Health Reports

Assessing the role of dental insurance in oral health care disparities in Canadian adults

by Mohammad Moharrami, Yujiro Sano, Kellie Murphy, Xuefeng Hu, Janine Clarke, Scott McLeish and Yannick Fortin

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ABSTRACT

Background
This study examines the association of dental insurance with oral health care access and utilization in Canada while accounting for income and sociodemographic factors. It contributes to a baseline of oral health care disparities before the implementation of the Canadian Dental Care Plan (CDCP).

Data and methods
This retrospective study of Canadians aged 18 to 64 years is based on data from the 2022 Canadian Community Health Survey. Multivariable logistic regression was employed to evaluate the association of dental insurance with the recency and frequency of dental visits, as well as avoidance of dental care because of cost.

Results
Overall, 65.7% of Canadians reported visiting a dental professional in the previous year: 74.6% of those with private insurance, 62.8% with public insurance, and 49.8% uninsured. Cost-related avoidance of dental care was 16.0%, 20.9%, and 47.4% for the privately insured, publicly insured, and uninsured, respectively. After adjustment, adults with private (odds ratio [OR]=2.54; 95% confidence interval [CI]: 2.32 to 2.78) and public (OR=2.17; 95% CI: 1.75 to 2.68) insurance were more likely to have visited a dental professional in the last year compared with those without insurance. Similarly, both private (OR=0.22; 95% CI: 0.20 to 0.25) and public (OR=0.22; 95% CI: 0.17 to 0.29) insurance holders showed a significantly lower likelihood of avoiding dental visits because of cost when compared with uninsured individuals.

Interpretation
This study showed the significant association of dental insurance with access to oral health care in Canada, contributing to setting a critical benchmark for assessments of the CDCP's effectiveness in addressing oral health disparities.

Keywords
dental insurance, oral health disparity, oral health care access, dental care utilization

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What is already known on this subject?

- Oral health is integral to overall well-being, affecting both physical and mental health. However, significant disparities in access to oral health care services persist in Canada, despite its critical role in maintaining oral health.

- An association has been identified between dental insurance coverage and the utilization of oral health care services in Canada.

- To help reduce financial barriers to access oral health care for eligible Canadian residents with an adjusted family net income (AFNI) below $90,000, and who do not have access to dental insurance, the Canadian government announced the launch of the Canadian Dental Care Plan (CDCP) in 2022.

What does this study add?

- This study utilizes data from the 2022 cycle of the Canadian Community Health Survey, conducted just before the CDCP program's implementation, to provide estimates on access to and utilization of oral health care.

- Unlike previous studies that primarily relied on descriptive analyses and the isolated examination of a few factors, this study employs multivariable regression analyses. It evaluates the association of dental insurance with oral health care access and utilization, adjusted for income and other sociodemographic variables.

- The analyses identified private and public dental insurance as crucial predictors of oral health care access and utilization. Even when accounting for income and sociodemographic variables, the association remained, suggesting that having dental insurance alone may lead to improved access and utilization.

Oral health is a crucial component of overall health, influencing both physical and mental well-being.[1,2] Yet, despite the important role that access to and utilization of oral health care services play in maintaining optimal oral health, substantial disparities remain in access to oral health care services across population groups in Canada.[3,4] Further, addressing oral health disparities across the country also requires a consideration of the behavioural and social determinants that influence these differences in access to and utilization of care.

Since 1996, national surveys in Canada have revealed an evolving oral health landscape. The 1996/1997 National Population Health Survey initially revealed that 53% of Canadians had dental insurance and 59% had visited a dental professional in the previous year.[5] A decade later, the Canadian Health Measures Survey (CHMS; Cycle 1, 2007 to 2009) showed some improvement, with 68.1% of Canadians having dental insurance and 74.5% visiting a dental professional in the previous year.[6] Further data from the 2018 Canadian Community Health Survey (CCHS) indicated that 64.6% of Canadians had dental insurance and 74.7% had visited a dental professional in the past year. Specifically, 82.5% of Canadians with dental insurance had visited a dental professional in the year before compared with 60.5% of those without insurance. While 39.1% of uninsured Canadians avoided dental visits because of cost, that percentage was lower among the insured, at 13.7%.[7] These findings support the importance of dental insurance for dental care utilization, as well as the notion that

affordability of oral health services is not simply driven by having dental insurance.

The correlation between having dental insurance and utilization of oral health care services is not unique to Canada since several international studies also documented similar findings. For instance, research in Australia revealed a positive association between having dental insurance and an increased frequency of dental visits, in addition to a reduction in visits for pain relief. This underscores the critical role dental insurance plays in promoting positive oral health behaviours.[8] In the United States, it was found that dental insurance significantly influences the use of dental services among children aged 2 to 17 years, as well as their level of unmet dental needs.[9] However, it is also important to mention that while income and dental insurance appear to be primary predictors of access to and utilization of dental services, other sociodemographic factors may also play a significant role. These can include immigrant status, educational attainment, place of residence, and identification with a racialized group, among others.[10-13] Also, as Andersen suggests, besides environmental factors, predisposing characteristics, and enabling resources, perceived need and perceived oral health status may also be associated with health care utilization behaviours.[14,15]

The evidence seems to indicate that enhancing equity in access to oral health care services is supported by providing dental insurance. Recent estimates show that approximately one-third of Canadians do not have dental insurance.[16] In response to this gap, the Canadian government announced the introduction of

Table 1

Prevalence of oral health care outcomes and predictor variables, Canadians aged 18 to 64, 2022

	Frequency (%)	95% confidence interval from	to
Outcome measures			
Recency of visiting a dental professional			
One year ago or more	34.4	33.5	35.2
Less than a year ago	65.7	64.8	66.5
Frequency of visiting a dental professional			
Limited to emergency care or never	16.3	15.7	17.0
More than, about, or less than once a year	83.7	83.0	84.3
Avoidance of visiting a dental professional because of cost			
No	74.1	73.3	74.8
Yes	25.9	25.2	26.7
Predictors			
Dental insurance			
No insurance	30.9	30.1	31.7
Private insurance	65.2	64.3	66.0
Public insurance	3.9	3.6	4.3
Adjusted family net income			
Less than $70,000	28.0	27.2	28.8
$70,000 to $89,999	11.8	11.3	12.3
$90,000 or more	60.3	59.4	61.2
Age groups			
18 to 34	35.6	35.4	35.9
35 to 49	32.0	31.8	32.3
50 to 64	32.4	32.2	32.5
Gender[1]			
Men[2]	50.1	50.0	50.3
Women[3]	49.9	49.8	50.0
Population group			
Non-racialized and non-Indigenous	70.4	69.4	71.3
Racialized and non-Indigenous	29.6	28.7	30.6
Indigenous identity			
Non-Indigenous	96.5	96.2	96.8
Indigenous[4]	3.5	3.3	3.8
Rurality status			
Population centre	83.9	83.2	84.6
Rural area	16.1	15.4	16.8
Immigrant status			
Born in Canada	69.6	68.7	70.6
Landed immigrants and non-permanent residents	30.4	29.5	31.3
Highest household education			
No postsecondary certificate, diploma, or university degree	16.0	15.5	16.6
Postsecondary certificate, diploma, or university degree	84.0	83.4	84.5
Employment status			
Employed	71.8	71.0	72.5
Unemployed	28.2	27.5	29.0
Perceived oral health			
Poor, fair, or good	40.2	39.3	41.0
Very good or excellent	59.8	59.0	60.7

1. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses. In these cases, individuals in the category "non-binary people" are distributed into the other two gender categories.

2. This category includes men, as well as some non-binary people.

3. This category includes women, as well as some non-binary people.

4. This category includes Indigenous people living off-reserve in the provinces only.

Source: Canadian Community Health Survey, 2022.

the Canadian Dental Care Plan (CDCP) in 2022. The CDCP is designed to help reduce financial barriers to access oral health care for eligible Canadian residents with an adjusted family net income (AFNI) below $90,000, and who do not have access to

dental insurance.[16-18] The CDCP is anticipated to extend oral health care coverage to up to 9 million uninsured Canadians, ensuring their access to essential oral health care such as preventive services, including scaling (cleaning), polishing,

Table 2

Characteristics of Canadians and oral health care access and utilization, Canadians aged 18 to 64, 2022

	Recency of visiting a dental professional: Less than a year ago			Frequency of visiting a dental professional: More than, about, or less than once a year			Avoidance of visiting a dental professional because of cost: Yes		
		95% confidence interval			95% confidence interval			95% confidence interval	
	%	from	to	%	from	to	%	from	to
Dental insurance									
No insurance	49.8	48.1	51.5	71.1	69.5	72.7	47.4	45.7	49.1
Private insurance	74.6	73.7	75.5	90.9	90.3	91.6	16.0	15.2	16.9
Public insurance	62.8	58.7	66.9	79.4	76.3	82.5	20.9	17.5	24.4
Adjusted family net income									
Less than $70,000	54.3	52.8	55.9	73.9	72.5	75.4	38.1	36.6	39.7
$70,000 to $89,999	63.0	60.8	65.2	81.6	79.6	83.6	29.5	27.3	31.7
$90,000 or more	71.4	70.3	72.5	88.6	87.9	89.4	19.6	18.7	20.5
Age groups									
18 to 34	61.6	60.0	63.3	83.3	82.0	84.6	30.5	28.9	32.0
35 to 49	67.1	65.8	68.4	84.6	83.6	85.7	25.1	23.9	26.3
50 to 64	68.6	67.4	69.9	83.2	82.2	84.2	21.8	20.7	22.8
Gender[1]									
Men[2]	62.0	60.8	63.2	81.1	80.1	82.0	24.4	23.4	25.5
Women[3]	69.3	68.1	70.4	86.3	85.5	87.2	27.4	26.4	28.5
Population group									
Non-racialized and non-Indigenous	68.0	67.1	68.9	85.6	85.0	86.2	23.8	23.0	24.6
Racialized non-Indigenous	60.3	58.3	62.3	79.6	77.9	81.4	30.8	28.9	32.7
Indigenous identity									
Non-Indigenous	65.8	65.0	66.7	83.9	83.2	84.5	25.9	25.1	26.6
Indigenous[4]	61.5	58.0	65.0	79.8	76.7	82.8	27.3	24.0	30.7
Rurality status									
Population centre	66.0	65.1	67.0	84.0	83.3	84.8	26.3	25.5	27.2
Rural area	63.7	62.2	65.3	82.0	80.7	83.2	24.0	22.5	25.4
Immigrant status									
Born in Canada	67.7	66.8	68.6	85.3	84.7	86.0	24.5	23.6	25.3
Landed immigrants and non-permanent residents	60.9	59.1	62.7	79.9	78.4	81.4	29.3	27.7	31.0
Highest household education									
No postsecondary certificate, diploma, or university degree	53.8	51.9	55.6	71.2	69.5	72.9	32.4	30.6	34.3
Postsecondary certificate, diploma, or university degree	68.1	67.1	69.0	86.2	85.5	86.9	24.6	23.7	25.4
Employment status									
Employed	67.3	66.4	68.3	85.2	84.5	85.9	24.4	23.6	25.3
Unemployed	61.5	59.8	63.1	79.8	78.4	81.1	29.7	28.2	31.3
Perceived oral health									
Poor, fair, or good	56.0	54.7	57.3	75.5	74.4	76.7	38.5	37.2	39.8
Very good or excellent	72.1	71.0	73.1	89.2	88.4	89.9	17.5	16.6	18.4

1. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses. In these cases, individuals in the category "non-binary people" are distributed into the other two gender categories.

2. This category includes men, as well as some non-binary people.

3. This category includes women, as well as some non-binary people.

4. This category includes Indigenous people living off-reserve in the provinces only.

Source: Canadian Community Health Survey, 2022.

sealants, and fluoride; diagnostic services, including examinations and X-rays; restorative services, including fillings; endodontic services, including root canal treatments; prosthodontic services, including complete and partial removable dentures; periodontal services, including deep scaling; and oral surgery services, including extractions.[16] With a projected expenditure of $13 billion over five years, the plan aims to enhance oral health care access across the country.[16]

The implementation of a national dental coverage program, such as the CDCP, could also alleviate the economic strain on health care systems caused by dental problems treated in emergency departments (EDs). For example, Ontario spent about $16.4 million in 2006 on ED visits and hospital admissions for dental problems,[19] while British Columbia incurred approximately $154.8 million in 2013/2014, representing about 1% of total ED visits.[20] In Alberta, dental problems account for 1.2% of all ED visits.[21] Introducing a nationwide oral health care plan is projected to significantly reduce these expenditures by offering accessible, preventive care, thus decreasing the frequency of dental emergencies in EDs. Currently, treatments in non-dental settings are often limited to palliative care, leading to high rates of repeat ED visits, particularly in vulnerable groups. A comprehensive oral health care plan would not only lessen these repeat visits but also reduce the overall burden on the health care system.[22,23]

This study details access to and use of oral health care in Canada among adults aged 18 to 64 years before the implementation of the CDCP and should thus offer opportunities for future comparative analyses. It complements a parallel study focused on children and adolescents, which is based on the Canadian Health Survey on Children and Youth (CHSCY),[24] and a forthcoming study on seniors based on the Canadian Health Survey on Seniors (CHSS). The primary objective of the study is to examine the relationship between dental insurance coverage and access to and utilization of oral health care services, while adjusting for known confounders such as income and other sociodemographic variables. The hypothesis posits a significant and strong correlation between dental insurance and access to and utilization of oral health care services, independent of the possible influences of sociodemographic and behavioural factors. Lastly, the study discusses the findings in the context of the COVID-19 pandemic's disruptive impacts on oral health care access and utilization.[25-27]

Methods

Data source

The data are from the 2022 CCHS. The CCHS is a cross-sectional survey designed to collect health-related information from Canadian residents aged 12 and older living in private dwellings in the 10 provinces and 3 territories. People living on reserves and other Indigenous settlements in the provinces, full-time Canadian Forces members, the institutionalized population, and people living in the Quebec health regions of Nunavik and Terres-Cries-de-la-Baie-James were excluded from the survey's sampling frame. Of the 157,589 in-scope units, 67,242 individuals responded, resulting in a response rate of 42.7%. For this study, the sample was limited to those aged 18 to 64 years living in the 10 provinces (n = 38,020).

Data were collected between February 7 and December 31, 2022, with varied reference periods for different questions. The CCHS employs computer-assisted interviewing, combining in-person and telephone interviews, and introduced an electronic questionnaire option in the 2022 cycle. These interviews capture a comprehensive range of data, including demographic details, socioeconomic status, and self-reported assessments of health care utilization and overall health. AFNI was obtained by linking respondent and tax data where possible (77%) and was imputed when a match could not be found. AFNI was computed based on summing the following tax variables: net family income minus Universal Child Care Benefit minus the amount of Registered Disability Savings Plan plus the Universal Child Care Benefit Repaid.

Dental care utilization and access

Recency of last dental visit

Recency of the last dental visit was determined based on responses to the following question: "When was the last time you saw a dental professional?" Response categories were grouped as "less than a year ago" and "one year ago or more."

Frequency of dental visits

Frequency of dental visits was determined based on responses to the following question: "How often do you usually see a dental professional?" Response categories were grouped as follows: "never or only for emergency care" and "more than once a year, about once a year, or less than once a year."

Avoidance of dental visits because of cost

Avoidance of dental visits because of cost was based on the question: "In the past 12 months, have you avoided going to a dental professional for your dental care due to the cost?" Response categories included "yes" and "no."

Predictors and covariates

Dental coverage

Dental coverage was determined based on responses to two questions: "Are all or part of your dental expenses covered by an insurance plan or government program?" and "What type of insurance plan or program?" Responses were categorized into three groups: "no insurance," "private insurance," and "public insurance." Private insurance includes plans paid by an employer, personally purchased plans, and plans through a college or university.

Table 3

Multivariable logistic regression analysis for visiting a dental professional less than a year ago, Canadians aged 18 to 64 years, 2022

	Model 1			Model 2		
	Adjusted odds ratio	95% confidence interval		Adjusted odds ratio	95% confidence interval	
		from	to		from	to
Dental insurance						
No insurance[†]	1.00	…	…	1.00	…	…
Private insurance	2.67 *	2.45	2.90	2.54 *	2.32	2.78
Public insurance	1.92 *	1.59	2.32	2.17 *	1.75	2.68
Adjusted family net income						
$90,000 or more[†]	1.00	…	…	1.00	…	…
$70,000 to $89,999	0.73 *	0.65	0.82	0.75 *	0.67	0.85
Less than $70,000	0.59 *	0.54	0.65	0.67 *	0.60	0.74
Age groups						
18 to 34[†]	…	…	…	1.00	…	…
35 to 49	…	…	…	1.25 *	1.13	1.39
50 to 64	…	…	…	1.51 *	1.37	1.67
Gender[1]						
Men[2][†]	…	…	…	1.00	…	…
Women[3]	…	…	…	1.36 *	1.25	1.48
Population group						
Non-racialized and non-Indigenous[†]	…	…	…	1.00	…	…
Racialized and non-Indigenous	…	…	…	0.87	0.75	1.01
Indigenous[4]	…	…	…	0.83 *	0.70	0.99
Rurality status						
Population centre[†]	…	…	…	1.00	…	…
Rural area	…	…	…	0.86 *	0.79	0.94
Immigrant status						
Born in Canada[†]	…	…	…	1.00	…	…
Landed immigrants and non-permanent residents	…	…	…	0.81 *	0.70	0.93
Highest household education						
No postsecondary certificate, diploma, or university degree[†]	…	…	…	1.00	…	…
Postsecondary certificate, diploma, or university degree	…	…	…	1.43 *	1.30	1.59
Employment status						
Employed[†]	…	…	…	1.00	…	…
Unemployed	…	…	…	0.96	0.87	1.07
Perceived oral health						
Poor, fair, or good[†]	…	…	…	1.00	…	…
Very good or excellent	…	…	…	1.80 *	1.66	1.95

… not applicable

* significantly different from reference category ($p < 0.05$)

[†] reference category

1. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses. In these cases, individuals in the category "non-binary people" are distributed into the other two gender categories.

2. This category includes men, as well as some non-binary people.

3. This category includes women, as well as some non-binary people.

4. This category includes Indigenous people living off-reserve in the provinces only.

Source: Statistics Canada, Canadian Community Health Survey, 2022.

Adjusted family net income

AFNI was determined from linkage to tax data and was categorized into three groups, aligning with the CDCP's policy framework: "under $70,000," "$70,000 to $89,999," and "$90,000 and more."

Covariates

Age was categorized into three groups: 18 to 34 years, 35 to 49 years, and 50 to 64 years. Gender was divided into men+ and women+; the category men+ includes men, as well as some non-binary people, while the category women+ includes women, as well as some non-binary people. Rurality status distinguished

between population centres and rural areas. Immigrant status was classified into those born in Canada and those who were landed immigrants or non-permanent residents. Population group was divided into two: racialized and non-Indigenous (including South Asian, Chinese, Black, Filipino, Latin American, Arab, Southeast Asian, West Asian, Korean, Japanese, and other racial or cultural origins) and non-racialized and non-Indigenous. Indigenous identity was categorized as Indigenous (First Nations, Métis, and Inuit) or non-Indigenous. The highest household education level was split into those without any postsecondary certificate, diploma, or university degree, and those with any postsecondary qualification. Employment status differentiated between employed and unemployed individuals. Lastly, perceived oral health was divided into two categories: those reporting good, fair, or poor oral health compared with those reporting very good or excellent oral health.

Statistical analyses

Proportions and 95% confidence intervals (CIs) are presented for all variables. Additionally, cross-tabulations for each of the three outcome measures and predictors, denoting the proportion of the predictor within each class of the outcomes, are included.

Associations between the predictors and outcomes were identified using multivariable logistic regression. For a more comprehensive analysis, a multistep forward logistic regression approach was adopted. In the initial phase, the model incorporated dental insurance and income as the sole predictors, allowing an evaluation of their direct impact on the outcomes (Model 1). Next, the remaining variables were introduced, providing insight into the dynamic changes in the associations between dental insurance, income, and the outcomes when influenced by a broader set of predictors (Model 2). Accordingly, adjusted odds ratios (ORs) were reported for multivariable regression models. For all inferential statistics in this study, a 95% CI is applied, and a P-value of less than 0.05 was considered statistically significant. To account for the complex survey design, analyses were weighted, and variance estimation (95% CIs) was done using the bootstrap method. All statistical analyses were performed using STATA MP-64 (Version 17) and R (Version 4.3.1) and its associated packages.

Results

Descriptive statistics

Results showed that, in 2022, with respect to the recency of dental visits, 65.7% of Canadian adults had visited a dental professional within the past year (Table 1). Regarding the frequency of dental visits, 16.3% of the participants sought dental care exclusively for emergency purposes or not at all. Furthermore, an estimated 25.9% reported avoidance of dental visits because of cost. In terms of predictors of interest, 65.2% were covered by private dental insurance, while a minority of 3.9% had public insurance, and 30.9% had no insurance. In

terms of AFNI, 28.0% earned less than $70,000, and 11.8% earned $70,000 to $89,999. The detailed description of the included covariates can be found in Table 1.

As shown in Table 2, Canadian adults with private insurance had the highest proportion of recent (74.6%) and frequent (90.9%) dental visits, followed by those with public insurance, who reported intermediate levels of dental care engagement, and the uninsured, with the lowest rates of recency (49.8%) and frequency (71.1%). Avoidance of dental care because of cost showed an inverse relationship with insurance coverage: 47.4% of uninsured individuals avoided dental care because of cost, compared with significantly lower rates among those with private insurance (16.0%) or public insurance (20.9%). Additionally, the data indicate an income-related trend where higher family income correlates with increased recency and frequency of dental visits and decreased avoidance of care because of cost. The comprehensive statistics on all the covariates are shown in Table 2.

Inferential analyses

In the conducted multivariable regression analyses, it was observed that the significant associations between dental insurance and the outcome measures exhibited only small shifts in magnitude after adjusting for a comprehensive set of predictors. Notably, among all covariates in the full models, the strongest association was observed for both private and public insurance with all three outcome measures. In the full model analysis, the OR for private insurance impacting the recency of dental visits was 2.54 (95% CI: 2.32 to 2.78), and for public insurance, it was 2.17 (95% CI: 1.75 to 2.68) (Table 3). Regarding the frequency of dental visits, the OR for private insurance was 3.29 (95% CI: 2.93 to 3.71), while for public insurance, it was 2.33 (95% CI: 1.85 to 2.93) (Table 4). For avoidance of dental visits because of cost, the ORs for private and public insurance were 0.22 (95% CI: 0.20 to 0.25) and 0.22 (95% CI: 0.17 to 0.29), respectively (Table 5). Comprehensive details of the initial and full models, including the associations of all covariates with the outcome measures, are presented in tables 3 to 5. These observations suggest that the association of dental insurance with the outcome measures remains relatively stable across different model specifications.

Discussion

This study was conducted as part of a broader series of reports by the Oral Health Statistics Program at Statistics Canada. It complements a parallel study focused on children based on the CHSCY[24] and a forthcoming study on seniors based on the CHSS. These studies also precede forthcoming reports based on CHMS Cycle 7 and Canadian Oral Health Survey (COHS) Cycle 1. The collective aim of these analyses is to establish benchmark measurements that will enable assessment of the impacts of the CDCP on the Canadian population following its implementation.

Table 4

Multivariable logistic regression analyses for frequency of visiting a dental professional more than, about, or less than once a year, Canadians aged 18 to 64 years, 2022

	Model 1			Model 2		
	Adjusted odds ratio	95% confidence interval		Adjusted odds ratio	95% confidence interval	
		from	to		from	to
Dental insurance						
No insurance[†]	1.00	…	…	1.00	…	…
Private insurance	3.52 *	3.15	3.93	3.29 *	2.93	3.71
Public insurance	1.85 *	1.51	2.27	2.33 *	1.85	2.93
Adjusted family net income						
$90,000 or more[†]	1.00	…	…	1.00	…	…
$70,000 to $89,999	0.62 *	0.53	0.73	0.66 *	0.55	0.79
Less than $70,000	0.48 *	0.43	0.53	0.56 *	0.50	0.63
Age groups						
18 to 34[†]	…	…	…	1.00	…	…
35 to 49	…	…	…	1.08	0.93	1.24
50 to 64	…	…	…	1.11	0.97	1.28
Gender[1]						
Men[2†]	…	…	…	1.00	…	…
Women[3]	…	…	…	1.47 *	1.32	1.64
Population group						
Non-racialized and non-Indigenous[†]	…	…	…	1.00	…	…
Racialized and non-Indigenous	…	…	…	0.75 *	0.62	0.90
Indigenous[4]	…	…	…	0.75 *	0.59	0.94
Rurality status						
Population centre[†]	…	…	…	1.00	…	…
Rural area	…	…	…	0.85 *	0.75	0.96
Immigrant status						
Born in Canada[†]	…	…	…	1.00	…	…
Landed immigrants and non-permanent residents	…	…	…	0.81 *	0.68	0.97
Highest household education						
No postsecondary certificate, diploma, or university degree[†]	…	…	…	1.00	…	…
Postsecondary certificate, diploma, or university degree	…	…	…	0.81 *	0.68	0.97
Employment status						
Employed[†]	…	…	…	1.00	…	…
Unemployed	…	…	…	0.99	0.87	1.12
Perceived oral health						
Poor, fair, or good[†]	…	…	…	1.00	…	…
Very good or excellent	…	…	…	2.31 *	2.07	2.57

… not applicable

* significantly different from reference category (p < 0.05)

[†] reference category

1. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses. In these cases, individuals in the category "non-binary people" are distributed into the other two gender categories.

2. This category includes men, as well as some non-binary people.

3. This category includes women, as well as some non-binary people.

4. This category includes Indigenous people living off-reserve in the provinces only.

Source: Statistics Canada, Canadian Community Health Survey, 2022.

This study revealed significant disparities in access to and utilization of oral health care services among the Canadian population by AFNI and dental insurance coverage independently. The trends observed across the income categories indicate that higher family incomes are associated with more frequent and recent dental visits and a lower tendency to avoid care because of cost concerns, aligning with findings from previous reports.[6,7] Specifically, over 50% of Canadian adults with an income below $70,000 visited a dental professional in the last year, compared with over 70% of those with an income of $90,000 or more. Additionally, the prevalence of avoiding dental visits because of cost concerns was double among those earning less than $70,000 annually than among those earning $90,000 or more. These findings

suggest that achieving greater equity in health care access for Canadians, particularly for those in lower income brackets, is conditional on removing financial barriers to oral health care.

Notwithstanding the observed disparities across income groups, the multivariable logistic regression model further identified private and public dental insurance as key predictors of access to and utilization of dental care services. Controlling for AFNI and other sociodemographic factors, the results suggest that providing dental insurance alone could significantly improve access to and utilization of oral health care. Improvement in oral health care access, as evidenced in the literature, could also have

Table 5

Multivariable logistic regression analyses for avoidance of visiting a dental professional because of cost, Canadians aged 18 to 64 years, 2022

	Model 1			Model 2		
	Adjusted odds ratio	95% confidence interval		Adjusted odds ratio	95% confidence interval	
		from	to		from	to
Dental insurance						
No insurance[†]	1.00	…	…	1.00	…	…
Private insurance	0.24 *	0.22	0.26	0.22 *	0.20	0.25
Public insurance	0.25 *	0.20	0.31	0.22 *	0.17	0.29
Adjusted family net income						
$90,000 or more[†]	1.00	…	…	1.00	…	…
$70,000 to $89,999	1.61 *	1.41	1.83	1.58 *	1.38	1.81
Less than $70,000	2.01 *	1.83	2.21	1.81 *	1.63	2.01
Age groups						
18 to 34[†]	…	…	…	1.00	…	…
35 to 49	…	…	…	0.73 *	0.65	0.82
50 to 64	…	…	…	0.51 *	0.46	0.58
Gender[1]						
Men[2†]	…	…	…	1.00	…	…
Women[3]	…	…	…	1.27 *	1.17	1.39
Population group						
Non-racialized and non-Indigenous[†]	…	…	…	1.00	…	…
Racialized and non-Indigenous	…	…	…	1.28 *	1.09	1.50
Indigenous[4]	…	…	…	1.12	0.91	1.37
Rurality status						
Population centre[†]	…	…	…	1.00	…	…
Rural area	…	…	…	0.88 *	0.79	0.98
Immigrant status						
Born in Canada[†]	…	…	…	1.00	…	…
and non-permanent residents	…	…	…	0.97	0.83	1.13
Highest household education						
No postsecondary certificate, diploma, or university degree[†]	…	…	…	1.00	…	…
Postsecondary certificate, diploma, or university degree	…	…	…	0.96	0.85	1.07
Employment status						
Employed[†]	…	…	…	1.00	…	…
Unemployed	…	…	…	0.98	0.87	1.09
Perceived oral health						
Poor, fair, or good[†]	…	…	…	1.00	…	…
Very good or excellent	…	…	…	0.33 *	0.30	0.36

… not applicable

* significantly different from reference category (p < 0.05)

[†] reference category

1. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses. In these cases, individuals in the category "non-binary people" are distributed into the other two gender categories.

2. This category includes men, as well as some non-binary people.

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Source: Statistics Canada, Canadian Community Health Survey, 2022.

favourable impacts beyond oral health-related outcomes. For example, it was shown that for economically constrained adults, providing dental insurance could alleviate the need to divert funds from other essential areas, addressing competing financial demands within limited budgets.[28] Furthermore, reducing the financial burden of oral health care might prevent households from allocating a disproportionate amount of disposable income to these expenses, thereby lowering the risk of falling below the poverty line.[29] Moreover, the Centers for Disease Control and Prevention has emphasized that untreated oral diseases significantly impact quality of life and productivity. Therefore, enhanced oral health care access and affordability may lead to broader socioeconomic benefits, improving overall health and quality of life.[30]

It should be noted that data used in this study from the 2022 CCHS cycle were collected from February to December 2022. They encompass responses from individuals who were asked to report on their oral health care experiences during a reference period in 2021 that included the COVID-19 pandemic. When this study's results are compared with estimates from the 2018 CCHS, the relative frequency of visiting a dental professional during the past year dropped from 74.7% to 65.7% between the 2018 and 2022 survey cycles.[7] The disruptive impact of the pandemic on provision of dental care is well documented in the literature.[25-27,31,32] Moreover, psychosocial factors such as fear and anxiety about contracting COVID-19 among both practitioners[31,33] and patients[34-36] have impacted dental visits. However, based on the inferential analyses of this study, having dental insurance is, interestingly, still the most important factor in accessing dental care and preventing a further decline in dental visits during uncertain times, such as those experienced during the pandemic.

While the CDCP promises improved access to oral health care, it is crucial to recognize that affordability alone does not guarantee access to and use of oral health care services. The complementary analyses showed that even among those with private dental insurance and without cost-related avoidance, one in five still had not visited a dental professional in the last year. Thus, affordability must be seen as only one aspect of access to oral health care. The other four pillars—availability, accessibility, accommodation, and acceptability—also play a vital role. Availability assumes an adequate supply of oral health professional services; accessibility concerns the ease of reaching the provider's location; accommodation relates to the provider's ability to meet the needs of the client, including operating hours and adequate communications; and acceptability refers to the mutual comfort between client and provider based on characteristics like age, sex, social class, and ethnicity. Comprehensive access requires addressing all these factors to ensure effective use of dental services.[37]

Notable strengths of this study include the use of a nationally representative sample from the 2022 CCHS cycle, thereby enabling the generalizability of its findings. The incorporation of inferential analyses and multivariable regression, which controls for a comprehensive set of predictors, adds significant robustness to the results. The deliberate choice of AFNI

categorized into ranges that reflect the eligibility criteria of the CDCP further ensures the relevance and applicability of the study's outcomes in policy discussions.

This study has a number of limitations. First, the information collected in the CCHS is based on self-reported behaviours over the previous 12 months, which can be subject to recall bias. Additionally, for some respondents, the previous 12 months overlapped with potential COVID-19-related restrictions, which may skew the prevalence of estimates. However, within the data collection period, examination of the prevalence of outcome and predictor variables by date of interview showed no meaningful differences, suggesting no concerning issues. The response rate of the CCHS was relatively low (42.7%), but incorporating the sampling weights in the analysis ensured the estimates were representative of the Canadian population, taking into account non-response. Finally, factors relevant to the study of oral health-related access and disparities were not collected in the CCHS, such as the availability of dental care providers, or cost-related information, including whether the respondent, even though insured, is required to pay for care out of pocket and wait for reimbursement, which could impact the affordability of their dental visit. The upcoming COHS will have more comprehensive information related to barriers to accessing oral health care in Canada.

For a more comprehensive understanding of the CDCP's potential impacts on Canadians, estimates from upcoming reports based on CHMS Cycle 7 and COHS Cycle 1 for which the data are collected just before the CDCP should be considered. Those data are expected to be released in fall 2025 and late 2024, respectively. These anticipated reports are likely to exhibit the residual influence of the pandemic, offering a clearer perspective on the effects of the CDCP in a post-pandemic environment.

Conclusions

This study provides insight on the pivotal role of dental insurance and other sociodemographic characteristics in accessing and utilizing oral health care services among Canadian adults. It underscores the existing disparities in dental care access based on insurance coverage, with private followed by public insurance holders exhibiting significantly higher rates of dental care use. The consistent role of insurance in dental care behaviours emphasizes the need for accessible dental insurance to promote regular oral health care. For future research, it is recommended to focus on the forthcoming data from COHS Cycle 1 and CHMS Cycle 7, which may provide a clearer view of oral health care utilization patterns in a more stable health care environment. In conjunction with the results of this study, those data would offer a comprehensive set of benchmarks before the implementation of the CDCP. Future research to understand the long-term impacts of health care policies on oral health care utilization, and guiding efforts toward ensuring equitable oral health care access for all Canadians, is important for advancing public health goals.

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