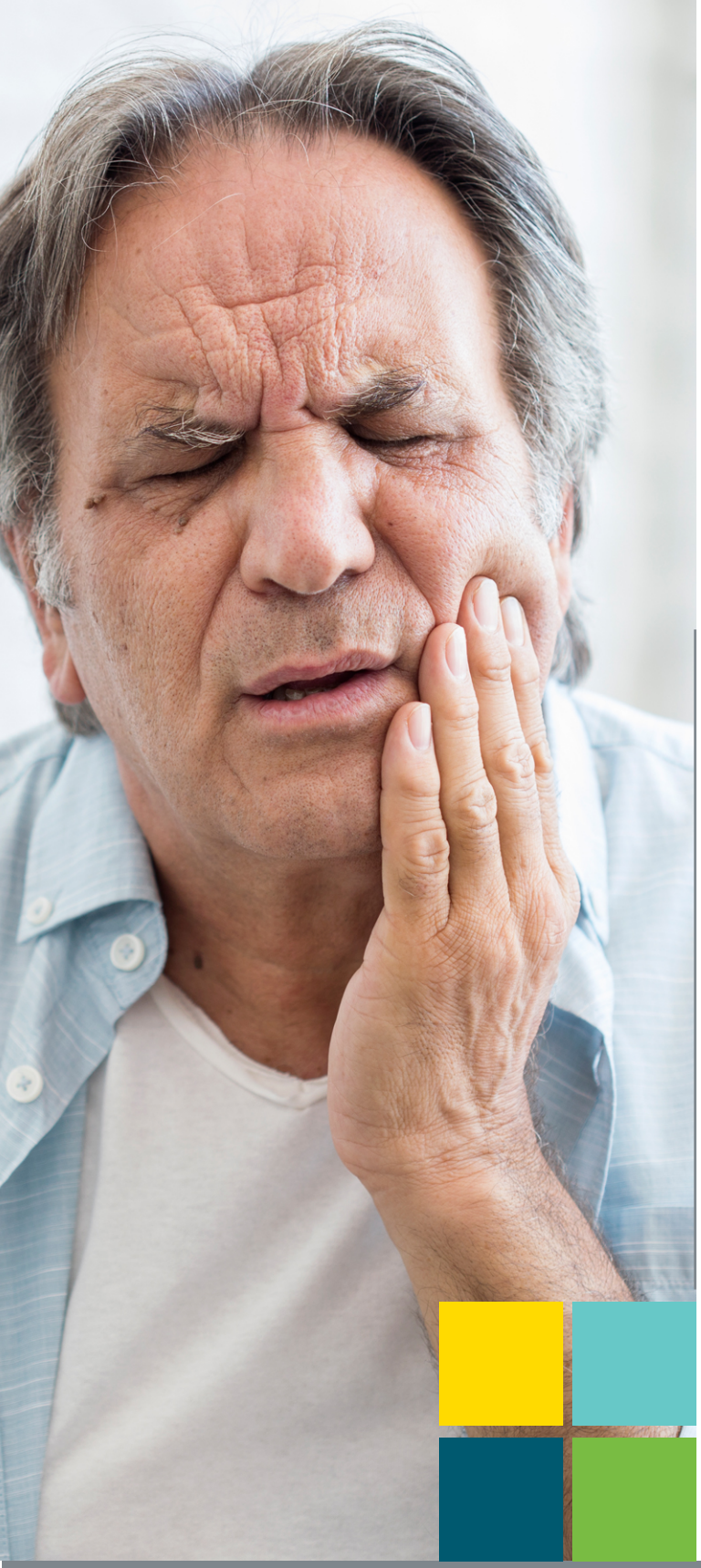

DENTAL HEALTH OF ADULTS AND SENIORS IN WINDSOR-ESSEX SURVEY RESULTS 2018

REPORT

WINDSOR-ESSEX COUNTY
HEALTH UNIT

WINDSOR-ESSEX COUNTY HEALTH unit

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Acknowledgements

Thank you to the many health and dental professionals and educators who have been leaders in the field of dental health. Your work is an example of the tireless efforts initiated across the province to advance dental health and overall well-being.

Thank you to the staff of the Windsor-Essex County Health Unit who helped to promote the survey to clients and operators.

Special acknowledgement is extended to the various health and social service agencies, retail stores, and the community agencies who willingly helped to support this initiative along the way. Your sense of community is proof that there is power in numbers.

We would like to sincerely thank the many individuals who completed a survey and shared their experiences. The positive response has been overwhelming and reflective of the need for local action on dental health issues in our community.

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Abbreviations & Glossary

BOH - Board of Health

CheckMarket – an online survey tool used to create and distribute surveys

Confidence Interval (95% CI) - the range within which we can be 95% certain that the true population estimate falls.

ED - emergency department

Proportion/percentage - the number of individuals with a health outcome or behaviour in comparative relation to the whole population or category.

Statistically significant difference - statistical testing indicates that there is high enough confidence to conclude that there is a significant difference between two values or groups.

WEC - Windsor and Essex County

WECHU - Windsor-Essex County Health Unit

Executive Summary

Good dental health is important to overall health and well-being; good dental hygiene habits and regular dental checkups help to prevent dental health issues. However, research shows that income and dental insurance play a key role in accessing dental health services (Duncan & Bonner, 2014). Individuals living in low-income households have to prioritize their financial resources in order to cover the cost of dental checkups and necessary treatment. This lack of access to dental care results in a greater burden of disease and additional strain on the health care system, as individuals with dental health needs visit the emergency department seeking relief.

The 2016 Community Needs Assessment (CNA) identified the dental health of adults in Windsor-Essex as a concern, and the second most reported service need for residents. In response, the Windsor-Essex County Health Unit (WECHU) developed a survey to explore the dental needs and barriers for adults and seniors in Windsor and Essex County.

Overview

- 1,594 respondents completed the Dental Heath of Adults and Seniors in Windsor-Essex survey. Sixty-six percent (60%) of respondents were from the City of Windsor.
- Overall, adults residing in the City of Windsor were least likely (56%) to have a dentist, whereas adults residing in LaSalle were most likely (86%) to have a dentist.
- The percentage of adults that self-reported having good/excellent dental health ranged from a low of 33% in the Town of Essex to a high of 65% in LaSalle.
- Low-household income (<$30,000) and the lack of dental health insurance in WEC adults was observed to be strongly associated with dental health concerns, emergencies and difficulty accessing dental health services.

Impact of unmet dental health needs

- Overall, the majority of adults responded that their unmet dental health needs had impacted their ability to eat (67%) and their general self-esteem (55%).
- Adults with a household income less than $50,000 were significantly more likely to report that their eating habits (92%) and self-esteem (91%) were affected by unmet dental health needs.

Dental health concerns/emergencies

- Cavities; broken, missing, loose teeth; and pain were commonly reported concerns and were disproportionately higher in households with income less than $30,000.

- Respondents in the lowest household income (<$30,000) group were more likely to deal with a dental emergency on their own (35%) or not do anything at all (23%) compared to those in higher (≥$50,000) income households.
- Respondents with no dental health insurance were more likely to deal with a dental emergency on their own (32%) or not do anything at all (22%) compared to respondents with dental insurance (24% dealt with dental emergencies on their own; 13% didn't do anything).

Problems in receiving dental care

- Dental health insurance was a key factor when accessing dental health care.
- The lack or absence of dental health insurance was a significant barrier for adults receiving dental health services.
- Lack of insurance has the greatest impact among lower income households in which 2 in 3 (67%) adults identified this as a barrier compared to adults with a household income of $30,000 or greater (33%).

Summary of Recommendations

1. **Partnerships.**

   - Form a Windsor-Essex County Dental Health Community Coalition.
   - Collaborate with the Erie-St. Clair Oral Health Coalition to expand dental health education and outreach programs to vulnerable populations.
   - Develop and strengthen alliances with dental and non-dental associations.
   - Identify communities that have implemented dental health programs for low-income adults 18 and over in Ontario that may be replicated in Windsor-Essex.

2. **Advocacy.**

   - Advocate for expansion of publicly-funded dental programs for adults and seniors.
   - Advocate for a living wage and/or dental insurance coverage for employees.

3. **Community Water Fluoridation.**

   - Promote and support policies for residents of Windsor-Essex County to have access to community water fluoridation and advocate for provincial coordination of community water fluoridation as a prevention strategy for dental caries.

4. **Comprehensive, community-based approach to healthy living programs and services.**

- Integrate dental health education into relevant Windsor-Essex County Health Unit programs and community-based programs and services.
- Increase support and resources to better promote healthy lifestyles among individuals and their families, with a focus on dental health education and awareness.
- Offer a range of preventive services in schools with children (i.e., preschool children, school-aged children, and teens) at a higher risk of dental disease. These services may include: daily brushing programs; professionally applied topical fluoride (PATF); dental sealants; scaling, dental education; and dental health promotion.
- Support the development and expansion of municipal social investment plans and poverty reduction strategies.

Introduction

In 2016, the Windsor-Essex County Health Unit (WECHU) undertook a Community Needs Assessment (CNA) to identify population health needs and describe factors that should be addressed to improve the health and well-being of individuals living in Windsor-Essex County (WEC). The results of the CNA identified the dental health of adults as a concern needing further exploration. While 71% of CNA respondents visited the dentist at least once a year for a checkup, 20% wanted more information on dental health. Moreover, 50% of CNA respondents reported that dental health services and supports for adults were needed to keep themselves and/or their family healthy (WECHU, 2016). This need has also been observed by the staff of the Oral Health Department at the WECHU who regularly receive calls and emails from adults in need of low-cost or free dental health services across WEC.

Access to dental care is incredibly important "because of its effectiveness in immediately relieving pain and restoring function when dealing with common dental infections (e.g., toothache) and in its ability to prevent disease with relatively simple and proven modalities (e.g., fluoride varnish)" (Locker, Maggirias, & Quiñonez, 2011). Additionally, an annual dental examination can lead to the detection of diabetes or dental cancers, which may go unnoticed among individuals who are not able to see a dental professional regularly. The latest information from the Rapid Risk Factor Surveillance System (2015-2017) indicates that almost one-quarter of adults 18 and over in WEC do not have dental insurance coverage (WECHU, 2018). Of those adults reporting some form of dental insurance coverage, nearly 60% reported having employer-paid dental insurance, 9.6% reported having some private dental insurance, and five percent of adults had some form of publicly-funded dental insurance (WECHU, 2018).

At times, individuals who cannot afford dental treatment go to an emergency department (ED) for a dental-health related problem. Locally, there were an average of 921 ED visits annually for dental-health related concerns between 2010 and 2016; this corresponds to an average annual rate of 240 dental-health related ED visits per 100,000 population (WECHU, 2018). Based on a minimum of $513 per visit (Maund, 2014a), the average total cost for ED visits in Windsor-Essex County is estimated to be $472,400 (2012 Canadian Dollars) per year. This figure increases to $508,259 once the value is adjusted for inflation (2017 Canadian Dollars). The reality is that a large number of ED visits for dental-health problems are triaged as non-urgent and most individuals are simply discharged (Quiñonez, Gibson, Jokovic, & Locker, 2009). Research suggests that removing cost barriers to dental care would facilitate individuals seeking dental care in dental settings, as opposed to costly medical environments (Quiñonez, Ieraci, & Guttmann, 2011).

Public health's role in dental health care

The Windsor-Essex County Health Unit, along with Public Health Units across Ontario offer dental health programming in accordance with the Ontario Public Health Standards (OPHS) set out by the Ministry of Health and Long-Term Care (MOHLTC) (MOHLTC, 2017). The OPHS outline the minimum requirements and expectations for programs and services offered by local

boards of health (BOHs) and identify the role of public health within dental health. Historically, the OPHS focused on the dental health and dental screening of school-aged children and youth. Beginning in 2018, the '*Chronic Disease Prevention and Well-Being*' component of the standards was updated to include assessing the local dental health needs for adults (including seniors), in addition to focusing on children and youth. Requirements under this standard include the collection and analysis of dental health data to monitor trends over time and the identification of emerging trends, priority populations, and health inequities. The aim of this standard and the WECHU is to decrease the burden of chronic diseases of public health importance and to improve well-being.

Objectives

As a first step to inform planning and evidenced-based decision making for adult and senior dental health programming, the WECHU Oral Health Department staff implemented a dental health survey for adults and seniors in the early part of 2018.

The objective of the *Dental Health of Adults and Seniors in Windsor-Essex* survey was to understand the dental health experiences of adults (including seniors) in WEC.

The results of the survey are described in the following pages and will be used to inform recommendations for future programming and advocacy. A brief literature review was also conducted and can be found in **Appendix A**.

Methods

The *Dental Health of Adults and Seniors in Windsor-Essex* survey was a 22 question survey which inquired about demographics of respondents and their dental health experience. The survey was available online and in hard copy. The online survey was available in English only, while the hard copies were available in English, Arabic, Chinese, French and Spanish. An English copy of the survey can be found in **Appendix B**. The survey is available in other languages, upon request.

Hard copies of the survey were provided to community agencies willing to distribute it to clients. Individuals who did not have internet access could contact the WECHU to obtain a hard copy by mail. Responses from the hard copy surveys were collated with results of the online survey.

The survey was promoted to residents using various methods. Promotional material (i.e., posters and post cards) inviting residents to complete the survey were distributed to social services agencies, community partners and other locations (e.g., grocery stores and libraries) across Windsor and Essex County. The promotional material was also available in the above-mentioned languages. The survey was also promoted through a news release at the start of the initiative and a through Facebook advertisement campaign.

The survey launched on January 2nd, 2018 and responses were collected until May 3rd, 2018. The majority of surveys (1,277 of 1,804) were completed online. Hard copies of the survey were manually entered into CheckMarket (an online survey tool) by WECHU staff and all response results were extracted from CheckMarket. In order to be considered a valid response, respondents had to be adults (≥ 18 years of age) and residents of WEC. Surveys were analyzed if the respondents were valid respondents, agreed to the consent statement, and answered at least one survey question. The data extracted from each survey was cleaned to ensure that responses followed the inclusion criteria and that responses were logically consistent. This process resulted in 1,594 (88%) valid responses from 1,804 responses. The data was managed and analyzed using Microsoft Excel 2016 and STATA 12.

Respondents were provided with a list of options and were asked to choose a response describing how they dealt with a recent emergency, if they had experienced one in the last 2 years. A follow-up question invited respondents to elaborate on the actions they had taken to address a recent dental emergency. Of the 298 respondents who provided comments, 229 (77%) provided comments that were further analyzed. Respondents' comments regarding visiting a dentist or taking no action were added to the quantitative analysis. As the reported comments related to many topics relevant to the other questions in the survey, the comments will be presented where they are most relevant.

Quantitative analysis included comparisons of proportions and measures of associations between demographic and respondent characteristics and the dental health outcome. Statistically significant differences between categories and proportions were noted where appropriate.

An odds ratio was used to measure the association between various demographic characteristics and the likelihood that respondents answered "Yes" to the following questions regarding dental health outcomes:

- I have had dental concerns in the past year
- I have unmet dental health needs that impact my life
- I had a dental emergency in the past 2 years
- I have problems getting dental services

Respondents were also asked about their knowledge of low-cost or free dental health services for adults and seniors. Any new information provided would be added to an existing list of services that the WECHU Oral Health Department staff use to refer adults looking for such services. A list of dental health services available across WEC is presented in **Appendix D**.

The University of Windsor Research Ethics Board (REB # 17-228) approved this study.

Limitations

Although the implementation of this survey has provided insight into the local perspective and health status of priority populations in WEC, the results represent a single point in time, and cannot be used to determine causal relationships between factors.

Results

Demographics of respondents

Demographic information reported by respondents is summarized in **Table 1**. Fifty-two percent of respondents (828 respondents) were between 30 and 64 years of age, while 11% were between 18 to 29 and 17% were over 65 years of age. Almost two-thirds of respondents were female (63%), while 19% were male. In terms of education, 40% of respondents had a high school diploma or less, 38% had a college or trade certificate, and 17% had a college or university degree. Over one-third of respondents (37%) were employed for wages or self-employed; 23% were retired; and 25% were unable to work or unemployed (11% and 14%, respectively). Almost 50% of respondents had a household income of $30,000 or less (49%) and 17% had a household income between $30,000 and $49,999; 16% had a household income greater than $50,000.

Table 1. Sample size by demographic variables

Characteristics	Respondents (%)
Valid respondents	1,594
Age	
18 to 29	177 (11.1)
30 to 49	476 (30.0)
50 to 64	352 (22.1)
≥ 65	264 (16.6)
No response	325 (20.4)
Gender	
Male	305 (19.1)
Female	1,001 (62.8)
Other	6 (<1.0)
No response	282 (17.7)
Education	
High school or less	637 (40)
College or trade certificate	598 (37.5)
College or university degree	277 (17.4)
Prefer not to answer/no response	82 (5.1)
Employment Status	
Employed for wages or self-employed	587 (36.8)
Student/taking care of my family	197 (12.4)
Unable to work (includes those receiving disability)	170 (10.7)
Retired	366 (23.0)
Unemployed	217 (13.6)
Prefer not to answer/no response	57 (3.6)
Household Income	
< $30,000	783 (49.1)

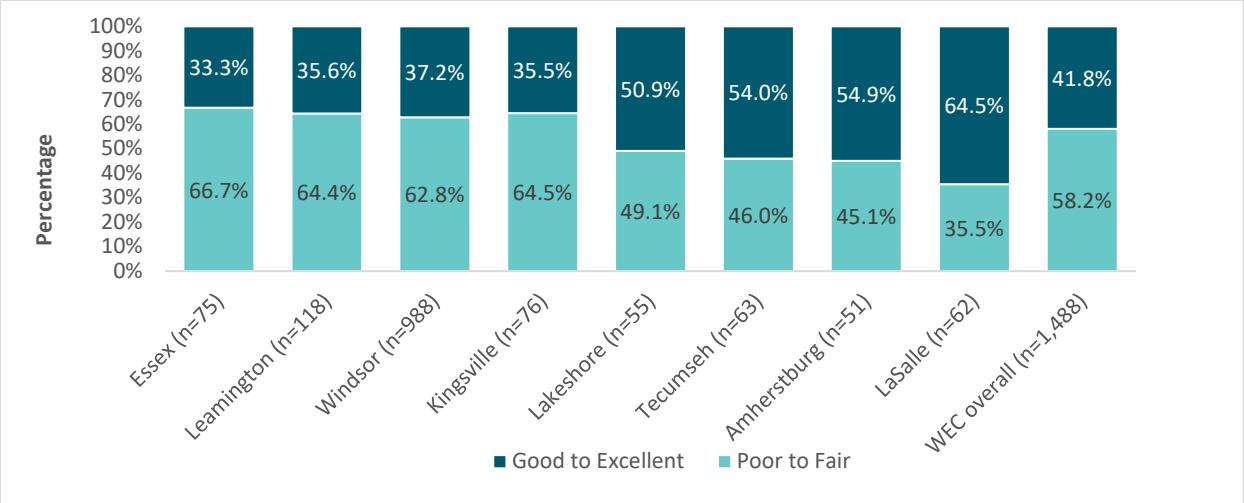
Characteristics	Respondents (%)
$30,000 to $49,999	277 (17.4)
$50,000+	253 (15.9)
Prefer not to answer/no response	281 (17.6)

Overview of dental health status

Self-reported dental health

Respondents from the Town of Essex, Leamington, Windsor, and Kingsville were more likely to report being in poor or fair dental health than respondents from Lakeshore, Tecumseh, Amherstburg, and LaSalle. Overall, a slight majority of respondents (58%) said they had either poor or fair dental health. **Figure 1** shows the percentage of adults, by municipality, in Windsor-Essex County who self-reported having good or excellent dental health.

Figure 1. Percentage of adults (≥18 years) who self-reported to have good or excellent dental health (n=1,488) by lower-tier municipality.



Note: <5% of respondents did not know their current dental health status or preferred not to answer; these respondents were excluded from the analysis.

Access to a dentist

Almost 60% of respondents reported having a dentist (see **Figure 2**). Respondents in communities such as LaSalle (86%), Amherstburg (76%), and Tecumseh (70%) were more likely to report having a dentist, than those in Windsor (56%) and Kingsville (58%).

While the majority of respondents do have a dentist, the cost of dental appointments prevented some respondents from contacting a dentist. From the comments shared, the experience of respondents ranges from not being able to make a dental appointment because of the cost, to seeing a dentist, but not being able to pay for the cost of the necessary

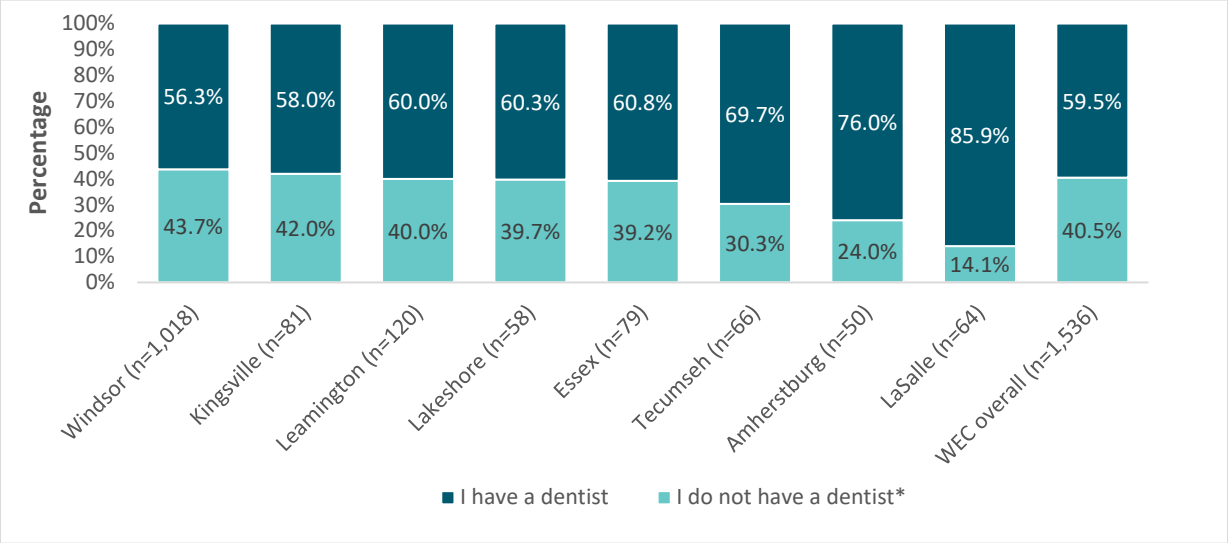
treatment. Others travelled to other countries to have their dental treatment completed, as it was deemed more affordable. The following are a few of the comments shared by residents:

> ***"i (sic) went to a dentist, but i (sic) couldn't afford it"***

> ***"Ive (sic) been in incredible pain caused by my teeth, and because im (sic) not working, and cant (sic) afford to pay cash, the dentist tells me theres (sic) nothing he can do. I take Motrin several times a week to numb the pain, but this isnt (sic) fixing the problem."***

> ***"I went to Cuba and had all my remaining teeth pulled"***

Figure 2. Percentage of adults that self-reported having a dentist by lower-tier municipality (n=1,536)



Note: Includes <5% of all respondents that do not know if they have a dentist.

Dental insurance

Figure 3 illustrates the various forms of dental insurance reported by respondents. Sixty-two percent of respondents reported that they did not have dental insurance. Of those respondents with dental insurance (38%), 50% reported having employer-provided insurance (including spousal employee dental health insurance). Thirty-four percent of respondents had publicly-funded dental insurance (i.e., OW or ODSP), while 10% had private insurance.

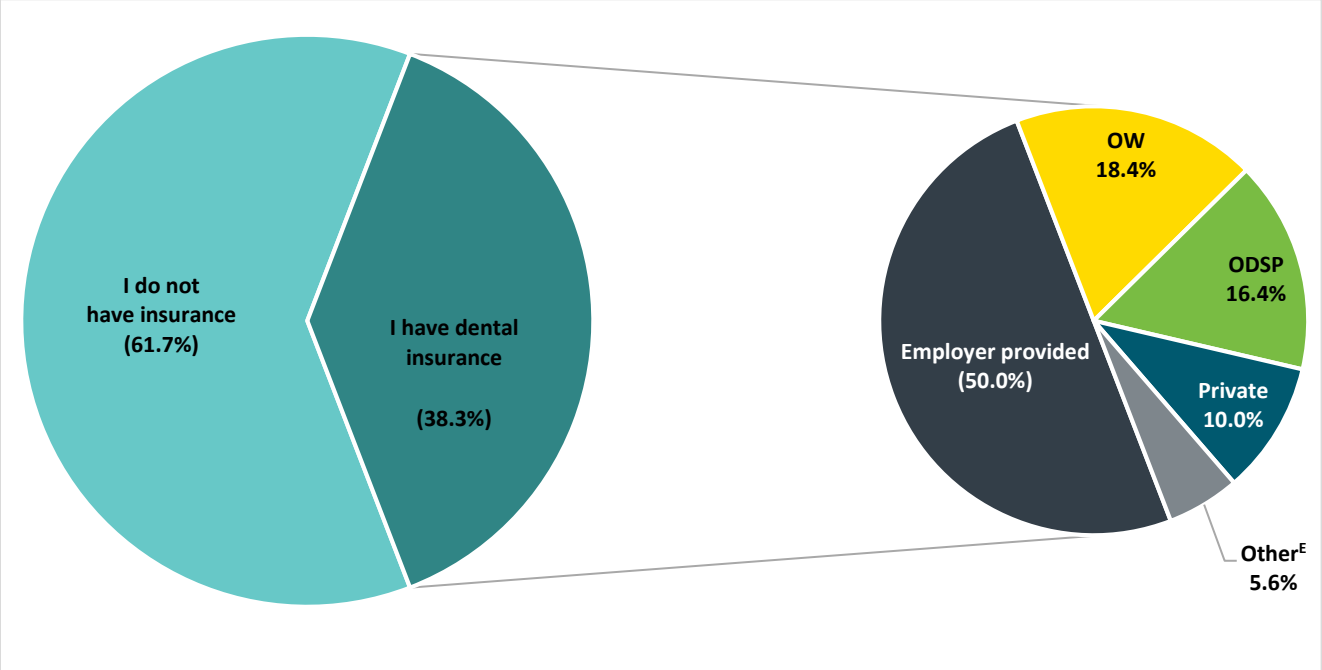
Dental insurance was identified as a barrier to accessing dental treatment. Respondents had an inadequate amount of dental insurance in some cases, while others did not have any insurance at all, to cover the costs. Some of the respondents' comments below reflect the scope of the problem of not having dental insurance:

> ***"While employed, I was covered, therefore I had no issues going to a dentist."***

"Had insurance but didn't cover total cost. Don't have insurance now."

"Last resort I went to a dentist when infection and pain unbearable and cheek the size of a ball.. No coverage means hard to [get treatment] even though I work."

Figure 3. Percentage of respondents by dental health insurance (n=1,514)



Note:

- [E]Interpret with caution due to high sampling variability.
- **OW:** Ontario Works; **ODSP:** Ontario Disability Support Program
- Other includes Correctional Services of Canada, School benefits, Green Shield, Canada Pension Plan, and Non-insured health benefits for First Nations and Inuit

Dental health concerns

Respondents were asked if they had any dental concerns in the past year. Respondents' self-reported dental health concerns are presented in **Figure 4**. The majority of respondents reported experiencing cavities (58%), missing, loose, or broken teeth (53%), and/or tooth or mouth pain (52%). Infection, which can lead to more serious health issues, affected almost 20% of respondents. More than 1 in 10 reported issues with dentures or false teeth (12%). Unmet dental concerns were an issue for respondents, as their comments often related to missing, loose, and/or broken teeth; tooth or mouth pain, infection, and dentures.

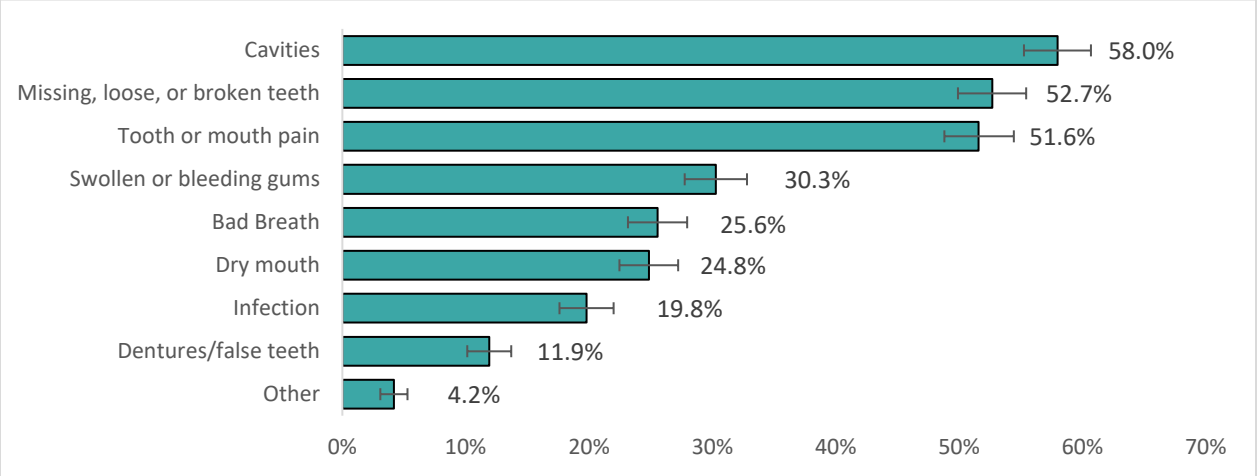
A significant proportion of respondents reported a dental health concern irrespective of insurance status and household income. **Figure 5** illustrates common dental health concerns in adults based on household income. Respondents with a household income less than $50,000 were more likely to report a dental health concern. The percentage of adults with a dental

health concern is compared by insurance status and household income in **Figure 6**. Dental health concerns were most prevalent in those individuals who had a household income less than $30,000 without insurance (72%) compared to those with a household income greater than $50,000 without insurance (39%). Compared to individuals with a household income greater than $50,000, those with the lowest household income (i.e., a household income less than $30,000) were approximately 3 times more likely to experience a dental concern. Those respondents without dental health insurance were approximately 2 times more likely to experience a dental concern (see **Table D1** in **Appendix D**).

Some respondents reported pulling out parts of, or all of, an infected tooth themselves, in spite of the added pain, increased risk of infection, and/or potential damage to their mouths that their home-based tooth extraction may cause. One of the common conditions shared was being in pain, and for some, it appears to be prolonged suffering. For some, it seems normalized, because they have learned to live with mouth pain, as if it is a regular part of their everyday life. Some respondents with infections said they used salt water rinses as a form of treatment, but several others took to relieving the pain and pressure of their infection by popping their abscesses and draining the fluid. A few comments were provided regarding dentures. Respondents that commented on dentures stated that they were unable to afford dentures or were unable to maintain them properly due to financial barriers. The following are just some of the comments shared by respondents regarding their dental health concerns:

> ***"I currently have a tooth that fell out superglued back into place"***
>
> ***"I took many Advil on a daily basis. Also helped myself pull out some teeth."***
>
> ***"I take a few pain killers, if i (sic) have any, and just ride it out until the next time. But its (sic) definately (sic) a constant pain."***
>
> ***"[I] Dealt with the pain. Thought I was going to die of infection."***

Figure 4. Percentage of adults by type of dental health concerns (n=1,268)



Note: Error bars represent 95% confidence intervals. The '*Other*' category includes concerns from complications from previous dental diseases and treatments. Percentages do not add up to 100% due to some respondent reporting more than one concern.

Figure 5. Common dental health concerns in adults (ages 18+) by household income

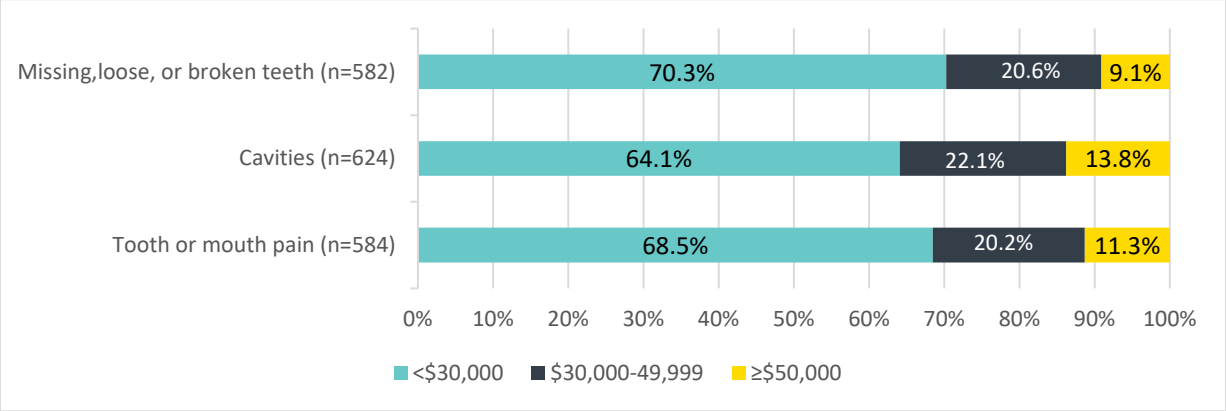
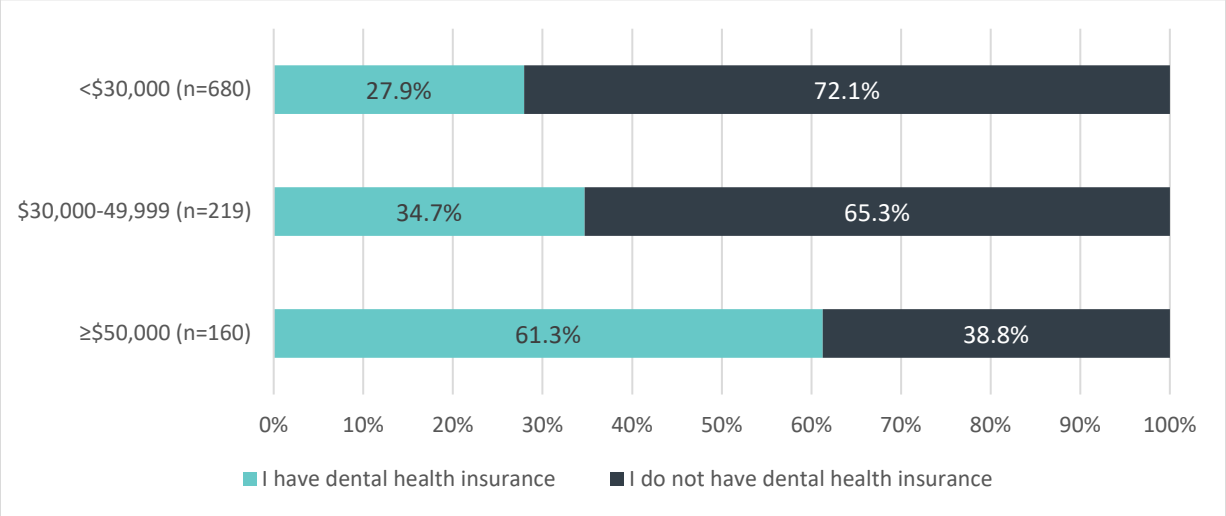


Figure 6. Percentage of adults with a dental health concern by insurance status and household income



Note: Respondents that do not have dental health insurance also includes those that do not know if they have insurance. Insurance includes any government or employer-funded plans.

Impact of unmet dental health needs

The various ways the respondents' unmet dental needs have impacted their lives is shown in **Figure 7**. More than two-thirds of respondents reported that their unmet dental care needs affect their eating behaviours (67%); this has potential implications for one's overall health, as people may not be consuming adequate amounts of food, vitamins, or minerals to sustain good health. Over 50% of respondents indicated that their self-esteem is impacted. Many respondents also reported that their unmet dental care needs affected their socialization

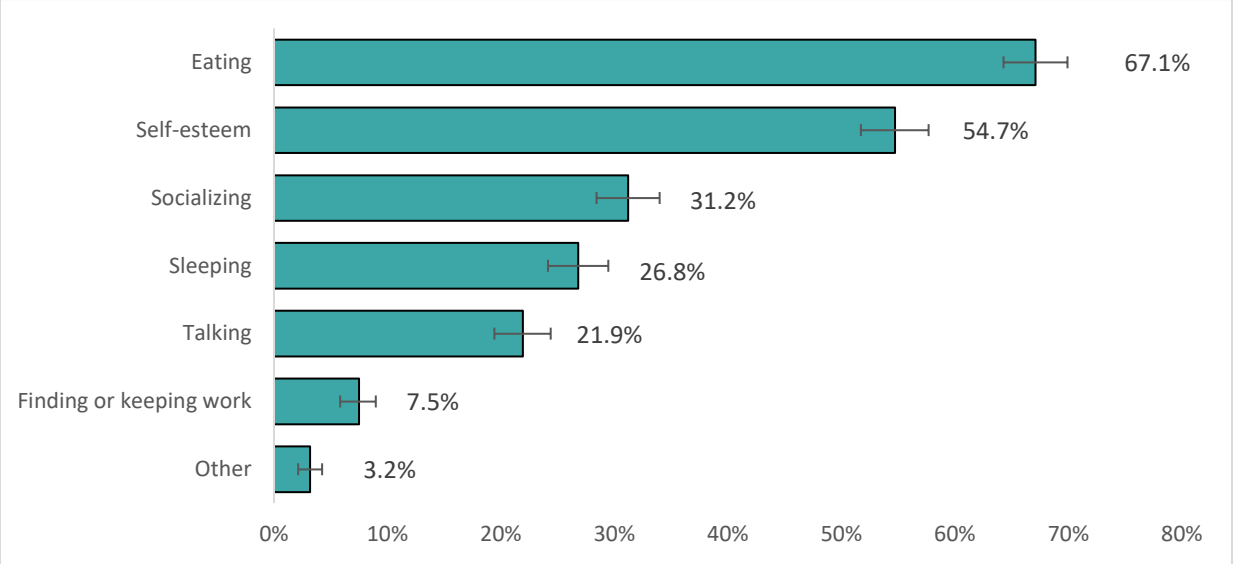
patterns (31%). Roughly 1 in 5 respondents (22%) reported that their unmet dental needs affect their ability to talk with others.

Respondents with a household income less than $50,000 were more likely to report their eating habits and/or whether their self-esteem is impacted by an unmet dental need (**Figure 8**). The impact of an unmet dental need is greatest among respondents with a household income less than $30,000. Compared to individuals with a household income greater than $50,000, those with lowest household income (i.e., a household income less than $30,000) were approximately 3.9 times more likely to have an unmet dental need that impacted their life. Those with a moderately low household income between $30,000 and $49,999 were 2.3 times more likely to have an unmet dental need. Those without dental benefits were also affected similarly. Those respondents without dental health insurance were approximately 2.3 times more likely to have an unmet dental need that impacted their life (see **Table D1** in **Appendix D**).

Comments shared about the impact of unmet dental needs focus on the effects on one's eating and sleeping. Both of these issues can affect one's well-being, by either not getting the proper nutrients or not getting enough sleep to function properly:

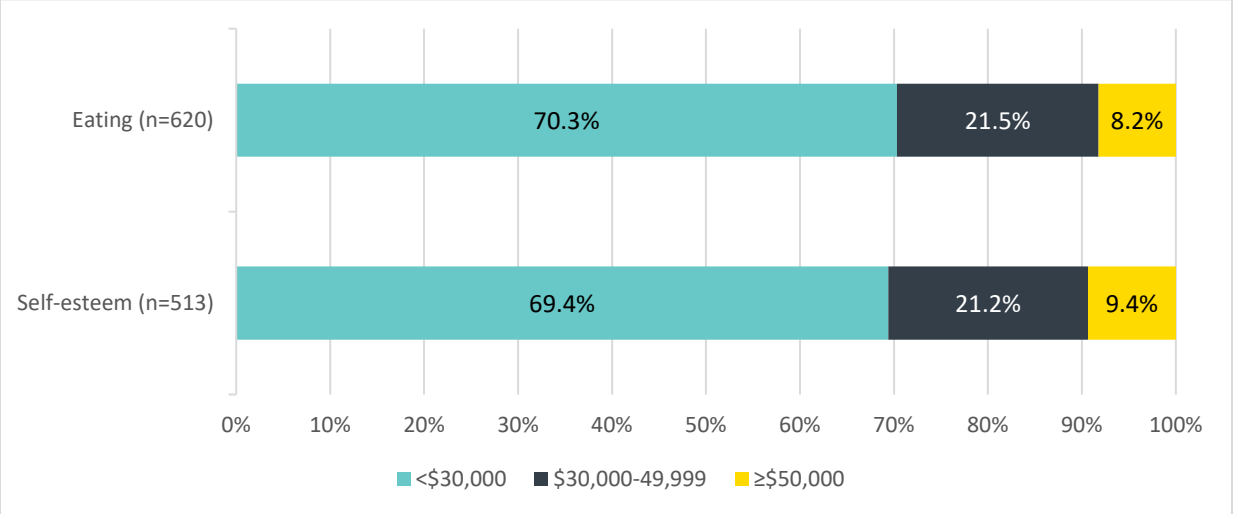
> ***"I just deal with it. Eat carefully."***
>
> ***"Kept taking pain medication and keeping mouth clean by not eating until it stopped hurting."***
>
> ***"Broken molar. Also another filled tooth caused severe pain for 7 days. Had a liquid diet. Boost."***
>
> ***"Once I had to call me (sic) dentist during (sic) weekend as the nerve related pain hadreached (sic) unbearable limits. He thankfully prescribed me a pain killer so I could slept (sic) that night."***

Figure 7. Percentage of adults by the type of impact of unmet dental care needs (n=1,067)



Note: Error bars represent 95% confidence intervals. The '*Other*' category includes financial, general stress, and health-related need. Percentages do not add up to 100% due to more than one type of impact reported by a respondent.

Figure 8. Percentage of adults by the type of impact of unmet dental care needs and household income



Dental health emergencies

Respondents who experienced a dental care emergency in the last two years were asked how they dealt with that emergency (see **Figure 9**). The actions respondents took were categorized into four main themes: self-medication, self-treatment, visit to a dentist, and no action taken. Although visiting a dentist was the most common action taken by respondents with a dental

emergency (53%), over 1 in 4 adults dealt with the dental emergency on their own (29%) and 19% did not do anything at all.

The top three most common actions taken as a result of a dental emergency in the past 2 years were further investigated in **Figure 10**. The actions taken were further broken down by household income and insurance status in order to illustrate how the prevalence of specific actions taken for a dental emergency changes with increasing income and availability of insurance.

Respondents with a household income greater than $50,000 were more likely to visit a dentist (72%) than respondents with moderate or low household incomes. An inverse relationship exists between household income and the likelihood that respondents would deal with the emergency by themselves or not do anything at all. As household income decreased, the proportion of respondents that dealt with the emergency themselves or took no action increased. Compared to individuals with a household income greater than $50,000, those with the lowest household income (i.e., a household income less than $30,000) were approximately 2.3 times more likely to experience a dental health emergency in the last 2 years (refer to **Table D1** in **Appendix D**).

Respondents were less likely to visit a dentist for a dental emergency if they did not have dental insurance (see **Figure 11**), yet they were more likely to deal with the dental emergency on their own or not at all, if they did not have dental insurance. Having dental insurance influenced what action(s) respondents took when they experienced a dental emergency. Publicly-funded dental insurance provides limited coverage for dental health emergencies only.

Respondents that further elaborated on how they dealt with their dental emergency took a variety of actions. Self-treatment included anything that the respondent did to deal with pain and/or infection, with the exception of seeking dental treatment. This included everything from researching home remedies on the internet, to buying over-the-counter medications, to pulling their own teeth out. At times, multiple actions were taken.

Taking medication to deal with tooth pain was a solution for some adults who were in constant tooth or mouth pain. Self-medication included any substance (both illegal or legal) that the respondent ingested to deal with tooth or mouth pain or infection. This included alcohol (for ex., tequila), over-the-counter pain medications (for ex., Tylenol), anti-inflammatories (e.g., Advil), antibiotics, and/or narcotics. As noted in **Figure 4**, 52% of adults reported having tooth or mouth pain.

The following comments illustrate the variety of actions respondents took to deal with a dental emergency.

> ***"Googled home remedies, took leftover antibiotics, stressed to avoid 'emergency fees and exam fees at dentist to write a script', and to avoid possible long wait at emergency care in hospital where flu was evident. (sic)"***

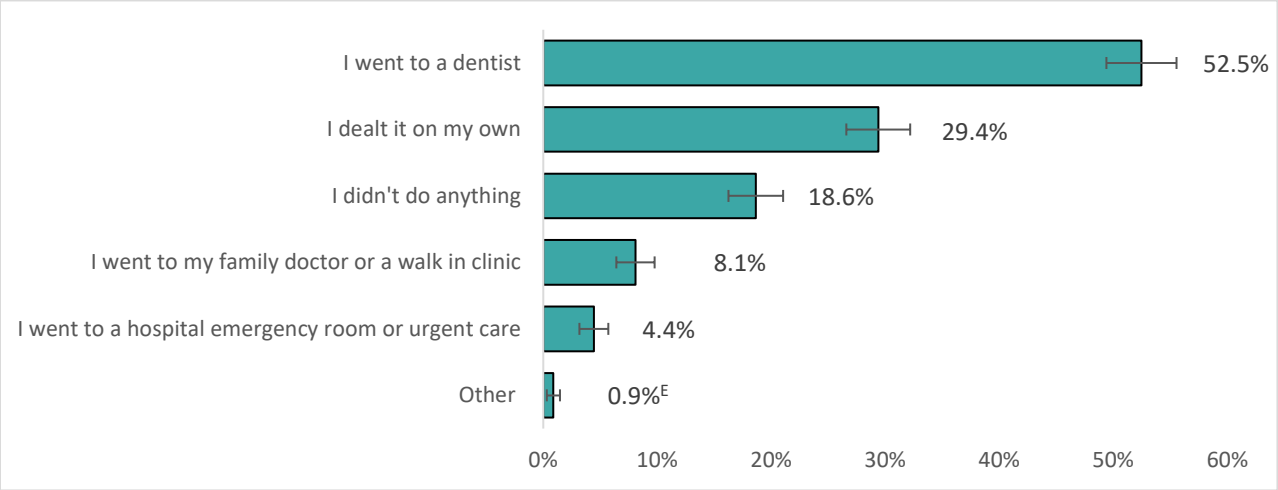
"I used salt rinses and an antibiotic my son was prescribed but didn't use."

"pain pills and antibiotics when I could get them."

"home remedies, kill pain with tylenol (sic), saltwater rinse, swish whiskey around infected tooth to kill pain."

"[I] found opiates on the street to deal with the pain"

Figure 9. Percentage of adults by type of self-reported action taken for a dental care emergency (n=1,014)



Note: Error bars represent 95% confidence intervals. [E]Interpret with caution due to high sampling variability. The '*Other*' category includes respondents who paid for dental services themselves, used family assistance, or had a procedure completed for low cost. Percentages do not add up to 100% due to the possibility of multiple actions taken for each respondent.

Figure 10. Action taken for a dental health emergency in the past 2 years by household income in WEC adults

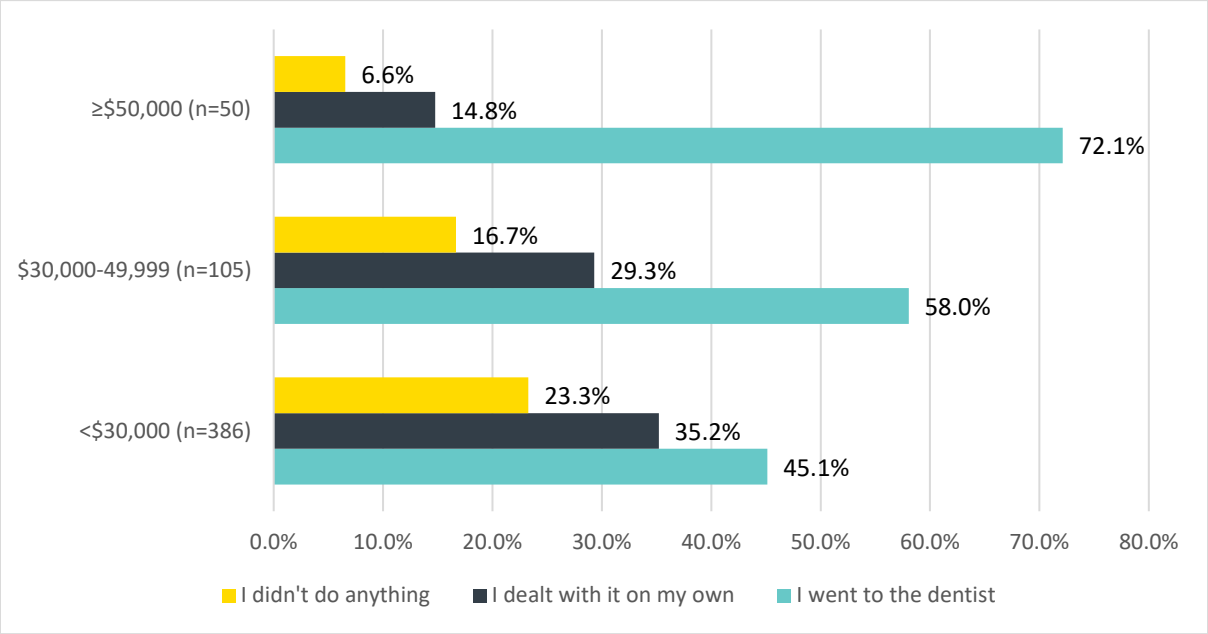
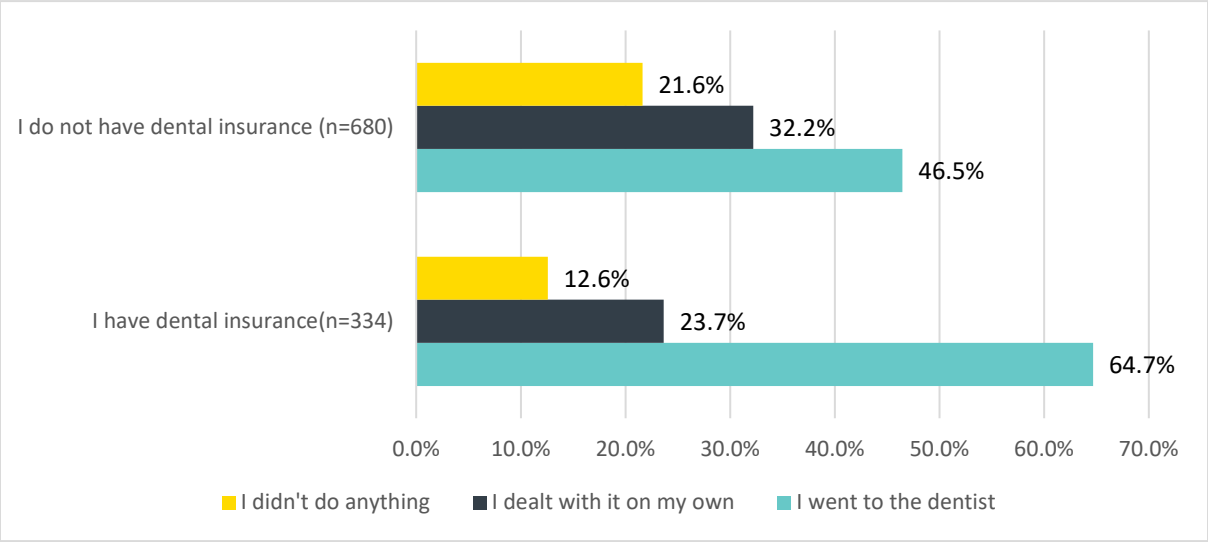


Figure 11. Common action taken from a dental health emergency in the past 2 years by dental insurance status



Barriers to getting dental health care

A large majority of respondents faced some type of barrier to dental care services. The top three problems respondents had with getting dental health services were related to cost. The cost of dental care was the most frequently reported barrier, experienced by more than 70% of respondents (**Figure 12**). A lack of dental insurance was reported by 67% of respondents while more than one-third of respondents (39%) reported having limited insurance.

Barriers to getting dental care were explored further by household income and insurance status (see **Figure 13**). Respondents with household incomes less than $50,000 and without dental insurance were more likely to experience problems getting dental care than those with dental insurance. This underscores the importance of insurance, as those with a household income between $30,000 and $49,999 were only slightly less likely to report problems getting dental care when compared with respondents with a household income less than $30,000. A strong association was found between dental insurance status and the likelihood of having problems accessing dental services: respondents without dental insurance were approximately 17 times more likely to experience problems accessing dental health services compared to those respondents with dental insurance (refer to **Table D1** in **Appendix D**).

The most commonly reported problems in getting dental health care were not being able to afford the cost and insufficient or no dental insurance. These problems are compared by household income in **Figure 14**; although respondents in all income categories are affected, individuals with lower household incomes were more affected. The majority of respondents that could not afford the cost (71%) or had insufficient or no dental insurance (67%) were observed to have a household income of less than $30,000. Additionally, it was observed that those with the lowest household income (i.e., a household income less than $30,000) were 5.4 times more likely to have problems accessing dental services than respondents with a household income of $50,000 or greater (refer to **Appendix D**).

Furthermore, individuals in the lowest household income group were 5.4 times more likely to have problems accessing dental services than respondents with a household income of $50,000 or greater. Those with a moderately low household income between $30,000 and $49,999 were 4 times more likely to have problems accessing dental services compared to adults in the reference group. Respondents without dental insurance were approximately 17 times more likely to experience problems accessing dental health services compared to those respondents with dental insurance (refer to **Table D1** in **Appendix D**).

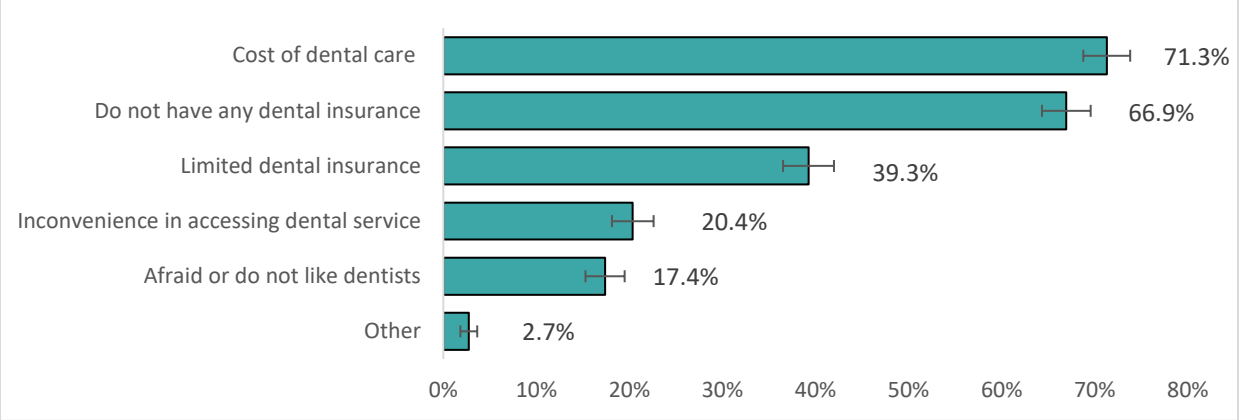
The financial cost of dental treatment was a barrier for some adults. Yet in spite of the cost, a number of respondents had sought treatment and were incurring debt to pay for the treatment. The financial resources to pay for dental health treatment came in many forms – saving the money in advance, generosity of friends, loans, and credit cards with unpaid debts.

Competing needs were noted by respondents who reprioritized their finances because of a dental health emergency, for example, by using rent money or their monthly pension to pay for the cost of dental treatment.

Even though respondents were asked about what actions they took to deal with a dental emergency, some respondents explained that they did indeed go to a dentist and paid a lot for the dental treatment.

> ***"Tried to save money for one year to see [a] dentist for tooth pain and cavity fillings and cleaning"***
>
> ***"I have cracked teeth. I had one removed. My friend paid for it. The others I keep the pain and swelling down with Advil."***
>
> ***"Had to pay $1,700 for an extraction & root canal (sic) Had to borrow the money. Still trying to pay it back."***
>
> ***"[put] $1000.00 on my credit card, which I'm still paying for it"***
>
> ***"I had an absess (sic) and let it go for as long as I could finally had to pay $850.00 to get it removed. Now I have a tooth ache again."***

Figure 12. Percentage of WEC adults by type of problem getting dental care (n=1,243)



Note: Error bars represent 95% confidence intervals. The 'Other' category includes respondents who have personal challenges, no time for dental services or a bad experience with dental services. The percentages do not add up to 100% due to a possibility of multiple problems for each respondent.

Figure 13. Percentage of respondents with problems getting dental care by dental insurance status and household income

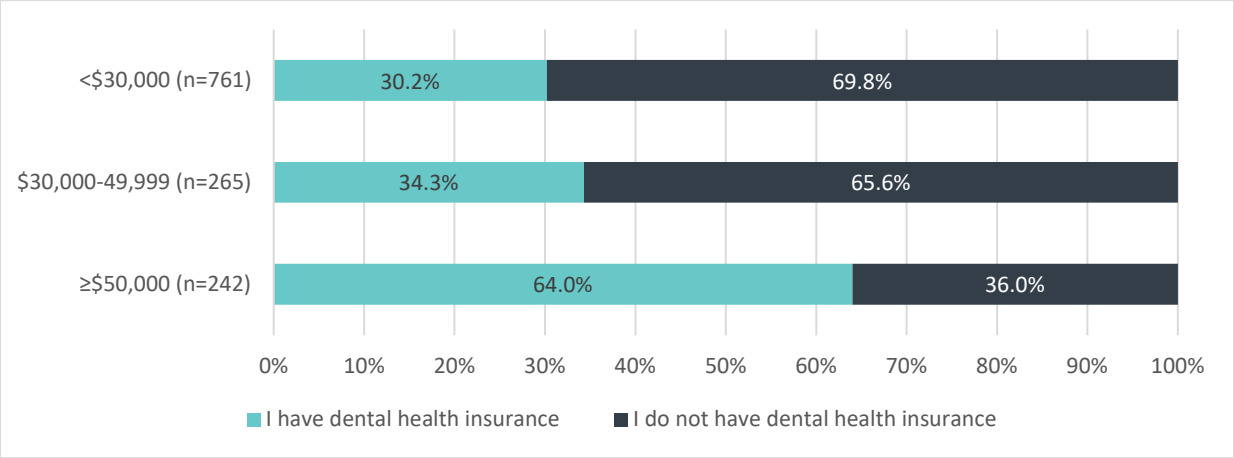
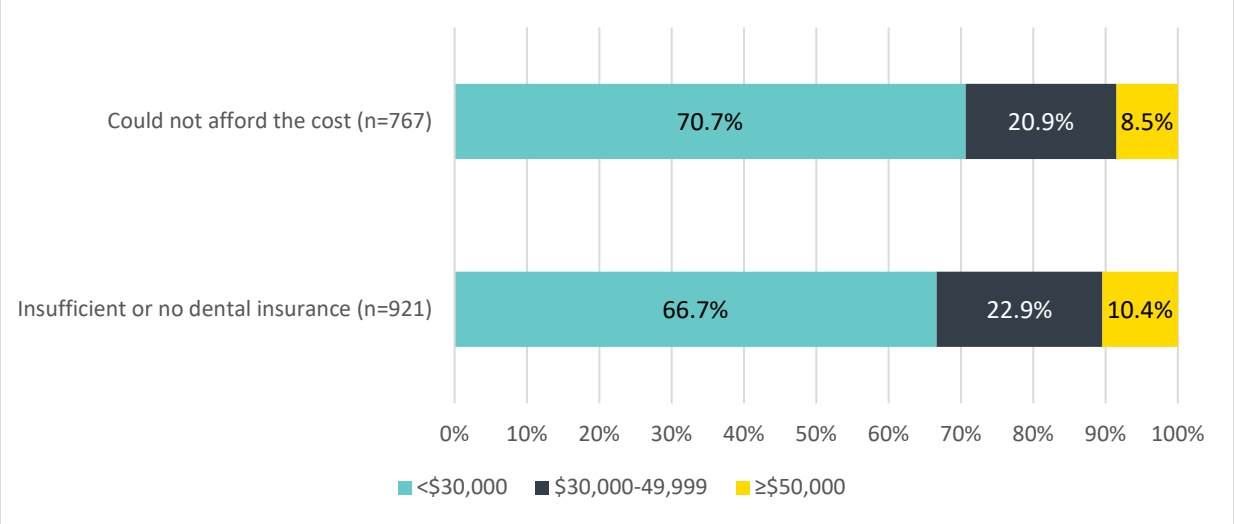


Figure 14. Commonly reported problems in getting dental health services by household income in WEC adults 18 and over



Awareness of dental health services

The survey finished with questions asking about awareness of free or low-cost dental programs and services for adults and seniors. More respondents were aware of free or low-cost dental programs for adults than seniors. The majority of respondents who answered this question noted the services of the dental clinic at St. Clair College; other responses included Street Health and publicly-funded programs such as Ontario Works (OW) and Ontario Disability Support Program (ODSP).

In terms of services for seniors, the responses were also focused on the dental clinic at St. Clair College or publicly-funded programs. Other responses included Go Fund Me, Windsor Essex Community Health Centre, Street Health, the WECHU, and Operation Smile.

In spite of the low-cost dental clinic at St. Clair College, some respondents noted that it was too expensive, that the wait list was too long, that it was too far to travel (especially for those adults and seniors who lived in the county), or that the services they needed were not provided.

Adults' dental health care needs are not being met, despite the existence of a few low-cost services in our community. Respondents' comments suggest that adults visit the emergency department as well, and leave without being seen nor with any relief for their dental health problem:

> ***"most dentists will give a lower rate to seniors without benefits."***

> ***"An abscess. The wait in the ER was too long so I went home and rinses (sic) with salt water until it drained."***

Most municipalities in Ontario lack dental health programs and services for adults 18 and over from low-income households (Ontario Oral Health Alliance, 2017). As the population ages and more adults enter retirement without dental insurance, the need for a publicly-funded dental health program becomes even greater. Additionally, because dental health is so connected to overall health, this lack of services puts more strain on the health care system and reduces the quality of life of many adults in this community.

Discussion

The results of this report demonstrate that adults with a low-household income and a lack of dental insurance are more likely to experience poor dental health outcomes such as dental concerns and emergencies, as well as have unmet dental needs and problems accessing dental health services. Research by Thompson, Cooney, Lawrence, Ravaghi, and Quiñonez (2014), found that more than 1 in 5 Canadians reported cost barriers to dental care. These individuals had more untreated decay and missing teeth, and were more likely to report frequent dental pain and having poorer dental health. Research by Muirhead et al., (2009) found that almost a third of the working poor could not afford needed dental care in the past and 12.6% reported a competing need, restricting spending to pay for dental care.

As noted in **Figure 4**, 52% of adults reported having tooth or mouth pain. This finding is similar to the research by the Barron and Kleinsmith (2014) who found that approximately 50% of survey respondents reported experiencing dental pain. Furthermore, 41% of survey respondents in Guelph and Wellington County reported dental pain (Ellery, 2015). Barron and Kleinsmith (2014) also reported that respondents experiencing a dental emergency pulled their own teeth or glued teeth back in place when needed.

The local experience in Windsor-Essex County also confirms a need for dental health services among adults with no insurance and/or low incomes. While the WECHU does not currently provide dental health services to adults, staff regularly receive questions from adults looking for free or low-cost services. Some adults have contacted WECHU for preventive services, some are looking for help to cover the costs of dentures, and others are looking for help to deal with a dental emergency. The staff of the Oral Health Department at the WECHU regularly receive calls from adults looking for dental health services for either themselves or others. For example, this request from a mom looking for services for her adult daughter:

> ***"My daughter who is 20 has severe tooth decay and I believe is making her sick. She…can't eat and feels sick all the time. Is there anything any programs to help her out. Her pay goes to rent and bills. She's been to dentists and can't afford anything passed the x-ray and checkup. She just can't afford the help she needs."***

Although there is a new, low-cost dental service in Windsor-Essex, the Alan Quesnel Community Dental Centre, this service faces barriers of its own. There is currently a waiting list of approximately 400 individuals and those living in the County may face transportation or time barriers to attend.

The results of this report reinforce the need for adult dental health services, as identified in the WECHU's Community Needs Assessment (2016). This provides an opportunity to work with community partners, locally and provincially, to find a comprehensive strategy including individual, interpersonal, organizational, community, and policy components.

Based on these survey results and those found in the WECHU Oral Health Report (2018), the following recommendations are proposed.

Recommendations

1. **Partnerships.**

    - Form a Windsor-Essex County Dental Health Community Coalition including key decision makers from both the City and County municipalities. This coalition can take on advocacy roles and work with other agencies to leverage the existing services and partnerships in this community to help adults and seniors who cannot access dental health services.
    - Continue and support collaboration with the Erie-St. Clair Oral Health Coalition to expand dental health education and outreach programs to increase availability of dental health care and information to vulnerable populations.
    - Develop and strengthen alliances with dental and non-dental associations (for example, dental professionals, family physicians, emergency physicians, day cares, social service agencies).
    - Consult with colleagues in the Ontario Oral Health Alliance (OOHA) and Ontario Association of Public Health Dentistry (OAPHD) to identify and examine other communities that have implemented dental health programs for low-income adults 18 and over in Ontario that may be replicated in Windsor-Essex.

2. **Advocacy.**

    - Advocate for increased funding for dental health services and expansion of publicly-funded dental programs for adults and seniors (refer to Appendix E).

    - Advocate for workplaces to provide a living wage and/or some type of dental insurance coverage to their employees.

3. **Community Water Fluoridation.**

    - Promote and support policies for residents of Windsor-Essex County to have access to community water fluoridation and advocate for provincial coordination of community water fluoridation as a prevention strategy for dental caries.

4. **Comprehensive, community-based approach to healthy living programs and services.**

    - Integrate dental health education into relevant Windsor-Essex County Health Unit programs and community-based programs and services, such as healthy eating, chronic disease and injury prevention, tobacco cessation, and programs for new or expecting parents.

- Increase support and resources to better promote healthy lifestyles among individuals and their families, with a focus on dental health education and awareness.

- Offer a range of preventive services in schools with children (i.e., preschool children, school-aged children, and teens) at a higher risk of dental disease. These services may include: daily brushing programs; professionally applied topical fluoride (PATF); dental sealants; scaling, dental health education; and dental health promotion.

- Support the development and expansion of municipal social investment plans and poverty reduction strategies.

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Appendix A: Review of literature on dental health

A lack of access to dental health care is putting additional strain on the health care system. Individuals who cannot afford dental treatment in typical dental health care settings are seeking treatment for dental problems from their physicians and/or hospital emergency department (Quiñonez et al., 2009). In Ontario, there were almost 217,728 dental-health related physician visits in 2012. At a minimum cost of $33.70 per visit, the estimated cost of these visits is at least $7.3 million (Maund, 2014b). This is in addition to emergency department visits for dental health related problems, which at a minimum of $513 per visit (Maund, 2014a), was estimated to cost Ontarians at least $30 million in 2013. These visits are a costly and ineffective use of health care dollars, as individuals who access the ED for dental health issues tend to receive pain medication (e.g., opioids) and not the necessary dental treatment to resolve the issue.

What is dental health and why does it matter?

Dental health plays an integral role in one's overall health and well-being, and can directly impact a person's quality of life, including one's physical, mental and social well-being (Canadian Dental Association, 2010). Good dental health can be described as being free of mouth and facial pain, cavities, periodontal (gum) disease, and any other negative conditions that impact the dental cavity (Petersen, 2003).

Tooth decay (cavities) and periodontal disease are two of the most common dental health concerns (Ministry of Health and Long-Term Care [MOHLTC], 2012). Results from the 2007-2009 Canadian Health Measures Survey demonstrate that 96% of Canadian adults have a history of cavities and 21% have had a moderate or severe gum problem (Health Canada, 2010). This is also true in Windsor-Essex County, where the rate of dental day surgeries for caries-related issues was almost 3 times greater in Windsor-Essex County compared to Ontario in 2016. Annually, there are 1,323 day surgeries for caries-related issues performed on average in Windsor-Essex County. Of these, 572 day surgeries per year on average are performed on adults with caries-related issues (WECHU, 2018). In fact, cavities are one of the most common, chronic, infectious diseases among Ontarians; yet these same dental health issues are largely preventable (MOHLTC, 2012).

Dental health issues can impact a person's quality of life. Missing teeth and dental pain can influence a person's speech, what they eat, and how they socialize (College of Dental Hygienists of Ontario [CDHO], 2014). In fact, some studies have shown that people who report chronic mouth pain are more likely to take a sick day (Quiñonez, Figueiredo, & Locker, 2011). An increasing amount of research has shown the important link between dental health and overall health. Specifically, dental health issues have been linked to respiratory infections, cardiovascular disease, diabetes, and poor nutrition. Recent research also links maternal periodontal disease with low-birth weights (MOHLTC, 2012).

The links between dental health and overall health are evident when dental health is considered in the context of risk factors for chronic diseases. Diabetes, heart disease, and cancer have common risk factors such as poor diet, alcohol use, and smoking; these are all possible risk factors for poor dental health, along with many others (Federal, Provincial and Territorial Dental Working Group, 2012). Moreover, poor dental health and poor overall health share many of the same social and economic risk factors (e.g., income, employment, education, access to health services, social support) (CDHO, 2014). Therefore, one's dental health is a key component to one's overall health, and reaching optimal dental health may have an impact on overall health as well (Seto, Ha Thanh, & Quiñonez, 2014).

The Canadian Dental Association (2010) recommends brushing twice a day, flossing once a day, visiting a dental professional regularly, and eating a healthy diet in order to prevent dental health issues. Visiting an dental health professional regularly is an important part of maintaining good dental health, as it involves the prevention, diagnosis, and treatment of issues such as cavities and gum disease, in a timely manner (CDHO, 2014).

Access to dental care

There are several indicators that can act as barriers to good dental health, including: education level, income, age, where you live (urban or rural), and immigrant status. Research by Locker et al. (2011) found that females, older subjects, individuals with lower education, and French-speaking respondents were more likely to report financial barriers to care. Compared to the rest of the population, immigrants receive less preventative services and more treatment and experience more negative dental health outcomes (Canadian Academy of Health Sciences, 2014). Furthermore, a recent systematic review found that newcomer families (refugees and immigrants) have poor dental health and face several barriers to using dental care services, including language, navigating a new health care system, and a lack of financial resources (Reza et al., 2016). This is an important consideration for Windsor-Essex County given the large immigrant population in the region (WECHU, 2016).

Financial barriers

Following good dental health practices requires individuals to be aware of the benefits of good dental hygiene and to be able to purchase the necessary items (e.g., toothpaste, toothbrushes, and floss) and services (i.e., dental cleanings and treatment if needed). For under-resourced individuals and families, food insecurity and financial instability often compete with other priorities (e.g., dental health/hygiene) (Duncan & Bonner, 2014).

The majority of dental health care services in Ontario are not publicly funded, requiring Ontarians to cover the cost of their own dental care. There are four ways people pay for their own dental care: third-party insurance (often through employer-sponsored dental insurance plans), private dental insurance, out of their own pocket, and government-subsidized programs (e.g., Ontario Works). Ontario provides public dental coverage to children of low income families, but there are very few options for adults and seniors living in low-income households

(Wellesley Institute, 2015). The lack of coverage and access to dental health care is a key barrier to good dental health.

Dental insurance

Even after controlling for a variety of sociodemographic factors, research has shown that income and dental insurance play key roles in utilization of dental care services. Dental insurance is typically a benefit of employment in some workplaces and is often terminated upon retirement. Individuals with higher incomes and those with dental insurance coverage are more likely to receive dental care (Duncan & Bonner, 2014). Those who have dental insurance are more likely to use dental care, than individuals with lower incomes and those individuals that are uninsured (Thompson, et al., 2014; Health Canada, 2010). Lack of dental insurance is of particular concern for those working low wage jobs that do not provide dental insurance and whose income does not meet the threshold for publicly-funded dental coverage (Muirhead, Quiñonez, Figueiredo, & Locker, 2009).

Although insurance increases dental health service usage (Locker et al., 2011), it does not remove all barriers to dental care and does not guarantee access to services or their usage. An individual's dental insurance coverage impacts the dental services they receive. This means that there are still individuals who have insurance and because of the range of services covered and any deductibles or co-payments, are not able to afford a preventive dental service and have to pay out-of-pocket for the cost of the treatment when needed. These individuals are less likely to follow through with the dental care and any related treatment, and more likely to report poor dental health conditions such as pain (Locker et al., 2011). Individuals with financial barriers also have worse dental health outcomes, including more untreated decay and missing teeth, and are more likely to report frequent dental pain and poorer dental health (Thompson, et al., 2014), which suggests that financial barriers limit the use of dental services and negatively affect one's health (Muirhead et al., 2009).

Appendix B: Dental Health of Adults and Seniors in Windsor-Essex Survey

This survey is being done by the Windsor-Essex County Health Unit (WECHU). We are inviting you to share your experience with getting dental care and/or any dental treatment. Your answers will help staff learn more about any issues faced by adults, 18 and over, in the Windsor-Essex region when looking for dental health care.

You must be a Windsor-Essex County resident 18 and over to fill out this survey. The survey only takes a few minutes to complete. Your responses are anonymous and will remain confidential. You can skip questions if you need to and you can stop the survey at any time without penalty. All responses will be compiled together and analyzed as a group. Results may be used on our website, annual report, presentations or for other purposes, but your individual responses will never be made public.

Once your survey is received by the WECHU, the data will be entered online at www.CheckMarket.com, a tool for survey analysis. Please note:

- Information in connection with survey responses will be stored by CheckMarket and not by the Windsor-Essex County Health Unit.
- Information in connection with survey responses is governed by the CheckMarket Terms of Use (and is available upon request).
- Survey data may remain on CheckMarket servers for up to 12 months.
- Like all servers housed within Canada, information on CheckMarket servers is subject to Canadian law.

Do you consent to participating in this survey?

- Yes
- No

<u>Part 1: Demographic Questions</u>

To begin, we would like to know a little about you.

1. **How are you filling out this survey?**
    - Desktop computer
    - Tablet
    - Mobile or smart phone
    - Paper
2. **Which municipality do you live in?**
    - I do not live in Windsor-Essex County

- Amherstburg
- Essex
- Kingsville
- Lakeshore
- LaSalle
- Leamington
- Pelee Island
- Tecumseh
- Windsor

3. **In what year where you born?** _____

4. **Gender:** I self-identify as _____

5. **What is the highest level of education you have completed?**
    - Less than high school diploma or its equivalent
    - High school diploma or a high school equivalency certificate
    - Trade certificate or diploma
    - College, CEGEP or other non-university certificate or diploma (other than trades certificates or diplomas)
    - University certificate or diploma below the bachelor's level
    - Bachelor's degree (e.g., B.A, B.Sc., LL.B.)
    - University certificate, diploma, degree above the bachelor's level (e.g., Master's degree, degree in medicine, dentistry, optometry, veterinary medicine, or an earned doctorate)
    - Prefer not to answer

6. **What was your total household income after taxes in 2016?**
    - Less than $5,000
    - $5,000 to less than $10,000
    - $10,000 to less than $15,000
    - $15,000 to less than $20,000
    - $20,000 to less than $25,000
    - $25,000 to less than $30,000
    - $30,000 to less than $35,000
    - $35,000 to less than $40,000
    - $40,000 to less than $45,000
    - $45,000 to less than $50,000
    - $50,000 to less than $60,000
    - $60,000 to less than $70,000
    - $70,000 and over
    - Prefer not to say
    - I don't know

7. **What is your current employment status?**
    - Employed for wages (e.g., working, on maternity, vacation, strike, etc.)
    - Self-employed
    - Unemployed
    - Taking care of my family (includes taking care of family even if also working part-time)
    - Student (includes students even if working part-time)
    - Retired (includes retirees even if working part-time)
    - Unable to work (includes people on disability)
    - Prefer not to answer

Part 2: Personal Dental Health

In this section, we would like to know about your dental health and any issues you face in getting care for your teeth and mouth.

1. **Have you had any of the following dental concerns in the past year? Please check all that apply.**
    - No, I haven't had any dental concerns in the past year
    - Bad breath
    - Cavities
    - Dry mouth
    - Missing, loose, or broken teeth
    - Problems with dentures or false teeth
    - Tooth or mouth pain
    - Swollen or bleeding gums
    - Infection
    - Other, please specify _____
2. **If you have dental health care needs now, how do they affect your life? Please check all that apply.**
    - No, I don’t have any dental needs now
    - Eating
    - Socializing
    - Self-esteem
    - Talking
    - Finding or keeping work
    - Sleeping
    - Other, please explain _____
3. **If you have had a dental emergency in the last 2 years, what did you do? Please check all that apply.**

- I haven't had a dental emergency in the last 2 years.
- I went to a dentist.
- I went to a hospital emergency room or urgent care.
- I went to my family doctor or a walk in clinic.
- I didn't do anything.
- I dealt with it on my own.

- Other, please explain _____

4. **If you had a dental emergency in the last 2 years and dealt with it on your own, please explain _____**

5. **How would you describe your overall health?**
    - Poor
    - Fair
    - Good
    - Very good
    - Excellent
    - I don't know

    - Prefer not to answer

6. **How would you describe your overall <u>dental</u> (i.e., health of your mouth, teeth, dentures, tongue, gums, lips, and jaw joints) health?**
    - Poor
    - Fair
    - Good
    - Very good
    - Excellent
    - I don't know

    - Prefer not to answer

7. **Do you have a dentist?**
    - Yes
    - No

    - I don't know

8. **Do you have any of the following problems getting dental health care services? Please check all that apply:**
    - No, I don't have any problems getting dental health services
    - Unable to take time off from work
    - Transportation difficulties

- Afraid or do not like dentists
- Dental office is too far away
- Do not have enough insurance to cover the costs
- My mouth is healthy so I do not need to visit the dentist
- Do not have any dental insurance
- Could not afford the cost
- Not sure what my insurance covers
- Language difficulties
- Dental office is not open at convenient times

- Other, please explain _____

9. **In the past 12 months, have you avoided going to a dental professional because of the cost of dental care?**
    - Yes
    - No

    - I don't know

10. **Has the cost of dental care stopped you from having any dental treatment done that was recommended during the last 2 years?**
    - Yes
    - No

    - I don't know

11. **What dental benefits do you currently have?**
    - I don't have any dental benefits
    - Ontario Disability Support Program (ODSP)
    - Employer-provided benefits
    - Ontario Works (OW)
    - Private insurance I have purchased
    - I don't know

    - Other, please specify _____

12. **Are you aware of any free or low cost dental programs and services for adults?**
    - Yes
    - No

    - I don't know

13. **If you are aware of any free or low cost dental program or service for adults, please explain:** _____

14. **Are you aware of any free or low cost dental programs and services for seniors?**
    - Yes
    - No
    - I don’t know

15. **If you are aware of any free or low cost dental program or service for seniors, please explain:**

Thank you for participating.

Appendix C: Low-cost or free dental health services in Windsor-Essex

Please note that this is a summary of the services only. For a more detailed description, including clients, eligibility, or limitations, contact 211 or the specific program.

Program Contact Information	Program Description	Services Covered
211 Ontario 2-1-1 1-866-686-0045 Email: Info@211southwestontario.ca www.211ontario.ca See WIN0088 in 211SW Ontario database*	211 is an information and referral service to community, social, health and government services. It is available 24/7 and in over 150 languages.	211 provides referrals to community services that meet the needs of its callers
Alan Quesnel Community Dental Centre Downtown Mission 875 Ouellette Ave., Suite 305 Windsor, ON Canada N9A 4J6 226-674-4950 Email: Dentalcentre@downtownmission.com	A community dental program for anyone in Windsor-Essex County who requires dental health care.	Bridges, crowns, dentures/partials, fillings, root canal therapy, x-rays, cleanings and education.
Embrace Dental Hygiene Independent Dental Hygiene Practice Jennifer Mayhew, RDH 174 Sandwich St. S. 4 Amherstburg, ON N9V 2A1 519-736-1100 http://embracedentalhygiene.com Email: jen@embracedentalhygiene.com	Providing dental hygiene services and education to the public. With a focus on health promotion and prevention of disease and decay. Billing is according to dental hygiene fee guide which is 10-30% savings from the dental fee guide. There are no exam or radiograph fees. Accepts ODSP.	Teeth cleaning, diet and habit counselling, radiographs, denture care and cleaning, cavity prevention, Interim Stabilization Therapy and referrals to appropriate healthcare providers as needed.

Program Contact Information	Program Description	Services Covered
Emergency Assistance Fund See WIN2487 in 211SW Ontario database*	Provide emergency funding for clients who have exhausted all possibilities.	Basic dental work. More information about this fund can be found here: https://www.weareunited.com/servlet/eAndar.article/62/Emergency-Assistance-Fund
Essex County Dental Society (ECDS) Is a component society of the Ontario Dental Society. It is a voluntary organization. http://www.ecds.on.ca/ See WIN0428 in 211SW Ontario database*	The ECDS helps to educate our local community on dental health care issues. Although the society does not specifically treat a subset of patients, it can put patients in contact with any of a number of member dentists in the community for fee for service treatment.	Members provide all services and treatment.
Interim Federal Health Program (IFHP) http://www.cic.gc.ca/english/refugees/outside/summary-ifhp.asp Listed on 211 provincial database, which 211 staff have access to (MET0142) and searchable on www.211ontario.ca	The IFHP provides limited, temporary coverage of health-care benefits for specific groups of people in Canada who don't have provincial, territorial, or private health-care coverage.	IFHP dental coverage provides coverage for emergency care for dental conditions involving pain, infection or trauma. Services, post emergency exams and radiographs, are limited to emergency relief of pain or infection only.
Non-Insured Health Benefits Program (NIHB) https://www.canada.ca/en/indigenous-services-canada/services/non-insured-health-benefits-first-nations-inuit/benefits-services-under-non-insured-health-benefits-program/dental-care-benefits.html	National program that provides coverage for a specified range of medically necessary items and services that are not covered by other plans and programs.	Dental services including diagnostic, preventive, restorative, endodontic, periodontal, prosthodontic, dental surgery, orthodontic and adjunctive services.

Program Contact Information	Program Description	Services Covered
Ontario Dental Association Listed on the 211 provincial database, which 211 staff have access to (MET5233) and is searchable on www.211ontario.ca	Provides client education materials and information to help clients find a dentist.	N/A
Ontario Dental Hygienists' Association 108-3425 Harvester Road Burlington, Ontario L7N 3N1 Toll-free: 1-800-315-ODHA (6342) E-mail: info@odha.on.ca	Provides client education materials and information to help clients find a dental hygienist in your area.	N/A
Ontario Disability Support Program (ODSP) Income and Employment Supports 270 Erie Street East PO Box 1810, Station A Windsor, ON N9A 7E3 Tel: (519) 254-1651	Provides dental services as listed in the Ministry of Community and Social Services (MCSS) Schedule of Dental Services and Fees.	Dental services including diagnostic, preventive, restorative, endodontic, periodontal, dental surgery, anaesthesia (denture services provided through OW). ODSP eligible dependent adults – dental only; relief of pain up to $300.00; only for procedures listed in the OW dental fee schedule.
Ontario Works (OW) Employment & Social Services City of Windsor Social Services Department 400 City Hall Square East Windsor, ON N9A 7K6 Tel: (519) 255-5200 Tel: (519) 255-5220 (Direct Line) See WIN1510 in 211SW Ontario database*	Provides limited dental and denture services to eligible individuals as listed in the OW "Adult Discretionary Dental/ Denture Program" (schedule of services and fees. Provide ODSP eligible recipients with dentures only	Dental services including diagnostic, restorative, Endodontic, surgery, anaesthesia, and dentures. Low-income eligible individuals – dental only; relief of pain up to $300.00; only for procedures listed in the OW fee schedule

Program Contact Information	Program Description	Services Covered
Operation Smile (c/o Essex County Dental Society) (1 day per year, typically in April)	Designed to promote oral health in the community and provide basic restorative and surgical services for those people who might not otherwise have access to those services.	Basic restorative and dental surgical procedures.
Royal College of Dental Surgeons of Ontario (RCDSO) Listed on the 211 provincial database, which 211 staff have access to (ONT00070) and is searchable on www.211ontario.ca	Provides information on patient rights and contact information to help clients find a dentist.	Individuals can search this website to find a dentist in their area https://www.rcdso.org/en-ca
Second Chance Ministries c/o Michael J. Rovers Christian Outreach Worker P.O. Box 3476 Tecumseh, Ontario N8N 3C4 Phone: 519-890-1863	Second Chance Ministry is an outreach ministry to those in our community who are in immediate need of practical and/or spiritual assistance. Work with all relevant agencies.	Provide immediate, practical, charitable help to those requesting assistance on a daily basis (i.e. food vouchers, bus tickets, help with dentures.
St. Clair College Dental Clinic South Campus 2000 Talbot Road West Box #31 Windsor, ON N9A 6S4 Tel: (519) 972-2709 See WIN1155 in 211SW Ontario database*	Hygiene clinic offers preventive service for a minimal fee, for people living in Windsor-Essex. Dental Hygiene students are supervised by a registered dental hygienist and/or dentist. Also offer mouth guards and teeth whitening.	Complete oral inspection, radiographs (if required), periodontal scaling/root planing, periodontal probing, selective polishing, fluoride treatment, sealants, dental hygiene instruction, denture care, tobacco cessation, oral cancer screening, nutritional counseling (dental health), referrals to healthcare providers as needed.

Program Contact Information	Program Description	Services Covered
St. Clair College Dental Clinic South Campus 2000 Talbot Road West Box #31 Windsor, ON N9A 6S4 Tel: (519) 972-2709 See WIN1155 in 211SW Ontario database*	Dental Assistant (DA) Level II Preventative Clinics DA students are supervised by Registered Dental Hygienists (DH) and/or dentist	Dental inspection, radiographs (if required), supra gingival scaling by DH students + faculty, selective polishing, fluoride treatment, sealants, dental hygiene instruction, denture care, oral cancer screening, nutritional counseling (tailored to dental health), tooth whitening, mouth guards, referrals to healthcare providers as needed.
St. Clair College (SCC) Dental Clinic South Campus 2000 Talbot Road West Box #31 Windsor, ON N9A 6S4 Tel: (519) 972-2709 See WIN1155 in 211SW Ontario database*	Restorative Clinics	Local dentists perform basic restorative services, composite and amalgam restorations and temporary fillings. Level II DA students assist dentist.
Veterans Affairs Canada South Western Ontario Area 1 Riverside Drive West, Suite 660, Windsor, ON N9A 5K3 http://www.veterans.gc.ca/eng/services/health/treatment-benefits/poc#poc4 POC=Programs of Choice	Provides coverage for basic dental care and some pre-authorized comprehensive dental services for Veterans who have Level B coverage.	Call or visit office for more information. **1-866-522-2122 (toll-free) Monday to Friday, 8:30 to 4:30, local time**

*To search for services on the 211SW Ontario Database, go to https://windsoressex.cioc.ca and type in the record number (e.g. WIN0682), then click search. All these services are also listed on the provincial website (www.211ontario.ca) but unfortunately, one cannot search by record number on this particular site. You would have to use the program name.

Appendix D: Association between demographic characteristics and dental health outcomes

The odds that the respondent said "Yes" to the following four questions was based on household income and having dental insurance and was adjusted for the effect of age, gender, and employment status:

- I have had dental concerns in the past year
- I have unmet dental health needs that impact my life
- I had a dental emergency in the past 2 years
- I have problems getting dental services

Although the effects of age and gender weren't as large as the effects of household income and dental health insurance, both variables were strongly associated with having problems accessing dental services (data not shown).

Table D1. Associations between characteristics and outcomes

Respondent Characteristics	I have Dental Concerns (95% Confidence Interval)	I had Dental Emergencies (95% Confidence Interval)	I have unmet dental needs that impact my life (95% Confidence Interval)	I have problems accessing dental services (95% Confidence Interval)
Household Income				
$≥50,000	Reference	Reference	Reference	Reference
$30,000-49,999	1.76* (1.03-2.89)	1.33 (0.87-2.05)	2.31* (1.47-3.65)	3.87* (2.00-6.37)
<$30,000	2.98* (1.79-4.73)	2.27* (1.52-3.31)	3.89* (2.56-5.89)	5.35* (2.87-8.30)
Dental Benefits				
Yes	Reference	Reference	Reference	Reference
No	2.17* (1.46-3.22)	1.42* (1.04-1.88)	2.32* (1.67-3.22)	16.86* (9.10-25.05)

Note: *Denotes statistical significant difference compared to the reference group. Odds ratios represent the measure of association between sample characteristics and outcomes (i.e. Compared to adults with dental benefits, the odds of having a dental health concern in adults without benefits are about 2.3 times higher (OR=2.3) after adjusting for the effects of age, gender, household income, education and employment status).

Appendix E: Resolution for expansion of publicly funded dental health programs to include low-income adults and seniors

January 2, 2017

The Honourable Dr. Eric Hoskins
Minister of Health and Long-Term Care
Hepburn Block, 10th Floor
80 Grosvenor Street

Toronto, ON M7A 2C4

Dear Minister Hoskins:

Resolution Regarding the Expansion of Provincial Publicly Funded Dental Health Programs for Adults with Low Incomes

On November 17th, 2016, at a regular meeting of the Board of the Windsor-Essex County Health Unit, the below resolution was brought forward for consideration and support by administration. The resolution supports the notion that good oral health is an essential part of attaining optimal overall health. To improve and achieve equitable health outcomes for all Ontarians, oral health care services must be accessible to all vulnerable populations within our communities, regardless of age.

The approved resolution states:

WHEREAS oral diseases, including dental caries and periodontal disease are among the most prevalent and preventable chronic diseases; and

WHEREAS oral health is essential to maintaining overall health; and

WHEREAS a mounting body of evidence shows a link between poor oral health and diabetes, cardiovascular and respiratory diseases and results in social and psychological suffering and interferes with employment opportunities;

WHEREAS Ontario's universal health care system does not include dental care for adults;

WHEREAS Ontario only has public dental programs for low income children, and limited and insufficient dental coverage and programs for low income and vulnerable adults and seniors; and

WHEREAS in Windsor Essex County nearly 1 in 3 residents report having no form of dental insurance coverage and residents from low income households consistently have less dental insurance coverage,

WHEREAS approximately every 9 minutes a person in Ontario arrives at a hospital emergency room with a dental problem costing the health care system at least $31 million annually;

THEREFORE BE IT RESOLVED THAT Windsor Essex County Health Unit's Board of Directors endorses the importance of oral health as part of overall health and recommends the Province of Ontario expands publicly funded oral health programs to include low income and vulnerable adults and seniors, similar to what is offered to children through Ontario's Healthy Smiles program.

Sincerely,

Gary McNamara

Chair, Windsor-Essex County Board of Health

Gary M. Kirk, MPH, MD

CEO & Medical Officer of Health

cc: Cheryl Hardcastle, MP Windsor-Tecumseh
Brian Masse, MP Windsor-West
Tracey Ramsey, MP Essex
Dave Van Kesteren, MP Chatham-Kent — Leamington
Percy Hatfield, MPP Windsor-Tecumseh
Lisa Gretzky, MPP Windsor-West
Taras Natyshak, MPP Essex
Rick Nicholls, MPP, Chatham-Kent-Essex
Hon. Kathleen Wynne, Premier of Ontario
Hon. Charles Sousa, Minister of Finance
Valerie Jaeger, President, Association of Local Public Health Agencies
Lynn Dollin, President, Association of Municipalities of Ontario
Dr. Gary Mannarino, President, Essex County Dental Society
County Clerks Offices – Windsor-Essex Regional Municipalities

Windsor Essex County Board of Health

References:
Windsor Essex County Health Unit, WECHU Adult Dental Health Resolution - Nov 2016.pdf
Canadian Centre for Policy Alternatives. (2011). Putting Our Money Where Our Mouth Is: The Future of Dental Care in Canada.
Canadian Health Measures Survey. (2007-2009). Statistics Canada
King, Arlene. (2012). Oral Health - More Than Just Cavities. A Report by Ontario's Chief Medical Officer of Health.

Goel, Vivek et al. (2012). Staying Ahead of the Curve: A Unified Public Health Program for Ontario.

Appendix F: Data Tables for Figures

Table for Figure 1. Percentage of adults (≥18 years) who self-reported to have good or excellent dental health (n=1,488) by lower-tier municipality.

Municipality	Good to Excellent	Poor to Fair
Essex (n=75)	33.3%	66.7%
Leamington (n=118)	35.6%	64.4%
Windsor (n=988)	37.2%	62.8%
Kingsville (n=76)	35.5%	64.5%
Lakeshore (n=55)	50.9%	49.1%
Tecumseh (n=63)	54.0%	46.0%
Amherstburg (n=51)	54.9%	45.1%
LaSalle (n=62)	64.5%	35.5%
WEC overall (n=1,488)	41.8%	58.2%

Table for Figure 2. Percentage of adults that self-reported having a dentist by lower-tier municipality (n=1,536)

Municipality	I have a dentist	I do not have a dentist*
Windsor (n=1,018)	56.3%	43.7%
Kingsville (n=81)	58.0%	42.0%
Leamington (n=120)	60.0%	40.0%
Lakeshore (n=58)	60.3%	39.7%
Essex (n=79)	60.8%	39.2%
Tecumseh (n=66)	69.7%	30.3%
Amherstburg (n=50)	76.0%	24.0%
LaSalle (n=64)	85.9%	14.1%
WEC overall (n=1,536)	59.5%	40.5%

Table for Figure 4. Percentage of adults by type of dental health concerns (n=1,268)

Dental Health Concern	Percentage	Lower Confidence Intervals	Upper Confidence Intervals
Cavities	58.0%	55.3%	60.7%
Missing, loose, or broken teeth	52.7%	49.9%	55.4%
Tooth or mouth pain	51.6%	48.8%	54.4%
Swollen or bleeding gums	30.3%	27.8%	32.8%
Bad Breath	25.6%	23.2%	28.0%
Dry mouth	24.8%	22.5%	27.2%
Infection	19.8%	17.6%	22.0%
Dentures/false teeth	11.9%	10.1%	13.7%
Other	4.2%	3.1%	5.3%

Table for Figure 5. Common dental health concerns in adults (ages 18+) by household income

Dental Health Concerns	<$30,000	$30,000-49,999	≥$50,000
Missing, loose, or broken teeth (n=582)	70.3%	20.6%	9.1%
Cavities (n=624)	64.1%	22.1%	13.8%
Tooth or mouth pain (n=584)	68.5%	20.2%	11.3%

Table for Figure 6. Percentage of adults with a dental health concern by insurance status and household income

Household Income	I have dental health insurance	I do not have dental health insurance
<$30,000 (n=680)	27.9%	72.1%
$30,000-49,999 (n=219)	34.7%	65.3%
≥$50,000 (n=160)	61.3%	38.8%

Table for Figure 7. Percentage of adults by the type of impact of unmet dental care needs (n=1,067)

Impact of Unmet Dental Care Needs	Percentage	Lower Confidence Intervals	Upper Confidence Intervals
Eating	67.1%	64.3%	69.9%
Self-esteem	54.7%	51.7%	57.7%
Socializing	31.2%	28.4%	34.0%
Sleeping	26.8%	24.1%	29.5%
Talking	21.9%	19.4%	24.4%
Finding or keeping work	7.5%	5.8%	9.0%
Other	3.2%	2.1%	4.2%

Table for Figure 8. Percentage of adults by the type of impact of unmet dental care needs and household income

Type of Impact	<$30,000	$30,000-49,999	≥$50,000
Eating (n=620)	70.3%	21.5%	8.2%
Self-esteem (n=513)	69.4%	21.2%	9.4%

Table for Figure 9. Percentage of adults by type of self-reported action taken for a dental care emergency (n=1,014)

Self Reported Action Taken	Percentage	Lower Confidence Intervals	Upper Confidence Intervals
I went to a dentist	52.5%	49.4%	55.5%
I dealt it on my own	29.4%	26.6%	32.2%

Self Reported Action Taken	Percentage	Lower Confidence Intervals	Upper Confidence Intervals
I didn't do anything	18.6%	16.2%	21.0%
I went to my family doctor or a walk in clinic	8.1%	6.4%	9.8%
I went to a hospital emergency room or urgent care	4.4%	3.2%	5.7%
Other	0.9%	0.3%	1.5%

Table for Figure 10. Action taken for a dental health emergency in the past 2 years by household income in WEC adults

Household Income	I didn't do anything	I dealt with it on my own	I went to the dentist
≥$50,000 (n=50)	6.6%	14.8%	72.1%
$30,000-49,999 (n=105)	16.7%	29.3%	58.0%
<$30,000 (n=386)	23.3%	35.2%	45.1%

Table for Figure 11. Common action taken from a dental health emergency in the past 2 years by dental insurance status

Dental Insurance Status	I didn't do anything	I dealt with it on my own	I went to the dentist
I do not have dental insurance (n=680)	21.6%	32.2%	46.5%
I have dental insurance(n=334)	12.6%	23.7%	64.7%

Table for Figure 12. Percentage of WEC adults by type of problem getting dental care (n=1,243)

Type of Problem	Percentage	Lower Confidence Intervals	Upper Confidence Intervals
Cost of dental care	71.3%	68.8%	73.8%
Do not have any dental insurance	66.9%	64.3%	69.6%
Limited dental insurance	39.3%	36.5%	42.0%
Inconvenience in accessing dental service	20.4%	18.1%	22.6%
Afraid or do not like dentists	17.4%	15.3%	19.5%
Other	2.7%	1.8%	3.6%

Table for Figure 13. Percentage of respondents with problems getting dental care by dental insurance status and household income

Household Income	I have dental health insurance	I do not have dental health insurance
<$30,000 (n=761)	30.2%	69.8%
$30,000-49,999 (n=265)	34.3%	65.6%

Household Income	I have dental health insurance	I do not have dental health insurance
≥$50,000 (n=242)	64.0%	36.0%

Table for Figure 14. Commonly reported problems in getting dental health services by household income in WEC adults 18 and over

Commonly Reported Problems	<$30,000	$30,000-49,999	≥$50,000
Could not afford the cost (n=767)	70.7%	20.9%	8.5%
Insufficient or no dental insurance (n=921)	66.7%	22.9%	10.4%

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