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OPEN

Is Prosocial Behavior Associated With Increased Registration for Deceased Organ Donation? A Cross-sectional Study of Ontario, Canada

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Background. A community that promotes prosocial behaviors such as organ donor registration or charitable giving could reinforce those behaviors among its residents. Understanding the nature of the relationship between prosocial behaviors at the community level and an individual's decision to engage in prosocial behavior can help in the targeting of communities with lower rates of prosocial activities. The objective of this study was to assess if the likelihood that an individual is a registered deceased organ donor in Ontario, Canada, is associated with community-level charitable giving. **Methods.** This cross-sectional population-based study involved individual- and community-level data from multiple administrative data sources from ICES and Statistics Canada. To assess the unadjusted and adjusted effects of community-level charitable giving on organ donor registration, we ran 4 sequential multilevel random intercept logistic regression models and used a number of individual- and community-level confounding factors. **Results.** Statistically significant between-community variance (0.322, SE=0.020) and interclass correlation coefficient (0.089) suggest that substantial variation in organ donor registration can be attributed to the between-community differences. Community-level charitable giving was correlated with organ donor registration (odds ratios, 1.351; 95% confidence intervals, 1.245-1.466) in the model containing only individual-level confounding factors. However, this relationship became statistically nonsignificant (odds ratios, 0.982; 95% confidence intervals, 0.907-1.063) when a series of community-level confounding factors were added to the model. Among these confounding factors, individuals' immigration status and community-level ethnic/immigrant concentration had the most pronounced association with organ donor registration. **Conclusion.** The identification of the characteristics of populations and communities with low organ donor registration rates may inform future initiatives in the area of organ donation awareness and promotion to make them more effective among those particular groups.

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INTRODUCTION

Around the world, transplantation needs exceed the supply of available organs.¹ Deceased organ donor registries are used to increase awareness of organ donation. In Canada, organ donor legislation and registries are managed by the provinces and territories.² In Ontario, Canada's most populous province, to be able to "opt-in" as organ donors, registrants must be 16 years of age or older and have a valid health card.² In 2016, only 29.5% of eligible residents of Ontario were registered deceased organ donors, and rates of organ donor registration have been found to vary throughout the province, with regions in northern Ontario having higher registration rates than urban areas, such as the Greater Toronto Area.³

The decision to become a registered organ donor is influenced by a multitude of factors.^{4,5} A systematic review of 33 studies found that several individual-level factors are related to positive attitudes toward organ donor registration, including being of a younger age, being female, and having higher educational attainment and socioeconomic status.⁵ Ethnic

and cultural background⁶⁻¹⁰ and immigration status^{9,11} have also been found to be important factors related to being a deceased organ donor. The characteristics of the community in which one lives may also promote organ donor registration. However, there is very limited knowledge about the role of community-level factors that may affect the likelihood of their residents to become registered organ donors.^{11,12}

Therefore, to better understand why individuals residing in certain communities in Ontario are more likely to become registered organ donors than individuals living in other regions, the objective of this study was to assess if the decision to be a registered organ donor is associated with community-level prosocial behaviors and, in particular, with community-level rates of charitable giving. It has been suggested that individuals who engage in 1 type of prosocial behavior (eg, volunteering, donations to charitable organizations, helping others) are more likely to take part in other prosocial behaviors.^{5,8,12,13} Ladin et al¹² refer to organ donation as a “collective action problem” where individuals benefit when everyone acts in a prosocial manner, thereby increasing the number of organs available for those who need them. Our hypothesis was that an individual residing in a community characterized by higher rates of charitable giving is more likely to be a registered organ donor than an individual living in a community with a lower rate of charitable giving.

MATERIALS AND METHODS

Data Sources

This cross-sectional population-based study used comprehensive data on individual- and community-level factors associated with organ donor registration from 5 administrative databases: (1) the Organ Donor Registry (ODR); (2) the Ontario Registered Persons Database (RPDB); (3) Immigration, Refugees, and Citizenship Canada’s Permanent Resident Database (IRCC-PRD); (4) the Longitudinal Administrative Databank (LAD); and (5) the Community Census Profiles. The ODR contains details on whether each resident of Ontario has registered as an organ donor and their date of registration. The RPDB contains demographic information on all residents of Ontario, their date of last contact with the healthcare system, and their date of death (if applicable). The IRCC-PRD contains information on all permanent legal immigrants in Canada. The individual-level records from these 3 administrative databases were linked at ICES using unique encoded identifiers; the access to these databases was authorized under section 45 of Ontario’s Personal Health Information Protection Act, which does not require review by a Research Ethics Board. The LAD is a 20% longitudinal sample of completed tax returns.¹⁴ We used the tax returns for fiscal year 2015 (ie, from January 1 to December 31, 2015), which contains approximately 5.6 million tax records for residents of Ontario. Finally, the Community Census Profiles provide aggregated data on a range of community-level demographic and socioeconomic characteristics derived from the 2016 Census of Canada. Analysis of the LAD and Community Census Profiles was carried out at Statistics Canada’s Research Data Centre before being merged with the individual-level data at ICES.

Inclusion and Exclusion Criteria

We included all residents of Ontario with a valid identification number in the RPDB who at the reference point

(March 31, 2016) were 16 or older and younger than 105. We excluded all individuals who lived outside Ontario and those who had not had contact with the healthcare system in over 9 years (ie, because they moved out of the province without updating the ministry or died outside of Ontario).

Measurements

Information on deceased organ donor registration status was obtained from the ODR, and this outcome variable was operationalized as a binary indicator measuring whether or not each resident of Ontario was registered as a deceased organ donor as of March 31, 2016. Community-level charitable giving was measured as a percentage of individuals in each community who indicated on their 2015 income tax return that they donated to a charitable organization. Forward sortation areas (FSAs), geographic areas adopted by Canada Post to sort and deliver mail, were used as a proxy for communities.¹⁵ Data from Statistics Canada’s 2016 Community Census Profiles were available for 513 out of the 527 FSAs in Ontario. The remaining 14 FSAs, with a total population of 604 individuals, were excluded from the analysis as they were either used exclusively for business mail, unpopulated, or sparsely populated.

The community-level rates of organ donor registration or charitable giving may be affected by the self-selection of individuals with specific characteristics to reside in a particular community. To control for this compositional effect, we used 4 individual-level confounding factors: sex (male versus female); age (16–19, 20–29, 30–39, 40–49, 50–59, 60–69, 70–79, >80); immigration status (immigrant vs nonimmigrant); and income (income quintiles¹⁶). The literature indicates that individuals living in communities that are economically disadvantaged, less cohesive, or residentially segregated may be less likely to participate in various forms of in prosocial behavior.¹² Thus, we controlled for 5 community-level confounding factors that are expected to be associated with both the decision to be a registered organ donor and the decision to make a charitable donation: urbanicity (urban versus rural); education (percentage of residents with a postsecondary certificate, diploma, or degree); poverty (percentage of the population residing in households with an income below the low-income cutoffs); residential mobility (percentage of residents who moved from a different community in the past 5 y); and ethnic/immigrant concentration. The latter factor was derived from 4 indicators: visible minority (percentage of the population who self-identified as a visible minority); recent immigrant (percentage of the population who resided in Canada for <10 y); knowledge of official language (percentage of the population who could speak neither English nor French); and language use at home (percentage of the population for whom neither English nor French were not the most often spoken language at home). A principal component analysis was conducted to reduce these 4 indicators into a single factor. With the exception of urbanicity, all community-level confounding factors were measured on a continuous scale, and for the ease of interpreting the results; they were centered around their mean values and divided by 10.

Statistical Analysis

For descriptive purposes, means and SD for continuous variables and proportions for categorical variables were computed. To test our hypothesis on the association between

community-level charitable giving and an individual's decision to be a registered deceased organ donor, we ran 4 sequential multilevel random intercept logistic regression models: the null model to assess the unadjusted level of between-community variance in organ donor registration (model 1); a model with individual-level confounding factors, to adjust the between-community variance for the potential compositional effects (model 2); a model with community-level charitable giving, the focal independent variable; and the fully adjusted model with community-level confounding factors (model 4).

To assess the level of between-community variation in organ donor registration, we reported (1) the variance of the random intercept (τ^2); (2) the interclass correlation coefficient (ICC), calculated using the latent variable method for rescaling individual-level variances¹⁷; and (3) the median odds ratio (MOR),¹⁸ which represents the community-level variance on an odds ratio scale. To assess the effects of the focal independent variable and other community-level factors, we reported (1) regression coefficients (log odds); (2) corresponding odds ratios (OR) and their 95% confidence intervals (CI); and (3) the 80% interval odds ratios, which cover the middle 80% of the distribution of odds ratios.^{19,20} The analyses were conducted in SAS 9.4 using the PROC GLIMMIX procedure.²¹

RESULTS

The sample consisted of 11 902 321 Ontarians, of whom 29.52% were registered as organ donors as of March 31, 2016. Approximately half of the sample was female (51.33%), 19.37% were immigrants, and the average age was 47.01 years. At the community level, the mean organ donor registration rate across all communities was 32.09% (SD=10.74), and the mean charitable giving rate was 21.97% (SD=4.87). The descriptive statistics for other confounding factors are presented in Table 1.

The statistically significant between-community variance ($\tau^2=0.322$) from the null multilevel logistic regression model (model 1) provides evidence of a significant overall level of between-community variance in organ donor registration in Ontario (see Table 2). The ICC for this estimate (0.089) suggests that 8.9% of the variance in organ donor registration can be attributed to the between-community differences. The MOR of 1.718 indicates that if a randomly selected individual moves from a community with a lower likelihood of being a registered organ donor to a community with a higher likelihood, their probability of registering would increase by 71.8%. In model 2, the addition of individual-level confounding factors (ie, sex, age, immigration status, and income) to the null model reduced the size of the between-community variance from 0.322 to 0.230 but remained statistically significant; the MOR for this variance was reduced to 1.580. The residual ICC for model 2 suggests that, after accounting for the compositional effects, 6.5% of the variance in organ donor registration can still be attributed to the between-community differences, justifying testing of the hypothesis on the effects of community-level charitable giving.

The results for the fixed effects from model 3 indicate that adjusting for individual-level factors; there is a statistically significant association between charitable giving and organ donor registration (OR, 1.351; CI, 1.245-1.466). That is, residing in a community with a 10% higher level of charitable giving increases the odds of organ donor resignation by

35.1%. The 80% interval odds ratios for this effect (0.589-3.100) suggests that when comparing 2 individuals with the same individual-level characteristics, 1 from a community with a higher and 1 from a community with a lower rate of charitable giving, the odds of organ donor registration are between 0.589 and 3.100 in 80% of comparisons. As this interval contains the value of 1, the association between charitable giving and organ donor registration is smaller than the overall between-community variance in organ donor registration.¹⁹ Finally, in model 4 (see Table 3), when community-level confounding factors (ie, urbanicity, education, poverty, residential mobility, and ethnic/immigrant concentration) were added to model 3, the association between community-level charitable giving and organ donor registration became statistically nonsignificant (OR, 0.982; CI, 0.907-1.063). This finding suggests that the selected community-level confounding factors may be related to both charitable giving and organ donor registration and may account for the initially observed association between these 2 types of prosocial behavior.

In addition to testing the main hypothesis related to the association between community-level charitable giving and organ donor registration, the results of our analysis provide some information on the role of individual- and community-level factors. Specifically, the results from the fully adjusted

TABLE 1.
Descriptive statistics

Factors	Total population		Registrants
	Frequency (N)	Percentage (%)	Percentage (%)
Individual level			
Sex			
Female	6 110 054	51.33	32.00
Male	5 792 267	48.67	26.92
Age (y)			
16–19	667 578	5.61	19.69
20–29	1 940 557	16.30	26.65
30–39	1 977 602	16.62	32.86
40–49	1 984 498	16.67	34.31
50–59	2 148 163	18.05	31.85
60–69	1 633 705	13.73	30.96
70–79	942 195	7.92	26.38
>80	608 023	5.11	15.83
Income			
First quintile	2 401 109	20.17	24.28
Second quintile	2 394 388	20.12	27.79
Third quintile	2 382 819	20.02	29.39
Fourth quintile	2 335 663	19.62	31.34
Fifth quintile	2 388 342	20.07	34.89
Immigration status			
Nonimmigrant	9 596 443	80.63	33.34
Immigrant	2 305 878	19.37	13.66
Community level	Mean [SD]	Minimum	Maximum
Organ donor registration	32.09 [10.74]	7.50	60.69
Charitable giving	21.97 [4.87]	5.42	40.23
Residential mobility	37.34 [9.65]	19.05	85.89
Poverty	9.31 [6.78]	0.00	38.15
Education	55.14 [9.46]	30.76	100.00
Visible minority	23.56 [23.42]	0.00	96.36
Recent immigrant	5.80 [5.65]	0.00	33.38
Knowledge of official language	1.91 [2.59]	0.00	24.39
Language used at home	11.73 [11.58]	0.00	59.39

TABLE 2.
Random effects (models 1–4)

Model	Variance (τ^2)	SE	ICC	MOR
Model 1—null model	0.322	0.020	0.089	1.718
Model 2—individual-level factors	0.230	0.014	0.065	1.580
Model 3—charitable giving	0.210	0.013	0.060	1.548
Model 4—community-level factors	0.064	0.004	0.019	1.273

ICC, interclass correlation coefficient; MOR, median odds ratio.

model 4 (see Table 3) indicate that, compared with females, males were 25.8% less likely to be registered organ donors (OR, 0.742; CI, 0.740-0.744). The likelihood of organ donor registration was lower among the youngest individuals (ages 16–19; OR, 0.405; CI, 0.403-0.408), increased to the maximum likelihood at the age of 40–49 (the reference group), and then decreased in older age (≥ 80 y old; OR, 0.277; CI, 0.275-0.279). There was also a clear gradient in the association between income and the likelihood of organ donor registration as those in the highest income quintile were 15.6% more likely (OR, 1.156; CI, 1.151-1.161) and those in the lowest quintile were 19.9% less likely (OR, 0.801; CI, 0.797-0.805) to register, compared with those in the middle quintile (the reference group). Finally, immigrants were 56.4% less likely to register than nonimmigrants (OR, 0.436; CI, 0.434-0.438).

Three of the community-level confounding factors, residential mobility (OR, 1.047; CI, 1.014-1.081), poverty (OR, 0.907; CI, 0.863-0.953), and ethnic/immigrant concentration (OR, 0.630; CI, 0.610-0.560) were significantly associated with the likelihood of organ donor registration. Specifically, individuals living in communities with a 10% higher proportion of residents who moved within the past 5 years were 4.7% more likely to register as organ donors than those residing in communities with lower rates of residential mobility; residents of communities with a 10% higher proportion of households with low-income families were 9.3% less likely to be organ donors than those from more affluent communities; and residents of communities with a 10% greater ethnic/immigrant concentration were 37.0% less likely to register as organ donors. The remaining 2 community-level factors, urbanicity (OR, 1.051; CI, 0.970-1.137) and education (OR, 1.039; CI, 0.999-1.080), were not significantly associated with organ donor registration.

Finally, in model 4, the between-community variance was statistically significant but further reduced from 0.230 in model 2 to 0.064, and the corresponding ICC and MOR were 0.019 and 1.273, respectively. Thus, when accounting for all the confounding factors, only 1.9% of the variance in organ donor registration can still be attributed to the between-community differences, down from 8.9% in the null, unadjusted model.

DISCUSSION

The primary objective of this study was to assess if the decision to be a registered deceased organ donor in Ontario is associated with community-level charitable giving. As hypothesized, charitable giving was found to be related to the likelihood of being a registered organ donor in the model containing only individual-level confounding factors. Specifically, residents of communities with a 10% higher level of charitable giving were found to be 35.1% more likely to

register as organ donors than residents of communities with a lower level of charitable giving. However, this relationship became statistically nonsignificant when we controlled for a series of community-level confounding factors (ie, urbanicity, education, poverty, residential mobility, and ethnic/immigrant concentration). These confounding factors were proposed to affect both an individual's decision to be a registered organ donor and the decision to make a charitable donation. Given that individuals who engage in prosocial behaviors are more likely to take part in various prosocial activities,^{5,8,12} the results of our study confirmed that, overall, organ donor registration and charitable giving are associated with each other but that this association can be accounted for by other community-level factors.

In particular, 3 out of 5 community-level factors were found to have a statistically significant effect on organ donor registration (ie, residential mobility, poverty, and ethnic/immigrant concentration). Similar to Ladin et al's study in the Greater Boston area, residential mobility was related to organ donor registration. Ladin et al proposed that this association may be due to particular migration patterns or to the positive association between socioeconomic status and residential mobility, as individuals living in areas that are economically disadvantaged may be less likely to participate in prosocial behaviors.¹² In support of this argument, poverty, the community-level indicator of economic disadvantage used in our study, was significantly associated with the likelihood of organ donor registration. However, it is important to point out that ethnic/immigrant concentration had the strongest association with organ donor registration, compared with other community-level factors. When comparing individuals with the same individual- and community-level characteristics, including their immigration status, the likelihood of organ donor registration for an individual residing in a community with a 10% higher rate of ethnic/immigrant concentration was 37.0% lower than for an individual living in a community with a lower rate of ethnic/immigrant concentration. Although educational attainment measured at an individual level has often been found to be associated with increased organ donor registration,^{4,5} our study did not find a significant relationship between community-level education and organ donor registration. This finding may be explained by the fact that, in our study, education was operationalized as a community-level factor, not an individual-level factor. It is also likely that the presence of other factors in the statistical model attenuated the strength of the relationship between education and organ donor registration. Finally, our findings on the role of individual-level factors are consistent with other research on organ donor registration.^{5,12,22} Specifically, females were found to be more likely to register as organ donors than males. Age did not follow a linear trend, but rather, organ donor registration was lower among younger individuals, increased to the maximum at the age of 40–49, and decreased again in older age. Overall, there was a clear gradient in the effect of income as the likelihood of organ donor registration increased with each income quintile. Finally, immigration status appears to have the most pronounced association with organ donor registration, compared with other individual-level factors. Specifically, immigrants were 56.4% less likely to register as organ donors than nonimmigrants. Li et al also found that immigrants in Ontario were less likely to register for organ

TABLE 3.
Fixed effects (model 4)

Factors	Log odds	SE	P	Odds ratios [95% CI]
Individual level				
Intercept	-0.270	0.038	< 0.0001	0.763 [0.709–0.822]
Sex (male)	-0.298	0.001	< 0.0001	0.742 [0.740–0.744]
Age (y)				
16–19	-0.903	0.004	< 0.0001	0.405 [0.403–0.408]
20–29	-0.462	0.002	< 0.0001	0.630 [0.627–0.633]
30–39	-0.068	0.002	< 0.0001	0.934 [0.930–0.939]
40–49	Reference			
50–59	-0.213	0.002	< 0.0001	0.808 [0.804–0.811]
60–69	-0.336	0.002	< 0.0001	0.715 [0.711–0.718]
70–79	-0.591	0.003	< 0.0001	0.554 [0.551–0.557]
>80	-1.284	0.004	< 0.0001	0.277 [0.275–0.279]
Immigration status (immigrant)	-0.830	0.002	< 0.0001	0.436 [0.434–0.438]
Income				
First quintile	-0.222	0.002	< 0.0001	0.801 [0.797–0.805]
Second quintile	-0.058	0.002	< 0.0001	0.944 [0.940–0.948]
Third quintile	Reference			
Fourth quintile	0.055	0.002	< 0.0001	1.056 [1.052–1.061]
Fifth quintile	0.145	0.002	< 0.0001	1.156 [1.151–1.161]
Community level				
Charitable giving	-0.018	0.041	0.654	0.982 [0.907–1.063]
80% IOR (low, high)	0.621, 1.553			
Residential mobility	0.046	0.016	0.005	1.047 [1.014–1.081]
80% IOR (low, high)	0.662, 1.656			
Poverty	-0.098	0.025	0.000	0.907 [0.953–0.863]
80% IOR (low, high)	0.697, 1.745			
Ethnic/immigrant concentration	-0.463	0.016	< 0.0001	0.630 [0.610–0.650]
80% IOR (low, high)	0.398, 0.996			
Urban	0.049	0.041	0.222	1.051 [0.970–1.137]
Education	0.038	0.020	0.058	1.039 [0.999–1.080]

CI, confidence interval; IOR, interval odds ratio.

donation, compared with long-term residents (11.9% versus 26.5%).¹¹

Overall, the 2 strongest correlates of organ donor registration were individual's immigrant status and community-level ethnic/immigrant concentration. As immigrants and ethnic minorities are, in general, less likely to register as deceased organ donors, it would be important to further explore the heterogeneities among immigrant and ethnocultural groups in their prosocial behaviors and how these behaviors differ depending on the characteristics of the communities in which they reside. Li et al, for instance, found that higher economic status, living in an area with a lower ethnic concentration and less material deprivation, a higher education, the ability to speak English or French, and longer residency in Canada were associated with higher rates of donor registration.¹¹ However, additional research is needed to better understand the role of and interactions among various individual- and community-level correlates of organ donor registration in immigrant and ethnic minority populations to develop more tailored, culturally sensitive approaches to informing these populations on the benefits of organ donor registration. It is possible that current efforts of public outreach and education are selectively reaching certain demographics and communities more than others, leading to a relative lack of effective outreach in some groups. Taking into account the increased need for deceased organ donors, targeting communities and populations with

low registration rates, in particular, immigrant and ethnic-cultural minority groups, would ultimately help more members of these groups who are often at a greater risk of requiring organ transplants.¹²

Limitations

The current study is not without its limitations. The cross-sectional nature of this study can only provide an assessment of the associations between organ donor registration in Ontario in 2016 and a number of individual- and community-level factors; however, our study cannot infer causation. The 2016 data were selected for this cross-sectional study as this is the most recent calendar year for which we were able to assemble all of the individual- and community-level correlates of organ donor registration. However, it has to be noted that the deceased organ donor registration rates in Ontario increased from 19.5% in 2016 to about 35% in 2020.²³ Despite this increase, there are still substantial between-community differences in registration rates, which currently range from 16% to 58%.²⁴ Thus, for monitoring purposes, it would be beneficial to reproduce the results of this study when the 2021 Census of Canada data are released. This study used a limited number of individual-level correlates of organ donor registration and did not account for other potentially relevant confounding factors such as religiosity, educational attainment, or ethnocultural characteristics. In particular, our study would have

been benefitted from controlling for the effects of charitable giving measured at the individual level. However, currently, individual-level linkage of income tax records from Statistics Canada with ICES's ODR database is not feasible. Inclusion of these individual-level confounding factors could also further account for the observed between-community variation in organ donor registrations. Despite these limitations, the merging of aggregated data on tax records from Statistics Canada with individual-level information from ICES's databases is a novel feature of this study.

To derive our focal independent variable, community-level charitable giving, we first counted the number of tax filers in each community who donated to charitable organizations, and then we divided this number by the total number of tax filers in each community. This proxy measure has some limitations. First, charitable giving was used as a proxy measure of prosocial behavior in this study, given that it is a common type of prosocial behavior.^{13,25,26} Second, we assumed that, at the individual-level, all acts of charitable donation are reported on tax returns and that all donations, regardless of their value, are treated in the same way, without taking into account substantial differences in the personal income of individuals who claimed their donation on their income tax returns. Although these assumptions would have substantial effects on how the construct of charitable giving is measured at the individual level, it might be argued that these effects are less pronounced when this construct is operationalized at the community level. Taking into account that FSAs in Ontario, on average, consist of 10 000 tax filers, it is expected that rates of charitable giving computed at a community level are a more stable and less biased measure to between-community differences in prosocial behavior.

Finally, we used FSAs as our geographic unit of analysis and a proxy measure of a community in Ontario. Although we believe that using FSAs was a reasonable decision, using other geographic units could have generated different results. This common problem is known as the modifiable areal unit problem.^{27,28}

This is the first study in Ontario to assess the association between charitable giving and deceased organ donor registration, controlling for selected individual- and community-level confounding factors. To our knowledge, it is also the first study that has used ICES and Statistics Canada administrative data linked at the community level. The multilevel assessment of correlates of an individual's decision to become a registered organ donor provides a better understanding of the role of charitable giving and who is more likely to register as a deceased organ donor in Ontario—in terms of individual- and community-level characteristics. In particular, the results of our study suggest that the decision to be a registered deceased organ donor in Ontario is associated with community-level charitable giving and may be treated as 2 types of prosocial behavior. However, we also found out that this relationship can be explained by community-level factors such as residential mobility, poverty, and ethnic/immigrant concentration.

As the need for organs exceeds supply, we must develop tailored initiatives to increase the number of potential organ donors. One mechanism is to enhance the awareness of organ donation by increasing the number of registered organ donors,²² and knowing where and how to focus registration efforts will aid in the effectiveness of potential initiatives. The identification of groups or residents and communities with

low organ donor registrations may inform future initiatives in the area of organ donation awareness and promotion to make them more effective among members of those particular groups and in these communities. However, further examination of some populations, particularly among immigrants and ethnic minorities, would help ascertain why some residents of Ontario are less likely to register. The findings from this study may be useful for other jurisdictions who have similar community heterogeneity to Ontario to gain a better understanding of organ donor registration.

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