



Older Adults and Oral Health

Texas Behavioral Risk Factor Surveillance System, 2012-2018

Introduction

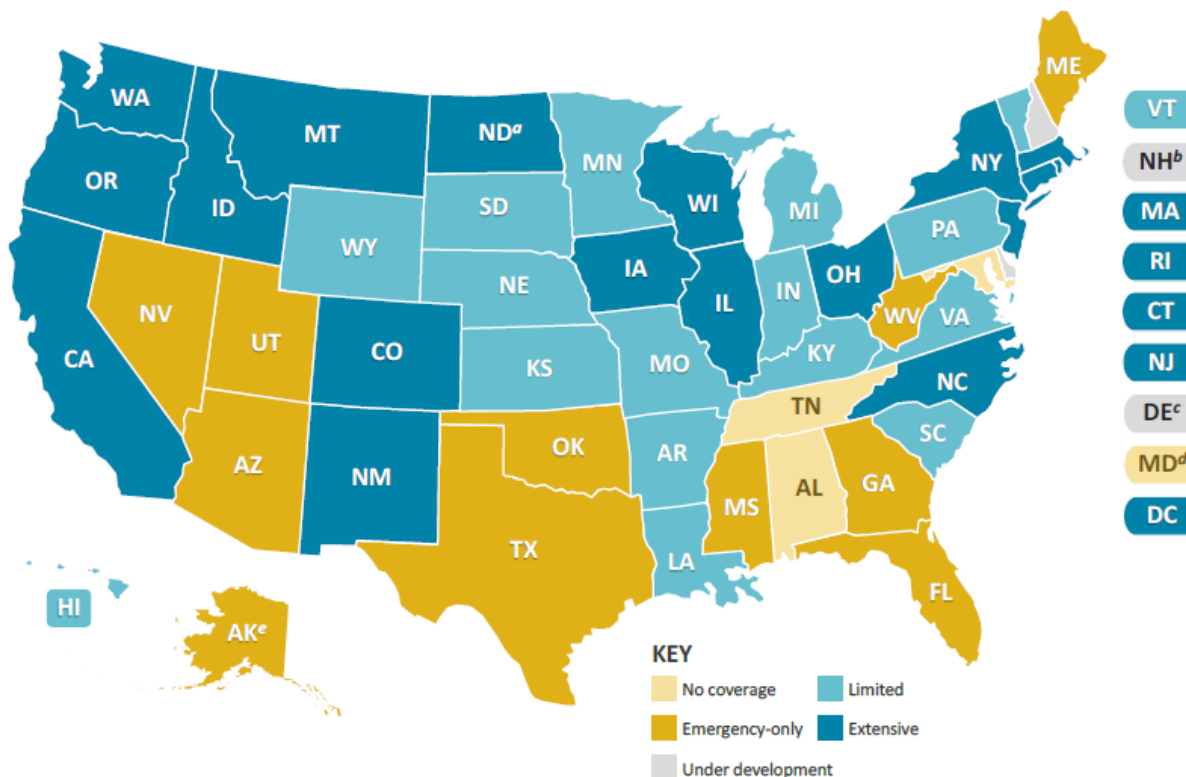
Maintaining good oral health is important throughout the lifetime. Yet, dental needs can shift with age. This is especially true for older adults, age 65 and beyond. Older adults are more likely to have lost all or most of their natural teeth than younger adults. According to 2011-2012 data reported by the National Center for Health Statistics, edentulism, or missing all-natural teeth, is twice as likely in adults aged 75 years and older than those 65-74 years-old.¹ Extensive tooth loss impairs the ability to chew efficiently causing malnutrition. Tooth loss may also lead to embarrassment and loss of self-esteem, contributing to loneliness and social isolation.^{1,2}

Because the risk of chronic disease increases with age,³ it is important to study the relationship of systemic diseases with oral disease to understand the combined impact on overall health among older adults. Both caries and periodontal disease share common risk factors with other chronic diseases,⁴ such as cardiovascular disease (CVD) and diabetes.⁵ These risk factors include poverty, poor diet, and tobacco use. Chronic conditions, and medications taken to treat them, increase the likelihood of dry mouth.⁶ Saliva is important to maintain a healthy oral environment. Decreased output can result in dental caries and aggravate oral health conditions.⁷

Lack of dental insurance coverage is a major reason that older adults do not seek or utilize dental care.⁸ Traditional Medicare does not cover routine dental care. Medicare Part A, which covers hospitalizations, covers a very limited, “medically necessary” benefit for certain dental services provided during a hospital stay. Advantage plans offer coverage with minimal benefits. Under Medicaid, states have the option to provide adult dental coverage.⁹ However, some states do not offer a dental benefit and others offer emergency-only coverage (Figure 1).



Figure 1: State Medicaid Coverage of Adult Dental Benefits, Sept 2019⁹



^a North Dakota does not offer adult dental benefits to its Medicaid expansion population.

^b Under New Hampshire's bill the Department of Health and Human Services is directed to develop a "comprehensive plan to ensure that Medicaid recipients can safeguard their smiles and their overall health."

^c Under Delaware's bill the state will offer preventive and restorative dental coverage to adult Medicaid beneficiaries.

^d Maryland offers treatment for symptoms in emergency situations but does not cover emergency surgery.

^e Alaska's state budget was passed keeping adult dental coverage intact; however, the Governor's line item vetoes in the budget will result in cuts to the state's Medicaid program, including adult dental, unless the legislature moves to rescind them.

Physical, sensory, and cognitive impairments associated with aging may make home care and patient education challenging for older adults. Older adults may experience diminished manual dexterity or an impaired range of motion of the wrist, elbow, or shoulder. If so, they may need help to maintain the ability to brush effectively. Conditions, such as arthritis, may cause weakened grips in the elderly population. They may need to use modified toothbrushes, floss holders, or other home care aids.¹⁰ Dentists may provide easy-to-read home care instructions for their elderly patients.

Older adults are a growing patient demographic for dental practices. The Federal Interagency Forum on Aging-Related Statistics projects that by 2030 the 65+ population will be twice as large as their counterparts in 2000. This means that the older adult population may grow from 35 million to 74 million and represent nearly 21 percent of the total U.S. population by 2030.¹¹ Thus, the complex medical and oral health needs of aging patients will have a major impact on the delivery of oral health care soon.



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.¹²

Currently, there is a wide sponsorship of the BRFSS survey. 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 Aging, Department of Veterans Affairs, and Substance Abuse and Mental Health Services Administration all support the survey. State health departments contract with telephone call centers for the BRFSS survey. The survey runs continuously throughout the year. CDC provides technical and methodological assistance. The survey includes a standardized core questionnaire and optional modules. States also add their own questions.

Federal and state governments, many universities, private organizations, and researchers all use BRFSS data. This data can 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.

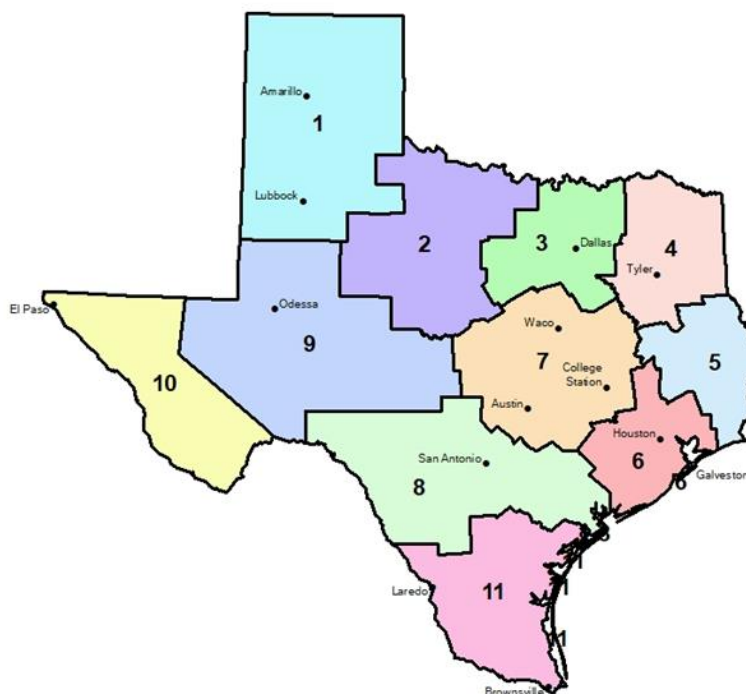
This report explores the oral health needs of the aging Texas population. We analyzed four years of data from BRFSS. Our analysis includes demographics, annual dental visits, tooth loss of 6 or more teeth, and edentulism for adults 65 years and older. It also includes trends by survey year, from 2012-2018, in which the dental module is conducted on every other year. We also added analysis of the impact of smoking and diabetes on dental visits, tooth loss, and edentulism.

The 254 counties in Texas belong to one of 11 public health regions (PHRs). The distance an individual must travel to receive health care services can be a significant challenge to accessing and receiving services.¹³ This is especially true for those living in rural areas. 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 1983.¹⁴



Figure 2: Map of Public Health Regions in Texas

Texas Public Health Regions



Sources: Center for Health Statistics Texas Public Health Regions, DSHS
Prepared by: Maternal & Child Health Epidemiology, 9/8/2020, (ds)

Results

Older Adults, Age 65+, by Demographics

Table 1 presents results for select demographics for older adults in Texas for even years from 2012-2018. Older adults in this report are defined as those who are 65 years of age and older. Older Texas adults tend to be female, white, non-Hispanic, have a high school degree, and be married. Nearly 91 percent live in non-border areas of the state. Most live in PHR 3, which includes Dallas-Fort Worth, followed by PHR 6, which includes Houston.


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

Characteristic	Sample Size	Percent	95% Confidence Interval
Gender			
Male	6,038	44.5	42.9 - 46.2
Female	10,378	55.5	53.8 - 57.1
Race/Ethnicity			
White, non-Hispanic	12,221	66.6	64.8 - 68.3
Black, non-Hispanic	1,032	10.3	9.0 - 11.7
Hispanic	2,296	19.8	18.4 - 21.4
Other/Multiracial, non-Hispanic	444	3.3	2.7 - 4.0
Educational Attainment			
Less than high school	2,087	20.4	18.8 - 22.0
High school grad/some college	8,403	56.4	54.8 - 58.0
College grad	5,854	23.2	22.1 - 24.4
Marital Status			
Married	8,002	56.6	55.0 - 58.2
Unmarried	8,353	43.4	41.8 - 45.0
Body Mass Index			
Normal	5,285	31.3	29.8 - 32.8
Overweight	5,752	37.6	36.0 - 39.2
Obese	4,356	31.1	29.5 - 32.8
Household Income			
Less than \$25,000	4,198	35.5	33.8 - 37.3
\$25,000 to less than \$50,000	3,380	30.0	28.4 - 31.7
\$50,000 or more	4,861	34.5	32.8 - 36.1
Geographic Location			
Border	1,784	9.4	8.5 - 10.3
Non-border	13,752	90.6	89.7 - 91.5
PHR 1	331	4.4	3.8 - 5.3
PHR 2	1,107	3.9	3.3 - 4.5
PHR 3	2,714	23.8	33.5 - 25.2
PHR 4	748	6.1	5.4 - 7.0
PHR 5	1,008	4.1	3.5 - 4.7
PHR 6	2,063	20.3	19.0 - 21.8
PHR 7	3,432	12.5	11.7 - 13.4
PHR 8	1,601	11.5	10.7 - 12.4
PHR 9	184	2.3	1.9 - 2.8
PHR 10	750	2.8	2.5 - 3.1
PHR 11	1,598	8.2	7.3 - 9.2

PHR – Public Health Region

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



Dental Outcomes among Older Adults

Table 2 reports dental visits in the past year and edentulism among older Americans in the U.S. in 2016.¹¹ Overall, elderly adults 85 years old and older are least likely to have an annual dental visit (56.0 percent) and most likely to be edentulous (31.0 percent).

Table 2: Percent of Older Adults with a Dental Visits in the Past Year and Edentulism by Age Group[^], U.S. 2014

Age Group	Annual Dental Visits	Edentulous*
65-74	62.0	16.0
75-84	66.0	25.0
85+	56.0	31.0

[^]Source: Federal Interagency Forum of aging-related statistics. Older Americans 2016: Key indicators of well-being. Accessed 12/10/2019.

*Edentulous is defined as having no natural teeth

Figure 3 shows data for dental outcomes in older adults in Texas across even-numbered survey years in which it includes oral health questions. Overall, 61.4 percent of older Texas adults have seen a dentist for an annual visit in the past year, and 13.2 percent are edentulous. Additionally, 31.5 percent have at least six or more teeth missing. In general, there have been no changes in these outcomes across time.

Figure 3: Dental Outcomes in Older Adults, by Year, Texas BRFSS, 2012-2018

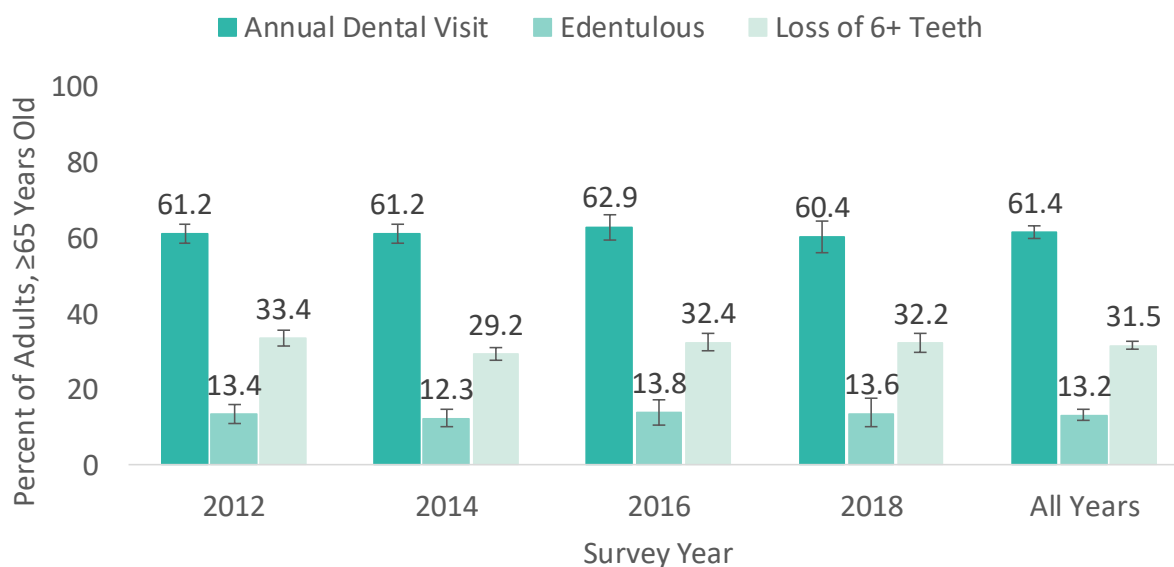
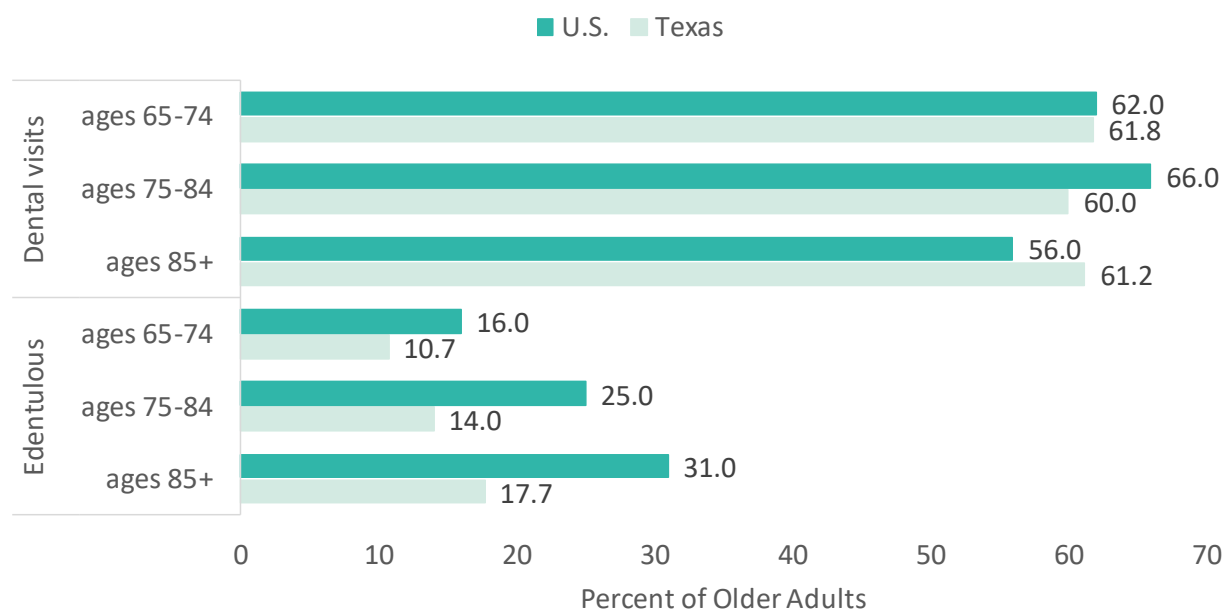




Figure 4 shows a comparison of annual dental visits and edentulism in older adults by age groups in the U.S. and Texas for 2014. The percent of individuals with an annual dental visit ranged from 56.0 to 66.0 percent in the U.S. across adults in the three age groups.¹¹ Visits in Texas ranged from 60.0 to 61.8 percent. In general, for both Texas and the U.S., the percent of individuals with edentulism increased with age. In Texas, for each age group, the percent of individuals with edentulism was less than in the U.S. overall. It is also worth noting there are fewer older men who are edentulous in Texas than women. Older men (11.5 percent (95% CI 10.0-13.1)) are significantly less likely to be edentulous than older women (14.6 percent (95%CI 13.2-16.2)).

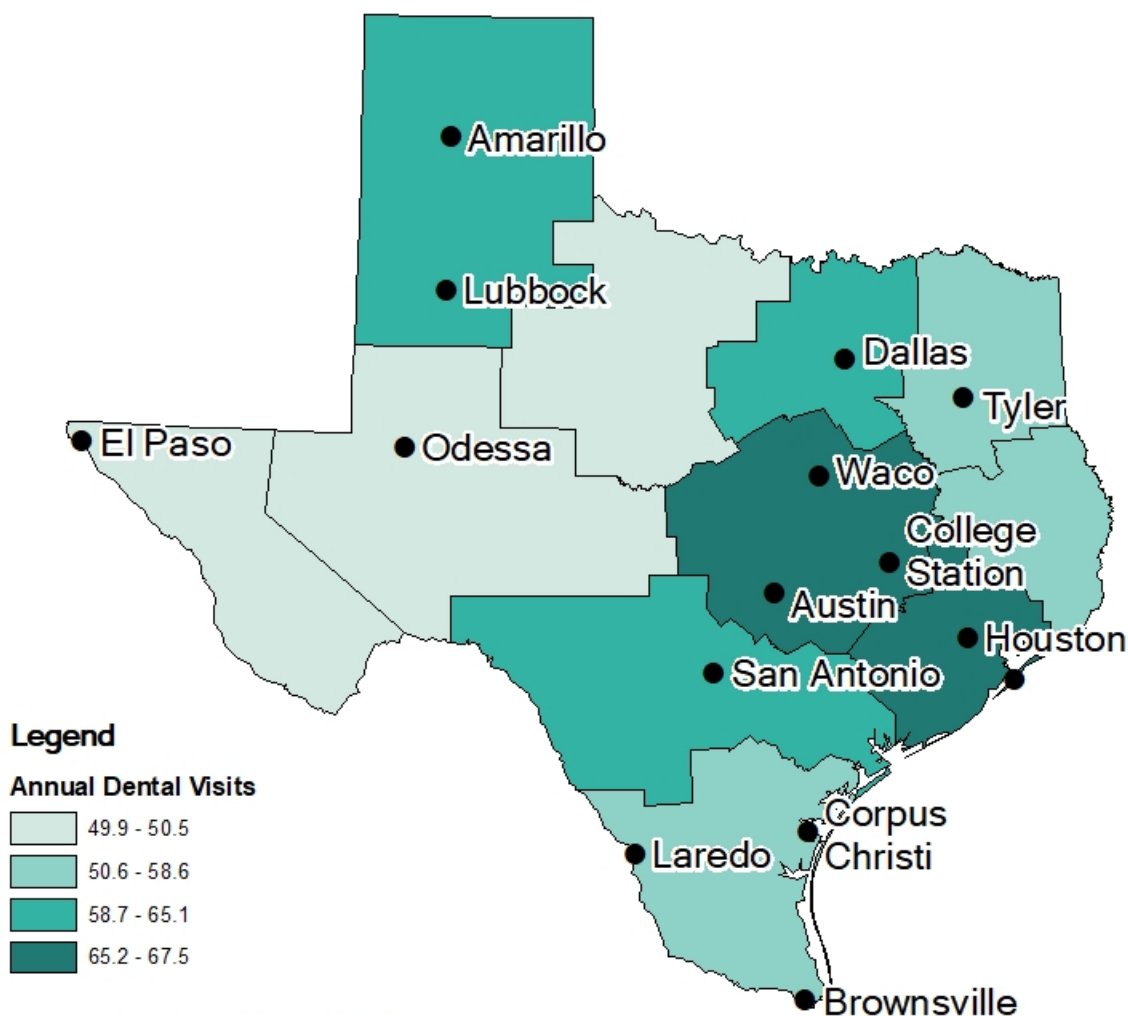
Figure 4: Dental Outcomes Comparison, U.S. and Texas Adults by Age Group, 2014





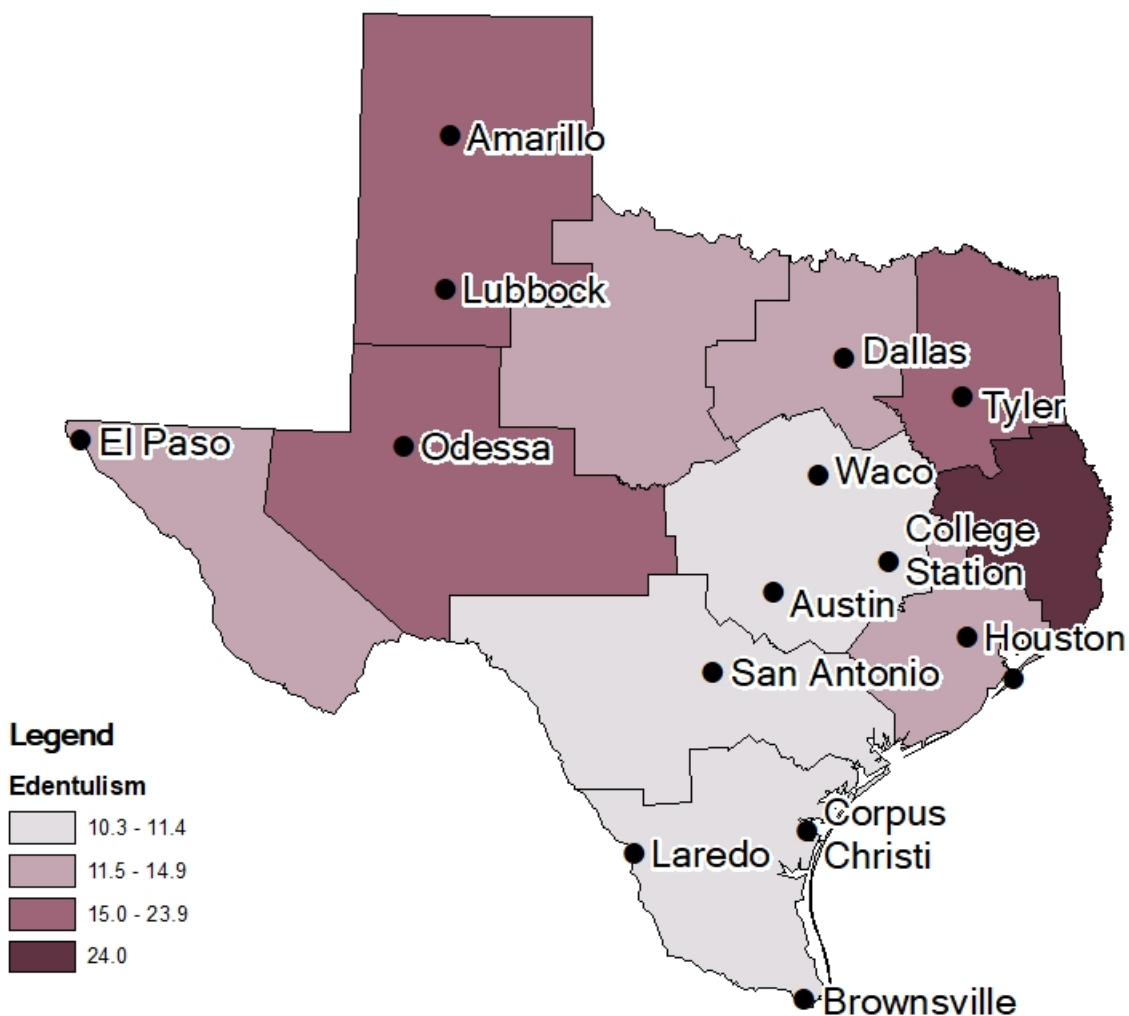
Figures 5.1 – 5.3 show data for dental outcomes for older adults in Texas across all eleven PHR in Texas. The percent of individuals with an annual dental visit ranges from 49.9 to 67.5 percent across the 11 health regions. PHR 10 had the lowest and PHR 7 had the highest percent of dental visits (figure 4.1). Figure 4.2 shows PHR 5 has the highest percent of edentulous older adults (24.0 percent); followed by PHR 9 (18.8 percent) and PHR 4 (18.4 percent). Finally, the loss of six or more teeth ranges from 25.7 to 43.2 percent across the regions (figure 4.3).

Figure 5.1: Percent of Older 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 Health Epidemiology, 3/13/2020, (ds)

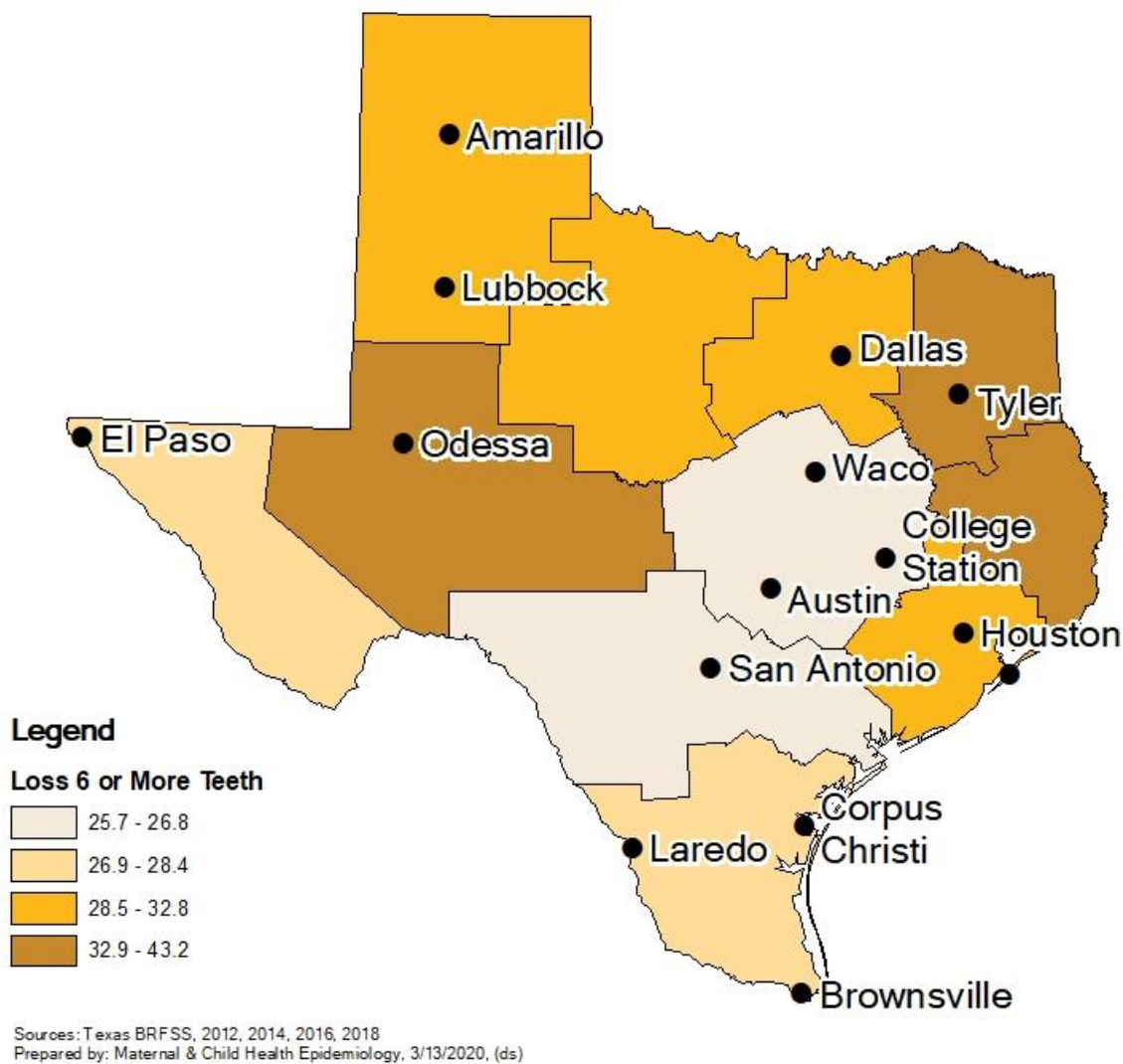
Figure 5.2: Percent of Older Adults who are Edentulous, by PHR, Texas BRFSS, 2012-2018



Sources: Texas BRFSS, 2012, 2014, 2016, 2018
Prepared by: Maternal & Child Health Epidemiology, 3/13/2020, (ds)



Figure 5.3: Percent of Older Adults Who Have Lost 6 or More Teeth, by PHR, Texas BRFSS, 2012-2018





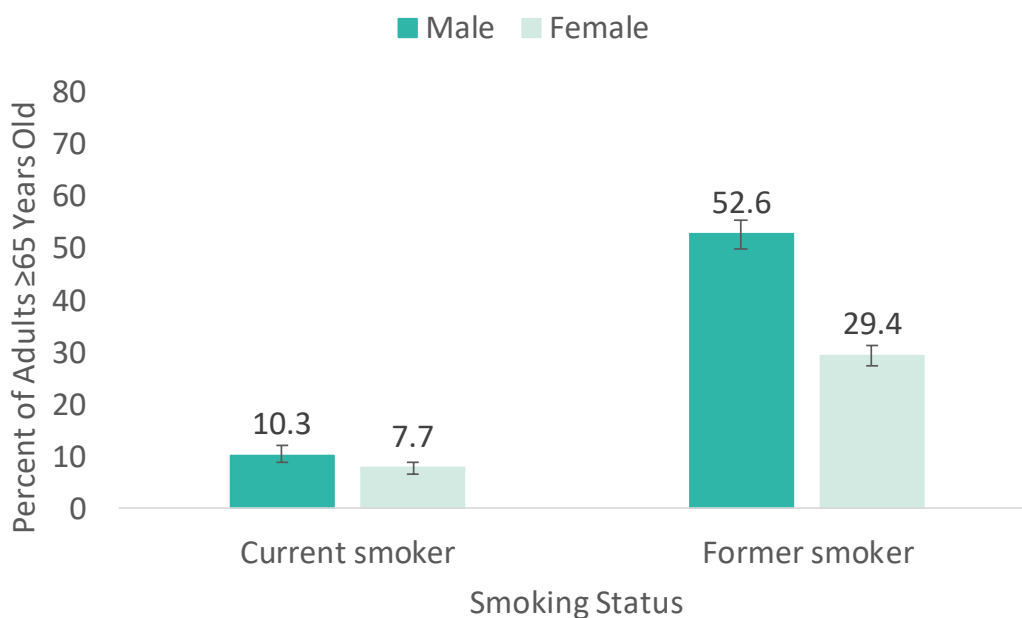
Smoking Status and Older Adults

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).¹⁵⁻¹⁶ 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.¹⁷

The five-year survival rate for cancers of the mouth and throat is 65.0 percent.¹⁸ Survival rates increase the earlier that cancer is detected hence, the importance of getting oral cancer screenings. Even patients who have no natural teeth should get an annual oral cancer screening, especially if they have a history of smoking or drinking.

In Texas, 8.9 percent of all older adults reported being current smokers, while 39.7 percent reported being former smokers. Figure 6 shows current and former older Texas smokers by sex. These results mimic those at the national level, where 10.0 percent of older men and 8.0 percent of older women were current smokers. Further, about 50.0 percent of older men reported formerly smoking cigarettes, and 30 percent of older women were former smokers.¹¹

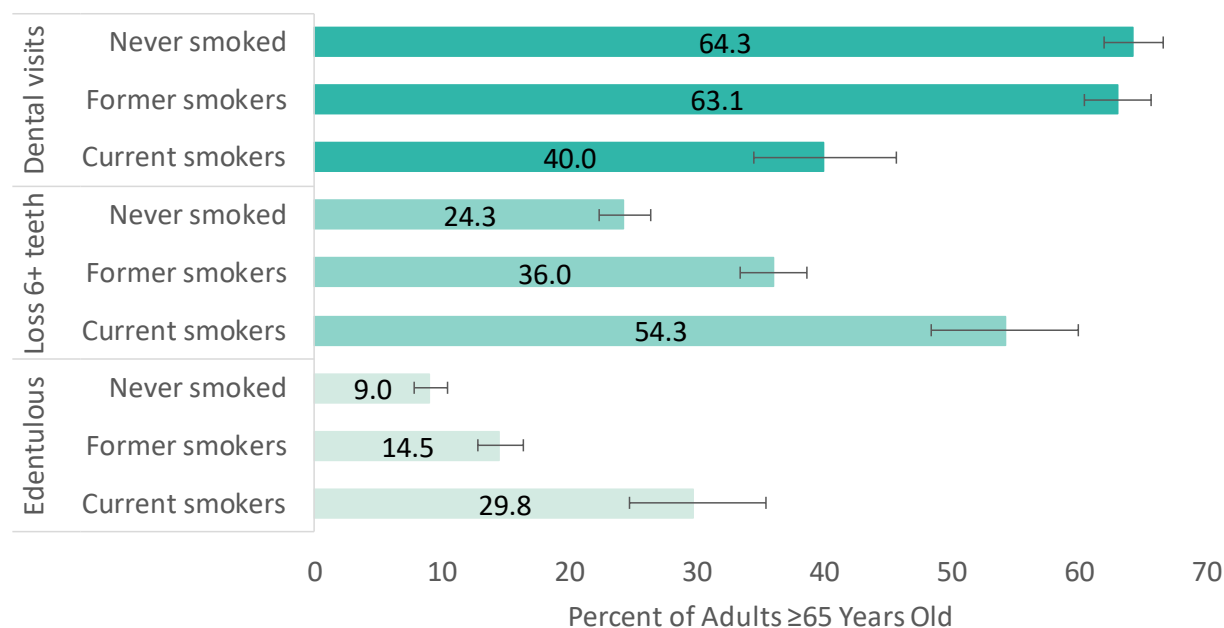
Figure 6: Current/Formers Smokers, Older Adults, by Sex, Texas BRFSS 2012-2018





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.¹⁹ Smoking is also an important cause of severe gum disease in the U.S.¹⁹ Figure 7 shows smoking status by dental outcomes for older adults. Comparatively, current smokers are significantly less likely to report an annual dental visit than former smokers. They are also significantly more likely to report being edentulous or having lost six or more of their natural teeth.

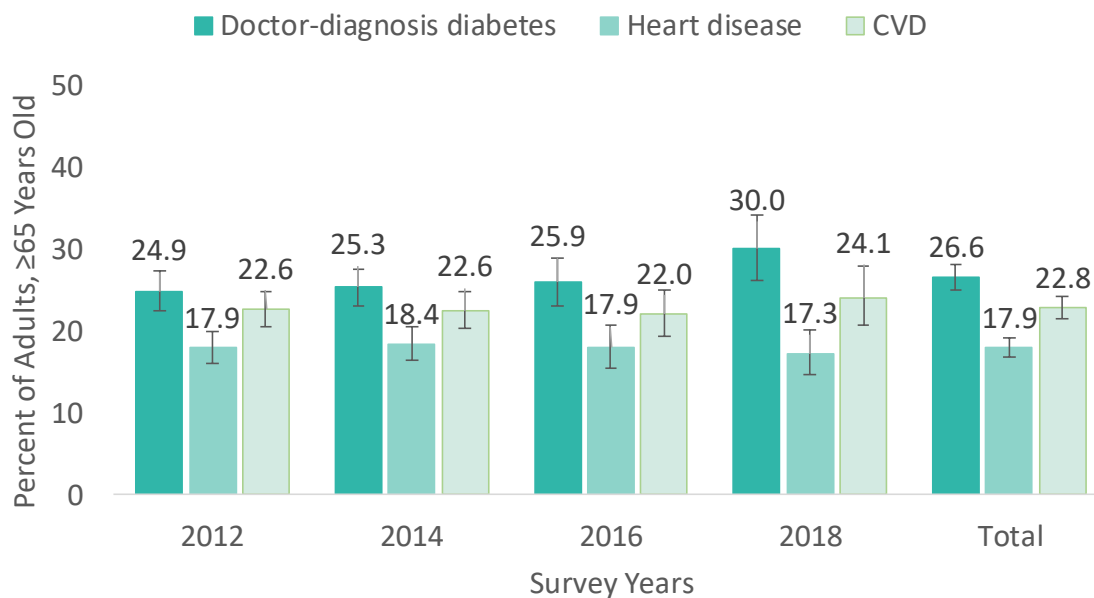
Figure 7: Smoking Status by Dental Outcomes, Older Adults, Texas BRFSS, 2012-2018



Chronic Disease and Older 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 older adults now suffer from multiple chronic diseases.²⁰⁻²⁴ Nationally, more than 25 percent of older adults have diabetes.²⁵ Figure 8 presents the prevalence of specific chronic diseases in older Texas adults. In 2014, 25.3 percent of Texas older adults reported having doctor-diagnosed diabetes. In comparison, in 2013-2014, 20.8 percent of U.S. older adults reported having diabetes.¹¹ Further, in 2014, 18.4 percent of Texas older adults reported having heart disease, compared to 29.4 percent of U.S. older adults.¹¹ Nearly 23 percent of Texas older adults in 2014 reported having cardiovascular disease (CVD). CVD, defined in the BRFSS data as heart disease and stroke, was not measured similarly at the national level.

Figure 8: Chronic Disease in Older Adults, Texas BRFSS, 2012-2018

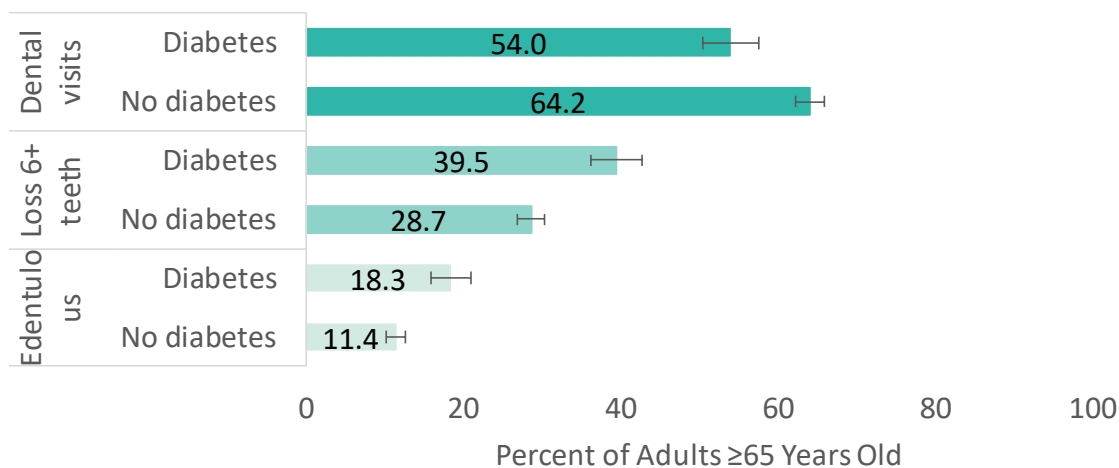




Edentulism and Diabetes among Older Adults

Studies have shown that diabetes can increase the risk of severe periodontal disease by three times.²⁶⁻²⁷ Additionally, adults with diabetes are at a higher risk of edentulism than are adults without diabetes.²⁸ Twenty percent of edentulism cases in the U.S. are linked to diabetes.²⁶ 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, especially as a patient ages. In Texas, older adults with diabetes are significantly more likely to be edentulous (18.3 percent) or to experience a loss of six or more teeth (39.5 percent) compared to their counterparts without diabetes (Figure 9). Further, those with diabetes are significantly less likely to have annual dental visits compared to those without diabetes.

Figure 9: Doctor-Diagnosed Diabetes by Dental Outcomes, Texas BRFSS, 2012-2018



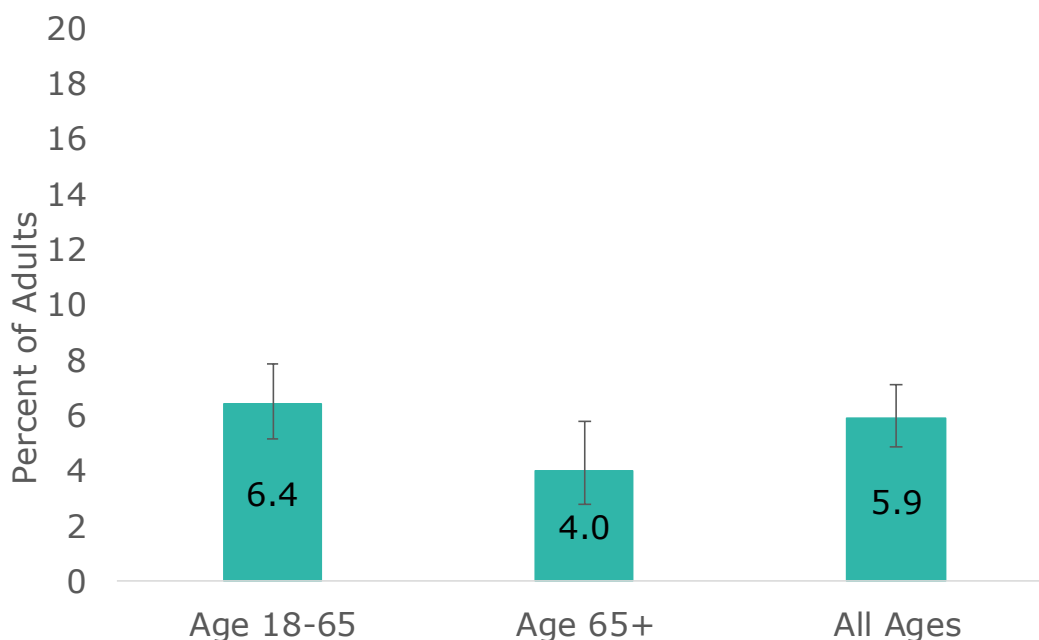


Visits to the Hospital Emergency Room (ER) for Dental Problems by Age Group

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 10 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 above the age of 18 years went to the ER for dental problems. Younger adults, below the age of 65, were more likely to visit the ER for dental problems than were older adults; however, this difference was not significant. Older males were slightly less likely to go to the hospital ER for dental problems than were older females. (3.4 percent vs. 4.4 percent, respectively).

Hospital ER visits for dental problems is problematic. Not only because of the costs associated, but also because most hospital ERs are not staffed or equipped to treat dental problems.²⁹⁻³⁰ This means patients are often sent home with a prescription for antibiotics and/or pain medication, which does not ultimately treat the problem.³⁰

Figure 10: Percent of Adults who went to the hospital ER for dental problems, by age, BRFSS 2017





What's Next

In some parts of Texas, only half of older adults have had an annual dental visit. This is at a time in life when dental needs become only more complex due to chronic oral diseases, comorbid conditions, and side effects from multiple medications. This is also an age group with an increased risk of mouth and throat cancers which can be detected with oral cancer screenings by a dentist.

It is important to help this population continue good home care, either by self-care or with the help of a caregiver. Providers and caregivers should be aware that adaptations to toothbrushes, etc., may be necessary for adequate self-care. It is also important that older adults understand that routine dental appointments are important for their overall health. This will continue to be a challenge, as many older adults in Texas are low-income and may not have the means to afford dental care.

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