthcare system, or the cultural beliefs and customs

of various ethnic groups remains unclear. However, it is clear that as centers around the world become more diverse, EI services will need to engage and to meet the varied needs of young people living within increasingly multiethnic and multilingual societies.

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