Oral Health Status of Florida's Older Adult Population 2015-2016

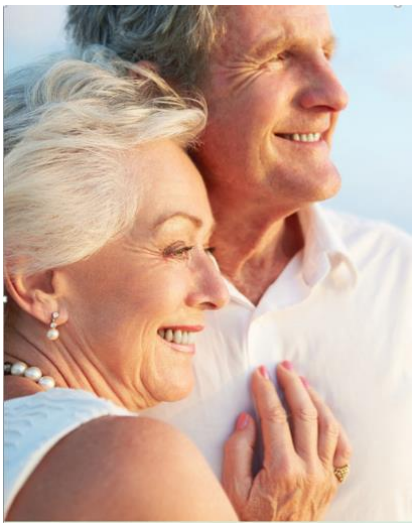
Acknowledgements:

Authors:
Christina Vracar, DA, MPH
Abigail Holicky, MPH
Jennifer Wahby, MPH
Jasmine Calhoun Bee, CFM, MPH

Survey Planning and Design:
Tami Miller, RDH, BS
Christina Vracar, DA, MPH
Jennifer Wahby, MPH
Donna Solovan-Gleason, RDH, PhD

Technical Assistance:
Christine Wood, RDH, BS
Michael C. Manz, DDS, MPH, DrPH
Collette Vallee, BS
Madeleine Nobles, RN, CPHM

Implementation and Screening:
Jan Barrett, RDH
Shelley Bergholcs, CRDH, BASDH
Dulce Calva, RDH
Joleyn Carriveau, RDH, BS, PDHC
Norine Dowd, CRDH, BHSc
Danielle Driscoll, CRDH, MHS
Karen Hodge, RDH, MHSc
Beryl Sue Kassoff-Correia, CRDH, BS
Rhoda Kublickis, RDH, MHS, FAADH
Cynthia Lineberger, CRDH
Kimberly Reams, RDH
Pamela Ridilla, CRDH, MS
Michelle Ryan, CRDH, MEd
Pamela Sandy, CRDH, MA
Paula Schad, RDH
Rebecca Smith, CRDH, EdD
Debra Vitale, RDH, BS
Daytona Beach State College, Eastern Florida State College, Miami-Dade College, Palm Beach State College, Pensacola State College, South Florida State College, and Valencia College Dental Hygiene Students



Thank you to the regional Area Agencies on Aging, the selected congregate meal sites, and older adults for your assistance and participation in this project.

This project is supported in part by the Health Resources and Services Administration State Oral Health Workforce Grant (T12HP27541) funds provided through the University of Florida, College of Dentistry.

Suggested Citation: Florida Department of Health. (2016). *The Oral Health Status of Florida's Older Adult Population 2015-2016*.

The Public Health Dental Program: www.flhealth.gov/dental
Contact us at dental@flhealth.gov or 850-245-4333

Table of Contents

Executive Summary

During the 2015-2016 state fiscal year, the Florida Department of Health's (DOH) Public Health Dental Program (PHDP) completed the first statewide oral health surveillance of Florida's older adult population attending congregate meal sites. The 2015-2016 Older Adult Oral Health Screening Project was conducted in 35 congregate meal sites across 19 Florida counties.

Out of 3,288 older adults attending the 35 selected Florida congregate meal sites, there were 674 older adults screened to gain a representative sample of Florida's older adult population. Overall, 21.6% of consent forms were returned and of those, 95.6% were returned with positive consent. In total, 20.5% of the sampled population were screened. Dental screenings were provided by contracted Florida Dental Hygienists' Association registered dental hygienists following the Association of State and Territorial Dental Directors' (ASTDD) Basic Screening Survey (BSS) protocols.

Key Findings

Of Florida's older adults ages 60 and older:

- The average number of natural teeth present were 15.2 out of a maximum of 32 teeth.
- Suspicious soft tissue lesions were present in 5.5% of Florida's older adults.
- The early dental treatment need among Florida's older adult population was 28.8%.
- The urgent dental treatment need among Florida's older adult population was 5.0%.
- Approximately one in four older adults (28.4%) reported having no insurance coverage for dental care and only 10% had private dental insurance.

Of Florida's older adults without any teeth (edentate; 19.2%):

- Those with a higher education status reported a lower prevalence of edentulism.
- Approximately one in three older adults (34.4%) reported the use of an upper and lower denture.

Of Florida's older adults with at least one tooth (80.8%):

- One in five older adults (22.9%) presented with untreated decay.
    - Untreated decay was the highest among non-Hispanic Blacks (32.2%).
- Almost half of older adults (46.7%) reported the use of an upper denture (or partial) and over one in three older adults (39.5%) reported the use of a lower denture (or partial).
- The need for periodontal care was 17.2%.
- Root fragments were present in 21.3% of older adults.

According to Oral Health America's *A State of Decay: Are Older Americans Coming of Age without Oral Healthcare* report, Florida ranks 7th nationally (84%, good category) on a composite score based on five variables: edentulism, adult Medicaid dental benefits, community water fluoridation, BSS history and status, and state oral health plans.[1]

[1] "A State of Decay", 2016

Introduction

Oral health is essential to overall health and well-being across the life span. There is a strong correlation between poor oral health status and other systemic and chronic conditions, such as diabetes, heart disease, and stroke.[2] Older adults experiencing poor oral health tend to be disabled, homebound, institutionalized, economically disadvantaged, lack insurance, and are members of racial and ethnic minorities.[3] Many older Americans do not have dental insurance as they lose these benefits when they retire and leave the work force.[2]

Florida's older adults are a growing vulnerable population with unique oral health needs. In 2010, Florida older adults ages 60 and older comprised approximately 36% of the state's population. By 2020, it is estimated that there will be more than 8 million older adults in the state, comprising 42% of the state's population.[4] According to the 2014 Florida Behavioral Risk Factor Surveillance System (BRFSS) survey, 13.2% of those ages 65 and older are experiencing complete tooth loss[5], affecting the ability to carry on basic human functions such as chewing, swallowing, speaking, smiling, and singing.

Oral health data are needed for ongoing surveillance, establishing the burden of oral health disease, and to inform statewide programmatic planning efforts. To address the need for state level oral health surveillance data, the Florida Department of Health (DOH) Public Health Dental Program (PHDP) has established a surveillance system for monitoring oral health status, risk factors, and access to dental services among various populations. Florida's older adult population was the third in a series of three ongoing statewide oral health surveillance projects to determine the oral health status of Floridians. The purpose of this project was to determine the current oral health status of Florida's oldest population (ages 60 and older) attending Florida congregate meal sites, identifying gaps in access to care and unmet dental needs, and to provide additional information for future prevention programs.

The Florida Department of Elder Affairs, through the Area Agencies on Aging, provides state and federally funded meal and nutrition education programs with outreach services.[6] There are approximately 425 congregate meal sites in Florida that serve thousands of meals daily.[5] At these congregate meal sites, Floridians 60 years and older and their spouses receive nutritionally balanced meals, nutrition education, and nutrition risk screening.[5] Florida congregate meal sites can function in several different types of dining facilities including senior centers, churches, senior housing facilities, and other community focal points.

The following sections of this report detail specifics about this project including the methodology, results, limitations, and recommendations from Florida's first Older Adult Oral Health Screening Project.

[2] U.S. Department of Health and Human Services, 2000
[3] "Oral Health for Older Americans," 2013
[4] Florida CHARTS Query, 2016
[5] BRFSS, 2014
[6] "Congregate Meal and Nutrition Sites"

Methodology

Basic Screening Survey

The 2015-2016 Older Adult Oral Health Screening Project (Project) was based on the BSS tool supported by ASTDD. The primary purpose of the BSS tool is to provide state and local health jurisdictions with a consistent model for monitoring oral disease in a timely manner, at the lowest possible cost, with minimum burden on survey participants, and that will support comparisons within and between states.[7] The goal of the BSS is to obtain standardized regional and statewide estimates of the oral health status in specific populations.

The BSS is designed to capture information on the following dental indicators that are directly related to oral health in older adults[8]:

1. Dentures and denture use: presence and use of full or partial removable dentures in the upper and lower arch.
2. Number of natural teeth: total number of teeth present in the upper and lower arch, including third molars, retained primary teeth, and root fragments. Teeth that may be used as part of an "over denture" are not included in the number of natural teeth.
    a. Dentate: having at least one natural tooth
    b. Edentate: loss of all natural teeth (without teeth)[9]
3. Untreated decay: visible breakdown of the enamel surface.
4. Root fragments: visible root fragments or teeth where the crown has fractured off at or below the gum line.
5. Need for periodontal care: need to have teeth cleaned before the next regularly scheduled dental appointment or more advanced periodontal treatment is needed.
6. Suspicious soft tissue lesions: presence of a soft tissue lesion that should be evaluated by a health professional including red and white lesions plus conditions or infections such as *Candidiasis*.
7. Urgency of need for dental care:
    a. Early dental care: needs to see a dentist within several weeks because of untreated decay or broken restorations.
    b. Urgent dental care: needs dental care as soon as possible because of signs and symptoms that include pain, infection, or swelling.

Sampling Procedure

A representative statewide sample of older adults attending Florida congregate meal sites was used for the Project. The average daily meal enrollment (average daily attendance) data were collected through the Area Agencies on Aging offices and individual congregate meal sites as there is not one centralized database housing this information for Florida. A Stratified Probability Proportional to Size sample (PPS) design was used to select the representative statewide sample of sites and the meal enrollment data were used to construct the population sample frame. The list of sites was sorted by region and then by average meal enrollment within each region to achieve geographic stratification. A systematic sample interval was drawn with a

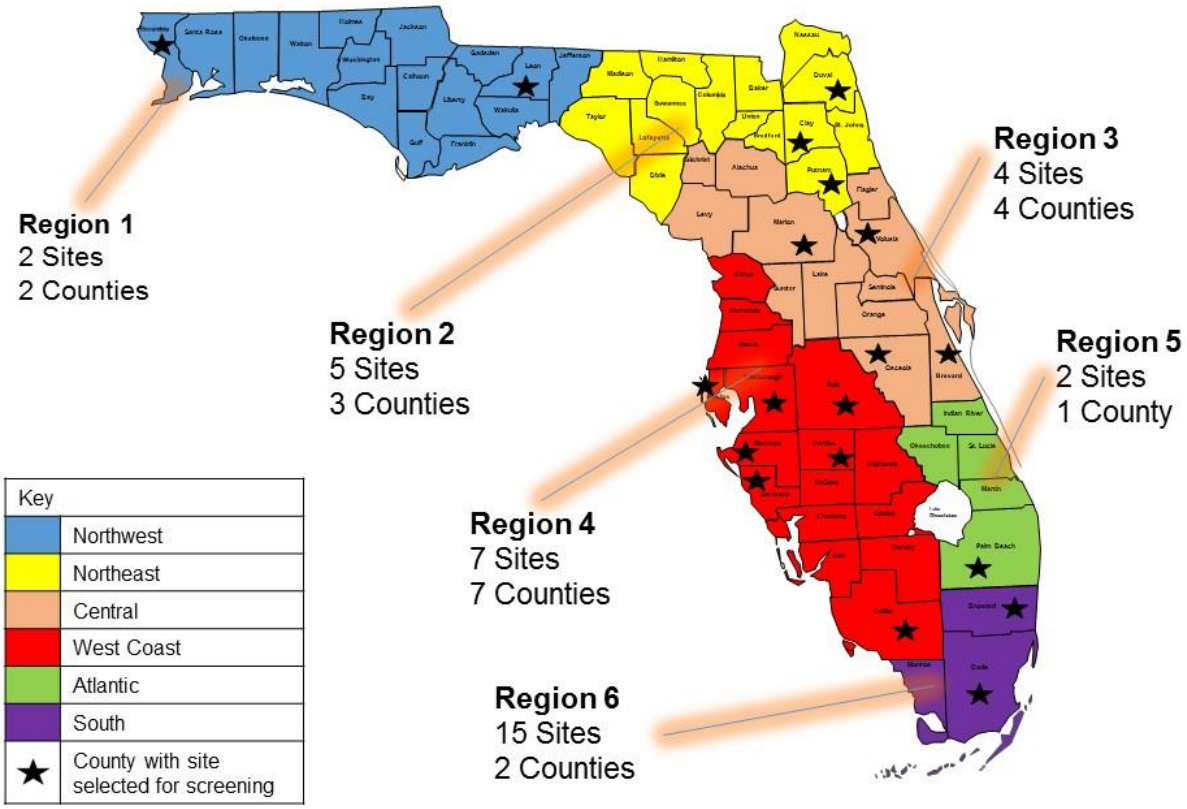
[7] ASTDD, 2011
[8] ASTDD, 2010
[9] "Healthy People 2010: Oral Health Toolkit," 2007

calculated sampling proportional to the region population (based on total average meal enrollment) to ensure a minimum of two sites were selected within each region of the state.

With a random start, the sampling interval was then repeatedly added with selections made based on where the sampling intervals fell in cumulative enrollment, for a total of 35 selections. Sites were contacted and consented to participate in the screening project. Sites that declined participation were replaced with a random PPS site selection from the same interval.

Figure 1 illustrates the regional designations and the number of counties and sites within each region for the Project.

Figure 1: Florida's 2015-2016 Older Adult Screening Region Map and Selected Counties



Screening Methods

After obtaining permission from the selected sites, older adults were given the opportunity for individual participation in the project. Consent form questionnaire (Appendix A), data collection forms (Appendix B), and screening results letters (Appendix C) were created based on BSS guidelines.[10] Consent forms were sent to the 35 participating sites and distributed to the older adults prior to the scheduled screening date. Older adults were encouraged to complete and return the consent form questionnaire even if they did not want to participate in the screening.

[10] ASTDD, 2010

The older adult screenings took place before and after the scheduled congregate meal times. Only those older adults returning a positive consent questionnaire form with a signature were screened.

Florida Dental Hygienist's Association licensed dental hygienists were trained in BSS guidelines and provided screenings to participants following procedures to prevent the spread of disease as set by the Centers for Disease Control and Prevention (CDC) for this type of oral health screening. Dental gloves and masks were worn, and the dental hygienists used a disposable mirror for each participant, which was thrown away after each screening. The screening was not intended to take the place of a regular dental checkup or an exam by a dentist. There were 17 hygienists who collected information on the presence of all seven indicators: dentures and denture use, number of natural teeth, untreated decay, root fragments, need for periodontal care, suspicious soft tissue lesions, and urgency of need for dental care. The screenings and data were collected at the participant level and the tooth level, depending on the indicator and in accordance with BSS guidance.

Maintaining screening and data collection consistency across calibrated screeners was the foundation of the Project. The BSS provided a framework to collect data in a consistent manner and overview trainings were provided to all screeners. Data were collected in accordance with all the guidelines and policies defined in the BSS for the older adult population. This was a cross-sectional (looking at a specific population at a point in time) and descriptive (intended to determine estimates of oral health status for a defined population) survey.

Data Analysis

Data analysis was completed utilizing Statistical Analysis Software (SAS) version 9.4, a high-level data analysis tool. Outcome data were weighted and adjusted for non-response based upon the Stratified Probability Proportional to Size sample design with a 95% Confidence Interval (CI). This sample design allows for the reporting of state-level and regional-level data.

Demographic indicators of age, race/ethnicity, gender, education level, and insurance status of the participating adults were obtained from the consent form questionnaire (Appendix A). Due to low participation of older adults identifying as American Indian/Alaska Native, Native Hawaiian/Pacific Islander, and Asian, these individuals were combined with those identifying as "Other" into the "Other Race" category for analysis and reporting. Those participants identifying as "Multi-Racial" on the consent questionnaire or those who checked multiple boxes for the race/ethnicity question were displayed as "Multi-Racial" in the following results.

Results

There were 3,228 consent forms provided to adults attending the 35 sampled congregate meal sites. Of the 3,228 consent forms, 709 consent forms were returned (21.6%) and of those, 678 (95.6%) were positive consent.

For the purposes of analysis and reporting, 668 of the 678 screened adults were included. To be included in this report, adults had to be aged 60 years or older (to align with eligibility criteria of congregate meal sites) and not missing data on key oral health indicators.

Demographic Characteristics of Participating Adults

The breakdown of demographic characteristics of the participating adults screened is shown in Table 1. Please note these data are unweighted.

Table 1. Demographic Characteristics of Adults Screened during the Florida Older Adult Oral Health Screening Project 2015-2016, n=668

Characteristic	N (%)
Age	
60-69 years	176 (26.4%)
70-79 years	269 (40.3%)
80-89 years	195 (29.2%)
90 years and older	28 (4.2%)
Gender	
Male	224 (33.5%)
Female	442 (66.2%)
Missing	2 (0.3%)
Race/Ethnicity	
White	237 (35.5%)
Black	60 (9.0 %)
Hispanic	278 (41.6%)
Multi-Racial	66 (9.9%)
Other Race	20 (3.0%)
Missing	7 (1.1%)

The majority of participants screened were age 70-79 years (40.3%), female (66.2%), and Hispanic (41.6%). The BSS data were weighted to achieve regional and state-level estimates of the various indicators. The data shown in the rest of the report represent the population of older adults attending congregate meal sites across Florida. Prevalence estimates are provided along with 95% Confidence Intervals (CIs).

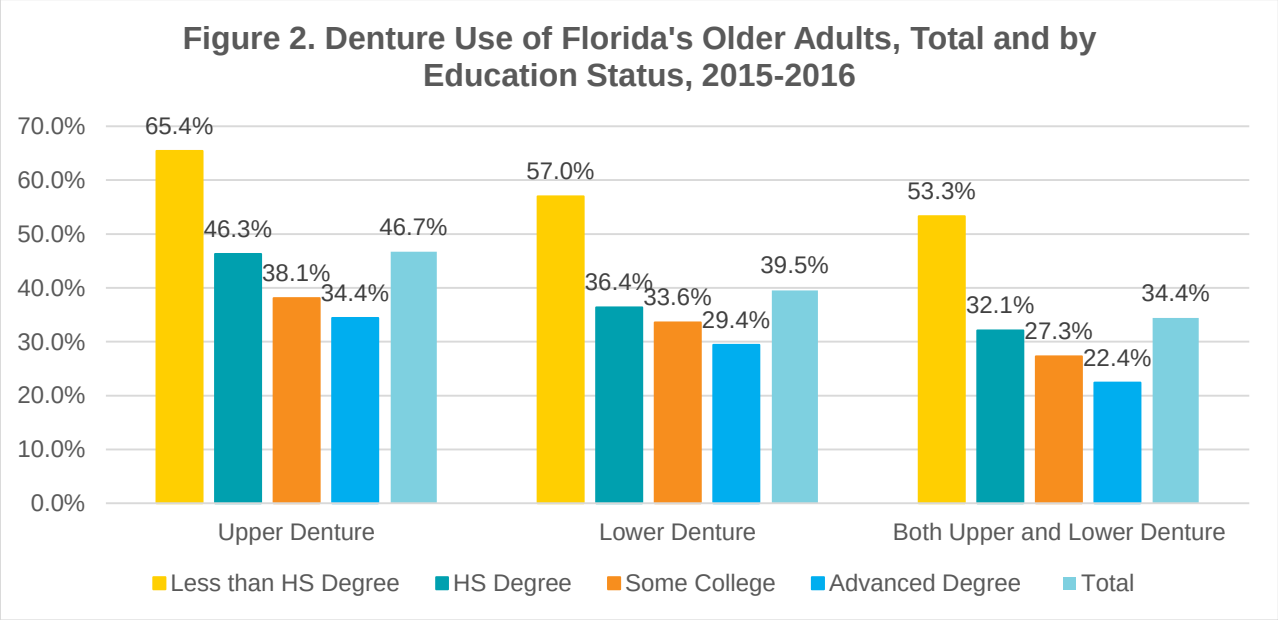
Natural Teeth and Denture Use

A key determinant in oral health status and function is an individual's number of natural teeth. Having adequate dentition (teeth in the dental arch)[11] is vital to quality of life and personal well-being.

[11] American Dental Association Glossary

Most adults have a total of 32 permanent teeth. If an individual has retained some or most of their natural teeth, they are considered dentate. If an individual does not have any natural teeth, they are considered edentate. ASTDD's BSS Older Adult Manual includes screening questions to determine the number of natural teeth retained to determine dentate status in addition to collecting data on the use of upper and/or lower dentures.

The data from the Project reveal that the average number of teeth for the older adult population is 15.2 teeth and that this number decreases with age. Almost one in five (19.2%) were edentate. Approximately 47% used upper dentures, 40% used lower dentures, and 35% used both upper and lower dentures (Figure 2).



This project revealed that the number of natural teeth (and subsequent denture use for tooth loss) is correlated with education status. Education status was categorized into four groups: less than high school (HS) degree, HS degree, some college, and advanced degree (i.e. Masters', Professional, and Doctoral).

When comparing average number of teeth by education status, a higher education status is indicative of a lower edentate status. On average, those with an advanced degree retained more than half of their teeth (19 out of 32) as compared to those with less than a HS degree (11 out of 32) and those with a HS degree (15 out of 32). When comparing other demographic factors, such as gender or race/ethnicity, by the average number of natural teeth, the level of disparity was not significant enough to represent graphically.

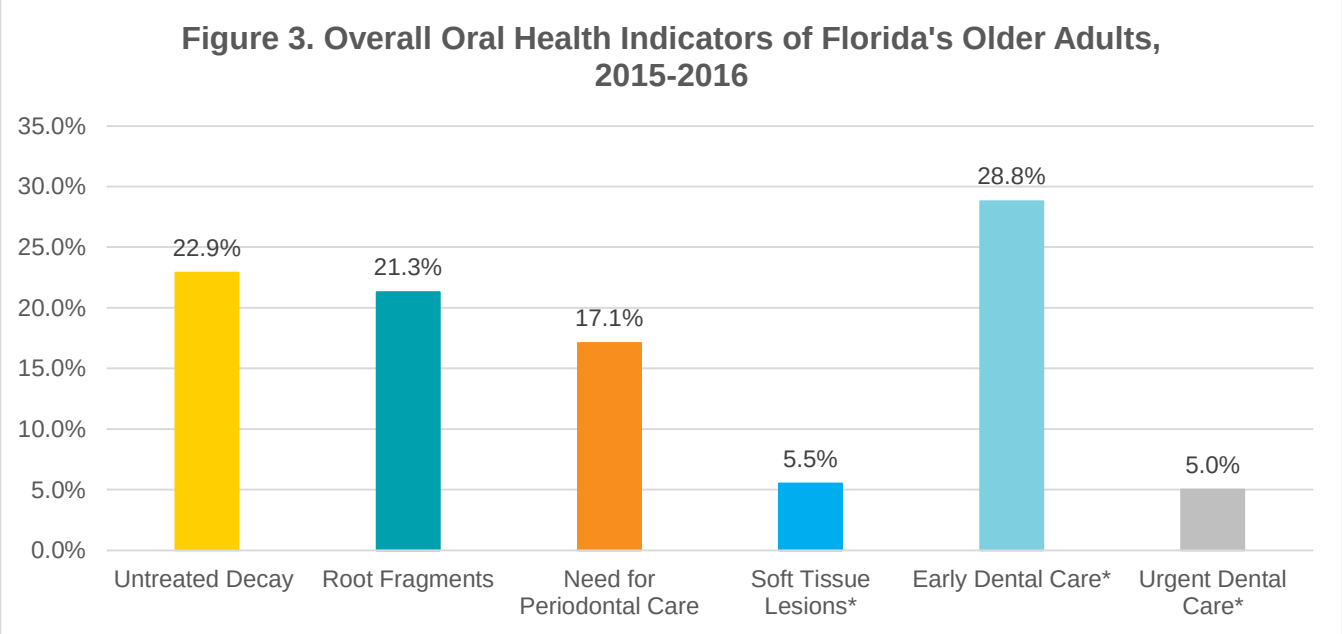
Denture use indicated a similar dynamic to natural teeth when assessing education status. For a participant with an advanced degree, usage in all denture categories drops by nearly half. In addition, over half of those with less than a high school education used both upper and lower dentures, a 30% increase from individuals with a high school diploma (Table 2).

Prevalence estimates of the denture use indicators by education status are provided along with 95% CIs in Table 2.

Table 2. Prevalence (95% CI) of Denture Use among Florida's Older Adults, by Education Status			
	Oral Health Indicator (95% CI)		
Education Status	**Upper Denture**	**Lower Denture**	**Both Upper and Lower**
Less than HS Degree	65.4 (55.2, 75.6)	57.0 (46.3, 67.6)	53.3 (42.9, 63.6)
HS Degree	46.3 (39.2, 53.4)	36.4 (29.9, 42.9)	32.1 (25.5, 38.6)
Some College	38.1 (30.3, 46.0)	33.6 (25.5, 41.8)	27.3 (18.7, 35.8)
Advanced Degree	34.4 (21.9, 46.8)	29.4 (17.9, 40.9)	22.4 (10.8, 33.9)
Total	46.7 (41.5, 51.9)	39.5 (34.7, 44.4)	34.4 (29.3, 39.5)

Oral Health Indicators

According to BSS guidelines, untreated decay, root fragments, and need for periodontal care are all indicators that should be restricted to the dentate population when reported and do not include any edentate adults. Suspicious soft tissue lesions and urgency of dental care are reported for the entire population. These criteria are reflected in all subsequent figures and tables shown. In Florida, the oral health indicators with the highest prevalence were need for early dental care (28.8%) and untreated decay (22.9%) (Figure 3). Approximately, 21.3% had root fragments, 17.1% had a need for periodontal care, 5.5% had soft tissue lesions, and 5.0% were in need of urgent dental care.



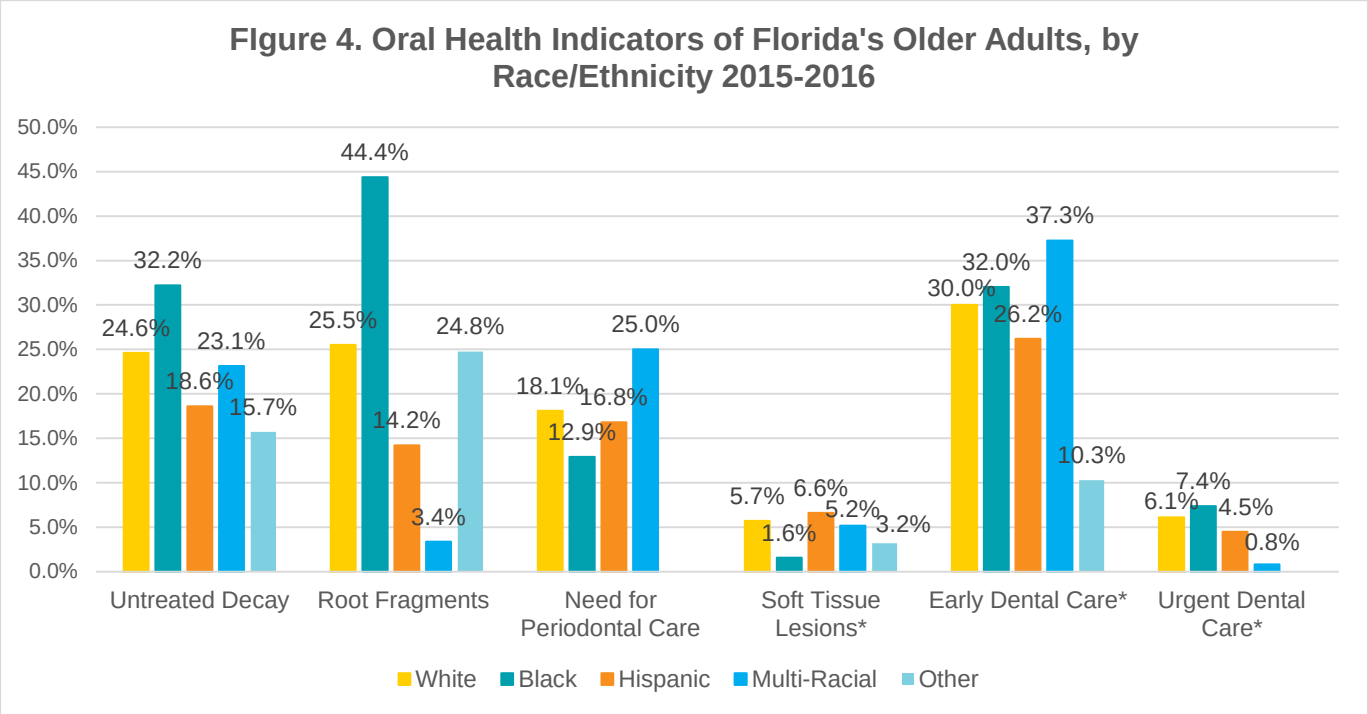
*Per the 2010 Older Adult BSS manual, soft tissue lesions, early dental care, and urgent dental care indicators are inclusive of all participants, including the edentate population. All other indicators in figure are reported for dentate population only.

Prevalence estimates of the various oral health indicators by population are provided along with 95% CIs in Table 3.

Table 3. Prevalence of (95% CI) of Oral Health Indicators						
	Oral Health Indicator, Prevalence (95% CI)					
Population	**Untreated Decay**	**Root Fragments**	**Need for Periodontal Care**	**Soft Tissue Lesions**	**Early Need for Dental Care**	**Urgent Need for Dental Care**
All Participants	-	-	-	5.5% (3.3, 7.7)	28.8% (22.3, 35.2)	5.0% (2.6, 7.4)
Dentate Only	22.9% (18.0, 27.8)	21.3% (16.1, 26.5)	17.2% (12.3, 22.0)	-	-	-

Oral Health Indicators-Race/Ethnicity

Oral health status varied by race/ethnicity, especially for root fragments (Figure 4). Non-Hispanic Black adults had almost two times higher prevalence of root fragments (44.4%) when compared to their non-Hispanic White counterparts (25.5%). Non-Hispanic Blacks also had the highest prevalence of untreated decay (32.2%). Multi-racial adults had the highest prevalence of need for early dental care (37.3%) and need for periodontal care (25.0%). Suspicious soft tissue lesions and need for urgent dental care were low among all race/ethnic groups.



*Per the 2010 Older Adult BSS manual, soft tissue lesions, early dental care, and urgent dental care indicators are inclusive of all participants, including the edentate population. All other indicators in table are reported for dentate population only.

Prevalence estimates and 95% CIs are provided for all oral health indicators by race/ethnicity in Table 4.

Table 4. Prevalence (95% CI) of the Oral Health Indicators, by Race/Ethnicity						
	Oral Health Indicator, Prevalence (95% CI)					
Race/ Ethnicity	**Untreated Decay**	**Root Fragments**	**Need for Periodontal Care**	**Soft Tissue Lesions***	**Early Dental Care***	**Urgent Dental Care***
White	24.6 (16.5, 32.6)	25.5 (18.3, 32.7)	18.1 (8.8, 27.4)	5.7 (1.0, 10.5)	30.0 (21.8, 38.2)	6.1 (1.6, 10.6)
Black	32.2 (19.1, 45.3)	44.4 (27.3, 61.6)	12.9 (0.7, 25.0)	1.6 (0.0, 3.9)	32.0 (7.9, 56.1)	7.4 (0.3, 14.5)
Hispanic	18.6 (10.6, 26.5)	14.2 (6.3, 22.1)	16.8 (7.7, 25.8)	6.6 (4.3, 9.0)	26.2 (17.6, 34.8)	4.5 (1.6, 7.5)
Multi-Racial	23.1 (8.8, 37.5)	3.4 (0.0, 7.6)	25.0 (5.9, 44.1)	5.2 (0.0, 10.3)	37.3 (27.3, 47.2)	0.8 (0.0, 2.6)
Other	15.7 (4.9, 26.6)	24.8 (0.0, 55.5)	-	3.2 (0.0, 9.6)	10.3 (0.1, 20.2)	-

*Per the 2010 Older Adult BSS manual, soft tissue lesions, early dental care, and urgent dental care indicators are inclusive of all participants, including the edentulous population. All other indicators in table are reported for dentate population only.

Oral Health Indicators-Region

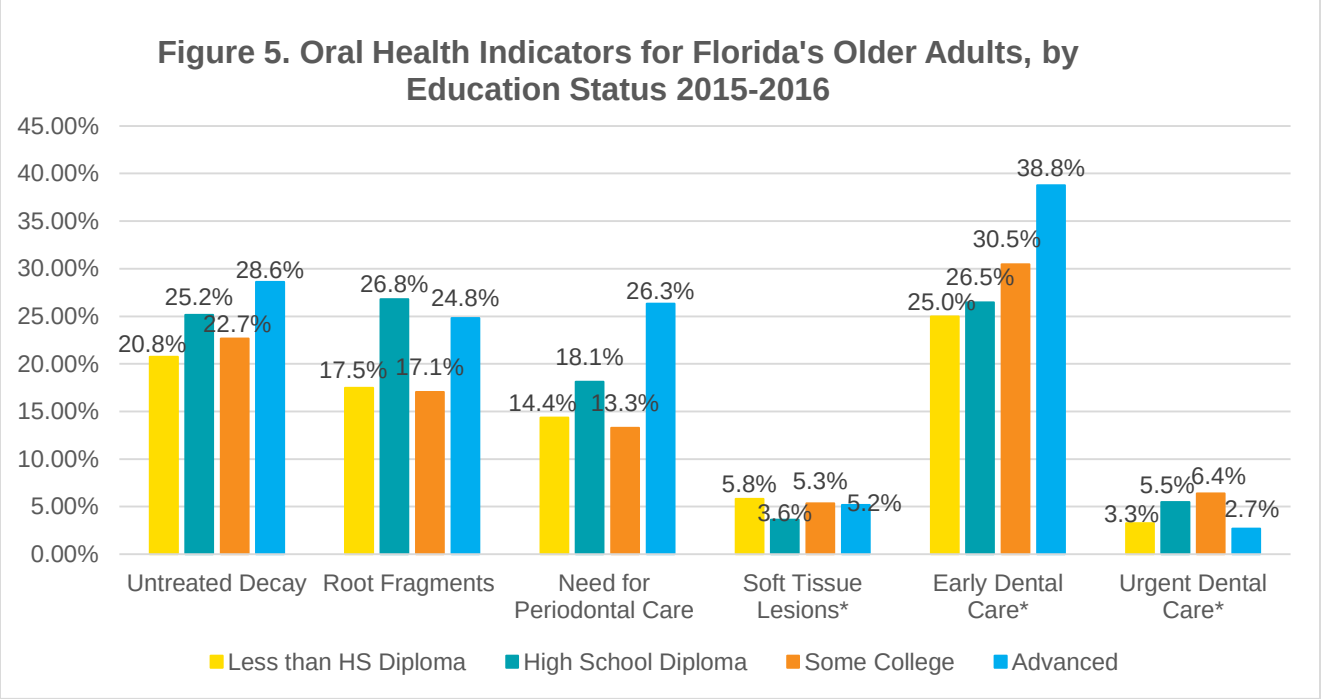
The PHDP stratified the survey sample into six regions in order to observe regional estimates and assess if geographic disparities exist. These results are shown in Table 5 and reveal that geographic disparities exist. Untreated decay and root fragments were highest in the Northwest region, and need for periodontal care and need for early dental care were highest in the Atlantic region. Due to the overall low prevalence of soft tissue lesions, regional estimates were not available for all regions. Prevalence estimates and 95% CIs are provided for all oral health indicators by region in Table 5.

Table 5. Prevalence (95% CI) of the Oral Health Indicators, by Region						
	Oral Health Indicator, Prevalence (95% CI)					
Region	**Untreated Decay**	**Root Fragments**	**Need for Periodontal Care**	**Soft Tissue Lesions***	**Early Dental Care***	**Urgent Dental Care***
Northwest	28.6 (15.5, 41.7)	45.3 (24.3, 66.3)	2.5 (0.0, 7.6)	-	35.2 (0.0, 76.7)	5.0 (0.0, 15.2)
Northeast	27.7 (13.9, 41.5)	20.8 (10.0, 31.6)	12.5 (1.8, 23.2)	3.6 (0.0, 8.6)	32.6 (18.6, 46.6)	3.3 (0.0, 7.6)
Central	18.8 (14.3, 23.3)	18.0 (7.0, 29.0)	7.0 (0.0, 14.1)	3.1 (0.0, 7.4)	25.6 (18.7, 32.5)	4.5 (0.0, 10.4)
West Coast	15.4 (3.3, 27.5)	18.9 (7.0, 30.7)	1.1 (0.0, 3.3)	8.1 (0.0, 7.4)	22.7 (1.1, 44.3)	4.1 (0.0, 11.3)
Atlantic	18.5 (16.8, 20.3)	19.3 (0.0, 39.4)	41.6 (40.8, 42.3)	3.3 (0.0, 9.9)	47.5 (11.6, 83.3)	7.8 (3.9, 11.7)
South	15.5 (9.7, 21.3)	11.0 (5.7, 16.3)	20.1 (11.8, 28.4)	6.5 (4.1, 8.9)	27.9 (21.4, 34.3)	5.7 (2.2, 9.3)

*Per the 2010 Older Adult BSS manual, soft tissue lesions, early dental care, and urgent dental care indicators are inclusive of all participants, including the edentate population. All other indicators in table are reported for dentate population only.

Oral Health Indicators-Education Status

Project data have already shown a disparity in number of natural teeth and denture use by education status. When the other oral health indicators are stratified by education status, not as large of a disparity is seen (Figure 5). It is important to note that the first three oral health indicators shown here (untreated decay, root fragments, and need for periodontal care) were highest among those with the highest level of education. This is in part due to their low rate of edentulism.



*Per the 2010 Older Adult BSS manual, soft tissue lesions, early dental care, and urgent dental care indicators are inclusive of all participants, including the edentate population. All other indicators in figure are reported for dentate population only.

Prevalence estimates and 95% CIs are provided for all oral health indicators by education status in Table 6.

Table 6. Prevalence (95% CI) of the Oral Health Indicators, by Education Status

	Oral Health Indicator, Prevalence (95% CI)					
Education Status	**Untreated Decay**	**Root Fragments**	**Need for Periodontal Care**	**Soft Tissue Lesions***	**Early Dental Care***	**Urgent Dental Care***
No HS Diploma	19.5 (10.0, 28.9)	17.8 (7.2, 28.3)	14.6 (8.5, 20.7)	4.8 (1.1, 8.7)	25.2 (14.5, 35.9)	2.3 (0.4, 4.1)
HS Diploma	24.2 (16.5, 31.8)	27.2 (18.3, 36.0)	18.4 (9.8, 26.9)	3.7 (0.6, 6.7)	26.8 (18.8, 34.7)	5.6 (2.2, 8.9)
Some College	21.1 (15.7, 26.5)	17.0 (9.9, 24.0)	13.1 (6.4, 19.6)	5.2 (1.8, 8.5)	30.7 (22.5, 38.8)	4.9 (1.7, 7.9)
Advanced	28.6 (14.7, 42.6)	24.8 (11.8, 37.8)	26.3 (14.1, 38.6)	5.2 (0.0, 11.1)	38.8 (24.1, 53.5)	2.7 (0.0, 7.2)

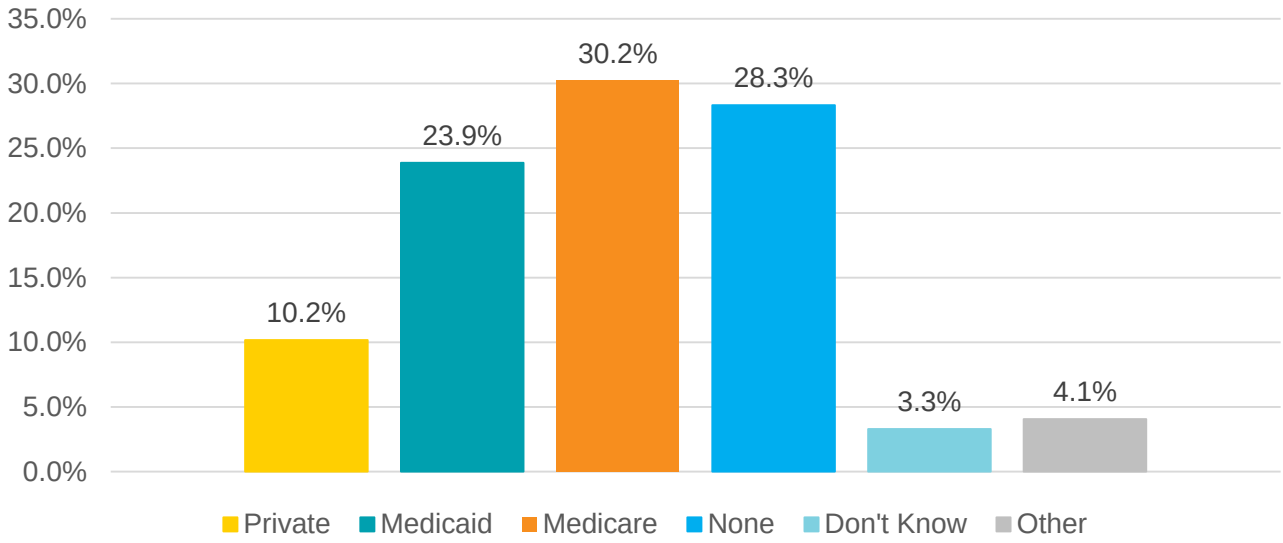
*Per the 2010 Older Adult BSS manual, soft tissue lesions, early dental care, and urgent dental care indicators are inclusive of all participants, including the edentulous population. All other indicators in table are reported for dentate population only.

Vulnerable Population-Dental Insurance

As stated previously, older adults are less likely to have dental insurance when compared to other age groups as this population has usually aged out of the workforce and are without the benefit of employer sponsored dental insurance. State Medicaid agencies have the flexibility to determine dental benefits for adult enrollees. In Florida, the Medicaid program covers medically-necessary emergency dental products to alleviate pain or infection. Other preventive, restorative, and surgical dental services vary by Medical Managed Care plan and dental subcontractor plan across the state. Additionally, Medicare does not cover most dental care.[12] Thus, the lack of comprehensive dental care coverage, even among the insured, leaves this population at risk of experiencing gaps in routine dental care access.

The consent form questionnaire completed by all screened participants asked about current dental insurance status. Results are shown in Figure 6. Among Florida's older adult population, the most common dental care insurance type reported was Medicare (30.2%), which is noteworthy given the established lack of procedures covered. Approximately one in four older adults (28.3%) reported having no insurance coverage for dental care and 10.2% reported having private dental insurance.

Figure 6. Dental Insurance Status of Florida's Older Adult Population, 2015-2016



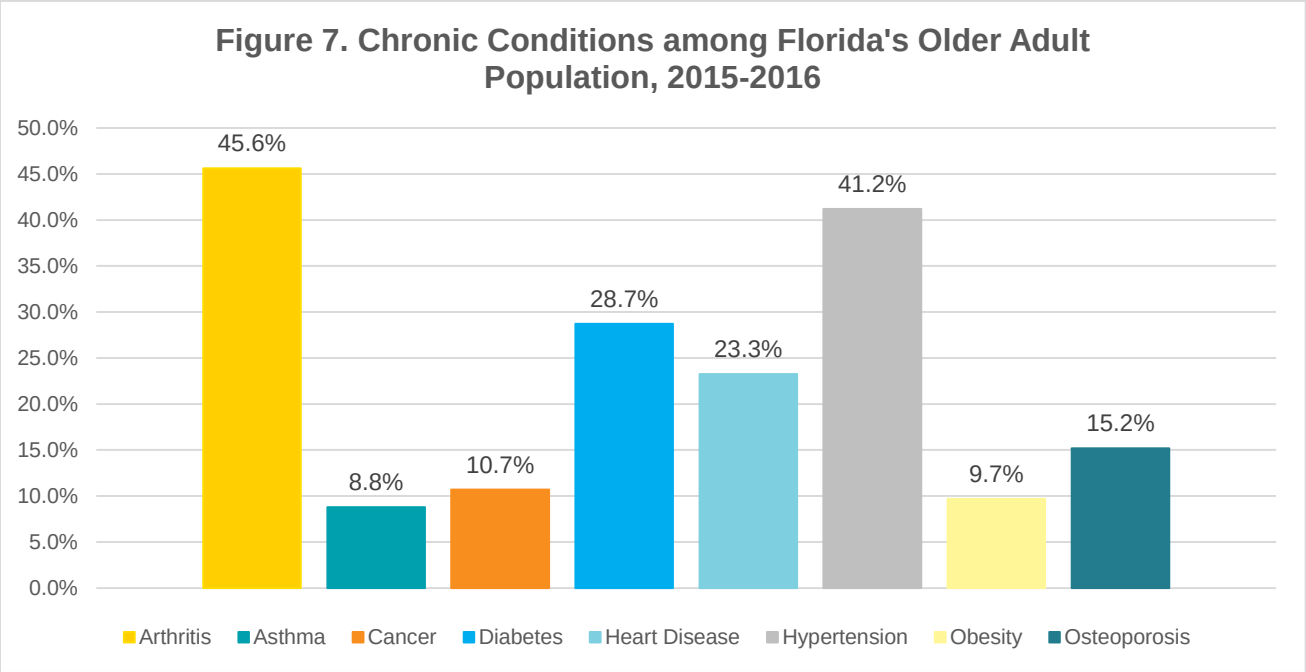
Racial and ethnic disparities exist for insurance status among older adults in Florida (data not shown). Those identifying as non-Hispanic White had the highest percent with reported private insurance while those identifying as "Other Race" had the highest percent with no reported

[12] Dental Services

dental insurance. More than half of non-Hispanic Black and Hispanic respondents indicated public dental insurance (either Medicaid or Medicare).

Chronic Disease Indicators

There is a growing body of evidence that links poor oral health to several common chronic conditions including diabetes, heart disease, and stroke. Furthermore the medications that many older adults take to manage chronic conditions can have side effects detrimental to oral health such as dry mouth. In order to better describe the overall health of older adults in Florida, chronic disease questions were added to the consent form questionnaire (Figure 7).



The most common chronic disease indicators for this population include arthritis (45.6%), hypertension (41.2%), and diabetes (28.7%). This information may be used in future analyses, focusing on the association between chronic disease and various oral health indicators for older adults.

National Status

Comparing the oral health status of Florida's older adults to other states is challenging due to the low number of states completing a BSS for the older adult population, as well as the diverse older adult population surveyed. While 19 states have completed an older adult BSS, such as a survey or pilot screening, many states have not completed a comprehensive BSS. Each state's survey was completed with a different older adult population and some were not representative of the entire population. Some states focused on older adults living in assisted living facilities while others focused on nursing homes.

Florida's first Older Adult Oral Health Screening Project focused on adults attending congregate meal sites. This population was targeted for the first Florida Older Adult BSS due to need and an existing partnership between the Florida Council on Aging, who facilitated contacting congregate meal sites, educating them about the benefits of participating in the project, and increasing the number of initial sites returning a positive consent. Florida nursing homes and assisted living facilities have the potential to be included in a future BSS, with enough time and resources to reach these additional older adult populations.

Limitations

There are several limitations to the information presented from this survey. First, these screenings were conducted without the use of radiographs (x-rays), therefore the findings may differ from those observed by clinicians. Second, this survey was conducted only in congregate meal sites and may not be representative of all older adults in Florida. For example, this excludes those older adults residing in assisted living facilities, nursing homes, or those living alone or with family. In addition, many congregate meal sites reported enrollment rates were higher than the amount of older adults who were present on the screening day to participate in the study; this made achieving consent rates for adequate regional sampling challenging. Lastly, the screeners are trained to be conservative for all BSS indicators, thus the results represented here may be an underrepresentation of the true oral health status of Florida's older adult population.

Recommendations

Community-based strategies that promote preventive oral health services are recommended to help adults maintain a good oral health status across the life span. Preventive dental services and measures include dental sealants, the optimal use of fluoride, timely examinations and clinical services, and increased research into preventing oral diseases and promoting oral health among adults.[13]

Additional opportunities for improving the oral health status specific to Florida's older adult population include:

- Evaluate, address, and overcome barriers that exist in promoting preventive care and delivering restorative and surgical dental services across the life span, specifically for minority racial and ethnic groups.
- Increase dental workforce to provide oral health education and referral sources in Florida congregate meal sites.
- Continue oral health surveillance activities for Florida's older adult population attending congregate meal sites and track progress in the reduction of oral health dipartites.

[13] Public Health and Aging, 2003

- Expand oral health surveillance activities for Florida's older adult population to include nursing homes and assisted living facilities.
- Increase awareness of the oral health needs of this population among primary care and other chronic disease prevention health care practitioners to encourage comprehensive health care models.

References

Association of State and Territorial Dental Directors (ASTDD). (2010). Basic Screening Surveys: An Approach to Monitoring Community Oral Health: Older Adults.

Association of State and Territorial Dental Directors (ASTDD). (2011). The Basic Screening Survey: A Tool for Oral Health Surveillance not Research. Retrieved from: http://www.astdd.org/docs/bss-what-is-oral-health-surveillance-4-26-2011.pdf

Centers for Disease Control and Prevention. (2016). BRFSS 2014. Data query from the BRFSS Prevalence and Trend data website. Retrieved from: http://www.cdc.gov/brfss/brfssprevalence/index.html.

Centers for Disease Control and Prevention. (2013). Oral Health for Older Americans. Retrieved from: http://www.cdc.gov/oralhealth/publications/factsheets/adult_oral_health/adult_older.htm

Centers for Disease Control and Prevention (CDC. (2003). Public health and aging: retention of natural teeth among older adults--United States, 2002. *MMWR. Morbidity and mortality weekly report*, *52*(50), 1226. Retrieved from: https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5250a3.htm

Florida CHARTS. (2016). Florida Population Estimates Query. Retrieved from: http://www.floridacharts.com/FLQuery/Population/PopulationRpt.aspx

Florida Statewide Cancer Registry. (n.d.). Florida Cancer Data System Statistics. Retrieved from: https://fcds.med.miami.edu/inc/statistics.shtml

Isman, B. (2007). Healthy People 2010: Oral Health Toolkit. *National Institute of Dental and Craniofacial Research (NIDCR)*. Retrieved from: http://www.ada.org/en/~/media/ADA/Science%20and%20Research/Files/HP2010_Oral_Health_Toolkit_72004

Medicare. (n.d.). Your Medicare Coverage-Dental Services. Retrieved from: https://www.medicare.gov/coverage/dental-services.html

Oral Health America (OHA). (2016). A State of Decay, Volume III. Retrieved from: http://www.toothwisdom.org/pages/a-state-of-decay

The Oral Cancer Foundation. (2015). Oral Cancer Facts. Retrieved from: http://oralcancerfoundation.org/facts/ .

State of Florida Department of Elder Affairs. (n.d.). Congregate Meal and Nutrition Sites. Retrieved from: http://elderaffairs.state.fl.us/doea/meals.php

US Department of Health and Human Services. (2000). Oral Health in America: A Report of the Surgeon General-- Executive Summary . Rockville, MD: US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health.

Appendices

Appendix A: Consent Form Questionnaire-Page 1

Mission:
To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.

Florida HEALTH

Vision: To be the **Healthiest State** in the Nation

Rick Scott
Governor

John H. Armstrong, MD, FACS
State Surgeon General & Secretary

Older Adult Oral Health Screening Project Consent Form and Questionnaire

Please complete this form and return it to your Site Director. Thank you.

Name: _____ Age: _____

Gender: Male _____ Female _____ Unspecified _____

____ **Yes, I give permission** for my mouth to be screened.

____ **No, I do not give permission** for my mouth to be screened.

_____ _____
Signature: Date:

The purpose of this screening is to collect data. You will receive a screening results form for use by your "dentist at a prompt subsequent examination." Please note: "diagnosis of caries, soft tissue disease, oral cancer, temporomandibular joint disease (TMJ), and dentofacial malocclusions can only be completed by a dentist in the context of delivering a comprehensive dental examination," in accordance with Section 466.0235, Florida Statutes.

Please answer the following questions to help us learn more about your dental care. Your answers will remain private and will not be shared. If you do not want to answer the questions you may still give permission to have your mouth screened.

1. During the past 6 months did you have a toothache more than once when biting or chewing?

□ No □Yes □ Don't know/don't remember

2. How long has it been since you last visited a dentist? Include all types of dentists, all other dental specialists, as well as dental hygienists. (Check one.)

□ 6 months or less
□ More than 6 months, but not more than 1 year ago
□ Never have been to the dentist
□ More than 1 year ago
□ Don't know/don't remember

3. Is the dentist who completed your last examination also providing follow-up care for you?

□ No □Yes □ Don't know/don't remember

4. What was the main reason that you last visited a dentist? (Check all that apply.)

□ Went in for check-up, examination or cleaning
□ Was called in by the dentist for check-up, examination or cleaning
□ Something was wrong, bothering or hurting
□ Went for treatment of a condition that dentist discovered at earlier check-up or examination
□ Other
□ Don't know/don't remember

Florida Department of Health
Division of Community Health Promotion• Bureau of Family Health Services
4052 Bald Cypress Way, Bin A-14 • Tallahassee, FL 32399-1721
PHONE: 850/245-4100 • FAX 850/414-7552

www.FloridaHealth.gov
TWITTER:HealthyFLA
FACEBOOK:FLDepartmentofHealth
YOUTUBE: fldoh
FLICKR: HealthyFla
PINTEREST: HealthyFla

Appendix A: Consent Form Questionnaire-Page 2

5. If you haven't seen a dentist in the last year, what was the main reason? (Check all that apply.)

- ☐ Fear/dislike going
- ☐ Do not have/know a dentist
- ☐ No reason to go
- ☐ Have not thought of it
- ☐ Cost
- ☐ No transportation
- ☐ Other things are more important/needed
- ☐ Don't know/don't remember

6. Do you have any kind of insurance that pays for some or all of your DENTAL CARE? Include health insurance obtained through employment or purchased directly, as well as government programs like Medicaid.

- ☐ No
- ☐ Medicaid
- ☐ Private Insurance
- ☐ Medicare
- ☐ Don't know
- ☐ Other

7. Which of the following best describes your race/ethnicity? (Check all that apply.)

- ☐ White
- ☐ Hispanic/Latino
- ☐ American Indian/Alaska Native
- ☐ Multi-racial
- ☐ Black/African American
- ☐ Asian
- ☐ Native Hawaiian/Pacific Islander
- ☐ Other _____

8. What is the highest degree or level of school that you have completed?

- ☐ Less than High School Diploma
- ☐ Some College, no Degree
- ☐ Bachelor's Degree
- ☐ Professional Degree
- ☐ High School Diploma
- ☐ Associate's Degree
- ☐ Master's Degree
- ☐ Doctoral Degree

9. Do you have to avoid eating some foods because of problems with your teeth or dentures?

- ☐ No
- ☐ Yes
- ☐ I avoid some foods due to other mouth problems

10. Do you have any history of chronic diseases? (Check all that apply.)

- ☐ Arthritis
- ☐ Cancer
- ☐ Heart Disease
- ☐ Obesity
- ☐ Asthma
- ☐ Diabetes
- ☐ Hypertension
- ☐ Osteoporosis

THANK YOU FOR PARTICIPATING IN THE
"Older Adult Oral Health Screening Project!"

Appendix B: Older Adult Oral Health Screening Form

Mission:
To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.

Florida HEALTH

Vision: To be the **Healthiest State** in the Nation

Rick Scott
Governor

John H. Armstrong, MD, FACS
State Surgeon General & Secretary

Older Adult Oral Health Screening Form

SITE INFORMATION

Name or Code	Screen Date	Screener Initials
	☐☐/☐☐/☐☐	

DEMOGRAPHIC INFORMATION

Age	Gender	Race/Ethnicity
☐☐☐	☐ 1 = Male 2 = Female 3 = Unspecified 99=Unknown	☐ 1 = White 2 = Black 3 = Hispanic 4 = Asian 5=AI/AN 6= Pacific Islander 7=Multi-racial 9=Unknown

ORAL SCREENING INFORMATION

1. Do you have a removable upper denture? ☐ 0 = No 1 = Yes 99=Unknown	*If Yes* →	1a. Do you usually wear your upper denture when you eat? ☐ 0 = No 1 = Yes 99=Unknown
2. Do you have a removable lower denture? ☐ 0 = No 1 = Yes 99=Unknown	*If Yes* →	2a. Do you usually wear your lower denture when you eat? ☐ 0 = No 1 = Yes 99=Unknown

Ask participant to remove dentures and remove excess oral debris if necessary.

3. # of Natural Teeth ☐☐ Range: 0-32 99=Unknown Include root fragments	4. Treatment Urgency ☐ 0 = No obvious problem – next scheduled visit 1 = Early care – within next several weeks 2 = Urgent Care – within next week – pain or infection 99=Unknown
5. Untreated Decay ☐ 0 = No 1 = Yes 9 = Edentulous 99=Unknown	6. Root Fragments ☐ 0 = No 1 = Yes 9 = Edentulous 99=Unknown
7. Need for Periodontal Care ☐ 0 = No 1 = Yes 9 = Edentulous 99=Unknown	8. Suspicious Soft Tissue Lesions ☐ 0 = No 1 = Yes 99=Unknown
9. Comments:	

Florida Department of Health
Division of Community Health Promotion• Bureau of Family Health Services
4052 Bald Cypress Way, Bin A-14 • Tallahassee, FL 32399-1721
PHONE: 850/245-4100 • FAX 850/245-4047

www.FloridaHealth.gov
TWITTER:HealthyFLA
FACEBOOK:FLDepartmentofHealth
YOUTUBE: fldoh
FLICKR: HealthyFla
PINTEREST: HealthyFla

Appendix C: Screening Results Letter

Mission:
To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.

Rick Scott
Governor

John H. Armstrong, MD, FACS
State Surgeon General & Secretary

Vision: To be the **Healthiest State** in the Nation

Older Adult Oral Health Screening Results

FLORIDA DEPARTMENT OF HEALTH

Dear: _____

As part of the *Older Adult Oral Health Screening Project*, your teeth and mouth were screened today. No x-rays were taken and the screening does not replace an in-office dental examination by your dentist. The results of the screening indicate that:

_____ You appear to have no obvious dental problems but should continue to have routine examinations by your dentist.

_____ You have a tooth, or teeth, which should be evaluated by your dentist to determine if treatment is needed.

_____ You have a tooth, or teeth, which appear to need immediate care and should contact your dentist as soon as possible for a complete evaluation.

If you do not have a dentist or you need help with arranging dental care, please contact your County Health Department on the top of the attached list of providers for your area.

Florida Department of Health
Division of Community Health Promotion• Bureau of Family Health Services
4052 Bald Cypress Way, Bin A-14 • Tallahassee, FL 32399-1721
PHONE: 850/245-4100 • FAX 850/245-4047

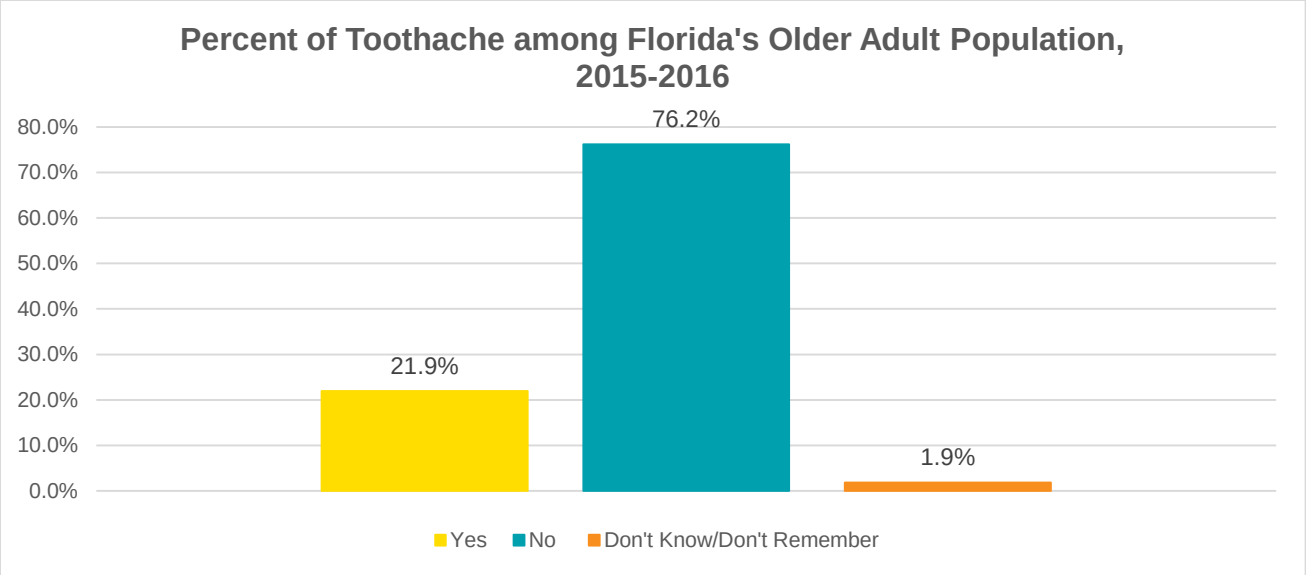
www.FloridaHealth.gov
TWITTER:HealthyFLA
FACEBOOK:FLDepartmentofHealth
YOUTUBE: fldoh
FLICKR: HealthyFla
PINTEREST: HealthyFla

Appendix D: Other Indicators from Questionnaire

The following questions were asked on the questionnaire and consent form for the Florida Older Adult Oral Health Screening Project (Appendix A). While supplemental to the BSS, these questions provide additional information about the current oral health status and oral health history of the older adult population.

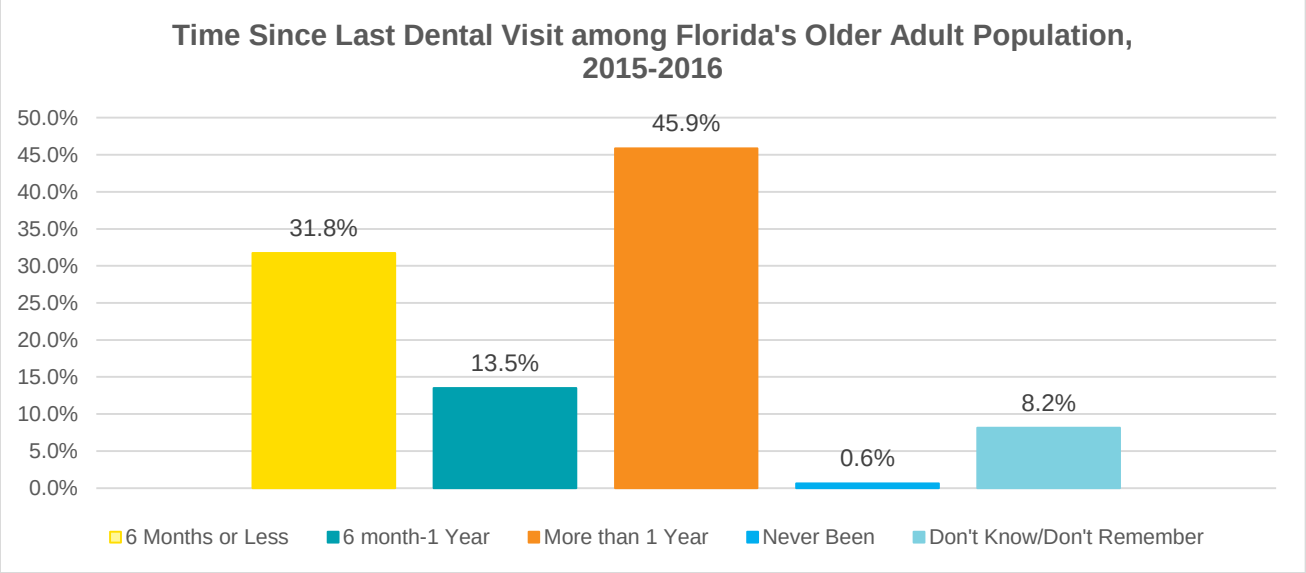
Toothache

Question: During the past six months, did you have a toothache more than once when biting or chewing?



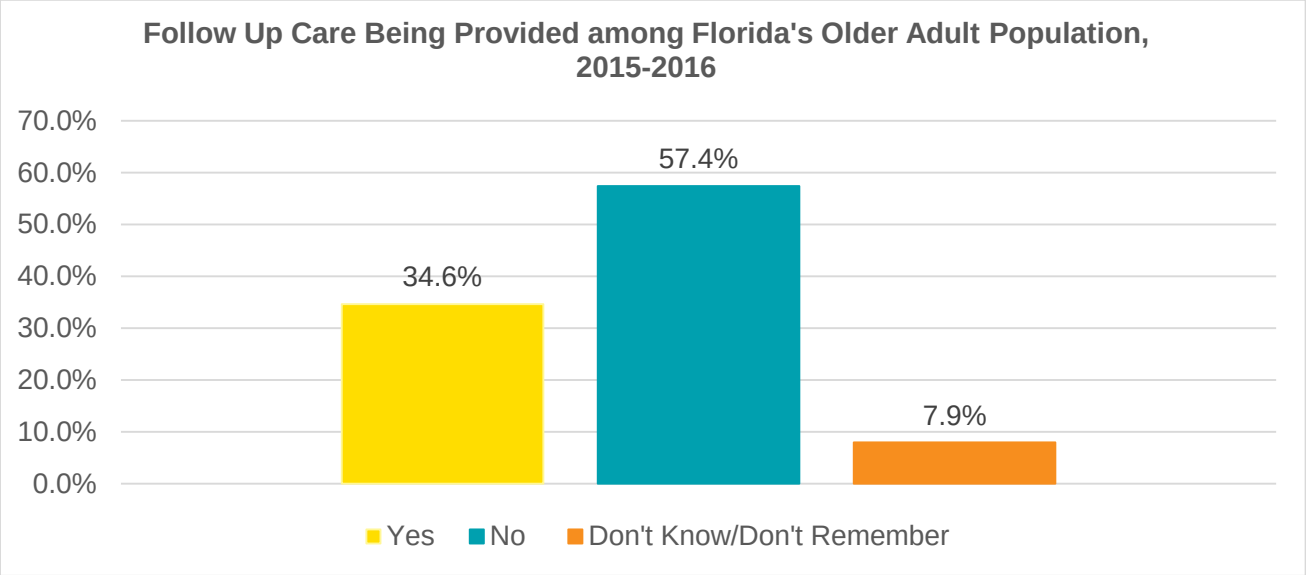
Last Dental Visit

Question: About how long has it been since you last visited a dentist?



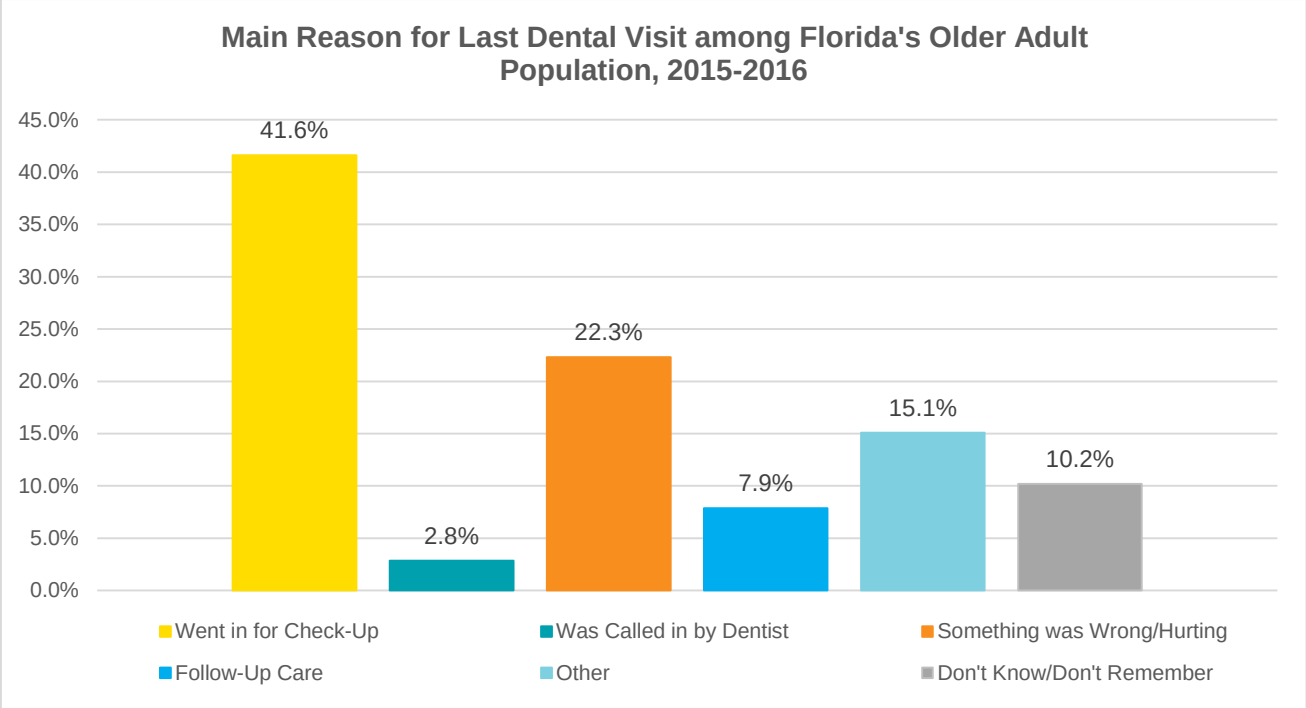
Follow-Up Care

Question: Is the dentist who completed your last examination also providing follow-up care for you?



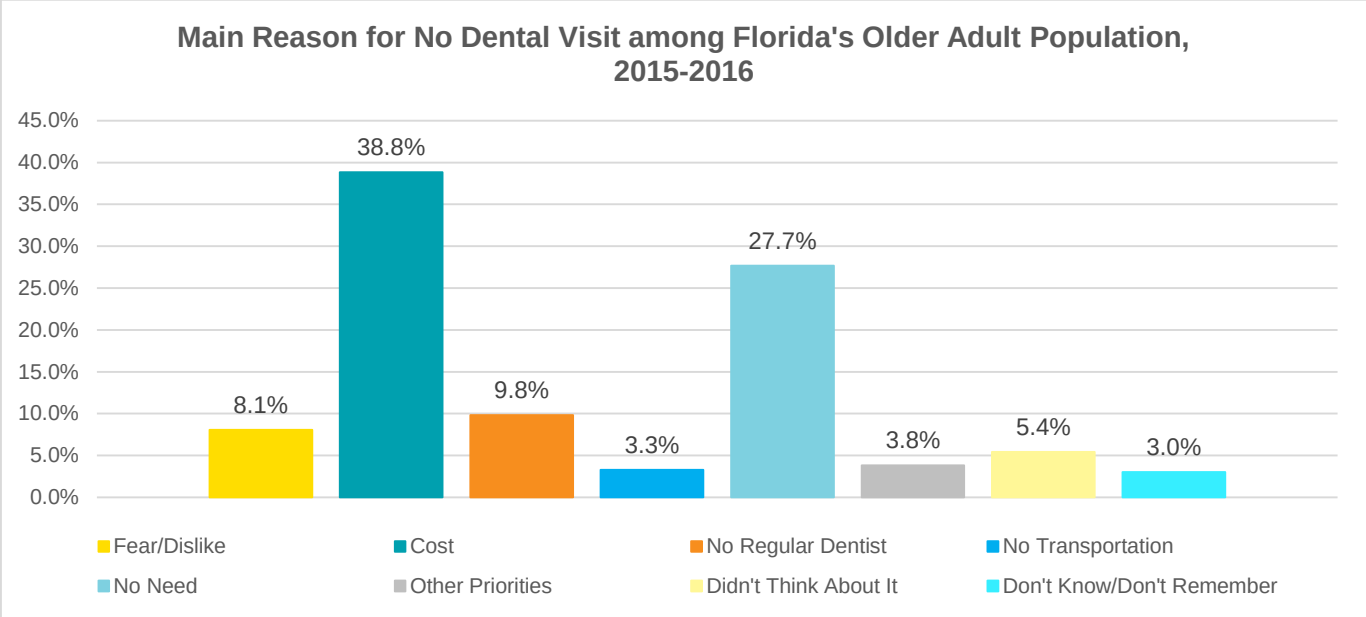
Reason for Last Dental Visit

Question: What was the main reason that you last visited a dentist?



Reason for Not Seeking Care

Question: If you haven't seen a dentist in the last year, what was the main reason?



Avoiding Food Due to Teeth or Dentures

Question: Do you have to avoid eating some foods because of problems with your teeth or dentures?