Use of Dental Services by Immigrant Canadians

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ABSTRACT

Although the health status and health behaviour of foreign-born residents of Canada have been well documented, little is known about their use of dental services. The authors, hypothesizing that foreign-born people would have lower utilization of dental care services than native-born Canadians, undertook this study to identify the factors associated with dental visits by Canadians aged 12 years and older and to compare the use of dental services by foreign-born and native-born populations. According to data derived from Statistics Canada's 1996–97 National Population Health Survey, foreign-born people were somewhat more likely than native-born Canadians to have visited a dentist within the previous year. Higher levels of education, greater income adequacy, and the presence of dental insurance were associated with greater use of dental services, whereas increasing age was associated with lower use. Although immigrants reported greater use of dental services than native-born Canadians, a variety of barriers to care may be present in this population.

MeSH Key Words: Canada/epidemiology; dental health services; emigration and immigration/statistics & numerical data; insurance, dental

Representing more than 18.5% of the Canadian population in 2004 and arriving from many countries, foreign-born residents constitute a growing segment of Canada's population. Recent literature has firmly established that the health and health-seeking behaviour of Canada's foreign-born residents, including refugees and immigrants, diverge from those of the native-born population. For example, the "healthy immigrant effect," whereby the health status of immigrants is good at the time of arrival but subsequently declines to a level below that of the native-born population, is well documented.[1–8] Recent immigrants are more likely to rank their health higher than Canadian-born people and are less likely to report chronic conditions or disability; these patterns are attributed to the fact that those in good health are more likely to emigrate from their home country and also to the screening process at the time of entry, which may disqualify those with serious medical conditions.[9] Although it could be argued that the observed decline in health after arrival reflects less contact with the health care system than is the case for the native-born population, there is conflicting evidence about immigrants' limited use of the health care system.[10] Immigrants as a group are typically considered to underuse the health care system, perhaps because of better health status at the time of arrival. However, barriers to care, lack of knowledge of the health care system and recent health care restructuring in Canada may discourage health care utilization by immigrants.

Surprisingly little is known about the dental health of and use of dental services by Canada's foreign-born population. For instance, a recent Health Canada report on immigrant health[10] was silent on the topic of dental health needs of the immigrant population. Yet immigrants

Table 1 Characteristics of the foreign-born and native-born populations of Canada, 12 years of age and older, 1996–97

	% of population	
Variable	**Foreign-born**	**Native-born**
Age (years)		
12–19	5.1	12.7
20–44	45.2	50.3
45–64	32.7	24.7
≥ 65	17.1	12.6
Sex		
Male	49.9	49.0
Female	50.1	51.0
Education		
Some high school without graduation	23.4	30.1
High school graduate	57.6	56.0
Bachelor's degree or higher	19.0	13.9
Income adequacy		
Low	5.6	4.5
Lower middle	14.2	10.2
Middle	30.5	29.9
Upper middle	35.0	39.9
High	14.7	15.4
Duration of residence in Canada (years)		
0–4	9.1	NA
5–9	15.4	NA
≥ 10	75.5	NA
Region of origin		
U.S., Europe or Australia	56.5	NA
Asia	28.3	NA
Other	15.3	NA
Overall		
% of all respondents	17.2	82.8
n	3,383,129	16,261,848

Source: Derived from the 1996–97 NPHS.[11]
NA = not applicable.

may face greater needs than the native-born population with respect to their dental health because of lack of insurance, lower incomes, limited awareness of both facilities and the need for oral care, or other barriers to good dental health such as language. Regardless, the general perception is that members of the immigrant Canadian population visit the dentist less often, even though they have a greater need for dental services. The objective of this study was to compare the use of dental services by the foreign-born and native-born populations of Canada and to determine factors associated with dental visits.

Methods

Data for this study were derived from Statistic Canada's National Population Health Survey (NPHS) Cycle 2 (1996–97).[11] The target population of the NPHS consists of household residents age 12 years and older in all provinces and territories, except those living on reserves, on Canadian Forces bases and in some remote places. Most interviews (95%) were conducted by telephone with computer-assisted interviewing techniques; the remainder of the interviews were conducted in person. The analysis compensated for nonresponding households (e.g., because of language barriers) by adjusting the weights assigned to reporting households. The NPHS collects in-depth information on a number of attributes, including sociodemographic and socioeconomic characteristics, lifestyle and health care utilization for each member of the household. It also includes questions about use of dental services. The current paper focuses on use of dental services within the year preceding the survey and reasons for the visit(s). Given the complex sampling design of the NPHS, the weights developed by Statistics Canada were used in this analysis. Both descriptive and multivariate statistics were used to evaluate patterns of use and differences between the native-born and foreign-born populations.

Table 1 illustrates differences in the population profiles of the 2 groups. Because the age profile of the immigrant population was different from that of the native-born population, it was expected that the 2 groups would have different utilization patterns, all other things being equal. Standardized dental use ratios (SDURs), which are similar to standardized mortality ratios, were calculated for the use of dental services according to selected personal attributes, which allowed age and sex standardization. The SDUR was calculated as the ratio of the observed proportion of immigrants reporting use of dental services to the expected proportion of individuals reporting use in the total Canadian population, if immigrants experienced the same age- and sex-specific rates of use as the native-born population. A ratio of less than 1.0 indicates that the foreign-born population fares better than the native-born population, and vice versa. Eight age–sex (4 × 2) groups were used for standardization.

Results

Although previous studies had suggested that foreign-born people would be less likely than native-born Canadians to have used dental services, the NPHS data analyzed here indicated similar rates of use in the past year (58.4% versus 57.0%; $p = 0.09$) (**Table 2**). Relative to the native-born population, a smaller proportion of the foreign-born participants were under 20 years of age and a

Table 2 Dental use by foreign-born and native-born Canadians 12 years of age and older, 1996–97

Variable	% of respondents: Foreign-born	Native-born	*p* value	SDUR
Dental visits				
% using dental services	58.4	57.0	0.09	0.94
n	8,296	47,007		
Age (years)				
12–19	73.9	74.9	0.24	NA
20–44	56.1	60.2	0.21	NA
45–64	66.2	51.8	< 0.001	NA
≥ 65	45.0	35.6	0.005	NA
n	8,296	47,007		
Sex				
Male	56.4	54.1	0.011	0.92
Female	60.4	59.8	0.36	0.99
n	8,296	47,007		
Education				
Some high school without graduation	51.4	46.2	0.05	0.74
High school graduate	58.5	58.0	0.42	0.98
Bachelor's degree or higher	66.6	76.2	0.015	1.12
n	8,296	47,007		
Income adequacy				
Low	39.6	38.3	0.35	0.86
Lower middle	43.5	36.8	0.17	0.72
Middle	51.9	48.2	0.040	0.81
Upper middle	65.5	63.1	0.01	1.00
High	76.8	76.8	0.018	1.00
n	8,296	47,007		
Dental insurance				
% with insurance	50.8	56.0	< 0.001	1.06
n	8,296	47,007		
Duration of residence in Canada (years)				
0–4	40.9	NA		NA
5–9	57.7	NA		NA
≥ 10	60.5	NA		NA
n	8,263	NA		
Region of origin				
U.S., Europe, Australia	61.0	NA		NA
Asia	51.9	NA		NA
Other	60.2	NA		NA
n	8,263	NA		

Source: Derived from the 1996–97 NPHS.[11]
n = *unweighted sample size, SDUR = standardized dental use ratio, NA = not applicable.*

larger proportion were older than 65 years; the slight difference in use of dental services may have been partly due to this difference in age distributions. Greater use of dental services by foreign-born participants was observed among those aged 45 and over; among those with middle, upper middle or high income adequacy; and among those with less than a high school education. Standardized by age and sex, the SDURs indicated somewhat greater use of dental services among foreign-born respondents as a whole and among foreign-born respondents of male sex, with lower income adequacy and with some high school education. Although the type of dental insurance (i.e., private or public) could not be determined, native-born Canadians were more likely than immigrants to have dental insurance (56.0% versus 50.8%). This difference remained when the data were standardized for age and sex.

Significant differences in the use of dental services were also noted within the immigrant population. For example, only 40.9% of immigrants who had resided in the country for less than 5 years had used a dentist in the previous year. In contrast, more than 60% of immigrants who had resided in the country for 10 or more years had visited a dentist. In addition, the region of origin appeared to have a significant impact upon use, with immigrants from Asia reporting the lowest use (51.9%) (**Table 2**).

Nearly equal proportions of native-born and foreign-born participants reported visiting a dentist because services were covered by dental insurance (about 8%) (**Table 3**). Immigrants were more likely than native-born Canadians to consult a dentist for treatment reasons, such as care of the teeth, gums or dentures (21.0% versus 18.3%). Conversely, native-born Canadians were more likely to report visits for preventive care, giving such reasons as "to check that everything is okay" (37.5% versus 33.4% for native-born and immigrants, respectively), "for good health" (13.0% versus 10.6%) and braces (1.9% versus 0.6%).

Logistic regression was used to determine the probability of using dental services with adjustment for other variables such as age, sex and the presence of dental insurance (**Table 4**). Two models were created to explore the determinants of dental use. The first was a pooled model that included both the native-born and foreign-born populations, which enabled determination of whether foreign-born participants were more (or less) likely to have used a dentist than the native-born population, with adjustment for other effects. The second model evaluated use of dental services by immigrants only. The model results are reported as odds ratios (ORs), which allow clear interpretation of the effect of a variable. An OR greater than 1.0 indicates an increased likelihood of use of dental services by participants in that category, and an OR less than 1.0 indicates the reverse. For example, females in the

Table 3 Reason for dental visits among foreign- and native-born people 12 years of age and older, 1996–97

	% of respondents		
Reason for visit to dentist[a]	**Foreign-born**	**Native-born**	***p* value**
Check everything is okay	33.4	37.5	0.036
Covered by insurance	8.3	8.0	0.036
Prevention	4.4	5.2	0.021
For good health	10.6	13.0	0.048
Care of teeth, gums, dentures	21.0	18.3	< 0.001
Clean, fluoride, maintenance	42.3	38.1	0.23
Filling or extraction	19.1	17.4	0.15
Braces	0.6	1.9	< 0.001
Other	0.7	0.8	0.12
n (unweighted)	6,572	37,394	

Source: Derived from the 1996–97 NPHS.[11]
[a]Respondents were allowed to give more than one reason for dental visits.

pooled model were 1.45 times more likely to have visited the dentist than males, all other things being equal.

The pooled model demonstrated that immigrants were significantly more likely than native-born Canadians to have visited a dentist (OR = 1.18). In general, individuals with greater income adequacy, those who were better educated, were married or were younger, and those who had dental insurance were more likely to have visited a dentist. Among foreign-born participants, recent arrivals (resident in Canada for less than 4 years) were less likely to have used a dentist. Immigrants from Asia were less likely to have used a dentist, whereas those with European origins were more likely to have used a dentist.

Discussion

Contrary to expectations, foreign-born residents of Canada were significantly more likely than native-born Canadians to have visited a dentist in the year preceding the survey, a finding that was supported by multivariate analyses adjusting for age and sex differences in the populations. Yet a larger proportion of the native-born population reported having dental insurance. The foreign-born population and the pooled population (foreign- and native-born) were, respectively, 3.30 and 2.60 times more likely to have visited a dentist if they had insurance than if they did not have insurance.

Overall, the factors associated with use of dental services and identified in the logistic model were largely as expected. Dental insurance, for example, significantly increased the likelihood of use. In terms of sociodemographic effects, there was a negative correlation between age and use, with greater use among younger people (aged 12–19 years) and generally less use with increasing age. Among the young, the greater likelihood of use probably reflects social pressure, the presence of parental dental insurance and/or dental care within the school system. Conversely, lack of dental insurance coverage probably explains declining use with older age. Female respondents and whites were also more likely to have used a dentist. Surprisingly, individuals who spoke a language other than English or French were more likely to have used a dentist within the past year, which suggests that language may not be a barrier to dental care.

Socioeconomic variables also influenced use of dental services. Income adequacy, which is defined by Statistics Canada and is based upon both household size and income level, was positively correlated with use (i.e., increasing likelihood of use with increasing income adequacy). Education had a similar gradient, and those who had a bachelor's degree or better were more likely to have used a dentist relative to all other educational levels. In both cases, the results probably reflect greater awareness of the need for care, greater ability to access resources, greater likelihood of dental insurance coverage and greater disposable income available for dental care. Working status (i.e., working versus not working), which potentially reflects access to dental insurance and care through the employer, was not a significant determinant of use and was therefore not included in the reported model.

Among foreign-born respondents, 2 other factors were significant predictors of use of dental services: duration of residency within Canada and region of origin. With regard to duration of residency, recent arrivals (those who had arrived within the 4 years before the survey) were significantly less likely to have used a dentist. Cross-tabulation of results indicated a difference in use of about 20 percentage points relative to those resident for more than 10 years. Social acceptability, adaptation, increasing awareness of

Table 4 Logistic regression for use of dental services by respondents 12 years of age and older, 1996–97[a]

	Pooled		Foreign-born	
Variable	**OR**	**95% CI**	**OR**	**95% CI**
Intercept	0.13	—	0.32	—
Immigration status (reference: native-born)				
Foreign-born	1.18	(1.11–1.26)	—	—
Age (reference: ≥ 65 years)				
12–19 years	4.66	(4.27–5.07)	4.40	(3.37–5.74)
20–44 years	1.31	(1.23–1.39)	—	—
45–64 years	1.10	(1.03–1.17)	1.27	(1.14–1.41)
Education (reference: less than high school graduation)				
High school or better	1.67	(1.59–1.75)	1.26	(1.11–1.43)
Bachelor's degree or better	2.96	(2.76–3.17)	1.56	(1.32–1.84)
Ethnic background (reference: nonwhite)				
White	1.46	(1.36–1.57)	1.59	(1.32–1.90)
Martial status (reference: not married)				
Married	1.11	(1.06–1.16)	1.23	(1.10–1.37)
Gender (reference: male)				
Female	1.45	(1.39–1.50)	1.34	(1.21–1.47)
Income adequacy (reference: low income adequacy)				
Middle	1.22	(1.15–1.29)	—	—
Upper middle	1.68	(1.58–1.78)	1.32	(1.18–1.48)
High	2.67	(2.48–2.88)	1.94	(1.76–2.14)
Dental insurance (reference: no insurance)				
Insurance	2.60	(2.49–2.70)	3.30	(2.98–3.65)
Smoking status (reference: smokes daily)				
Smokes occasionally	0.75	(0.65–0.85)	—	—
Language (reference: speaks an official language)				
Other language	1.38	(1.30–1.46)	1.42	(1.27–1.58)
Origin (reference: other)				
Europe	—	—	1.65	(1.53–1.78)
Asia	—	—	0.67	(0.57–0.79)
Duration of residence (reference: resident for 5 years or more)				
Arrived within past 4 years	—	—	0.60	(0.51–0.72)
n (unweighted)	55,007		8,210	
Likelihood ratio	9,390.681		1,322.740	
Rho squared	0.125		0.119	
% concordant	72.4		71.4	

Source: Derived from the 1996–97 NPHS.[11]

OR = odds ratio, CI = confidence interval

[a]*Suppressed values (indicated by a dash or not shown) were not statistically significant (working status, lower-middle income, smokers) or were not meaningful (origin, duration of residence) in the context of the model.*

dental resources, income and insurance are possible reasons for increasing use with increasing duration of residency. Indeed, there was a difference in insurance coverage of about 24 percentage points between the newest immigrant Canadians (about 30%) and immigrants who had lived in Canada for the longest period (about 54%) (**Table 5**). With regard to region of origin, immigrants who had arrived from countries outside North America,

Table 5 Use of dental services and availability of insurance among foreign-born residents of Canada 12 years of age and older, by duration of residence and origin, 1996/97

	% of respondents	
Characteristic	**At least one visit to dentist**	**Insurance**
Duration of residence in Canada (years)		
0–4	40.9	29.7
5–9	57.7	47.5
≥ 10	60.5	54.1
Region of birth		
U.S., Europe, Australia	61.0	54.2
Asia	51.9	47.2
Other	60.2	45.3

Source: Derived from the 1996–97 NPHS.[11]

Europe and Australia were more likely to have used a dentist in the past year than those of other origins (**Table 4**). Those from Asia had the lowest utilization rate (51.9%), about 8 percentage points lower than those from the United States, Europe and Australia. Dental insurance was also one of the factors for which European immigrants had a slight advantage over immigrants from other regions (about 7 percentage points higher than Asian immigrants). Unmeasured factors, such as fear, language difference, awareness, and transportation problems, may also have resulted in different utilization patterns among immigrants. Although only small proportions of all respondents reported problems with visiting a dentist (data not shown), a somewhat larger proportion of foreign-born respondents than native-born respondents indicated such problems (2.2% vs. 1.8%).

About equal proportions of immigrant and native-born respondents identified the presence of insurance as a reason for a visit to the dentist, but these 2 groups may differ in terms of other reasons for dental use. For example, data in **Table 3** suggest that foreign-born respondents obtained dental services to address needs for physical oral care (such as taking care of teeth, gums or dentures, cleaning and maintenance, and getting fillings or extractions) more often than native-born Canadians. These results may indicate differences in oral health practices between the 2 groups and may also indicate that immigrants have poorer dental health. The larger proportion of immigrants seeking physical oral care could also be due to a lack of services in the region of origin or a lack of prior dental care education.

Conversely, the native-born population seemed more likely to have visited a dentist for preventive reasons, potentially reflecting greater dental insurance coverage. Two self-reported reasons for use of dental services were to ensure that "everything is okay" and to "maintain good dental health." Although general check-ups and maintenance may include some physical corrections (similar to services provided to the immigrant group), it would appear that visiting the dentist was less often associated with a physical ailment and more often to ensure oral health. Similarly, dental appointments to check braces, which may be viewed as an expensive health option (compared with other conditions), is also a preventive oral health measure.

Conclusions

The lack of attention within the literature to immigrant oral health is hardly surprising. The recent Romanow report[12] on health care in Canada did not discuss dental health, and oral health remains a relatively low priority within Canada, with public funding of dental care low by international standards.[13] Federal funding has decreased over time, and funding for oral health at the provincial level is discretionary, although provisions are made within provincial health plans to cover emergency dental care.[13] Other oral health programs, including those for children, expectant mothers, people receiving welfare benefits and elderly people, have been cut back or simply do not exist. Even the immigrant health literature, which has grown exponentially over recent years, is noticeably silent on this topic, yet immigrants represent a particularly vulnerable population in terms of both overall health status and dental health status. With an average of over 200,000 new immigrants per year, this group represents a growing segment of Canada's population, and there is a potential that many new arrivals will have poor dental health or will lack the resources to access care.

Somewhat unexpectedly, the proportion of foreign-born respondents reporting use of dental services was greater than the proportion of native-born respondents after adjustment for age and sex. In addition, foreign- and native-born individuals reported different reasons for dental visits. There remains much room for improvement in the provision of dental care to the immigrant population. Although dental insurance is an important factor in determining use of dental services, duration of residence since arrival, language, access to appropriate dental insurance and other factors may limit use and create barriers to care.[14] In particular, immigrants who speak English as a second language, who speak little or no English at all or who are constrained by social and gender roles may be less likely to use a dentist. Increasing the ability to obtain insurance may result in a shift toward prevention among immigrants, similar to the trend observed among native-

born respondents, with new arrivals benefiting the most. Increased education and awareness of the need for dental services may also be appropriate. The question, of course, is who will pay for these enhancements.

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