Use of mental health care for nonpsychotic conditions by immigrants in different admission classes and by refugees in Ontario, Canada

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ABSTRACT

Background: Most Canadian newcomers are admitted in the economic, family, or refugee class, each of which has its own selection criteria and experiences. Evidence has shown various risks for mental health disorders across admission classes, but the respective service-use patterns for people in these classes are unknown. In this study, we compared service use for nonpsychotic mental health disorders by newcomers in various admission classes with that of long-term residents (i.e., Canadian-born persons or immigrants before 1985) in urban Ontario.

Methods: In this population-based matched cross-sectional study, we linked health service databases to the Ontario portion of the Citizenship and Immigration Canada database. Outcomes were mental health visits to primary care physicians, mental health visits to psychiatrists, and emergency department visits or hospital admissions. We measured service use for recent immigrants (those who arrived in Ontario between 2002 and 2007; n = 359 673). We compared service use by immigrants in each admission class during the first 5 years in Canada with use by age- and sex-matched long-term residents. We measured likelihood of access to each service and intensity of use of each service using conditional logistic regression and negative binomial models.

Results: Economic and family class newcomers were less likely than long-term residents to use primary mental health care. The use of primary mental health care by female refugees did not differ from that of matched long-term residents, but use of such care by male refugees was higher (odds ratio 1.14, 95% confidence interval 1.09–1.19). Immigrants in all admission classes were less likely to use psychiatric services and hospital services for mental health care. Exceptions were men in the economic and family classes, whose intensity of hospital visits was similar to that of matched long-term residents.

Interpretation: Immigrants in all admission classes generally used less care for nonpsychotic disorders than long-term residents, although male refugees used more primary care. Future research should examine how mental health needs align with service use, particularly for more vulnerable groups such as refugees.

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➢ THE USE OF HEALTH SERVICES BY IMMIGRANTS HAS garnered substantial attention from international policy-makers, media, and advocates.[1-3] However, there is a paucity of empirical research on patterns of immigrants' health service use, particularly in Canada, to inform policy changes in this area.[4,5] Moreover, existing research often considers immigrants as a single group,[6] despite wide variation in the context of their exit situations, entrance conditions, and resettlement experiences. One area of variation is the method (i.e., class) of entry.

Canada has 3 main admission classes, with differing selection criteria: economic, family, and refugee (see Appendix A for definitions). Selection criteria related to health and occupational skills are most stringent for economic immigrants, who are expected to demonstrate reasonable health and the potential to contribute to Canada's economy. The selection criteria are less stringent for the other 2 classes, through which people are admitted because they are the relatives of Canadians and permanent residents (family class) or in need of protection (refugees).[7,8] Potential immigrants to Canada, including refugees, undergo an immigration medical examination. The results of these exams are considered to various degrees for different classes of potential immigrants when their eligibility for admission is determined. The examination for adults consists of a detailed medical history and physical examination, which includes chest radiography, urinalysis for protein, testing for syphilis, testing for HIV, and a review of mental state.[9]

Evidence indicates various rates of general health disorders (e.g., infectious diseases, liver cancer)[10] and nonpsychotic mental health disorders (e.g., post-traumatic stress disorder, depression)[8,11-15] across admission groups. Regarding mental health, there is also evidence of postmigration differences among admission classes, with persons admitted in the refugee class having greater exposure to mental health stressors, such as socio-economic disadvantage, concerns about family in the previous country, and limited social support.[8,16]

Despite this variation, there is a lack of literature examining patterns of mental health care use for newcomers in the different admission classes. Given the multitude of postmigration stressors, the period after arrival is an important time for immigrants to be able to link to mental health services.[7,17,18] If unrecognized and untreated, mental health challenges can adversely affect an immigrant's successful adaptation and functioning in the new country.[8]

In the study presented here, we aimed to describe the characteristics of recent adult immigrants to urban Ontario by admission class and sex and then to compare service use (primary care visits, visits for psychiatric care, and hospital use) for nonpsychotic mental disorders by recent immigrants in different admission classes and sex groups with use of the same services by matched long-term residents (i.e., Canadian-born persons or immigrants who arrived before 1985) in Ontario. Given the health and economic criteria that newcomers admitted in the economic class must meet, one study hypothesis was that immigrants in this class would have lower use of all mental health services than long-term residents. Because refugees must meet less stringent screening criteria and they are exposed to stressors before and after immigration, the second hypothesis was that refugees' mental health care use would be higher than that of long-term residents. There was no study hypothesis concerning immigrants admitted in the family class because, to the authors' knowledge, there is no literature to inform a hypothesis and the selection criteria result in considerable heterogeneity within this group.[18]

This study was conducted in a single-payer health care system where access to physician and hospital services was not directly affected by ability to pay. During the study period, provision of health insurance to refugees was similar to provision of health insurance to the other 2 classes of immigrants.

Methods

For this population-based, cross-sectional study, we used administrative data accessed through a research agreement between the Ontario Ministry of Health and Long-Term Care and the Institute for Clinical Evaluative Sciences (ICES). The protocol was approved by the research ethics boards of the University of Toronto and Sunnybrook Health Sciences Centre in Toronto, Ontario.

Data sources. We linked several databases using unique, encoded identifiers and analyzed the data at ICES. Ontario residents are eligible for the province's single-payer, universal health care plan, the Ontario Health Insurance Plan (OHIP). OHIP insures medically necessary care delivered by physicians and in hospital settings without user fees, copayments, or deductibles. Immigrants are eligible for this coverage after residing in Ontario for 3 months. For refugees, the wait time is variable and often longer than 3 months.[19] We determined outpatient physician visits (for primary mental

health care and psychiatric care) from the OHIP database, categorizing visits by type of provider visited on the basis of OHIP specialty codes (codes for primary care visits = 00, 01; code for psychiatrist visits = 19). The Registered Persons Database, Ontario's health care registry, includes the age, sex, and postal code of every Ontario resident who is eligible for OHIP. We determined hospital admissions from the Canadian Institute for Health Information's Discharge Abstract Database and the Ontario Mental Health Reporting System. We identified emergency department visits for mental health care from the National Ambulatory Care Reporting System. Using Statistics Canada's definition of urban versus rural areas, we identified immigrants with an urban residence using Statistics Canada's Postal Code Conversion File, which links patients' postal codes to dissemination areas in the 2001 and 2006 censuses[20] (see Appendix B). We also derived neighbourhood income quintiles from these census data (see Appendix B).

We identified immigrants through the Ontario portion of the Citizenship and Immigration Canada (CIC) database, which contains individual-level demographic information for Ontario's permanent residents with landing dates from 1985 to 2010. A validation[21] of the linkage between the Ontario CIC database and the Registered Persons Database showed that 84.4% of records initially in the Ontario CIC database were successfully linked.[22,23] For our descriptive analysis, we used various demographic and immigration characteristics from the Ontario CIC database, including age, sex, admission class, education level, and language-speaking abilities. Because comparable data were not available for long-term residents, this information could not be used in the adjusted analysis.

Study populations. The immigrant sample was drawn from individuals in the Ontario CIC database who arrived from 2002 to 2007. In 2002, Canada introduced the *Immigration and Refugee Protection Act,* which changed the process for refugee selection to place greater emphasis on the refugee's need for protection and less on his or her ability to become established.[24,25] Other eligibility requirements for the immigrant sample included residence in Ontario with OHIP coverage, age 18–105 years, and residence in a metropolitan area. We excluded rural populations, because most immigrants settle in urban areas.[26,27] Also excluded were those who lived in more than one country before immigration to Canada, those whose country of origin could

not be classified, those in the "other" admission class (estimated as < 5%), and those with missing data for area-level income quintile.

Eligible long-term residents were Ontario residents with OHIP coverage, aged 18–105 years, who lived in metropolitan areas and who were not listed in the Ontario CIC database. The long-term residents were mostly Canadian-born but also included newcomers who settled in Ontario before 1985.

Only immigrants whose intended province of settlement was Ontario were included in the available CIC data. To avoid misclassifying as long-term residents any immigrants who were not in the Ontario CIC database, we excluded individuals not in the CIC database who first became eligible for OHIP after 1993.

The immigrant sample was matched 1:1 with the long-term resident sample on sex and birth date. Of the final immigrant sample (163 298 men and 196 375 women), 99.9% were matched to a long-term resident.

Independent variables. Most immigrants are admitted in one of the following classes: economic (i.e., persons who bring needed skills), family (spouses, common-law partners, dependent children, or parents of Canadians or permanent residents), and refugees (persons in need of protection) (see Appendix A).

We matched participants by sex and stratified the analyses by sex because women are more likely to experience depressive symptoms and are more likely to use mental health services.[28–32] Given these differences, it has been recommended that research on mental health and the use of mental health care consider women separately from men.[33]

We matched on birth date because age is related to use of mental health services. For example, middle-aged persons are reportedly more likely than younger adults or older adults to use specialty mental health services.[30,34,35]

We included neighbourhood income quintile as a covariate in the adjusted analysis because immigrants are over-represented in disadvantaged areas.[7,36] In turn, these disadvantaged areas are associated with lower access to outpatient mental health care,[37,38] even in publicly funded systems where patients experience fewer financial barriers to using mental health services.[39] Disadvantage can also be considered a proxy for mental health need.[40]

The Ontario CIC database also provided information on immigrant characteristics at landing that were used for descriptive purposes.

Service-use outcomes. We measured 3 mental health service-use outcomes over the study period (2002–2012): outpatient visits to primary care physicians, outpatient visits to psychiatrists, and a composite of emergency department visits and hospital admissions. For each immigrant and his or her matched long-term resident, service use was measured over the same 5 years following the start of the immigrant's eligibility for OHIP. Short-term mental health admissions (i.e., 72 hours or less) were excluded because of limitations in the available diagnostic information. We used the codes listed in Appendix C to identify primary care visits for nonpsychotic mental health reasons. These codes have been used in previous studies, which have shown sensitivity of 81% and specificity of 97% for identifying mental health visits to primary care physicians.[41,42] The OHIP database records one diagnostic code per visit. Emergency departments and hospital admission databases allow up to 16 and 25 diagnostic codes, respectively, with the first being the diagnosis most responsible for the visit or admission. In the primary analysis, emergency department visits and hospital admissions were included if the most responsible diagnosis was a mental health code based on codes from the International Classification of Diseases and Related Health Problems, Ninth Revision (see Appendix C for codes and their definitions). A sensitivity analysis examined hospital use where any diagnosis field was related to a nonpsychotic mental disorder (Appendices D and E).

Statistical analysis. Summary data for demographic characteristics were calculated for immigrants in different admission classes and for long-term residents, with stratification by sex. We used t tests and χ^2 tests to examine the statistical significance of differences across admission classes. In sex-stratified unadjusted analyses, for each of primary care, psychiatric care, and hospital care, we calculated both the proportion of the sample with any service use and the mean number of visits among those with any service use.

We used adjusted analyses for the same outcomes to model access (i.e., any service use) within the entire sample and the intensity of service use (i.e., counts of uses) among those with any service use. Access was modelled using conditional logistic regression models,[43] and utilization among those with any access was modelled using negative binomial models with generalized estimating equations with exchangeable correlation structures. We used these models because they

accounted for the outcome types (binary and counts, respectively) and also accounted for the matched nature of the data. The measures of effect derived from the models were odds ratios (ORs) and rate ratios (RRs), respectively. We selected negative binomial models instead of other count models after calculating predicted probabilities and comparing them with observed data. Negative binomial models best fit the data and demonstrated that the frequencies of zeroes were not beyond the fitted regression models.[44]

We used sex-stratified models, adjusted for area-level income quintile, to compare service use by newcomers with service use by matched long-term residents. These models were run for men and women in each of the economic, family, and refugee classes.

All analyses were conducted with SAS software, version 9.3 (SAS Institute Inc., Cary, NC).

Results

Among immigrants in this study (n = 359 673), most entered in the economic class (170 742 [47.5%]), with 137 385 (38.2%) admitted as family immigrants and 51 546 (14.3%) admitted as refugees. Across admission groups, those who entered in the economic class were more commonly men and had more than high school education (Table 1; $p < 0.001$ for all comparisons). Relative to newcomers in other admission classes, family class immigrants were more likely to be older, female, and not to speak English or French. Refugees were most commonly in the most disadvantaged area-level income quintile. Compared with immigrants, long-term residents were more commonly in the most affluent income quintile. These differences were all statistically significant ($p < 0.001$ for all comparisons).

The results were generally similar in the unadjusted and adjusted analyses (i.e., after adjustment for area-level income quintile) (Table 2, Figures 1 and 2). Immigrants in all admission classes and of both sexes were generally less likely than their matched long-term residents to use all 3 types of mental health services (Figure 1). The exceptions were for primary mental health care, where male refugees were more likely than long-term residents to have at least one visit (OR 1.14, 95% CI 1.09–1.19) and where the likelihood of use by female refugees was not statistically different from that for long-term residents (OR 1.04, 95% CI 1.00–1.09).

Regarding intensity of use, immigrants in all admission classes used less of each service than did long-term residents, with 2 exceptions (Figure 2). For use of mental health care in hospital, male immigrants in 2 of

Table 1

Characteristics of adult immigrants to Ontario, Canada, by admission class (economic, family, or refugees), who arrived to urban Ontario between 2002 and 2007 and of matched long-term residents, by sex

Characteristic	Immigrant admission class*				Long-term residents‡
	Economic	Family	Refugee	All immigrants†	
Men					
No. (% of total)	86 933 (53.2)	50 015 (30.6)	26 350 (16.1)	163 298 (100.0)	163 263
Age at arrival, yr, mean ± SD	35.48 ± 8.33	39.88 ± 16.79	34.75 ± 11.12	36.71 ± 12.15	
Income quintile (area level)					
1 (least affluent)	33 624 (38.7)	15 317 (30.6)	13 487 (51.2)	62 428 (38.2)	29 151 (17.9)
2	20 381 (23.4)	12 878 (25.7)	6 456 (24.5)	39 715 (24.3)	32 680 (20.0)
3	14 520 (16.7)	10 089 (20.2)	3 434 (13.0)	28 043 (17.2)	33 356 (20.4)
4	10 649 (12.2)	7 138 (14.3)	1 985 (7.5)	19 772 (12.1)	34 282 (21.0)
5 (most affluent)	7 759 (8.9)	4 593 (9.2)	988 (3.7)	13 340 (8.2)	33 794 (20.7)
Highest level of education					
More than high school	76 694 (88.2)	23 844 (47.7)	10 623 (40.3)	111 161 (68.1)	
High school	9 321 (10.7)	24 467 (48.9)	14 988 (56.9)	48 776 (29.9)	
None	918 (1.1)	1 704 (3.4)	739 (2.8)	3 361 (2.1)	
Language (spoken)					
English or French	67 420 (77.6)	29 631 (59.2)	20 921 (79.4)	117 972 (72.2)	
Neither English nor French	19 513 (22.4)	20 384 (40.8)	5 429 (20.6)	45 326 (27.8)	
Women					
No. (% of total)	83 809 (42.7)	87 370 (44.5)	25 196 (12.8)	196 375 (100.0)	196 326
Age on arrival, yr, mean ± SD	34.13 ± 7.82	37.10 ± 15.88	35.96 ± 12.15	35.69 ± 12.62	
Income quintile (area level)					
1 (least affluent)	31 628 (37.7)	28 634 (32.8)	13 336 (52.9)	73 598 (37.5)	35 087 (17.9)
2	19 207 (22.9)	22 550 (25.8)	5 820 (23.1)	47 577 (24.2)	38 898 (19.8)
3	13 933 (16.6)	16 608 (19.0)	3 170 (12.6)	33 711 (17.2)	39 912 (20.3)
4	10 529 (12.6)	12 033 (13.8)	1 917 (7.6)	24 479 (12.5)	41 439 (21.1)
5 (most affluent)	8 512 (10.2)	7 545 (8.6)	953 (3.8)	17 010 (8.7)	40 990 (20.9)
Highest level of education					
More than high school	68 614 (81.9)	42 911 (49.1)	9 104 (36.1)	120 629 (61.4)	
High school	13 951 (16.6)	39 530 (45.2)	14 206 (56.4)	67 687 (34.5)	
None	1 244 (1.5)	4 929 (5.6)	1 886 (7.5)	8 059 (4.1)	
Language (spoken)					
English or French	57 877 (69.1)	47 113 (53.9)	17 234 (68.4)	122 224 (62.2)	
Neither English nor French	25 932 (30.9)	40 257 (46.1)	7 962 (31.6)	74 151 (37.8)	

SD = standard definition

* Differences across immigrants from different admission classes were assessed by χ^2 test ($p < 0.001$ for all).

† Immigrants admitted in the "other" visa class (< 5%) were excluded.

‡ Long-term residents = Canadian-born residents or immigrants who arrived in Ontario before 1985.

the admission classes did not differ from matched long-term residents: for men in the economic class, RR was 0.90 (95% CI 0.78–1.04) and for men in the family class, RR was 0.80 (95% CI 0.61–1.06). For primary care, estimates of intensity of use were highest for refugees and lowest for economic class immigrants. For psychiatric care and hospital care, estimates were similar across admission class groups.

In a sensitivity analysis, we examined the effect of changing the definition of hospital admissions for mental health reasons. In the primary analysis, the hospital-use outcome included only hospital use for which a mental health diagnosis was the most responsible diagnosis. In the sensitivity analysis, the hospital-use outcome included hospital use for which any diagnosis was a mental health diagnosis. Results

Table 2

Unadjusted estimates of use of mental health services by adult immigrants to Ontario, Canada, by admission class (economic, family, or refugees), who arrived to urban Ontario between 2002 and 2007 and by matched long-term residents, by sex

Type of mental health care	Immigrant admission class*†			Long-term residents‡
	Economic	Family	Refugee	
Men	n = 86 933	n = 50 015	n = 26 350	n = 163 263
Primary mental health care				
Any use, no. (%)	23 500 (27.0)	13 669 (27.3)	8 733 (33.1)	48 821 (29.9)
Counts of use among users, mean (95% CI)	2.46 (2.41–2.51)	2.69 (2.59–2.81)	3.20 (3.10–3.31)	4.31 (4.23–4.40)
Psychiatric care				
Any use, no. (%)	1 899 (2.2)	1 030 (2.1)	1 180 (4.5)	9 078 (5.6)
Counts of use among users, mean (95% CI)	8.38 (7.08–9.67)	8.40 (6.48–10.33)	7.33 (6.66–8.00)	11.82 (11.16–12.49)
Hospital mental health care§				
Any use, no. (%)	220 (0.25)	110 (0.22)	55 (0.21)	376 (0.23)
Counts of use among users, mean (95% CI)	1.30 (1.21–1.39)	1.42 (0.99–1.84)	1.29 (1.09–1.49)	1.33 (1.20–1.45)
Women	n = 83 809	n = 87 370	n = 25 196	n = 196 326
Primary mental health care				
Any use, no. (%)	30 881 (36.8)	34 245 (39.2)	12 010 (47.7)	89 483 (45.6)
Counts of use among users, mean (95% CI)	2.82 (2.77–2.88)	2.91 (2.87–2.96)	3.75 (3.65–3.85)	5.27 (5.20–5.33)
Psychiatric care				
Any use, no. (%)	2 266 (2.7)	2 272 (2.6)	1 638 (6.3)	14 172 (7.2)
Counts of use among users, mean (95% CI)	8.99 (8.20–9.76)	8.09 (7.33–8.87)	8.11 (7.48–8.73)	15.02 (14.45–15.59)
Hospital mental health care§				
Any use, no. (%)	74 (0.09)	96 (0.11)	52 (0.21)	626 (0.32)
Counts of use among users, mean (95% CI)	1.24 (1.11–1.38)	1.20 (1.05–1.34)	1.06 (0.97–1.14)	1.43 1.33–1.53)

CI = confidence interval.

*Immigrants admitted in the "other" visa class (< 5%) were excluded.

†Differences across immigrants from different admission classes were assessed by χ^2 test ($p < 0.002$ for all).

‡Long-term residents = Canadian-born residents or immigrants who arrived in Ontario before 1985.

§Hospital uses were determined on the basis of most responsible diagnosis.

from the sensitivity analysis (Appendices D and E) were mostly consistent with the primary analysis, with 2 exceptions: the RRs for intensity of visits for male economic class immigrants and male family class immigrants indicated significantly lower use relative to long-term residents. In the primary analysis, these differences did not reach statistical significance.

Interpretation

Amid record-high levels of immigration globally,[45] this study showed that recent immigrants in all admission classes generally used less mental health care than age- and sex-matched long-term immigrants and native-born Canadians. No admission-class group had greater use (in terms of access or intensity) of

psychiatric care or mental health care in hospital—the most costly, specialized mental health services—than did long-term residents. Across admission classes, there were significant differences in demographic characteristics and some differences in service use.

These results were mostly consistent with the first hypothesis, that immigrants in the economic class would use less care than long-term residents, except for mental health care in hospital, where use by male immigrants in this class was not significantly lower than use by male long-term residents. This latter finding was unexpected, given that admission in the economic class is linked to better health and overall fitness.[46] Even so, the study showed that these individuals were more likely than long-term residents to live in low-income
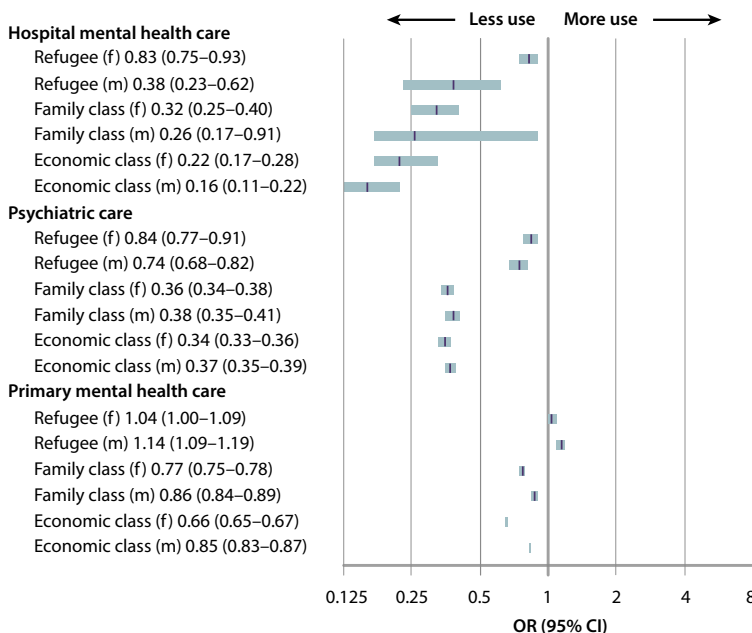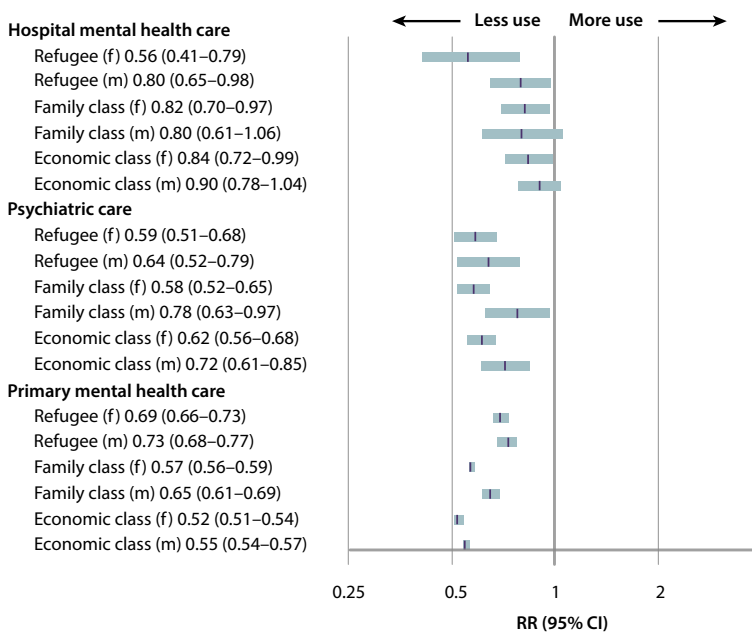
Figure 1

Any use of mental health care for nonpsychotic mental health disorders by adult immigrants in various admission classes (refugee, family, and economic) within 5 years of arrival in Ontario over the period 2002–2007, compared with matched long-term residents in urban Ontario, by sex. Odds ratios (ORs) with 95% confidence intervals (CIs) were determined from conditional logistic regression models, with adjustment for neighbourhood income quintile and stratification by admission class and by sex, and are plotted on a logarithmic scale (base 2). Mental health hospital use was defined as visits to the emergency department or admission (according to the most responsible diagnosis).

Figure 2

Intensity of use of mental health care for nonpsychotic mental health disorders by adult immigrants in various admission classes (refugee, family, and economic) within 5 years of arrival in Ontario over the period 2002–2007, compared with matched long-term residents in urban Ontario, by sex. Rate ratios (RRs) with 95% confidence intervals (CIs) were determined from negative binomial regression models with generalized estimating equations, with adjustment for neighbourhood income quintile and stratification by admission class and by sex, and are plotted on a logarithmic scale (base 2). Mental health hospital use was defined as visits to the emergency department or admission (according to the most responsible diagnosis).

neighbourhoods, and one-quarter to one-third did not speak English or French. These characteristics may elevate the need for mental health care. Primary care is the recommended first line of mental health care in Ontario and other jurisdictions[47–49] and is intended to be protective against a need for more intensive levels of care. However, in Ontario the majority of primary care practices are physician-only models.[26] In these models, managing care for patients with complex needs, including immigrants with many social needs as well as

medical needs, may be difficult. About one-quarter of the Ontario population has access to inter-professional primary care teams (i.e., family health teams), which may be better positioned to manage complex patients, but recent immigrants are under-represented in these practices (4.6% of clients of these practices are recent immigrants, whereas immigrants account for 10.9% of the Ontario population).[27]

The second hypothesis, that refugees' use of mental health care would be higher than that of long-term residents, was supported for one outcome, the likelihood of use of primary mental health care. However, refugees were less likely than long-term residents to have further use of mental health services, as indicated by lower numbers of primary care visits and less use of specialty mental health care overall. The study also showed that refugees were over-represented in less affluent areas and had lower levels of education than other immigrant groups and long-term residents. These barriers may have intensified following enactment of the *Immigration and Refugee Protection Act* in 2002. For example, compared with refugees entering Canada before 2002, refugees entering Canada since 2002 have lower levels of education and are older.[24,25] In addition, many refugees from non-industrialized countries may not be familiar with follow-up mental health care in Ontario, given that specialized mental health services in those countries are often less numerous, more intense, and more stigmatized than in Canada.[50,51]

Limitations and strengths. This report was limited to nonpsychotic conditions, and the findings cannot be extrapolated to psychoses.

The study was limited by the absence by some desired data (e.g., mental health need, social support). We matched immigrants and long-term residents on birth date and sex and adjusted for area-level income, but we did not adjust for other variables, such as clinical comorbidities. If there was an unequal distribution of unmeasured comorbidities among immigrant classes and long-term residents, the findings for hospital-based mental health services might have been affected, since psychiatric comorbidity is associated with greater disability and increased hospital use.[52,53] Limited data also prevented us from accounting for heterogeneity within admission classes (e.g., by country of origin) and from investigating use of other supports (e.g., from religious leaders).[54–56]

Regarding the outcome measures, use of Community Health Centres could not be included in this study, even though the proportion of newcomers served in these centres is higher than the proportion of newcomers served by other primary care models in Ontario (16.4% v. 2.6%–14.6%).[27] However, because the Community Health Centres still serve only a small proportion of the immigrant population (1.4% of recent newcomers), the exclusion of these centres likely did not significantly bias our results.[27] A related limitation is that mental health service use was tracked only when persons were covered by OHIP. Although immigrants receive OHIP coverage after 3 months in Ontario, refugees can apply for OHIP coverage only after their claim has been accepted; on average, this takes almost 1.5 years.[19,57] Consequently, refugees' first years of OHIP coverage often do not immediately follow their arrival. Moreover, given that the prevalence of nonpsychotic mental health disorders among refugees is reportedly highest immediately after displacement,[15] this study may have underestimated service use by refugees.

These findings may have limited generalizability to certain immigrant groups, such as those not included in this study. For example, the Ontario CIC database does not include immigrants who entered Ontario from a different province; refugee claimants who have not been accepted or are appealing; other temporary residents, workers, or visitors; or "nonstatus" residents. Immigrants in rural areas were also excluded from the study. However, concern about this latter exclusion is mitigated by the fact that most immigrants settle in urban areas. Over the past decade, between 92% and 95% of new immigrants to Canada settled in census metropolitan areas, and a similar percentage of the country's overall immigrant population lives in census metropolitan areas (91%).[58,59]

The study also had a number of strengths. The use of population-level health services data linked to immigration data allowed us to fill a policy-relevant knowledge gap concerning health care use by immigrants in different admission classes. Matching immigrants to standard comparators (long-term residents) on both age and sex helped to control for 2 important sources of variation in mental health care use. In addition, we used standard inclusion criteria, methodology, and outcome definitions across the different admission classes. Use of administrative data sources distinguished this study from most work on immigrant mental health, which has used survey-derived data. Self-reported data can be affected by missing information and by recall, reporting, and selection biases.[6,60–62] Under-reporting of service use is particularly common among individuals

with mental health disorders.[63,64] Another strength of this study was its focus on immigrants within their first 5 years after arrival, during which time immigrants routinely deal with resettlement challenges (e.g., missing their country of origin, underemployment, and difficulties with the host country's language).[17]

Conclusion. Despite varied selection criteria and immigration characteristics, recent immigrants in all admission classes generally used less care for nonpsychotic conditions than Canadian-born residents and long-term immigrants. Some immigrant groups, such as refugees, may require greater support from services to meet their mental health needs. This study begins to fill a knowledge gap regarding an issue that has garnered policy attention worldwide.[65–67] Future research should examine how immigrants' mental health needs correspond with observed patterns of use. The capacity of primary care to support newcomers' mental health may also warrant investigation.

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