Report on Access to Dental Care and Oral Health Inequalities in Ontario

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Executive Summary

Objective

This report provides a summary of oral health status and access to dental care among different sociodemographic subgroups of the Ontario population, using the latest relevant data from the Canadian Community Health Survey (CCHS) of 2005. The CCHS interviewed and collected self-reported information from more than 40,000 individuals in Ontario, aged 12 and older.

Methods

Simple descriptive methods were used to explore the associations between sociodemographic characteristics of respondents and their self-reported access to dental care and oral health status. Sociodemographic characteristics included sex, age, household annual income, household highest educational attainment, dental insurance status, and immigration status. Access to dental care measures included in this study were last year's dental visit, type of dental visits, and a history of financial barriers to visiting a dentist in the last 3 years. Oral health status was examined through four variables: tooth loss due to oral diseases in the last year, dentate status, experience of any kind of pain or discomfort in oral/facial area over the last month, and experience of any social limitation resulting from an oral health condition.

Findings

The findings of this study indicate that:

- 68% of Ontarians have dental insurance. However, among older adults and those with lower income and education, this number drops to 36%, 40%, and 41% respectively. Ontarians with the highest incomes are the most likely to have dental insurance (85%).

- 71% of Ontarians had visited a dentist in 2005. Among Ontarians with lower income and less education, as well as those with no insurance, about half made such visits.

- Most Ontarians (80%) tend to visit a dentist for preventive purposes while one in five visits a dentist only in emergencies. Those with lower income, less than secondary school graduation, the uninsured, and those 65 years of age and older were more likely to visit only when an emergency occurs.

- Among Ontarians who did not visit a dentist in the past three years, one out of five (20%) cited cost as a barrier. Young adults, the uninsured and those with some post-secondary education had higher rates of reporting financial barriers to dental care.

- Approximately 6% of Ontarians do not have any of their own teeth. Similarly, about 5% of Ontarians aged 12 years and older reported that they had lost a tooth due to dental disease in the previous year. Age, income, educational attainment and dental insurance were significantly associated with both outcomes.

- Nearly half of Ontarians aged 12 years and older experienced pain or discomfort in their oral/facial area in the previous month. This could be anything from bad breath or bleeding gums, to severe pain and infection. Older adults were the least likely to report such experiences (36%).
- 3.5% of Ontarians avoided social interactions, such as conversation, laughing or smiling, in the past year because of an oral condition. Ontarians in the lowest income group were most likely to report that oral conditions caused them to avoid such social interactions (8.5%).
- More than 8 out of 10 Ontarians brush their teeth at least twice a day. This proportion increased with higher educational attainment and annual household income. Compared to men, women were significantly more likely to brush their teeth at least twice a day.

Conclusions

- While the majority of Ontarians have good oral health and adequate access to dental care, there are subgroups in Ontario that cannot appropriately access dental care and have poorer oral health.
- Those most likely to report poorer oral health and access barriers include lower income earners, the uninsured, older adults and those with lower educational attainment.

Background

Equitable access to dental care is fundamental aspect of quality dental care systems, as defined by the World Health Organization (1), and is recognized as a basic right of individuals (2). In Canada, equitable access to preventive care and basic treatments is a basic principle in developing oral care programs (3). However, despite overall improvements in the oral health of Canadians, there are still subgroups that bear a disproportionate burden of oral diseases (4,6,7).

Health disparities, including oral health disparities, and their relation to sociodemographic characteristics, are now a major focus of public health. With the completion of the 2007-09 Canadian Health Measure Survey (CHMS), we now know that the oral health of Canadians has improved significantly over the years; yet, not everyone has enjoyed the same degree of improvement. Significant inequalities in oral health and access to dental care were observed and shown to be related to age, dental insurance, income, education, and immigration status (4).

Due to the limited public funding for oral health care, it is important to adopt an evidence-based approach for allocation of the available resources. That is, gathering detailed evidence on the dynamics of inequalities among subgroups is essential for decision making purposes. While the CHMS provides valuable insight on oral health disparities in a national context, it does not permit provincial level analysis. Therefore, this study aimed to explore the profile of oral health inequities in Ontario using data collected through the 2005 Canadian Community Health Survey (CCHS).

Policy Context for Oral Health Ontario

Unlike the universal coverage for general health in Ontario and Canada, oral health is mainly funded by the private sector. In 2009, $12.8 billion was spent on dental care in Canada; however, public funding represented less than 6% of all expenditures (4). Public programs in Canada are often limited to individuals with minimum income, or those on social or disability assistance. Even within eligible groups, coverage for basic services is mainly limited to children and adolescents while adults can only benefit from these services on a discretionary basis. In the majority of cases, only emergency treatments are provided to eligible adults (8).

In Ontario, access to dental care is largely restricted to those who can pay out-of-pocket or from "dental insurance" plans received as a benefit of employment. Community water fluoridation (CWF) is the major public oral health policy intervention in Ontario; CWF benefits everyone regardless of their sociodemographic and economic means. More than 70% of Ontarians have access to fluoridated water supplies (5). There are also four major public programs providing limited oral care for those in financial difficulties:

- *Children in Need of Treatment (CINOT)* – provides one-time comprehensive dental care for children in need of dental treatment as identified through school screening programs. CINOT covers children and adolescents up to the age of 18, whose parents do not have dental insurance and cannot afford the cost of treatment (9).

- *Healthy Smiles Ontario (HSO)* – a program for children and adolescents under the age of 18 who do not have access to any form of dental coverage and whose parents have limited incomes. HSO provides some preventive and restorative dental coverage (10).

- *Ontario Disability Support Program (ODSP)* – provides discretionary dental coverage for persons receiving disability support, their spouses and dependent children up to their 18th birthday (each municipality decides the extent of services for eligible adults) (11).
- *Ontario Works (OW)* – provides basic dental coverage for social assistance recipient's children up to the age 18, and discretionary coverage for adults (12).

Methods and Materials

Data Source

The CCHS 2005 provides the most recent oral health related data for Ontario. CCHS is a cross-sectional survey which targets persons aged 12 years or older who are living in private dwellings in ten provinces and three territories. However, this survey excludes persons living on Indian Reserves or Crown lands, residents of institutions, full-time members of the Canadian Armed Forces and residents of certain remote regions. The CCHS covers approximately 98% of the Canadian population aged 12 or older. In Ontario, the number of valid participants for 2005 was 41,766.

Public Use Microdata Files (PUMF) for the CCHS Cycle 3.1, which collected data between January and December 2005, were used in this study. PUMFs provide data collected from all respondents in a less detailed format. More details about the CCHS are provided by Statistics Canada (13).

Measures

Variables were selected to provide a better understanding of dental utilization/access and oral health outcomes. These variables are presented in Table 1.

Access to dental care factors

Measures of utilization/access to dental care derived from CCHS and used in this study include: 1) visiting a dentist in the last year; 2) type of dental visits made; 3) experiencing cost barriers in accessing dental care; and 4) dental insurance status. Measures of visiting a dentist in the last year were derived from the question "*When was the last time that you went to a dentist? a) Less than 1 year ago; b) 1 year to less than 2 years ago; c) 2 years to less than 3 years ago; d) 3 years to less than 4 years ago; e) 4 years to less than 5 years ago; f) 5 or more years ago; h) Never".* This variable was dichotomized at the 1 year cut off level. Measures of type of dental visit were derived from the question *"Do you usually visit a dentist for check-ups: (a) More than once a year; (b) about once a year; (c) less than once a year; (d) only for emergency care?".* A dummy variable was created with the value of 0 if the answer to the question was a, b, or c (regular/occasional visits for preventive care) and a value of 1 otherwise (visiting only in emergency cases). Measures of financial barriers to dental care were obtained from the question "*What are the reasons that you have not been to a dentist in the past 3 years?*" The responses were grouped as *yes* or *no,* with *yes* indicating an experience of cost restrictions in the past. Dental insurance was derived from the question "*Do you have insurance or a government program that covers all or part of your dental expenses?"*

Oral health status

The CCHS does not provide any clinically assessed oral health measures; only self-reported, oral health variables were used in this study. These measures included current dentate status, tooth loss due to dental diseases in the last year, history of pain or discomfort in oral/facial area in the last month, and history of social limitation due to oral health conditions in the past year. Self-reported frequency of tooth brushing was also included in the analysis because of its role in exposing fluoride to the oral cavity and the impact of oral hygiene on better oral health.

Information on the dentate status was collected by asking "*do you have one or more of your own teeth*?" Those who reported not having any of their own teeth were grouped as "edentate". The history of tooth loss due to dental decay or gum diseases in the past year was derived from combining two variables. The first variable was from the question "*In the past 12 months, have you had any teeth removed by a dentist?*" This was then followed by the question "*(In the past 12 months,) were any teeth removed because of decay or gum disease?*" which was asked only from those who responded "yes" to the first question. These two variables were combined to estimate the number of people who lost teeth due to dental caries/ gum disease as a percentage of the whole population.

The history of pain or discomfort in the last month was a derived variable created by survey administration with a yes/no response. This variable was created based on questions asked about tooth ache, sensitive teeth to hot/cold, pain in the jaw/mouth/face, bleeding gums, dry mouth , and bad breath. If the respondent reported any of these conditions in the past month, it is grouped as "yes" in the "experienced pain or discomfort in the last month". Social limitation due to oral health conditions was also a derived variable created by survey administration and indicated whether the respondent's oral health status impacted their social functions as measured by avoiding conversations or contact with others, or by avoiding laughing or smiling. Frequency of tooth brushing was dichotomized to "twice a day or more" and "less than twice a day".

Sociodemographic factors

Sociodemographic variables included sex, age, annual household income, household highest educational attainment, and immigration status (derived from the question *"In what country were you born?"* with Canada-born defined as non-immigrant).

Table 1: Relevant variables from the CCHS 2005 database

Access to dental care factors	Oral health status factors	Sociodemographic factors
Last time visited a dentist: < 1 year ago 1 year or more ago	**Dentate status:** Dentate Edentate	**Sex:** Male Female
Type of dental visits: Regularly/occasionally for check-ups Only for emergency	**Tooth loss due to oral diseases in the last year:** No Yes	**Age:** 12-19 20-44 45-64 65 and older
History of cost-barrier in the last 3 years: No Yes	**Experienced pain/discomfort in the past month:** No Yes	**Household annual income:** No income or < $15,000 $15,000-$29,999 $30,000-$59,999 $60,000-$79,999 $80,000 and more
Dental insurance status: Insured Uninsured	**Social limitation due to oral health status in the last year:** No Yes	**Household educational attainment:** < Secondary school graduation Secondary school graduation Some post-secondary education Post-secondary graduation
	Frequency of tooth brushing: Twice a day or more Less than twice a day	**Immigration status:** Non-immigrant Immigrant

Analysis Plan

A series of descriptive analyses was conducted to compare access to dental care and oral health status among different sociodemographic groups. Each access to dental care and oral health status variable was stratified based on the sociodemographic factors presented in Table 1. In addition, access and oral health status factors were stratified according to dental insurance status. All data analysis was completed using the Survey Documentation and Analysis (SDA) online tool available through University of Toronto's Data Library services (http://sda.chass.utoronto.ca/sdaweb/html/cchs.htm). Confidence intervals (95%) were derived using the SDA with weights supplied by Statistics Canada. Results were considered significantly different if two parameter estimates did not have overlapping 95% confidence intervals.

Summary of the Findings

Due to the sample characteristics of the CCHS survey, the results of this study only refer to those aged 12 years and older.

Sociodemographic Characteristics of the Sample

Table 2 presents the sociodemographic characteristics of the population surveyed. Men and women composed almost equal portions of the sample. The majority of the respondents were aged 20-44 (43.4%). A larger proportion of respondents were from households with higher income and higher educational attainment (67.0% were from households with income ≥ $50,000, and 77.3% from households with post-secondary graduation). 30% of the respondents were immigrants.

Table 2: Characteristics of Ontario Sample Surveyed, CCHS 2005

Sociodemographic factors	Distribution (%)
Sex	
Male	49.2
Female	50.8
Age group	
12-19	12.6
20-44	43.4
45-64	29.7
65 and older	14.3
Household annual income	
No income or < $15,000	4.6
$15,000-$29,999	10.7
$30,000-$49,999	17.6
$50,000-$79,999	26.2
$80,000 or more	40.8
Household educational attainment	
< Secondary school graduation	6.7
Secondary school graduation	10.8
Other post-secondary	5.2
Post-secondary graduation	77.3
Immigration status	
Immigrant	30.1
Non-immigrant	69.9

Access to Dental Care and Oral Health Status

Table 3 presents the analyses of access to dental care by sociodemographic factors. Overall 67.7% (C.I: 67.2-68.2) of the Ontario population age 12 years and older reported having some type of dental insurance in 2005. About 70% of Ontarians made a dental visit in past year (71.4%, C.I: 70.9-71.8). Most individuals reported visiting a dentist for check-ups either regularly or occasionally; however, one in five reported visiting a dentist only when emergency occurs (19.7%, C.I: 19.3-20.1). Among those whom have not visited a dentist in the past 3 years, 20% (19.9%, C.I: 19.0-20.9) cited cost as the main reason.

Table 4 contains self-reported oral health outcomes by sociodemographic factors. Only 5.8% (C.I: 5.6-6.0) reported having none of their own teeth and 5.1% (C.I: 4.8-5.3) reported losing one or more teeth due to oral diseases in the past year. Only 3.5% (C.I: 3.4-3.7) reported experiencing social limitations such as avoiding conversation and smiling in the last year. However, close to half (47.1%, C.I: 46.6-47.6) reported experiencing pain or discomfort in the past month. Over 80% of Ontarians (82.8%, C.I: 82.4-83.2) brush their teeth at least twice a day.

Sex

Overall, sex differences among the Ontario population aged 12 years and older were not prominent. While men had slightly higher insurance rates (69.5%, C.I: 68.9-70.2) compared to women (66%, C.I: 65.3-66.6), more women reported visiting a dentist in the last year (73.6% of women, C.I: 73.0-74.2 vs. 69.1% of men, C.I: 68.4-69.8). Females also reported visiting a dentist only in emergency cases slightly less than men (18.0%, C.I: 17.5-18.5 vs. 21.5%, C.I: 20.9-22.1). Yet, higher numbers of females cited cost as the main reason for not visiting a dentist in the last 3 years (21.6%, C.I: 20.2-23.0 vs. 18.5%, C.I: 17.2-19.9).

Women brushed their teeth significantly more frequently when compared to men (90.2%, C.I: 89.8-90.6 vs. 75.2%, C.I: 74.5-75.8). Fewer women reported tooth loss due to dental diseases in the last year (4.5%, C.I: 4.2-4.8 vs. 5.7%, C.I: 5.3-6.2); while women reported a history of pain, discomfort (49.6%, C.I: 48.9-50.2 vs. 44.5%, C.I: 43.7-45) or social limitation due to oral conditions more frequently than men (3.9%, C.I: 3.6-4.1 vs. 3.2%, C.I: 2.9-3.4).

FIGURE 1 **Percent reporting frequent tooth brushing by sex, CCHS 2005 (Ontario)**

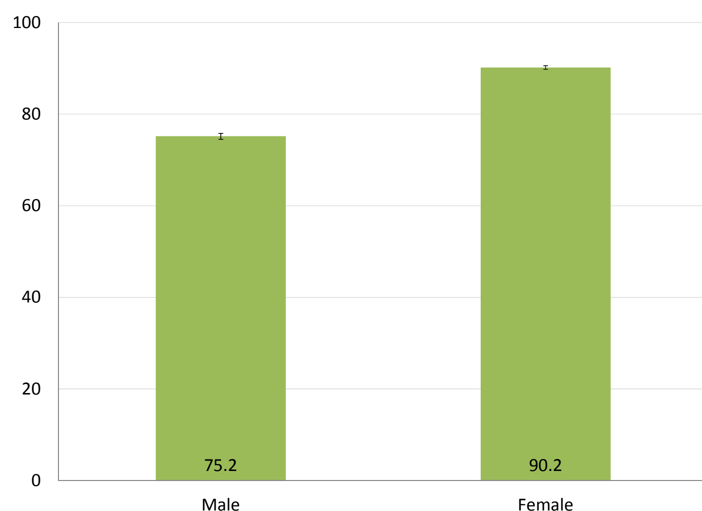


Table 3: Access to dental care among Ontario residents according to their sociodemographic characteristics, CCHS 2005 (Prevalence and 95% confidence interval)

	Visited a dentist in the last year (%)	Reported that cost was a barrier (%)	Only visited dentist in an emergency (%)	Has dental insurance (%)
Sex				
Male	69.1 (68.4-69.8)	18.5 (17.2-19.9)	21.5 (20.9-22.1)	69.5 (68.9-70.2)
Female	73.6 (73.0-74.2)	21.6 (20.2-23.0)	18.0 (17.5-18.5)	66.0 (65.3-66.6)
Age group				
12-19	83.0 (81.9-84.0)	18.7 (14.1-24.5)	8.9 (8.2-9.8)	77.5 (76.3-78.7)
20-44	69.4 (68.7-70.2)	32.8 (30.8-35.0)	18.2 (17.6-18.9)	71.3 (70.6-72.0)
45-64	75.3 (74.5-76.0)	15.9 (14.4-17.6)	18.6 (17.9-19.3)	73.1 (72.3-73.9)
65 and older	58.6 (57.6-59.7)	6.4 (5.5-7.3)	36.9 (35.9-37.9)	36.1 (35.0-37.1)
Household income				
No income or <$15,000	48.9 (47.0-50.8)	19.1 (16.7-21.8)	43.8 (41.9-45.8)	39.5 (37.6-41.4)
$15,000-$29,999	50.2 (48.9-51.5)	22.1 (20.2-24.1)	41.9 (40.6-43.3)	34.8 (33.6-36.1)
$30,000-$59,999	62.3 (61.2-63.4)	22.5 (20.4-24.7)	28.2 (27.2-29.3)	55.5 (54.3-56.6)
$60,000-$79,999	73.1 (72.2-74.0)	21.8 (19.4-24.4)	17.4 (16.6-18.2)	72.8 (71.9-73.7)
$80,000 and higher	84.1 (83.4-84.8)	16.0 (13.3-19.1)	7.7 (7.2-8.3)	84.9 (84.2-85.5)
Educational attainment				
< Secondary school graduate	47.2 (45.7-48.7)	7.7 (6.5-9.0)	48.1 (46.6-49.6)	40.8 (39.4-42.3)
Secondary school graduate	63.8 (62.4-65.1)	15.9 (13.8-18.3)	27.9 (26.7-29.2)	61.3 (59.9-62.7)
Other post-secondary	66.1 (64.0-68.2)	28.7 (24.4-33.4)	23.3 (21.5-25.2)	66.0 (63.9-68.1)
Post-secondary graduate	75.6 (75.1-76.1)	22.2 (20.8-23.7)	15.3 (14.9-15.8)	71.5 (71.0-72.1)
Immigrant status				
Immigrant	66.3 (65.2-67.3)	19.3 (17.3-21.4)	25.3 (24.3-26.3)	59.2 (58.1-60.3)
Non-immigrant	73.8 (73.3-74.3)	20.2 (19.1-21.3)	17.2 (16.7-17.6)	71.7 (71.2-72.2)
Insured	81.4 (80.9-81.9)	11.3 (10.0-12.6)	10.7 (10.4-11.1)	
Uninsured	51.3 (50.5-52.2)	26.0 (24.7-27.3)	38.9 (38.1-39.7)	
Total	**71.4 (70.9-71.8)**	**19.9 (19.0-20.9)**	**19.7 (19.3-20.1)**	**67.7 (67.2-68.2)**

Table 4: Oral health status of Ontario residents according to their sociodemographic characteristics, CCHS 2005 (Prevalence and 95% confidence intervals)

	Tooth loss in the last year due to dental decay/ gum disease (%)	Edentate (%)	Experienced oral/facial pain or discomfort in the past month (%)	Social limitation in the last year due to oral health conditions (%)	Frequent tooth brushing (at least twice a day) (%)
Sex					
Male	5.7 (5.3-6.2)	5.2 (4.9-5.6)	44.5 (43.7-45.2)	3.2 (2.9-3.4)	75.2 (74.5-75.8)
Female	4.5 (4.2-4.8)	6.3 (6.0-6.7)	49.6 (48.9-50.2)	3.9 (3.6-4.1)	90.2 (89.8-90.6)
Age group					
12-19	1.0 (0.7-1.4)	0.9 (0.7-1.3)	54.3 (52.9-55.7)	4.1 (3.6-4.7)	82.4 (81.3-83.5)
20-44	3.8 (3.4-4.2)	1.6 (1.4-1.8)	50.7 (49.9-51.5)	3.5 (3.2-3.8)	85.7 (85.1-86.3)
45-64	7.1 (6.6-7.7)	6.5 (6.1-6.9)	43.6 (42.7-44.5)	3.8 (3.5-4.2)	80.8 (80.1-81.6)
65 and older	9.6 (8.7-10.4)	22.6 (21.7-23.5)	36.1 (35.1-37.1)	2.4 (2.1-2.7)	76.5 (75.4-77.5)
Household income					
No income or <$15,000	12.7 (10.9-14.8)	14.3 (13.0-15.7)	52.0 (50.1-53.9)	8.5 (7.5-9.6)	79.9 (78.1-81.6)
$15,000-$29,999	11.6 (10.4-12.9)	15.2 (14.3-16.2)	48.5 (47.2-49.8)	5.7 (5.1-6.3)	76.3 (75.0-77.6)
$30,000-$59,999	7.1 (6.4-7.9)	7.7 (7.1-8.4)	48.1 (46.9-49.2)	4.1 (3.7-4.6)	80.5 (79.5-81.5)
$60,000-$79,999	5.0 (4.5-5.5)	3.6 (3.3-4.0)	46.9 (45.9-48.0)	3.2 (2.8-3.6)	82.9 (82.0-83.6)
$80,000 and higher	3.0 (2.7-3.4)	2.1 (1.9-2.4)	47.0 (46.1-48.0)	2.5 (2.2-2.8)	85.4 (84.7-86.0)
Educational attainment					
< Secondary school graduate	10.3 (9.0-11.7)	24.0 (22.8-25.3)	43.2 (41.7-44.7)	5.5 (4.9-6.2)	70.1 (68.4-71.7)
Secondary school graduate	8.3 (7.4-9.4)	8.3 (7.6-9.2)	44.5 (43.1-45.9)	3.7 (3.2-4.3)	79.3 (78.0-80.4)
Other post-secondary	7.1 (5.8-8.7)	4.8 (3.9-5.8)	48.3 (46.1-50.5)	4.0 (3.2-4.9)	79.5 (77.6-81.3)
Post-secondary graduate	4.2 (3.9-4.5)	3.9 (3.7-4.2)	47.4 (46.8-48.0)	3.2 (3.0-3.4)	84.6 (84.2-85.1)
Immigrant status					
Immigrant	7.0 (6.3-7.7)	5.9 (5.4-6.4)	45.8 (44.7-46.9)	3.7 (3.3-4.2)	82.7 (81.8-83.5)
Non-immigrant	4.3 (4.0-4.6)	5.7 (5.4-6.0)	47.8 (47.3-48.4)	3.4 (3.2-3.6)	82.9 (82.4-83.3)
Dental insurance status					
Insured	4.1 (3.8-4.4)	3.5 (3.2-3.7)	47.5 (46.8-48.1)	3.2 (3.0-3.4)	84.3 (83.8-84.7)
Uninsured	8.8 (8.1-9.4)	10.7 (10.2-11.2)	46.0 (45.2-46.8)	4.2 (3.9-4.5)	79.6 (78.8-80.3)
Total	**5.1 (4.8-5.3)**	**5.8 (5.6-6.0)**	**47.1 (46.6-47.6)**	**3.5 (3.4-3.7)**	**82.8 (82.4-83.2)**

Age

In general, seniors (65 years and older) reported significantly poorer access to dental care compared to other age groups. They were the least likely to be insured (36.1%, C.I: 35.0-37.1) and to have visited a dentist in the past year (58.6%, C.I: 57.6-59.7). In addition, seniors were the most likely to report visiting a dentist only in emergency cases (36.9%, C.I: 35.9-37.9). However, they were also the least likely to cite cost as the main reason for not visiting a dentist in the past 3 years (6.4%, C.I: 5.5-7.3). Younger adults (20 to 44 years old) visited the dentist less frequently in the past year (69.4%, C.I: 68.7-70.2) and were more likely to cite cost as the main reason for not visiting (32.8%, C.I: 32.8-35.0).

FIGURE 2 **Percent reporting having dental insurance by age group, CCHS 2005 (Ontario)**

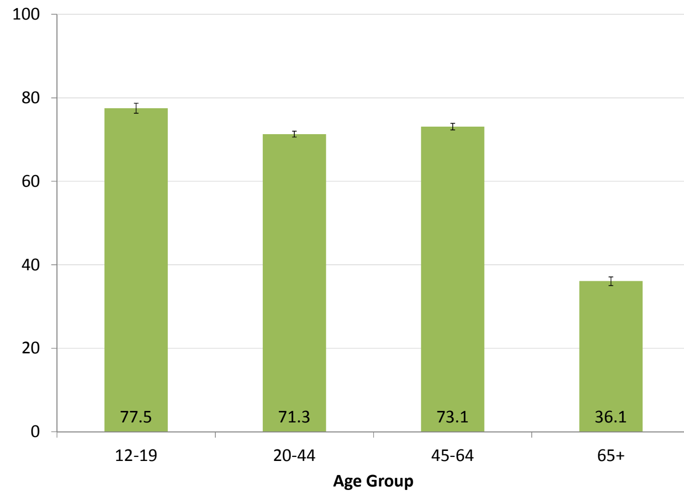


FIGURE 3 **Percent reporting visiting a dentist in the past year by age group, CCHS 2005 (Ontario)**

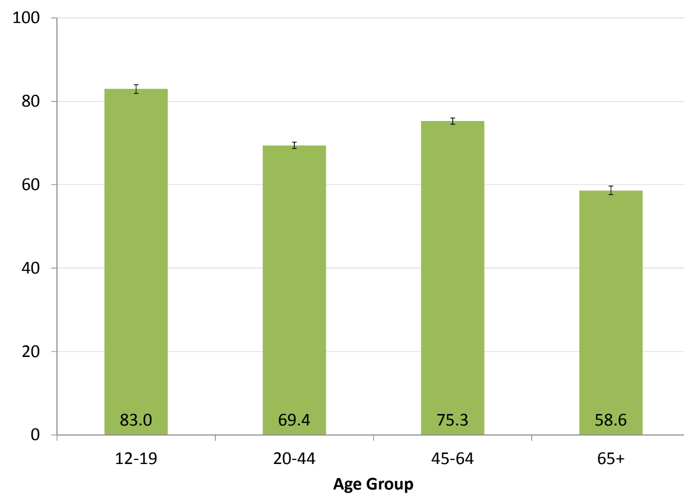
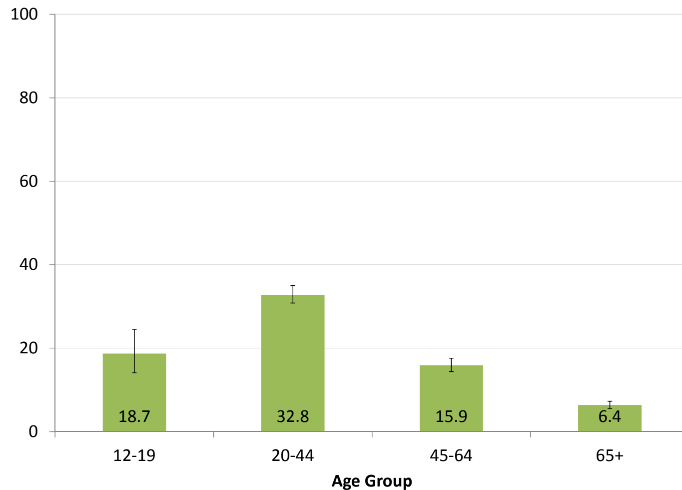
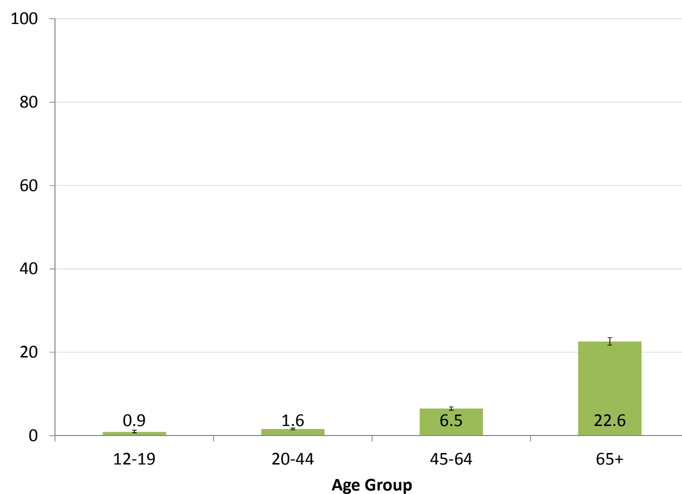


FIGURE 4 **Percent reporting cost barriers to dental visits by age group, CCHS 2005 (Ontario)**



Age was positively associated with being edentate and reporting tooth loss in the last year; seniors reported having lost teeth in the last year (9.6%, C.I: 8.7-10.4), and being edentate (22.6%, C.I: 21.7-23.5) much more frequently when compared to those aged 12 to 19 (1.0%, C.I: 0.7-1.4, and 0.9%, C.I: 0.7-1.3, respectively). Yet, as age increased, fewer people reported that their oral health conditions caused them pain, discomfort or social limitations. Only 36.1% (C.I: 35.1-37.1) of seniors experienced oral/facial pain or discomfort in the last month, while about half (54.3%, C.I: 52.9-55.7) of adolescents (12 to 19 years old) reported such experiences. In addition, as age increased, fewer people reported tooth brushing twice a day or more.

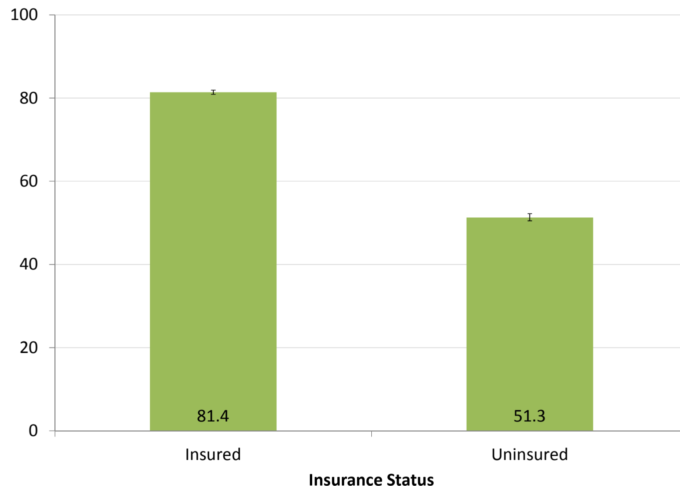
FIGURE 5 **Percent reporting being edentate by age group, CCHS 2005 (Ontario)**



Dental insurance

Ontarians who had any type of dental insurance reported significantly higher rates of dental service utilization and more favourable access to dental care. While over 80% (81.4%, C.I: 80.9-81.9) of the insured visited a dentist in the last year, just over half of the uninsured made such visits (51.3%, C.I: 50.5-52.2). Cost was cited as a barrier by only 11.3% (C.I: 10.0-12.6) of the insured as opposed to 26.0% (C.I: 24.7-27.3) of the uninsured. Also, the uninsured more frequently reported visiting a dentist only in emergency cases (38.9% of uninsured, C.I: 38.1-39.7 vs. 10.7% of insured, C.I: 10.4-11.1).

FIGURE 6 **Percent reporting visiting a dentist in the past year by dental insurance status, CCHS 2005 (Ontario)**



Moreover, uninsured respondents reported poorer oral health compared to the insured. The uninsured reported tooth loss due to oral diseases in the past year nearly twice as often as the insured (8.8% of uninsured, C.I: 8.1-9.4 vs. 4.1% of insured, C.I.: 3.8-4.4). The rates of edentulism among the uninsured were also higher than among the insured (10.7% of uninsured, C.I: 10.2-11.2 vs. 3.5% of insured, C.I: 3.2-3.7), and the uninsured reported less frequent tooth brushing (79.6% of uninsured, C.I: 78.8-79.6 vs. 84.3% of insured, C.I: 83.8-84.7). However, the uninsured reported only slightly higher rates of experiencing pain, discomfort or social limitation when compared to insured.

FIGURE 7 **Percent reporting visiting a dentist only in emergency cases by dental insurance status, CCHS 2005 (Ontario)**

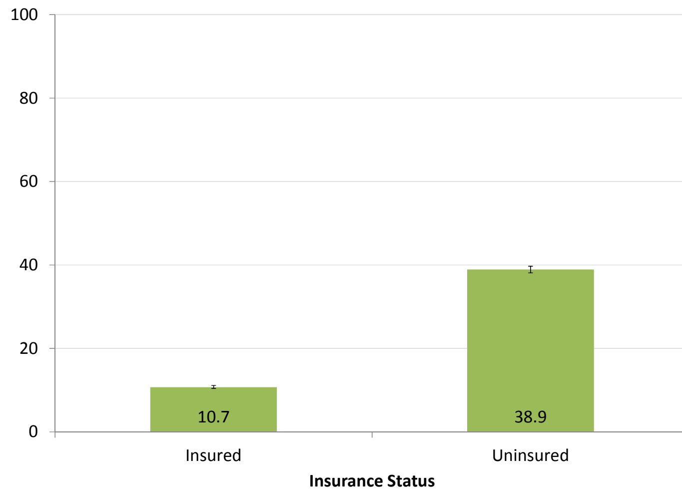
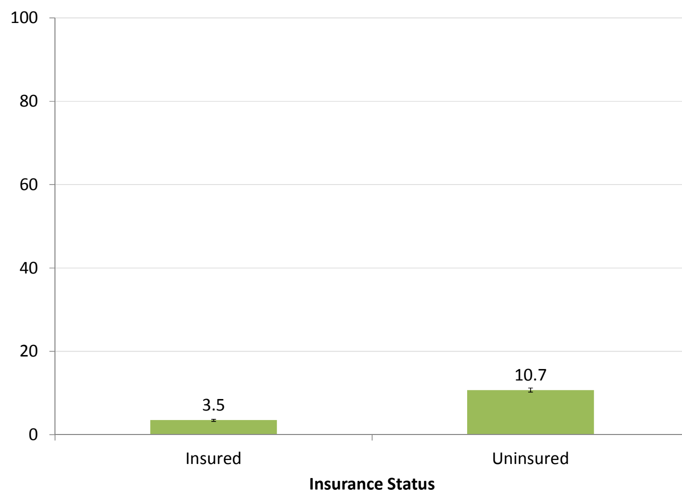


FIGURE 8 **Percent reporting being edentate by dental insurance status, CCHS 2005 (Ontario)**



Income level

Household annual income was significantly associated with access to dental care measures. Overall, respondents from the highest income households were reported having dental insurance more frequently (84.9%, C.I: 84.2-85.5) and having visited a dentist in the last year (84.1%, C.I: 83.4-84.8). The highest income earners were least likely to report visiting a dentist only for emergency reasons less frequently (7.7%, C.I: 7.2-8.3) citing cost as the main barrier to dental visits (16.0%, C.I: 13.1-19.1). In contrast, those from the lowest income households (< $15,000) had the lowest rate of visiting a dentist in the past year (48.9%, C.I: 47.0-50.8) and the highest rate of visiting a dentist only in emergency cases (43.8%, C.I: 41.9-45.8). Importantly, the highest uninsured rate was reported by those coming from households with annual incomes of $15,000 to $30,000. It is worth noting that members of households with the lowest income were not those who cited cost

as the main barrier to their dental visits. Instead, those from middle-income households (income between $15,000 and $79,999) had the highest rates of reporting cost as a barrier.

FIGURE 9 **Percent reporting having dental insurance by income, CCHS 2005 (Ontario)**

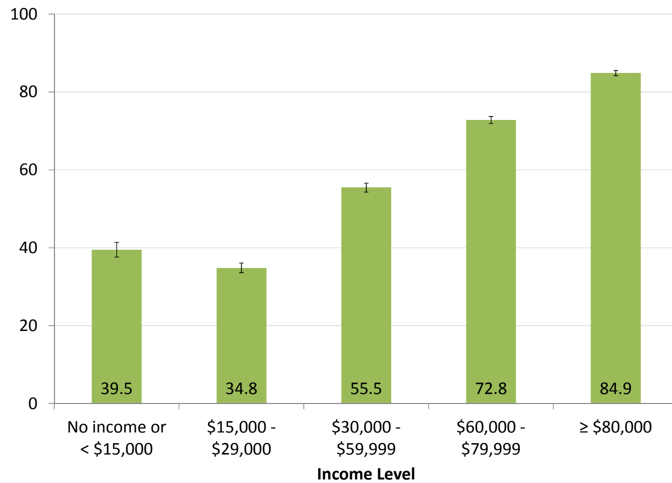
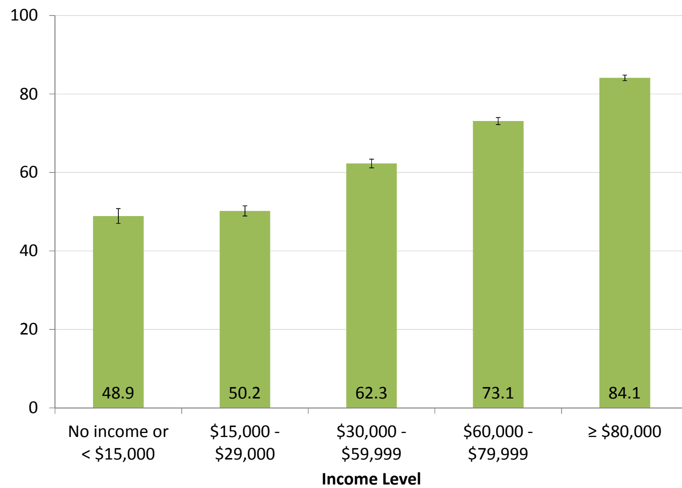
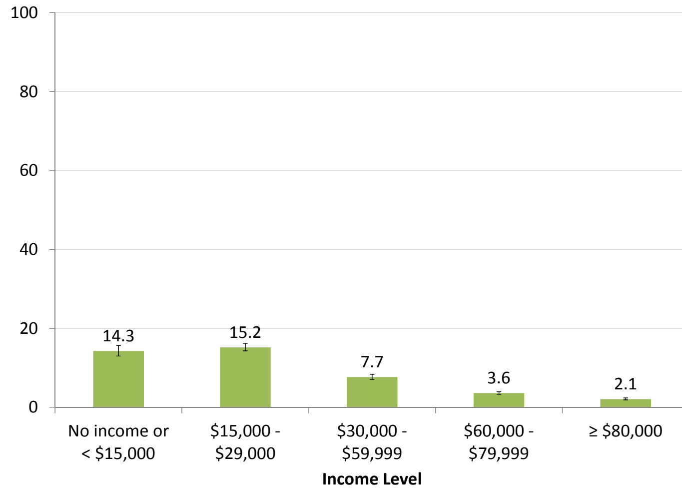


FIGURE 10 **Percent reporting visiting a dentist in the past year by income, CCHS 2005 (Ontario)**



Low and low-middle income earners reported less favourable oral health status compared to high income earners. They had the highest rates of reporting tooth loss in the last year and being edentate with rates nearly 4 and 7 times higher than the highest income households, respectively. Lowest income earners also reported pain/discomfort more frequently (52.0%, C.I: 50.1-53.9) as well as social limitations due to oral health problems (8.5%, C.I: 7.5-9.6) when compared to other income groups. Those with annual household incomes of $15,000 to $29,999 were also reported less frequent tooth brushing (76.3%, C.I: 75.0-77.6).

FIGURE 11 **Percent reporting to be edentate by income, CCHS 2005 (Ontario)**



Educational attainment

Generally, as household educational attainment decreased, so did access to dental care. Respondents living in households with less than secondary school graduation were the least likely to be insured (40.8%, C.I: 39.4-42.3) and to have visited a dentist in the past year (42.7%, C.I: 45.7-48.7). This group also reported visiting a dentist only in emergency cases more frequently (48.1%, C.I: 46.6-49.6) compared to respondents with post-secondary education (15.3%, C.I: 14.9-15.8). Importantly, those with lower than secondary school graduation reported cost as the main reason for not making dental visits in the last 3 years more frequently (7.7%, C.I: 6.5-9.0) compared to respondents with post-secondary education (22.2%, C.I: 20.8-23.7).

FIGURE 12 **Percent reporting having dental insurance by educational attainment, CCHS 2005 (Ontario)**

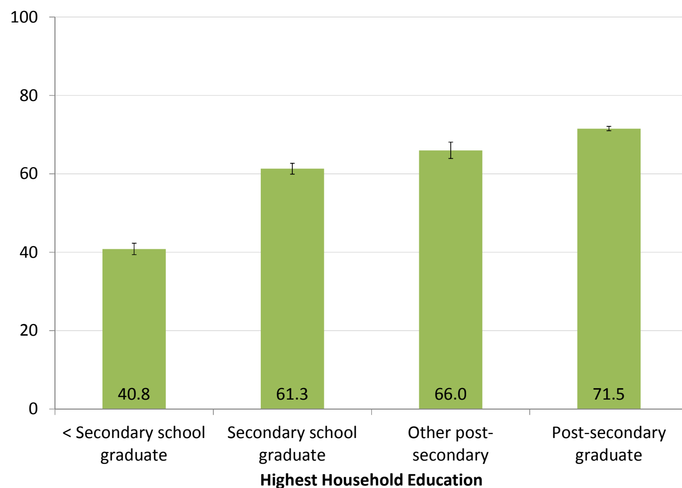
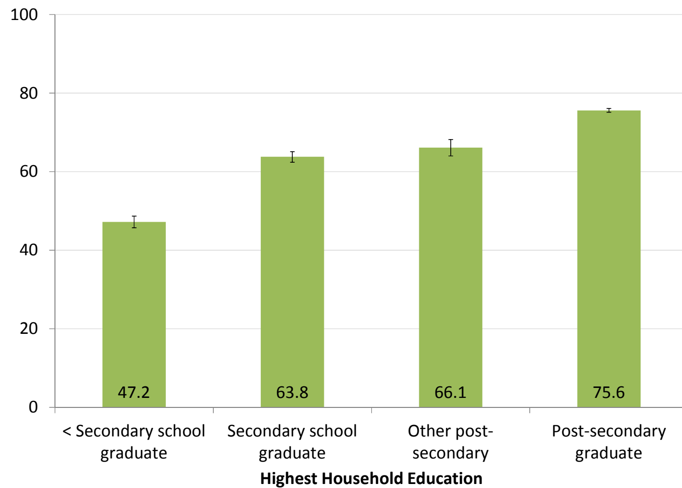


FIGURE 13 **Percent reporting visiting a dentist in the past year by educational attainment, CCHS 2005 (Ontario)**



Those with lower than secondary school graduation had the highest rate of tooth loss due to oral diseases (10.3%, C.I: 9.0-11.7), edentulism (24%, C.I: 22.8-25.3), and being socially limited due to oral health conditions (5.5%, C.I: 4.9-6.2). However, these respondents had slightly lower rates of reporting oral/facial pain or discomfort in the last month. Reports on frequent tooth brushing were also associated with higher household educational attainment.

FIGURE 14 **Percent reporting visiting a dentist only in emergency cases by educational attainment, CCHS 2005 (Ontario)**

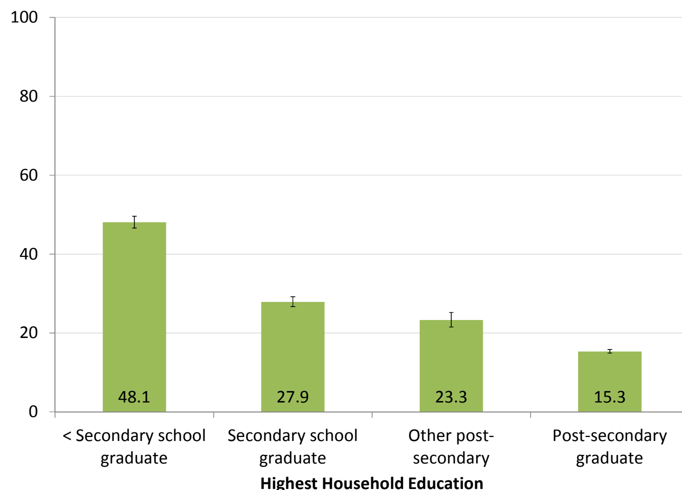
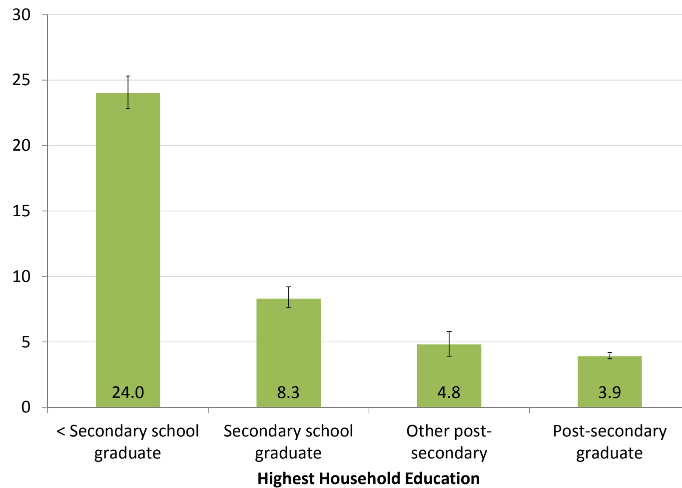


FIGURE 15 **Percent reporting to be edentate by educational attainment, CCHS 2005 (Ontario)**



Immigrant status

Immigrants reported less favourable access to dental care when compared to their non-immigrant counterparts. Only about 6 out of 10 immigrants aged 12 years and older reported having dental insurance (59.2%, C.I: 58.1-60.3), and only 66.0% (C.I: 65.2-67.3) of them visited a dentist in the last year compared to 73.8% (C.I: 73.3-74.3) of non-immigrants. Also, 1 out of 4 immigrants reported seeking dental care only in emergency cases (25.2%, C.I: 24.3-26.3). Immigrants, reported tooth loss due to dental diseases in the last year more frequently than non-immigrants (7.0%, C.I: 6.3-7.7 compared to 4.3%, C.I: 4.0-4.3), yet less frequently reported having experienced oral/facial pain or discomfort in the last month (45.8%, C.I: 44.7-46.9) compared to non-immigrants (47.8%, C.I: 47.3-48.4).

FIGURE 16 **Percent reporting having dental insurance by immigrant status, CCHS 2005 (Ontario)**

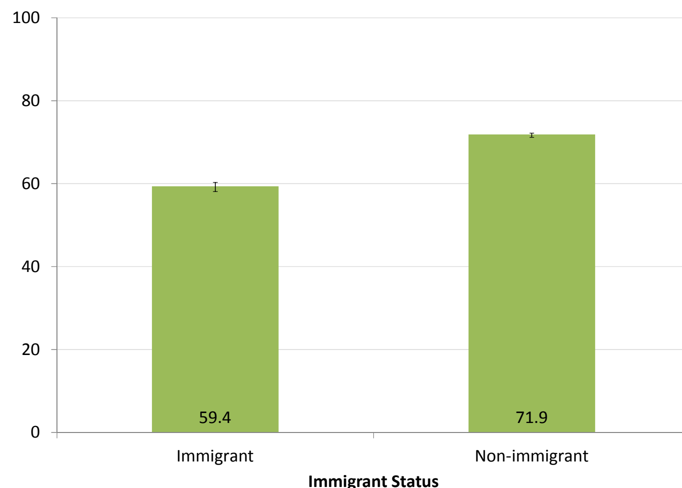
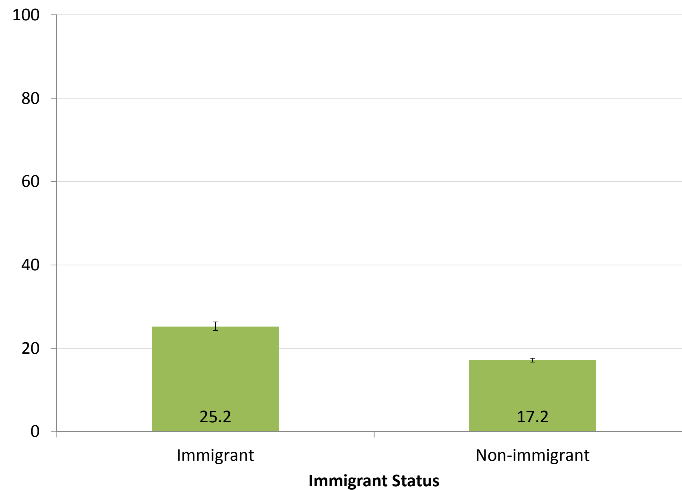


FIGURE 17 **Percent reporting visiting a dentist only in emergency cases by immigrant status, CCHS 2005 (Ontario)**



Conclusions

Most Ontarians have good access to dental care, as measured in 2005:

- Seven out of ten had dental insurance and visited a dentist in the previous year;
- About four out of five visited a dentist regularly or occasionally for preventive reasons; and
- Four out of five did not face financial barriers to dental visits in the last 3 years.

Most Ontarians enjoy good oral health, as measured in 2005:

- Four out of five Ontarians brushed their teeth at least twice a day;
- About 94% reported to be dentate;
- More than nine out of ten did not lose any teeth due to oral diseases in the last year; and
- 97% said that the condition of their mouth and teeth did not interfere with their social life.

- *However*, half of the Ontario population reported that they have experienced some sort of pain or discomfort in the last month. This could vary from mild conditions such as bad breath to severe problems like pain or infection.

Subgroup characteristics: Not everyone in Ontario has access to dental care. Significant inequalities are experienced by older adults, lower income earners, the uninsured, and those with lower educational attainment.

Among older adults:

- Most were uninsured (about 60%);
- Only six in ten visited a dentist in the last year and 40% made dental visits only in emergencies; and
- About 23% were edentate.

Among lower income earners:

- Most were uninsured (about 60%);
- More than half did not visit a dentist in the past year;
- More than 40% made dental visits only in emergencies; and
- They more frequently reported losing teeth or experienced social limitations due to oral problems in the last year compared to high income earners.

Among the uninsured:

- Half visited a dentist in the last year and about 30% did not visit a dentist in the last 3 years because of perceived financial barriers;
- About 40% made dental visits only in emergencies; and
- They were more likely to be edentate and lose teeth due to oral diseases.

Among those with lower than secondary school graduation:

- More than four in ten did not have dental insurance;
- Less than half visited a dentist in the last year and half seek dental care only in emergencies;
- About one in five were edentate;
- They were more likely to lose teeth and experience social limitations due to mouth problems; and
- Brushed their teeth less frequently.

Lastly, there is some evidence suggesting that access to dental care may be compromised for young adults and those in the lower-middle income category:

- More than 3 out of 10 young adults avoided visiting a dentist for the past 3 years or more due to financial restrictions; and
- Those with incomes of $15,000 to $29,999 were the least insured group. They also had low rates of dental visits in the last year, high rates of visiting only in emergency cases, and reported cost as the main barrier for not visiting a dentist.

Limitations

This study has a number of limitations. First, the analysis is limited to the data and measurements provided by the CCHS. For instance, consultations with dentist/orthodontist and consultations with other dental professionals (denturists, hygienist, etc.) have not been captured. Second, like any other survey, the analysis relied on CCHS self-reported data rather than observation or clinical measures. Therefore, measurement error could have been introduced by respondents' recall errors, instability of their opinions, misunderstanding of questions, and the possibility that the respondents might have given socially desirable answers. Importantly, since this the CCHS is a cross-sectional survey, only associations can be assessed—causal inferences cannot be established. Also, since this is a secondary analysis of survey data, errors made in the original survey methods cannot be distinguished and it is not possible to differentiate interviewing or data entry errors. Lastly, utilization determinants, such as dental insurance coverage, are limited in breadth and detail. For example, information about the scope or type of insurance coverage for dental services was not available.

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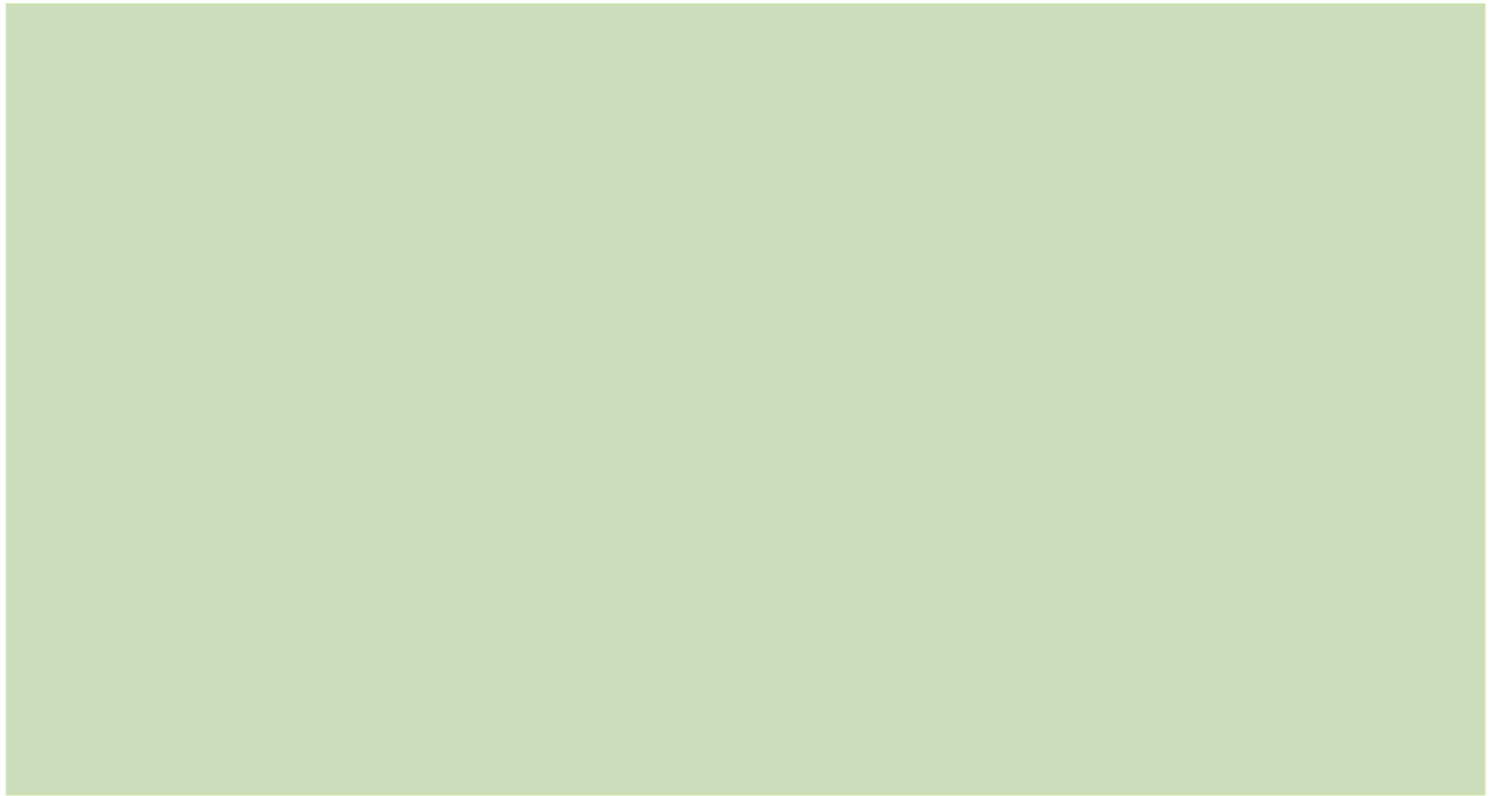

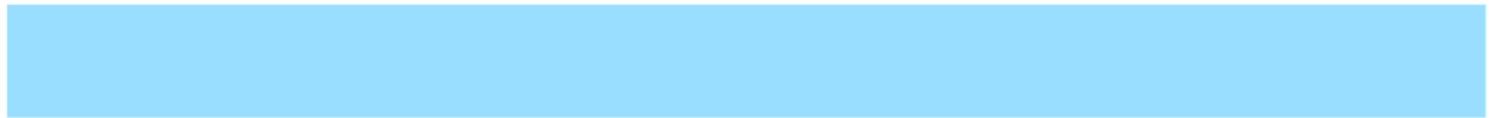

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