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Adults and Oral Health

Texas Behavioral Risk Factor Surveillance System, 2012-2018

Introduction

Maintaining good oral health is important throughout one's lifetime. Yet, among adults with private dental benefits, dental care use is declining in most states.[1] For every adult, aged 19 years or older, without medical insurance, there are three adults who don't have dental insurance.[2] Lack of dental insurance coverage is a major reason that adults do not seek or receive dental care.[3]

Additionally, there is emerging evidence that having a chronic disease, such as cardiovascular disease (CVD),[4] cancer,[5] or diabetes,[6] may increase an individual's risk of having missing teeth and poor oral health.[7] Both caries and periodontal disease share common risk factors with several chronic diseases.[8] These risk factors include poverty, poor diet, and tobacco use. Chronic conditions, and medications taken to treat them, increase the likelihood of dry mouth.[9] Saliva is important to maintain a healthy oral environment and decreased output can result in dental caries and aggravate oral health conditions.[10]

Partial or total tooth loss has been associated with onset of disability and mortality in the elderly.[11] Although tooth loss in U.S. adults has decreased during the past few decades, both partial and total tooth loss remain significant public health concerns.[12-13] Understanding the reasons for tooth loss will facilitate the development of prevention strategies. These strategies may benefit overall oral health and oral function and reduce associated morbidities.[14]

Methods

The Behavioral Risk Factor Surveillance System (BRFSS) is the nation's premier system of health-related telephone surveys. BRFSS collects state data about U.S. residents about their health-related risk behaviors, chronic health conditions, and use of preventive services. BRFSS collects data in all 50 states as well as the District of Columbia and three U.S. territories.[15]

Currently, there is a wide sponsorship of the BRFSS survey, including most divisions in the CDC National Center for Chronic Disease Prevention and Health Promotion; other CDC centers; and federal agencies, such as the Health Resources and Services Administration, Administration on

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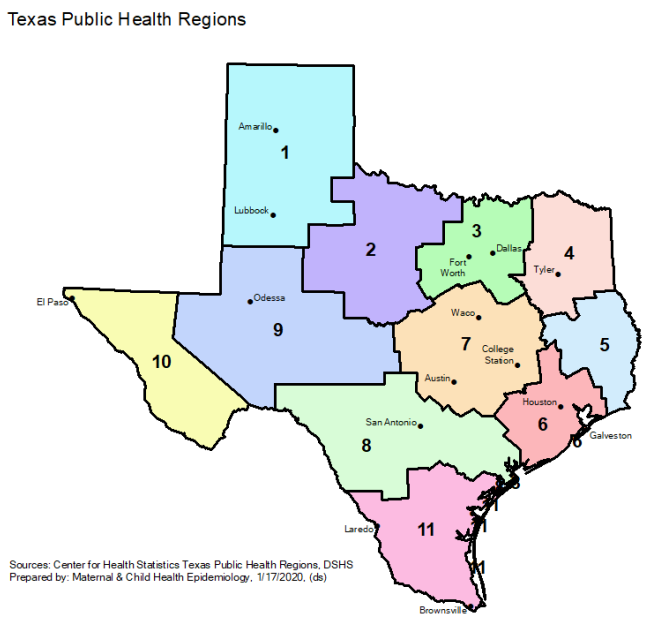
Aging, Department of Veterans Affairs, and Substance Abuse and Mental Health Services Administration. With technical and methodological assistance from CDC, state health departments contract with telephone call centers to conduct the BRFSS surveys continuously through the year using a standardized core questionnaire and optional modules, plus additional state-added questions.

The federal government, state governments, many universities, private organizations, and researchers use BRFSS data to identify the frequency of health behaviors and conditions, track progress toward health objectives, evaluate the effects of disease prevention activities, and rapidly assess emerging health problems.

This report explores the oral health needs of the adult Texas population. Oral health questions are asked in even-numbered years. We analyzed 4 years of data from BRFSS. Our analysis includes demographics, annual dental visits, tooth loss of 6 or more teeth, and edentulism for adults 18 years and older. It also includes trends by survey year, which are even years from 2012-2018. In addition, we looked at the impact of smoking and chronic diseases, including diabetes, heart disease, and cardiovascular disease (CVD) on dental visits, tooth loss, and edentulism.



A state map is provided to identify public health regions (PHR) in Texas. As shown, each of the 254 Texas counties are assigned to one of eleven PHRs. The distance that some individuals, especially those living in rural counties, must travel to receive health care services can be a significant challenge to accessing and receiving those services.[16] Counties in the border/non-border subgroup in this report are designated as Border or Non-Border according to Article 4 of the La Paz Agreement of 1983.[17]

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Results

Adults, Age 18+, by Demographics

Table 1 presents results for select demographics for adults in Texas for even years from 2012-2018. Adults in this report are defined as those who are 18 years of age and older. Texas adults tend to be female, white, non-Hispanic, have a high school degree, and be married. Nearly 90 percent live in non-border areas of the state, with most living in PHR 3, which includes Dallas-Fort Worth, followed by PHR 6, which includes Houston.

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Table 1: Percent of Adults by Select Demographics, Texas BRFSS 2012-2018

Characteristic	Sample Size	Percent	95% Confidence Interval
Gender			
Male	19687	49.1	48.3-49.9
Female	27753	50.9	50.1-51.7
Race/Ethnicity			
White, non-Hispanic	28672	46.0	45.2-46.8
Black, non-Hispanic	3741	11.7	11.1-12.3
Hispanic	11684	35.9	35.1-36.8
Other/Multiracial, non-Hispanic	2167	6.4	5.9-6.8
Educational Attainment			
Less than high school	6013	18.6	17.9-19.4
High school grad/some college	23735	57.2	56.4-58.0
College grad	17454	24.2	23.6-24.8
Marital Status			
Married	25092	52.2	51.3-53.0
Unmarried	22011	47.8	47.0-48.7
Body Mass Index			
Normal	14210	32.1	31.3-32.9
Overweight	15444	35.3	34.5-36.2
Obese	13910	32.6	31.7-33.4
Household Income			
Less than $25,000	12075	32.2	31.4-33.1
$25,000 to less than $50,000	9454	23.8	23.0-24.6
$50,000 or more	18050	44.0	43.1-44.9
Geographic Location			
Border	5378	10.6	10.1-11.0
Non-border	37669	89.4	89.0-89.9
PHR 1	1205	3.7	3.4-4.0
PHR 2	2356	2.4	2.2-2.6
PHR 3	7219	25.5	24.8-36.2
PHR 4	2101	4.4	4.1-4.7
PHR 5	2602	3.4	3.1-3.6
PHR 6	5926	22.0	21.3-22.8
PHR 7	9932	13.3	12.9-13.7
PHR 8	4433	11.1	10.6-11.5
PHR 9	785	2.6	2.4-2.9
PHR 10	2192	3.2	3.0-3.4
PHR 11	4296	8.5	8.0-8.9

PHR – Public Health Region
Border Region defined as Border or Non-Border according to Article 4 of the La Paz Agreement of 1983.

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Dental Outcomes among Adults

Figure 2 shows data for dental outcomes in adults in Texas across even-numbered survey years in which oral health questions are included. Overall, 59.2 percent of Texas adults have seen a dentist for an annual visit in the past year, and 3.7 percent are edentulous. Further, 11.4 percent have at least six or more teeth missing. In general, there have been no significant changes in these outcomes across time.

Figure 2: Dental Outcomes in Adults, by Year, Texas BRFSS 2012-2018

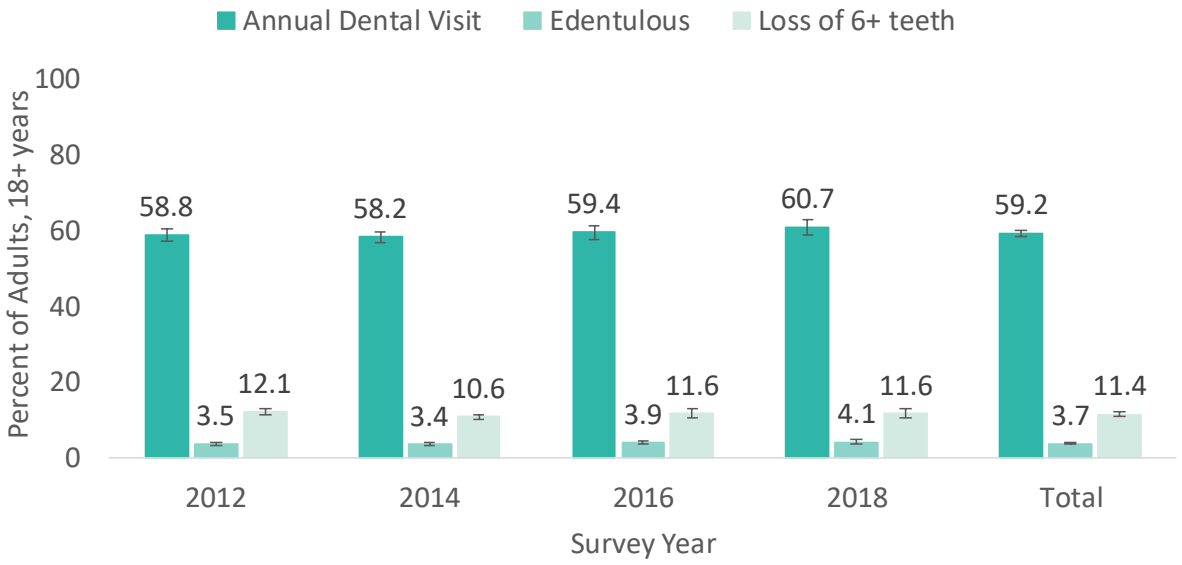

Figure 3: Dental Outcomes in Adults, by PHR, Texas BRFSS

Figure 3.1 – 3.3 shows data for dental outcomes for adults in Texas across all eleven public health regions (PHR) in Texas. Annual dental visits range from nearly 49 to 63.7 percent across the eleven health regions, with 9 and 11 having the lowest and 7 having the highest percent of dental visits (figure 3.1). Figure 3.2 shows PHR 4 and 5 has the highest percent of edentulous adults (8.3 and 7.8 percent, respectively); followed by PHR 1 (6.9 percent) and PHR 2 (6.2 percent). Finally, the loss of six or more teeth ranges from 9.0 to 21.0 percent across the regions (figure 3.3).

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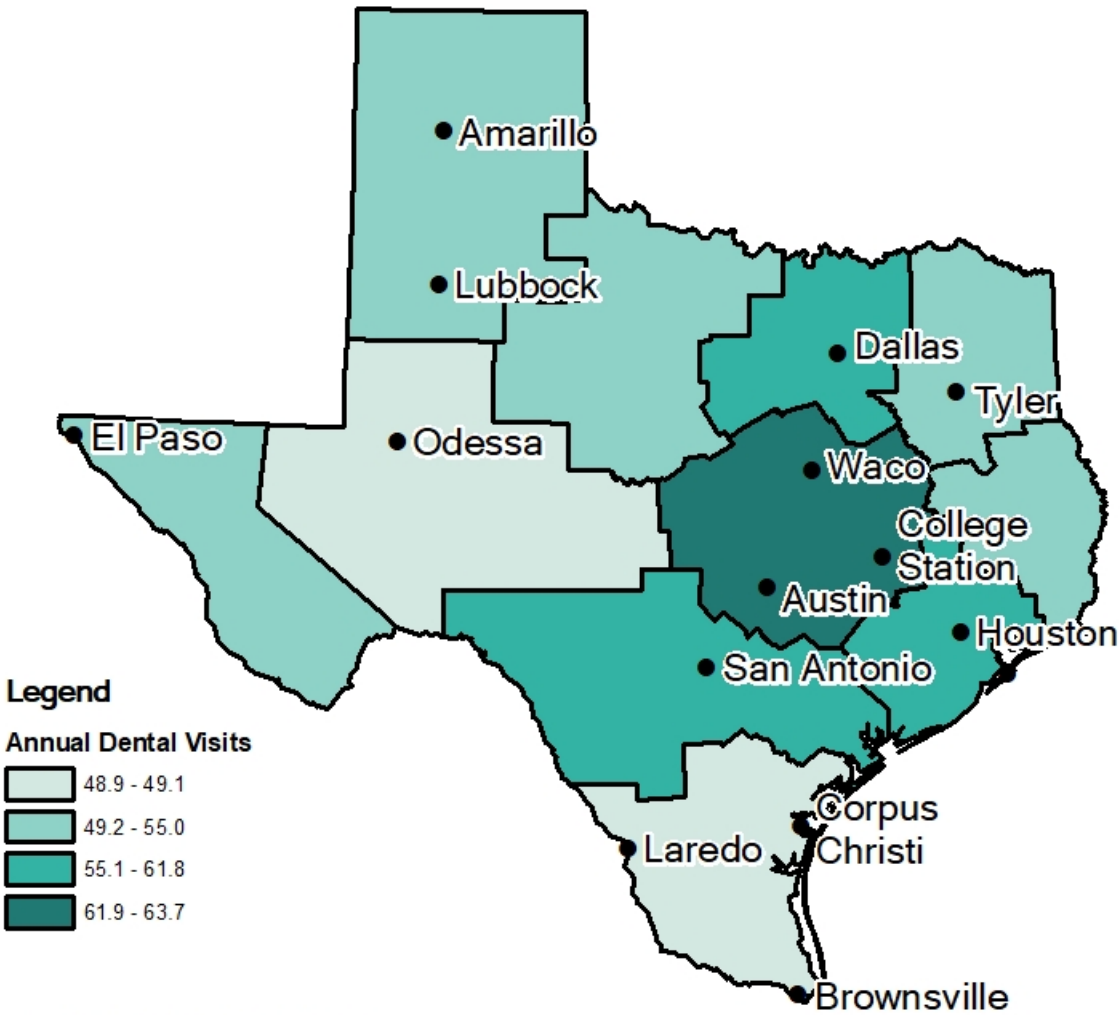
Figure 3.1: Percent of Adults with an Annual Dental Visit in Past Year, by PHR, Texas BRFSS 2012-2018



Sources: Texas BRFSS, 2012,2014, 2016, 2018
Prepared by: Maternal & Child Epidemiology, 3/5/2020, (ds)

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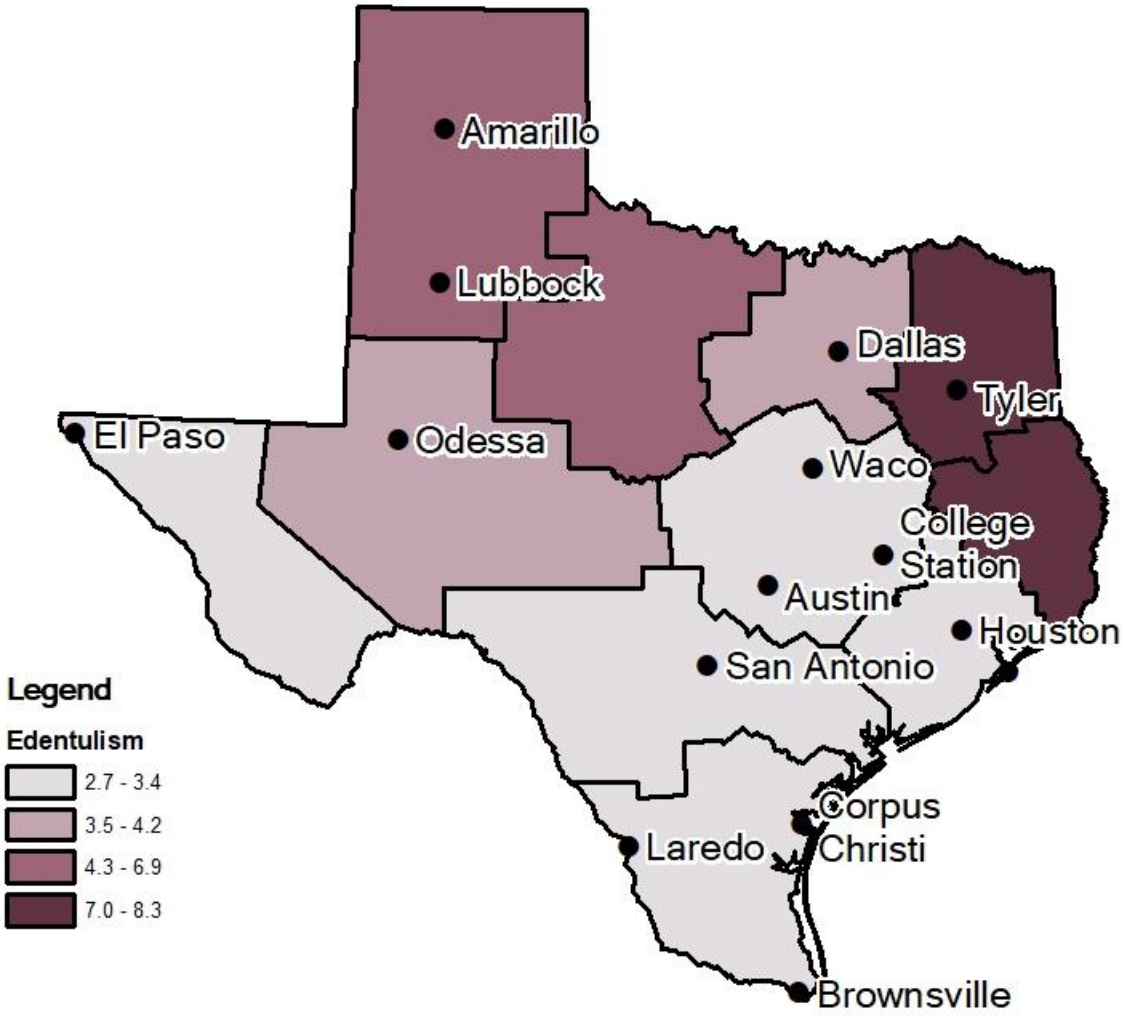
Figure 3.2: Percent of Adults who are Edentulous, by PHR, Texas BRFSS 2012-2018



Sources: Texas BRFSS, 2012,2014, 2016, 2018
Prepared by: Maternal & Child Epidemiology, 3/5/2020, (ds)

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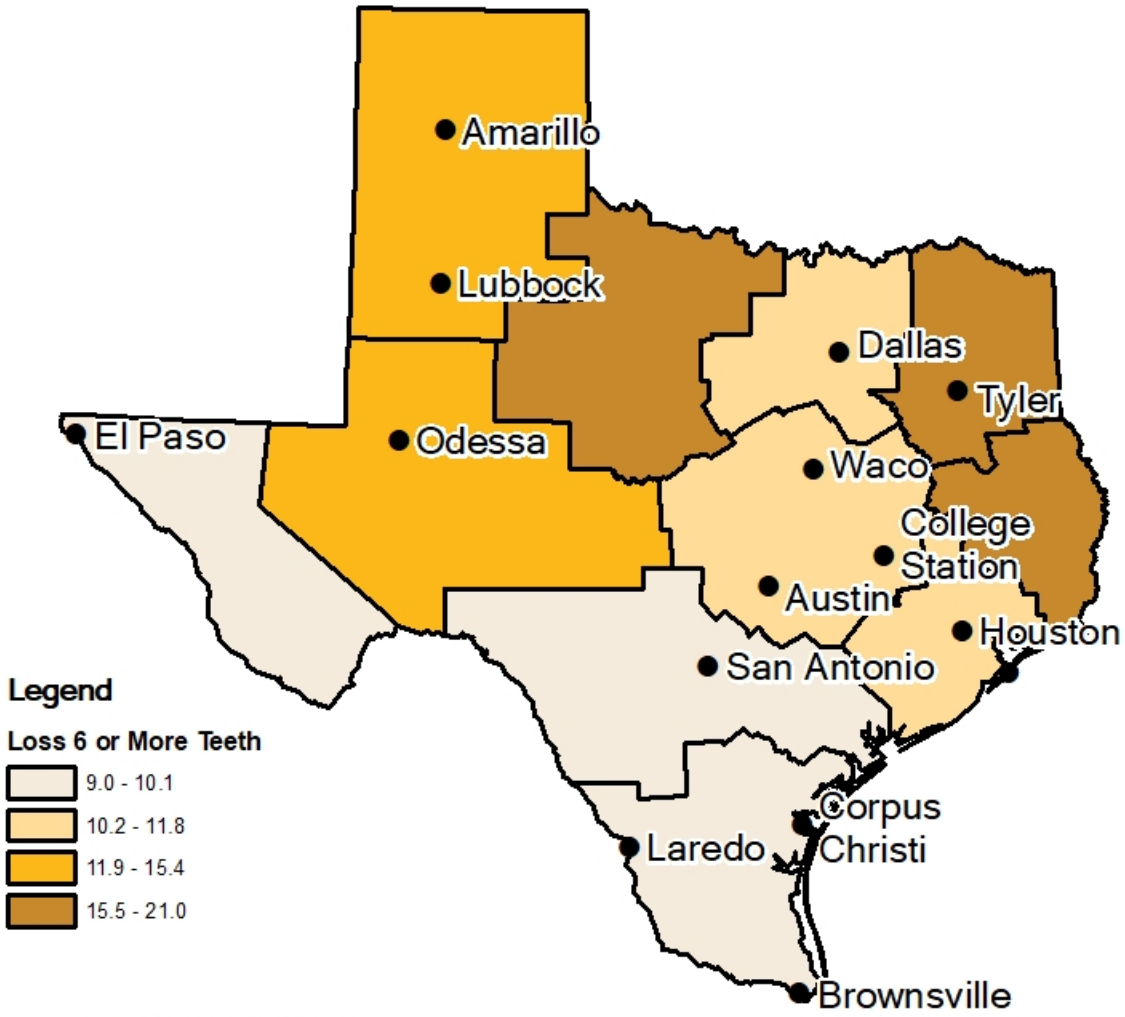
Figure 3.3: Percent of Adults Who Have Lost 6 or More Teeth, by PHR, Texas BRFSS 2012-2018



Sources: Texas BRFSS, 2012,2014, 2016, 2018
Prepared by: Maternal & Child Epidemiology, 3/5/2020, (ds)

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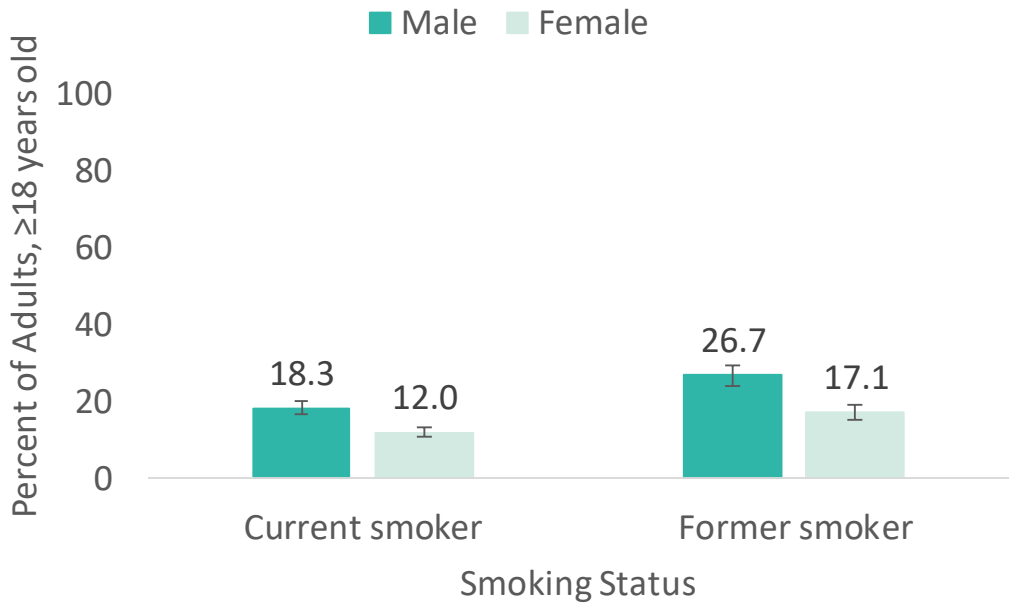
Smoking Status and Adults

Head and neck cancers may occur due to prolonged exposure to specific risk factors, such as tobacco use (e.g., cigarettes, cigars, chewing tobacco, or snuff), excessive alcohol abuse, or exposure to human papilloma virus (HPV).[18] Cigarette smoking can increase the risk of head and neck cancer by 15 times compared to a non-smoker. Additionally, men are affected about twice as often as women with oral, head and neck cancer.[19]

The overall 5-year survival rate for people with oral or oropharyngeal cancer is 65.0 percent.[20] Survival rates increase the earlier cancer is detected. Hence, routine oral cancer screenings are important. Even patients who have no natural teeth should get regular oral cancer screenings, especially if they have a history of smoking or drinking.[21]

In Texas, 15.1 percent of all adults reported being current smokers, while 21.8 percent reported being former smokers. Figure 4 shows current and former adult smokers in Texas by sex.

Figure 4: Current/Former Smokers, Adults, by Sex, Texas BRFSS 2012-2018



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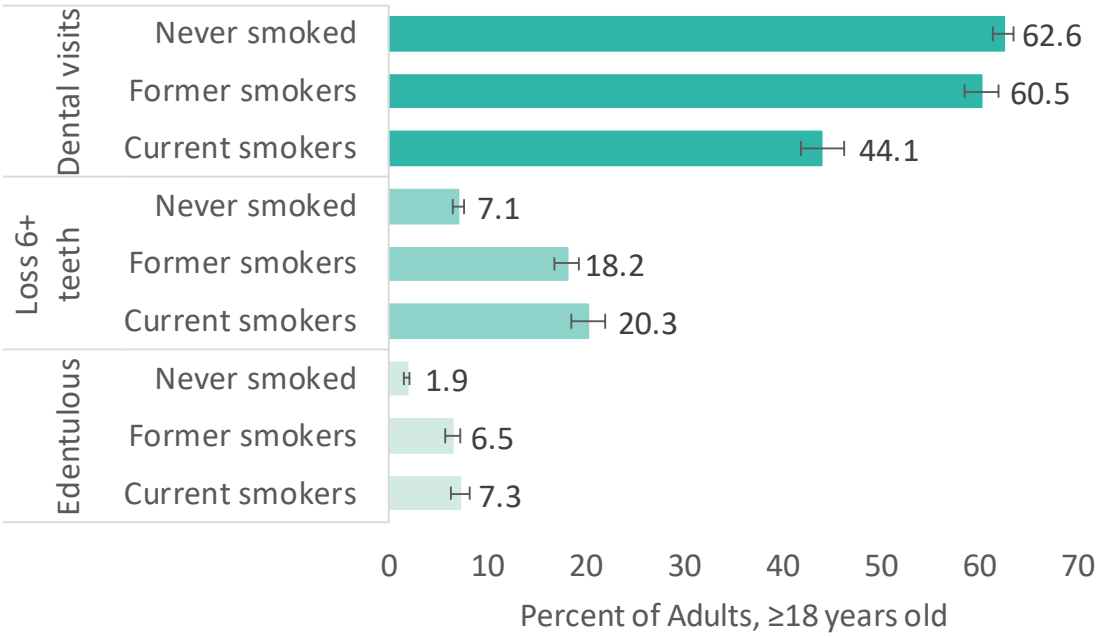
Periodontal (gum) disease is an infection of the gums that can affect the bone structure supporting teeth. In severe cases, it can cause tooth loss.[22] Smoking is also an important risk factor for gum disease in the U.S.[23] Figure 5 shows smoking status by dental outcomes for adults. Comparatively, current smokers are significantly less likely to report an annual dental visit than former smokers. Both current and former smokers are significantly more likely to report being edentulous or having lost six or more of their natural teeth than are adults who reported never smoking.

Figure 5: Smoking Status by Dental Outcomes, Adults, Texas BRFSS 2012-2018



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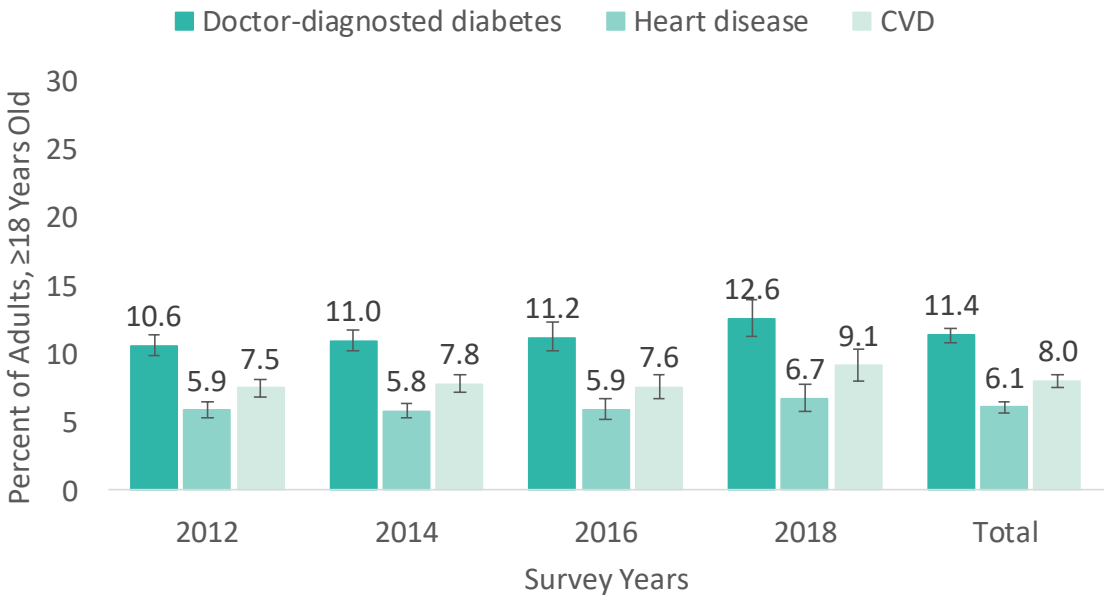
Chronic Disease and Adults

Uncontrolled chronic disease is linked to poor oral health outcomes and vice versa. Over the past 20 years, there has been a rise in chronic disease prevalence, and most adults now suffer from multiple chronic diseases.[24-28] Nationally, more than 12.2 percent of adults, age 18 years and older, have diabetes.[29] Figure 6 presents the prevalence of specific chronic diseases in Texas adults. As shown for Texas from 2012-2018, 11.4 percent of adults, age 18 years and older have diabetes, whereas 8.0 percent have cardiovascular disease (CVD).

Figure 6: Chronic Disease in Adults, Texas BRFSS 2012-2018



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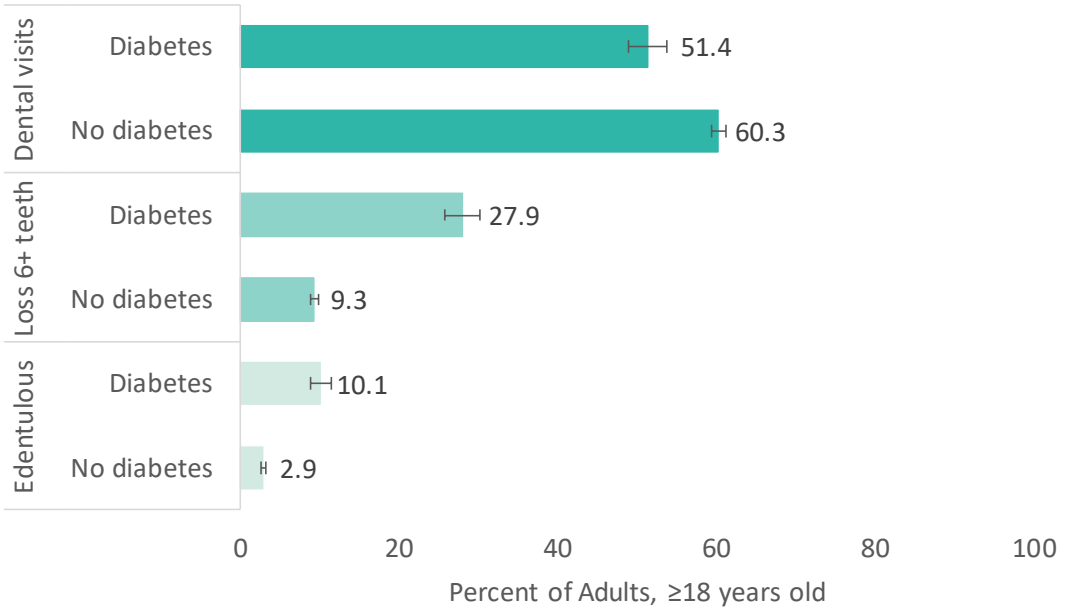
Edentulism and Diabetes among Adults

Studies have shown that diabetes can increase the risk of severe periodontal disease by three times.[30-31] Additionally, adults with diabetes are at a higher risk of edentulism than are adults without diabetes.[32] Twenty percent of edentulism cases in the U.S. are linked to diabetes.[30] Lack of routine dental care can sometimes delay diagnosis of conditions which can result in high-cost emergency department visits and adverse dental outcomes like edentulism.[33-34] In Texas, adults with diabetes are significantly more likely to be edentulous (10.1 percent) or to experience a loss of six or more teeth (27.9 percent) compared to their counterparts without diabetes (Figure 7). Further, those with diabetes are significantly less likely to have annual dental visits compared to those without diabetes.

Figure 7: Doctor-Diagnosed Diabetes by Dental Outcomes, Texas BRFSS 2012-2018



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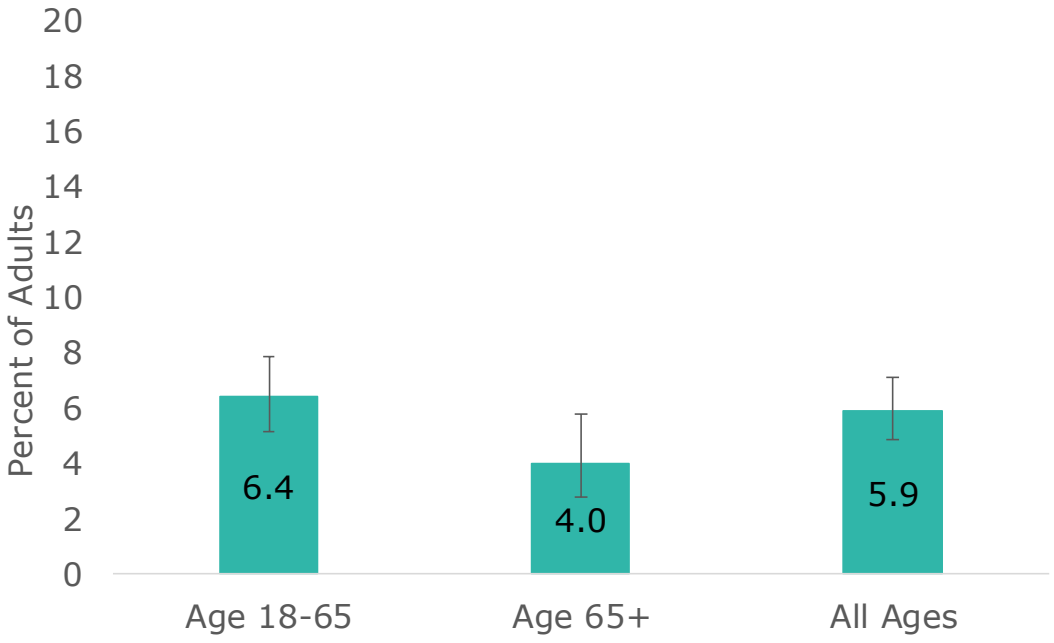
Visits to the Hospital Emergency Room (ER) for Dental Problems and Adults

When people do not have a dental home or the means to pay for dental care, they often resort to hospital ERs for dental emergencies. Figure 8 below shows the percent of adults who went to the hospital ER for dental problems by age. In general, approximately 6.0 percent of all adults went to the ER for dental problems. Adults under 65 were more likely to visit the ER for dental problems than were adults 65 years or older; however, this difference was not significant. Adult males were slightly more likely to go to the hospital ER for dental problems than were adult females. (6.0 percent vs. 5.7 percent, respectively).

Hospital ER visits for dental problems are problematic. Not only because of the costs associated, but also because most hospital ERs are not staffed or equipped to treat dental problems.[33] This means patients are often sent home with a prescription for antibiotics and/or pain medication, which does not ultimately treat the problem.

Figure 8: Percent of Adults who went to the hospital ER for dental problems, by age, BRFSS 2017



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What's Next

Many Texas adults are not receiving the dental care they need. Stakeholders and policymakers may want to look for opportunities to close these gaps in access to care. The data shows that many adults who most need dental care, including those who smoke and those with diabetes, are not seeing a dentist. Their medical providers are an important link to oral health by talking to their patients about it and referring them to a dentist. With chronic disease rates increasing, medical and dental providers may need to work together to connect the importance of oral care to overall health. Integrated care and communication between medical and dental providers can improve health outcomes.

Citation

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