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EXECUTIVE SUMMARY

In day-to-day clinical practice, dentists typically work collaboratively with dental hygienists and dental assistants. Dental hygienists provide a number of services for patients, including assessing their oral health condition, taking and developing dental radiographs (x-rays), removing deposits from tooth surfaces, applying topical fluorides and sealants to the teeth, teaching patients proper oral hygiene techniques, and counseling patients about nutrition and its impact on oral health. Like dentists, dental hygienists may work in private dental offices or in publicly supported health access settings.

Florida statutes authorize licensed dental hygienists to provide educational, preventive, and therapeutic dental services and related procedures. Some services may be provided without supervision of a dentist, while others require direct, indirect, or general supervision. Legislation recently enacted in Florida (ss. 466.003, 466.023, 466.0235, and 466.024, F. S.) expands the scope and area of practice of dental hygienists by authorizing hygienists to provide certain specified services unsupervised in health access settings. Licensed dental hygienists may apply fluorides, provide educational programs, instruct a patient in oral hygiene care, and perform other services without the supervision of a dentist. The recent legislation may serve to expand the role of dental hygienists as oral healthcare providers.

Florida statute and administrative rules require renewal of dental hygiene licenses every two years, with the most recent period ending on February 28, 2010. The Florida Department of Health prepared and administered a survey of dental hygienists to coincide with license renewal. A total of 11,793 dental hygienists renewed an active Florida license during the most recent renewal period. Of these, 93% (10,963) responded to the survey. Respondents closely matched the profile of all active dental hygienists in Florida with respect to gender, race/ethnicity, and age.

Among dental hygienists renewing an active license who responded to the question concerning Florida practice, more than three-quarters (78.5%) reported practicing in Florida. These hygienists can be characterized as follows.

- 61% were between the ages of 30 and 49 years, with an average age of 44.
- 97% are female and 3% are male.
- 94% are either white (76%) or Hispanic (18%). The remaining 6% are Asian (2%), black (2%), or of another race/ethnicity (2%). Hispanic, black, and Asian hygienists tend to be younger than white hygienists.
- 70.9% trained in a Florida program; 20.5% trained out of state; and 8.6% trained in a foreign country.

- More than half (51.6%) of those trained in Florida graduated from Miami-Dade College, St. Petersburg College, Palm Beach State College, or Santa Fe College.
- 86.1% worked in a general (non-specialty) dentistry practice, and 13.9% worked in a practice with at least some specialty services, including dental public health.
- 95% worked in private office settings, predominantly solo practice offices (65.7%). The remaining 5% generally worked in “safety net” settings that serve individuals who otherwise might have lacked access to dental care.
- 27.6% had more than one employer or employment setting.
- 23.9% were seeking additional dental hygiene employment. 41.8% of those seeking additional employment desired between one and eight more hours per week.
- 85.2% worked nine or more months in the previous year.
- 53.9% worked full-time (more than 30 hours per week), and 46.1% worked part-time (up to 30 hours weekly). 22.7% worked 20 or fewer hours per week.
- Typically higher percentages of dental hygienists work full-time in areas with high counts of residents per dental hygienist.
- 84.6% of hygienists working full-time in a general or public health practice saw between 26 and 50 patients per week.
- 66.7% worked exclusively in their residence county, while 17.6% worked exclusively outside their county of residence.
- 54.8% reported no difficulty in obtaining employment in their profession. Among hygienists reporting difficulties, the most commonly cited issue was obtaining full-time employment (21.1%).
- Almost two-thirds (64.4%) who worked in a private office setting reported no volunteer dental services within the previous two years. By contrast, 66.7% of hygienists working in safety net settings reported some volunteer dental service.
- 96.2% of Hispanic hygienists reported speaking a language other than English; for white hygienists, the percentage was 8.1%. Spanish was the most frequently reported non-English language.
- 9.8% plan to retire within the next five years.
- Projections through 2050 indicate that new dental hygienists entering the profession offset attrition associated with retirement of hygienists.

Among dental hygienists renewing an active license who responded to the survey, 21.5% reported not practicing in Florida. Some of the major characteristics that distinguish these hygienists from hygienists who practice in Florida are as follows.

- 56.6% are licensed in another state, compared to 15.2% of hygienists practicing in Florida.
- 56% reside out of state, compared to 1.2% of hygienists practicing in Florida.
- 48.5% received a dental hygiene degree from a Florida school, compared to 70.9% of hygienists practicing in Florida.

Among survey respondents not practicing in Florida, one in three (37.6%) reported plans to relocate to Florida within four years. Among hygienists 20–29 years of age practicing out of state, nearly half (48.4%) reported plans to relocate to Florida.

INTRODUCTION

In January 2008, former Florida Surgeon General Ana M. Viamonte Ros, MD, MPH, established the Oral Healthcare Workforce Ad Hoc Advisory Committee to evaluate and address the complex range of oral health workforce concerns that were impacting the state's ability to recruit and retain dental providers, especially for serving disadvantaged and underserved populations. Later that year, in December, the Public Health Dental Program at the Department of Health convened an Oral Health Workforce Workgroup to continue the work of the Ad Hoc Committee by refining and advancing its findings and recommendations into a working plan. The Workgroup developed a realistic strategic plan to improve the State's oral health workforce and service delivery infrastructure. One of the eight strategic goals called for the improvement of data collection in part through the administration of dentist and dental hygienist workforce surveys. This report presents findings from the dental hygienist workforce survey. The report also includes a detailed description of the history and development of the survey and the actual survey instrument.

OVERVIEW: SURVEY METHODS, REPORTING, AND LIMITATIONS

The Florida Department of Health report presents the data from the 2009 – 2010 workforce survey of dental hygienists. The survey was designed to obtain information concerning Florida's dental hygienists that could be used to inform and shape healthcare policies. Florida statute and administrative rules require renewal of dental hygiene licenses every two years, with the most recent period ending on February 28, 2010. The Florida Department of Health prepared and administered the first survey of the dental hygienist workforce (see Appendix A) to coincide with this biennial license renewal period.

Respondents could complete the web-based survey directly on-line or by submitting a printed survey with or without their license renewal paperwork. Paper surveys were entered into the web-based system for analysis along with those that were submitted directly on-line. The survey consisted of 19 core questions on demographics, education and training, practice characteristics and status, specialties, retention, and access to oral healthcare in Florida. For each of these topic areas, responses of dental hygienists were compared to those of dentists who completed the 2009 – 2010 Workforce Survey of Dentists Licensure data maintained by the Department of Health and other data sources provided additional material for the analysis.

A total of 12,058 dental hygienists renewed an active or non-active Florida license during the 2009 – 2010 biennial license renewal period. Of 11,793 dental hygienists who renewed an active license, 90% (10,624) responded to the survey and provided information on their current status of practicing in Florida. The findings presented are based on data from 8,335 active-licensed respondents who practice in Florida and 2,289 active-licensed respondents who do not practice in

Florida. Limitations of the survey are that data are self-reported and are only from one two-year licensure period. Surveys will be conducted biennially and therefore this initial report will provide a benchmark for future information on the workforce of dental hygienists.

A detailed statement of the survey methods is presented in Appendix B.

SYNOPSIS OF FINDINGS

In 2009, the Florida Department of Health developed a workforce survey for dentists and dental hygienists. The survey was administered on a voluntary basis in conjunction with biennial renewal of dental and dental hygiene licenses for which the deadline was February 28, 2010. This report focuses primarily on findings for dental hygienist respondents. A separate report has been published regarding findings for respondent dentists. Responses are self-reported. Ninety percent of dental hygienists with an active Florida license responded to the survey whether or not they practiced in the state. Respondents closely matched the profile of all active dental hygienists in Florida with regard to gender, race/ethnicity, and age.

Dentists currently practicing in Florida do not resemble the composition of the state's population with respect to gender and race/ethnicity. While Florida's population is about evenly split by gender, nearly all of Florida's dental hygienists are female (97%). There was no evidence of a gender-linked demographic change in the profession: females outnumbered males in all age groups. Racial and ethnic differences also exist. Hispanics and African-Americans are under-represented in the dental hygiene workforce. Hispanics constitute 20.5% of the state's adult population and about 18% of active dental hygienists. African-Americans constitute 14.8% of the state's adult population and only 2.0% of Florida's dental hygienists.

The retirement plans of this generally young workforce do not appear to have important ramifications in the near future. Of respondents who practice in Florida, 61% were between the ages of 30 and 49 years (mean age= 44 years) and approximately 70% were younger than 50 years. Based on survey responses, roughly 10% (n=803) of Florida's currently practicing workforce plan to retire within the next five years. Of this group, 45.8% are less than 50 years of age. Despite this, the large majority of respondents who do not plan to leave the profession in five years (74% of 7,406 respondents) are less than 50 years of age.

Survey findings suggest no potential reduction in the size of the dental hygienist workforce over the next several decades. Projections through 2050 indicate that new dental hygienists entering the profession more than offset attrition associated with retirement. This assumes that current entry levels are sustained and plans for retirement do not increase. The statewide projection may not apply to areas within Florida that have few dentists currently practicing. For example, certain northern Florida counties with small, largely rural populations may be much more

susceptible to an adverse impact from the retirement of dental hygienists than counties in other parts of the state.

An overwhelming majority (95%) of respondents who currently practice in Florida, practice in a private office setting. Most frequently, the office is a solo practice (65.7%), but about 30% work in a group practice. Respondents who practice in non-private office settings (5%) generally practice in government-operated or government-supported settings. These settings are intended either for select populations (such as state correctional inmates, veterans, or active military personnel) or for low income clients (county health departments, academic institutions, community health centers, federally qualified health centers, and other state government clinical settings).

Approximately 86% of survey respondents reported their practice type as general dentistry not combined with any specialty. Another 5.1% reported practice of a single specialty other than dental public health. Dental public health was the practice type of the smallest group, 1.8%. The remaining 7% represented some combination of general practice, public health practice, and another specialty practice or practices. With regard to the geographic distribution of dental hygienists working with specialists within Florida, the common pattern is the presence of dental hygienists in major metropolitan areas and the lack of dental hygienists working with specialists in many central Panhandle counties of Florida. Residents requiring services may face substantial travel distances, particularly for dental hygienists working in some specializations such as orthodontics and dentofacial orthopedics, oral and maxillofacial surgery, endodontics, and pediatric dentistry.

The uneven geographic distribution of dental hygienists in Florida is not confined to specialists. Generally, dental hygienists are disproportionately concentrated in the more populous areas of the state, particularly the metropolitan areas and coastal counties of southern Florida. With regard to residents-to-dentist hygienist ratios, many of these counties tend to have better availability of dental hygienists than do other areas of Florida. Approximately 73% of the state's residents live in counties with the highest availability and 7% live in the counties with the lowest.

With regard to practice time, approximately one-half (51.3%) of survey respondents work 31 to 40 hours per week, while an additional 2.6% exceed 40 hours weekly. Thirty-one or more hours per week was defined as full-time work. Approximately 46% practiced dental hygiene part-time (<31 hours per week), with the majority of these working 21 to 30 hours weekly. Less than a quarter (23%) of respondents worked fewer than 21 hours per week.

Patterns of part-time practice may vary by gender and age. For most age groups, male respondents practicing in Florida reported that they are more likely to work full-time than female respondents. The exceptions are for the youngest (20-29 years) and oldest (70-79) age groups but these particular findings should be

interpreted with caution given the small number of respondents in these age groups.

Among survey respondents with an active Florida license, 21.5% reported that they do not currently practice in the state. Two characteristics that most strongly distinguish non-practicing dental hygienists from those who practice: non-practicing respondents are more likely to have an out-of-state address on file with the Department of Health and they are more likely to hold a dental hygiene license for Florida and another state. Among the non-practicing respondents, nearly 38% reported plans for future practice in the state. This equates to about 870 dental hygienists. This group combined with dental hygienists whose current licensure type does not allow practice creates a pool exceeding 2,000 dental hygienists who could potentially grow the current workforce in the future.

Many different barriers may block access to oral healthcare, including lack of knowledge or motivation, phobias, poverty, language or cultural differences, disabilities, and lack of an available provider. Different barriers may require different remedies. Among the barriers, poverty may be the most tangible and pervasive. The impact of poverty on access to oral health services among underserved populations can be mitigated through volunteer work. Dental hygienists in safety-net settings tend to provide more volunteer services than do dental hygienists in private office settings. This pattern is reversed for dentists as indicated in the 2010 Workforce Report of Dentists. Dental hygienists who work in either safety-net or private office practices provide volunteer services most frequently at school events.

The provision of services is affected by the economics of oral healthcare. Like any other small business, a private dental practice remains viable only as long as its revenues cover its costs. Among survey respondents, 95% of dental hygienists and nearly 93% of dentists work in the private sector. Thus, the provision of dental services in Florida rests largely with thousands of small, self-supported businesses. Market forces of supply and demand will limit the number of these businesses and govern the areas where they are viable. Services provided or paid by the public sector may face even tighter constraints as elected officials establish spending priorities in the face of strained federal and state budgets. In either instance, limitations placed on available resources constrain delivery of services the workforce provides to the population of Florida.

FINDINGS OF THE 2009 – 2010 WORKFORCE SURVEY OF DENTAL HYGIENISTS

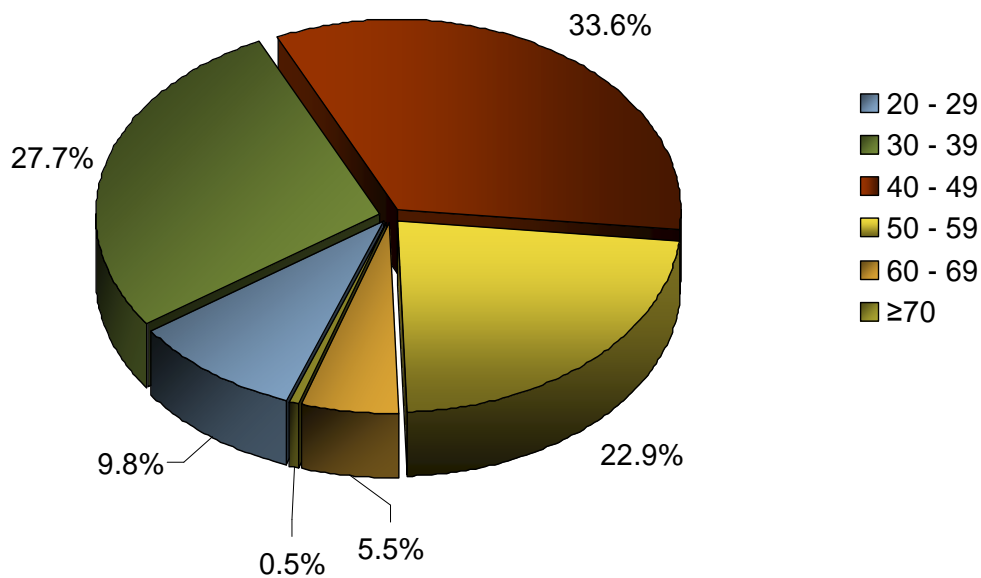
SECTION 1: DEMOGRAPHICS

Dental Hygienists Practicing in Florida – Demographics

Summary: The majority of respondents with active licenses were between the ages of 30-49 years, female, and white.

The ages of all respondents ranged from 21 to 85 years with the majority (61%) between the ages of 30 – 49 years (See Figure 1.1). The overall mean age was 43.9 years.

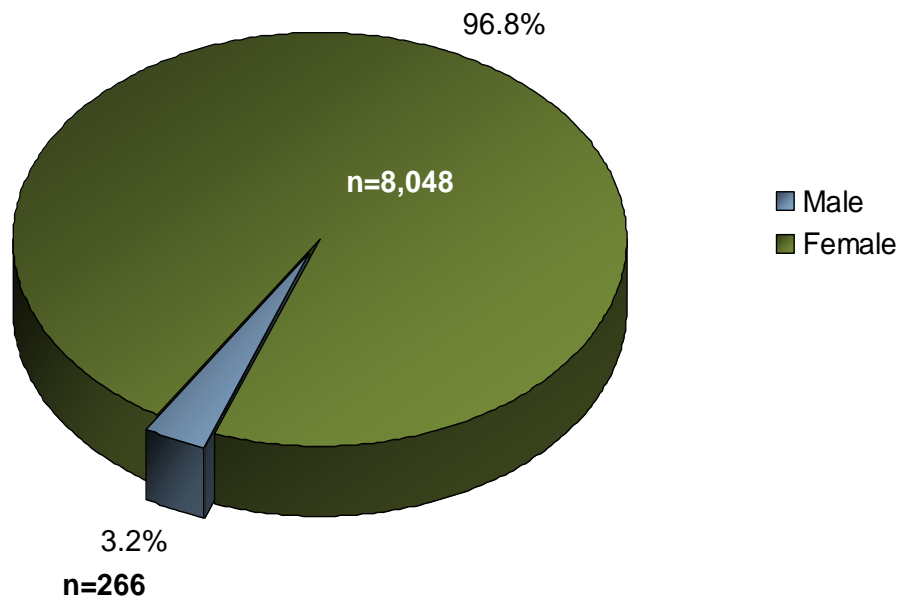
Figure 1.1. Age Distribution of Respondents Practicing in Florida



Source: Workforce Survey of Dental Hygienists, 2009-10
*Percentages follow the order of the legend in a clockwise direction.

Ninety-seven percent of respondents were female (Figure 1.2) and three percent male.

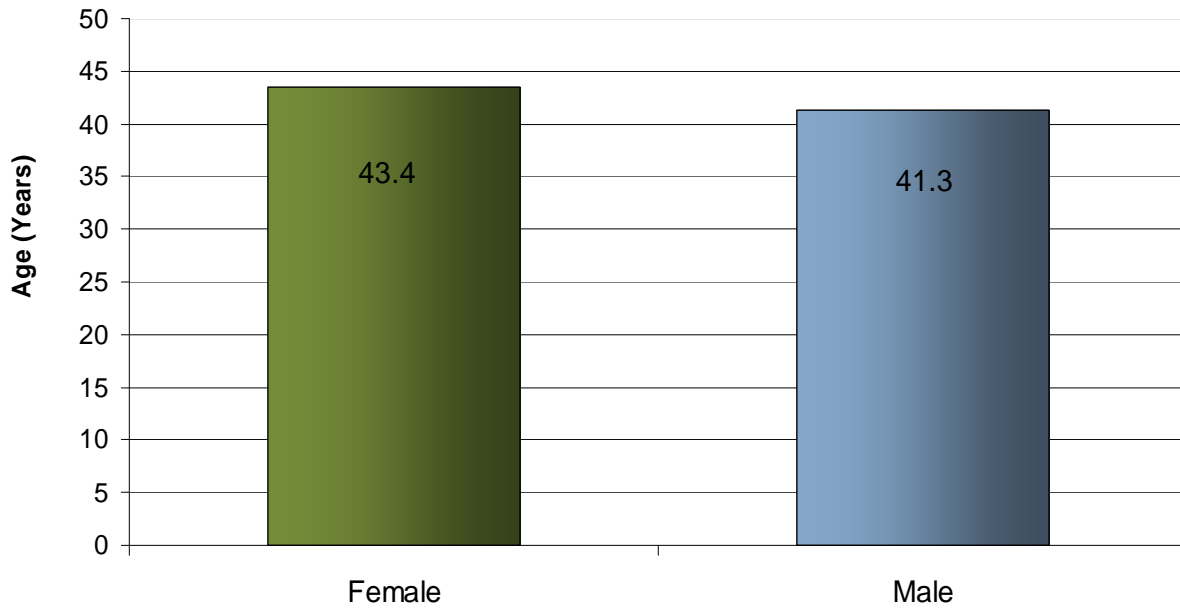
Figure 1.2. Gender Distribution of Respondents Practicing in Florida



Source: Workforce Survey of Dental Hygienists, 2009-10
*Percentages follow the order of the legend in a clockwise direction.

The mean ages for respondents were 43.4 years for females and 41.3 years for males (Figure 1.3).

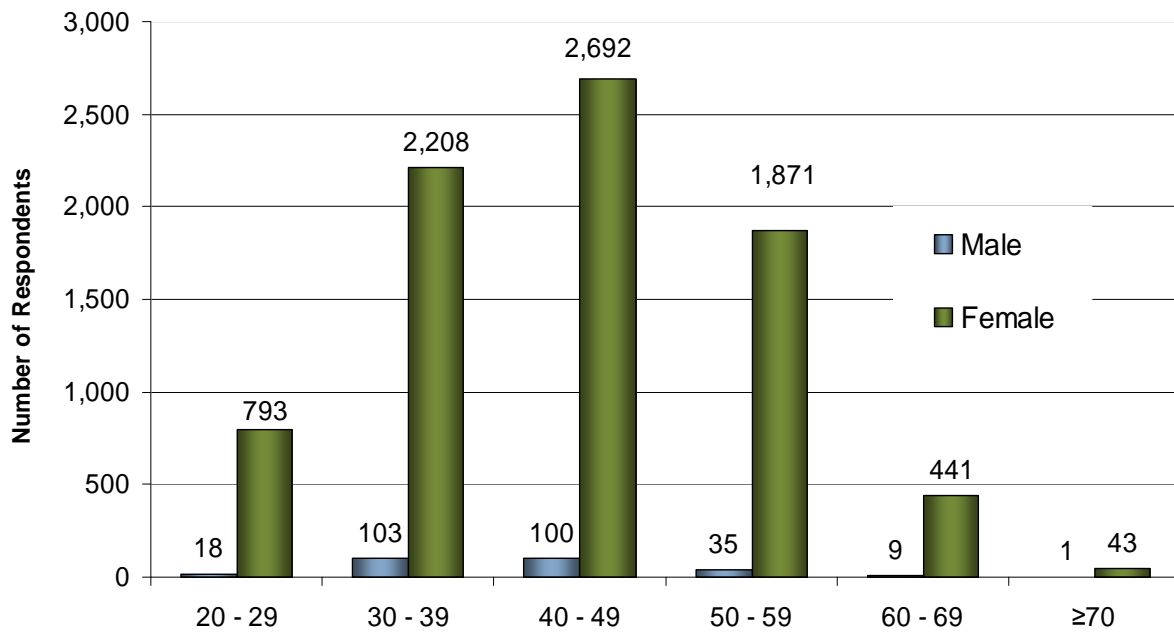
Figure 1.3. Average Age by Gender for Respondents Practicing in Florida



Source: Workforce Survey of Dental Hygienists, 2009-10

The gender distribution of practicing hygienists did not vary substantially across age groups. Females constituted the majority of practicing dental hygienists for all age groups when compared to male hygienists (Figure 1.4). For both males and females, the contribution of older hygienists to the workforce declined after the age of 49 years.

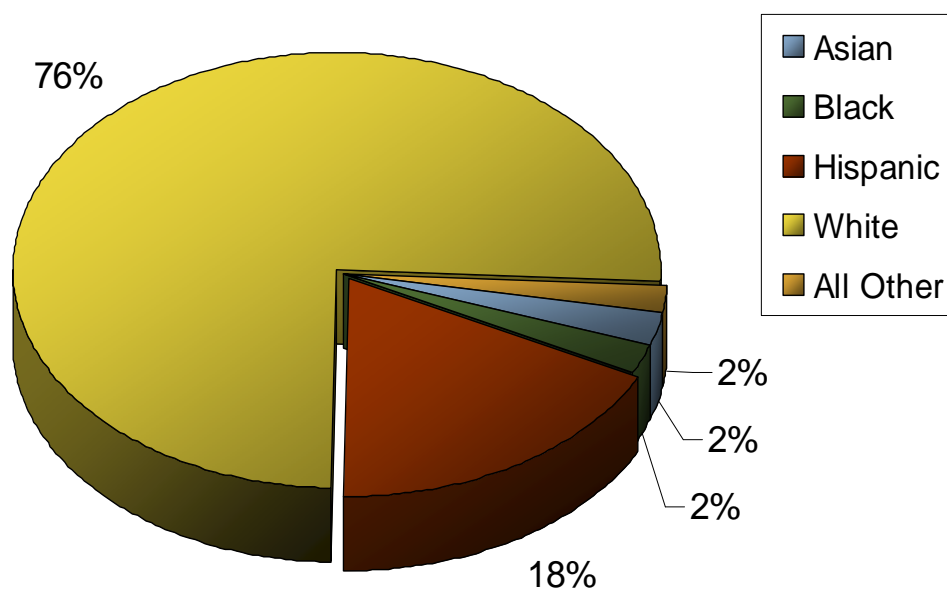
Figure 1.4. Gender by Age Group for Florida's Practicing Dental Hygienists



Source: Workforce Survey of Dental Hygienists, 2009-10

Dental hygienists were predominantly White or Hispanic. White hygienists constituted 76% of Florida's practicing dental hygienists while Asian and Black hygienists each accounted for approximately 2% (Figure 1.5). The percentage of Black dental hygienists is disproportionately low compared to the percentage of Black adult Floridians in 2010 (14.8%). The Hispanic representation among dental hygienists corresponds more closely to the general adult population: 18% among dental hygienists versus 20.5% among Floridians.

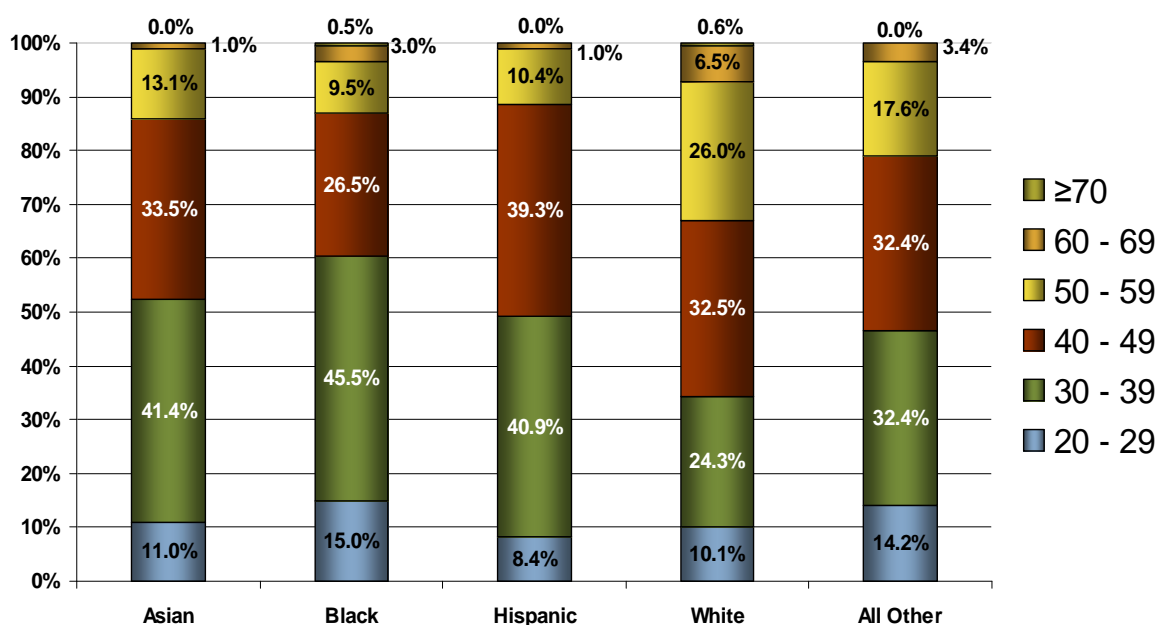
Figure 1.5. Race/Ethnicity of Respondents Practicing in Florida



Source: Workforce Survey of Dental Hygienists, 2009-10
* Percentages follow the order of the legend in a clockwise direction.

The percentage of respondents between the ages of 20 – 29 years by race/ethnicity ranged from a low of 8.4% for Hispanic hygienists to a high of 15.0% for Black hygienists. Conversely, the percentage of respondents 50 years or older ranged from 11.4% for Hispanic hygienists to 32.5% for White hygienists. After 50 years of age, the percentage of Black respondents dropped to 13.0%. White hygienists were generally older while Black hygienists were generally younger. Although Hispanic respondents represented the second most prevalent racial/ethnic group in the survey, they had the lowest percentage of both youngest and oldest practicing respondents.

Figure 1.6. Age Distribution of Respondents Practicing in Florida by Race/Ethnicity



Source: Workforce Survey of Dental Hygienists, 2009-10

Demographics: A Comparison between Dental Hygienists and Dentists Practicing in Florida

Summary: Overall, the workforce of dental hygienists and dentists differed by age and gender but had similar distributions of race and ethnicity.

Dental hygienists were slightly younger than dentists: the mean ages of dental hygienists and dentists were approximately 44 and 49 years, respectively.

The gender distribution of dental hygienists differed substantially from dentists: 97% of female and 3% of male dental hygienists responded compared to 26% of female and 74% of male dentists.

White respondents constituted the largest percentage of practicing dental hygienists and dentists representing 76% and 67%, respectively. The Hispanic population represented the second largest group accounting for approximately 18% for both dental hygienists and dentists. The combined percentages of Asian and Black respondents were lower among dental hygienists at 4% compared to 9% of dentists.

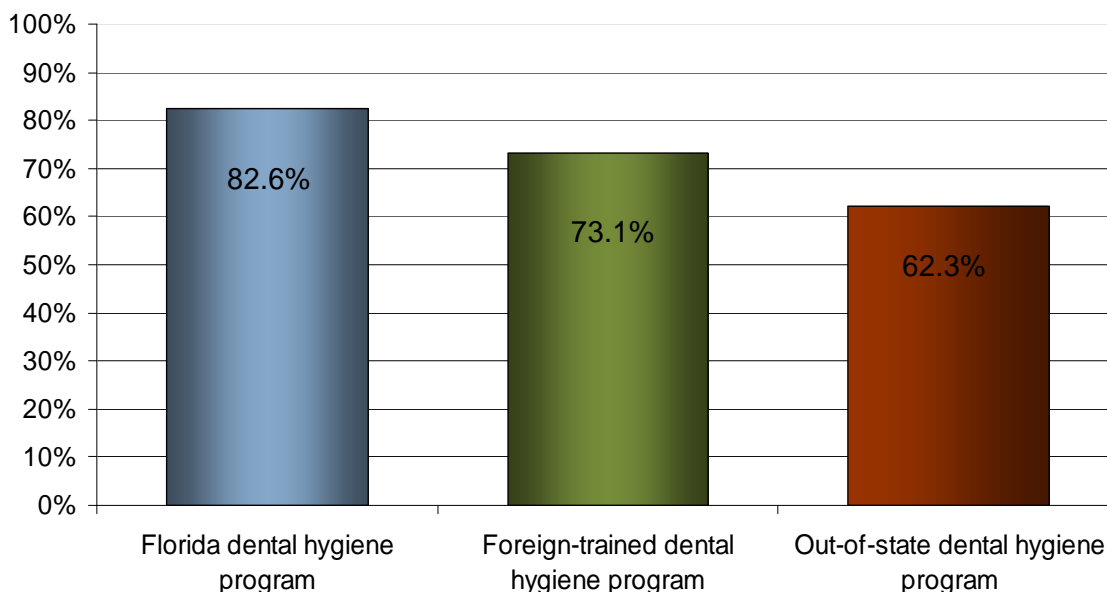
SECTION 2: EDUCATION AND TRAINING

Dental Hygienists Practicing in Florida – Education and Training

Summary: The majority of respondents who practiced in Florida trained at a Florida dental hygiene school. Several of the schools with the highest percentage of survey respondents were located in the southern and northern regions of Florida. Although Palm Beach and Pensacola Junior Colleges had graduates who comprised a relatively high proportion of respondents, less than 80% of their graduates reported practicing dental hygiene in Florida.

Figure 2.1 displays the percent of all respondents requesting an active Florida license who practiced in Florida by the type of program from which they had received a degree. Of all respondents (practicing and non-practicing), 82.6% of those who attended a Florida dental hygiene program reported practicing in Florida, followed by respondents who were trained at a foreign dental hygiene program (73.1%), and finally from an out-of-state dental hygiene program (62.3%).

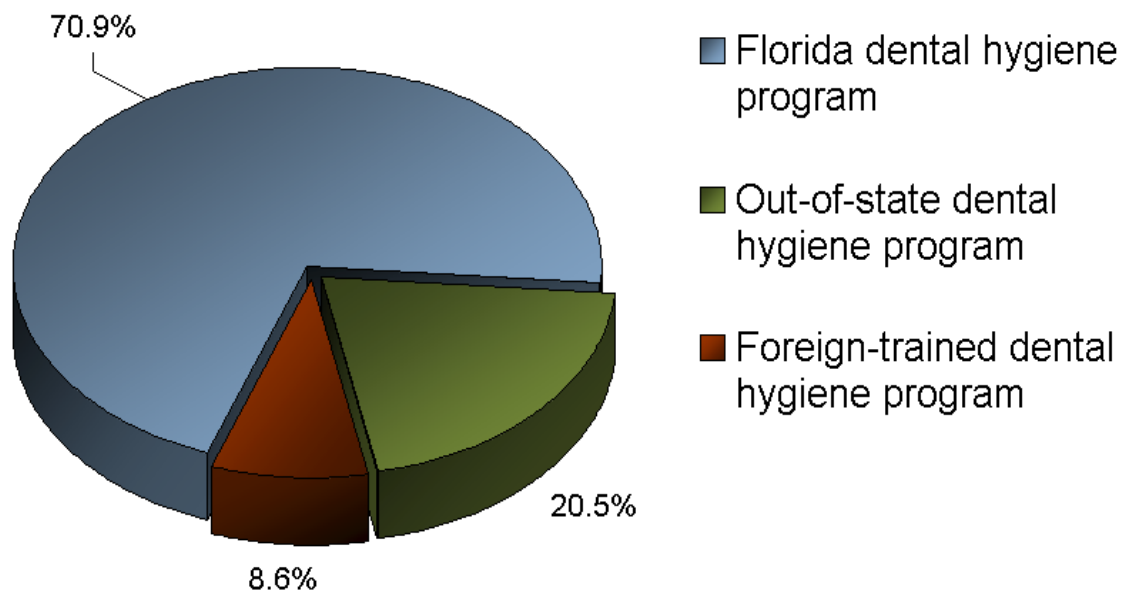
Figure 2.1. Percent of Respondents Requesting an Active License Who Practice in Florida by Type of Program



Source: Workforce Survey of Dental Hygienists, 2009-10

Most practicing dental hygienists trained in Florida. Figure 2.2 portrays the type of dental hygiene program only among survey respondents who practiced in Florida. Of those respondents, 70.9% trained at a Florida dental hygiene school, 20.5% trained at an out-of-state program, and 8.6% trained at a foreign-trained dental program.

Figure 2.2. Dental Hygiene Type of Program among Respondents Who Practice in Florida

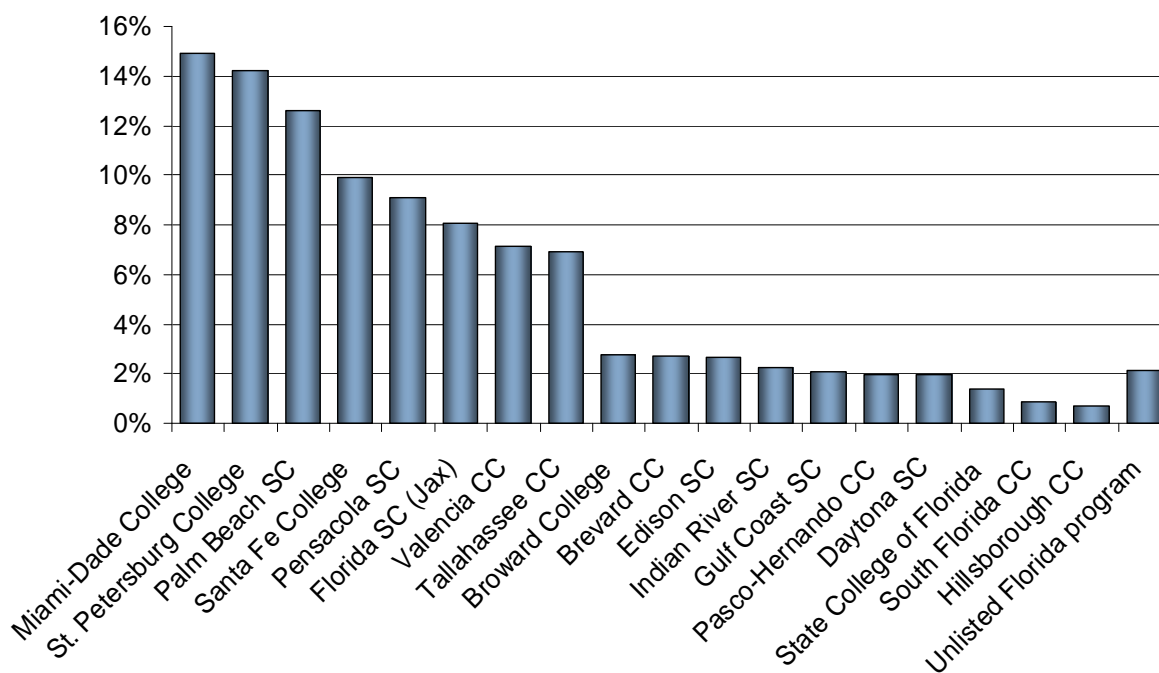


Source: Workforce Survey of Dental Hygienists, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Graduates of Miami-Dade College in South Florida and St. Petersburg College on the West Coast constituted the highest percentages of survey respondents (Figures 2.3 and 2.4). Following in percentage of survey respondents were graduates from Palm Beach State College in South Florida, Santa Fe College in North Florida and then Pensacola State College, which is also located in North Florida.

Figure 2.3. Distribution of Respondents by Florida Dental Hygiene School of Graduation



Source: Workforce Survey of Dental Hygienists, 2009-10
 Note: Abbreviations -SC: State College; and CC: Community College

Dental Hygienists Practicing in Florida – Education and Training by County

Summary: Dental hygiene programs are located throughout the state with the West Coast and South Florida regions having the most with a total of four programs. The Atlantic Coast region has the highest percentage of respondents who graduated and practice in the same region but the lowest number of total practicing respondents.

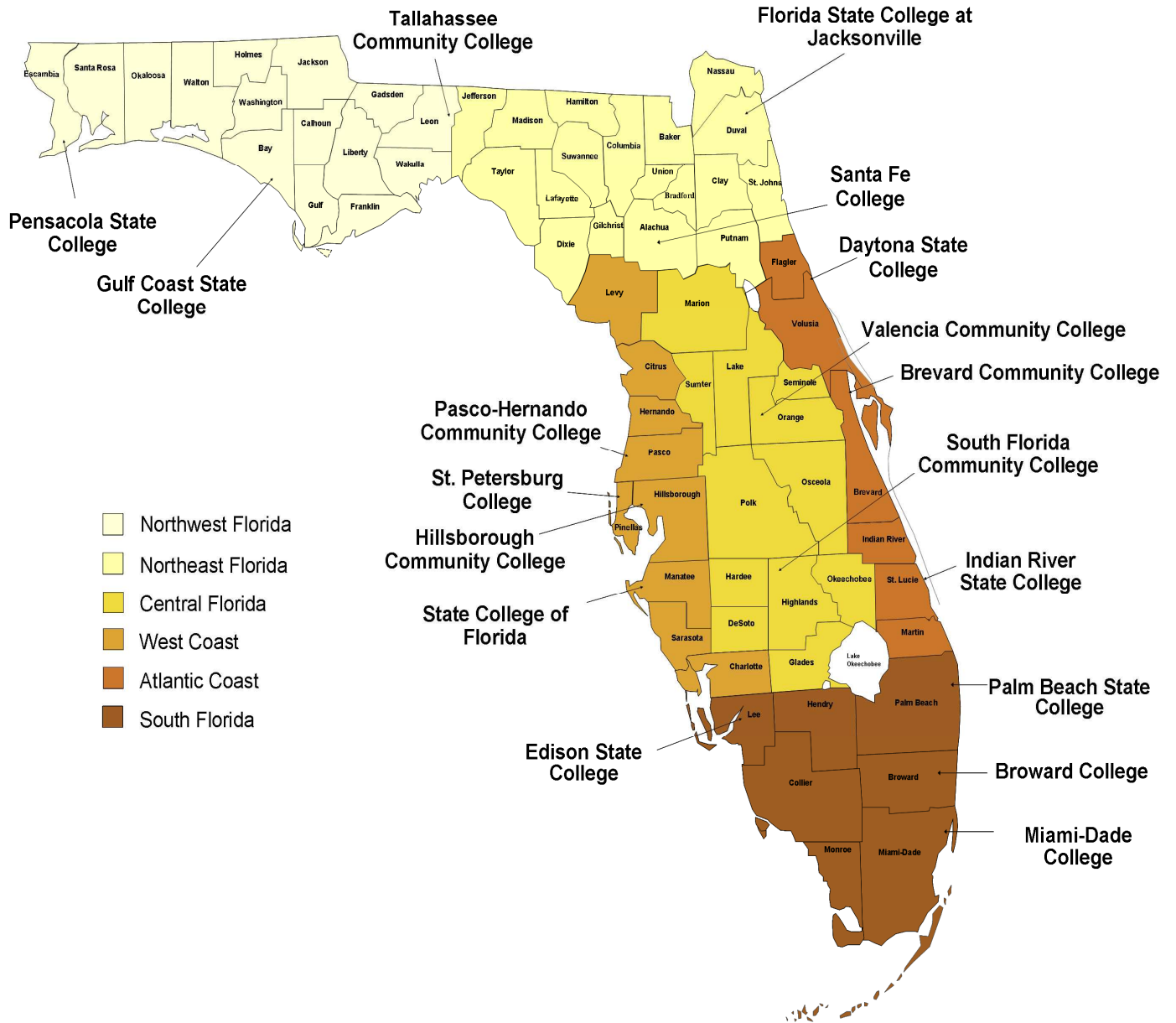
Dental hygiene programs are located in each of the six regions of Florida. The West Coast and South Florida regions have the most with a total of four programs.

The Northwest region of Florida had the fewest residents and had the lowest percentage of respondents who graduated and practice in the same region (46.1%) (Table 2.1). The Atlantic Coast had the second fewest residents in the state but had the highest percentage of respondents who graduated and practice in the same region (68.2%). Despite this regional difference, the total number of practicing dental hygienists is higher in the Northwest than in the Atlantic Coast region.

Table 2.1. Florida Hygienist Respondents Who Graduated and Practice in the Same Region

Region of Graduation	Region Population	Number of Dental Hygiene Programs	Practicing Hygienists		
			Region Graduates	All Hygienist Respondents	Percentage Who Graduated and Practice in Same Region
Northwest	1,404,139	3	579	1,257	46.1%
Atlantic Coast	1,727,360	3	328	481	68.2%
Northeast	2,012,669	2	621	1,248	49.8%
Central	3,356,340	2	366	558	65.6%
West Coast	3,814,033	4	842	1,271	66.2%
South Florida	6,584,871	4	1,426	2,287	62.4%

Figure 2.4. Florida Regions and Dental Hygiene Schools



Education and Training: A Comparison between Dental Hygienists and Dentists Practicing in Florida

Summary: Over 80% of respondents who trained at dental or dental hygiene programs located in Florida practice in the state. However, out-of-state and foreign dental programs have higher percentages of graduates who practice in Florida than dental hygiene programs.

Of all survey respondents who trained at schools in Florida, approximately 83% of dental hygienists reported practicing in the state compared to 86% of dentist respondents.

In contrast, a higher percentage of dentist respondents who trained at out-of-state schools practice in Florida than do dental hygienist respondents who trained at out-of-state schools (78% versus 64%). Similar differences were noted for respondents who attended foreign dental schools (84%) and foreign dental hygiene schools (75%).

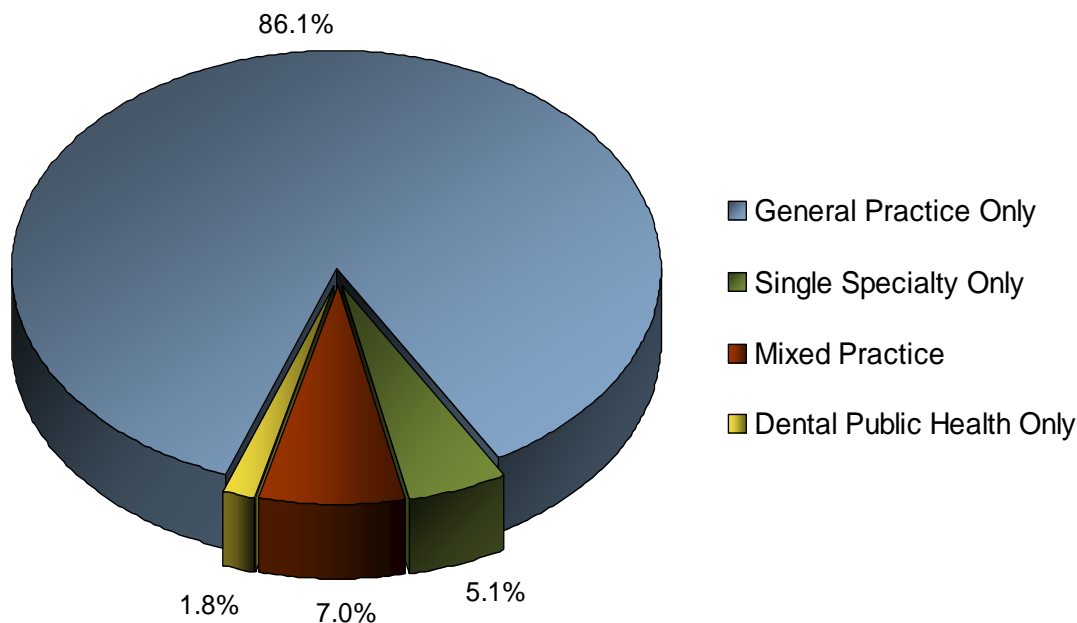
SECTION 3: PRACTICE CHARACTERISTICS

Dental Hygienists Practicing in Florida – Practice Characteristics

Summary: Of respondents who practice in Florida, a large majority (86.1%) reported their practice as general only. Periodontics was the most frequently cited specialty among hygienists working in single-specialty or mixed practices. The majority of respondents (95%) work in a private office setting and two-thirds (66.7%) reported residing and working in the same county.

Figure 3.1 portrays the distribution of dental hygiene practice types among survey respondents who practiced in Florida. A large majority of respondents (86.1%) reported their practice as general only (excluding any specialties), while 1.8% reported their practice as dental public health only, the least prevalent practice type. Another 5.1% practiced in a single specialty only and the remaining 7% worked in a mixed practice. The specialties listed in the survey include periodontics, prosthodontics, pediatric dentistry, orthodontics and dentofacial orthopedics, oral and maxillofacial surgery, endodontics, oral and maxillofacial pathology, and oral and maxillofacial radiology.

Figure 3.1. Dental Practice Types among Respondents Practicing in Florida



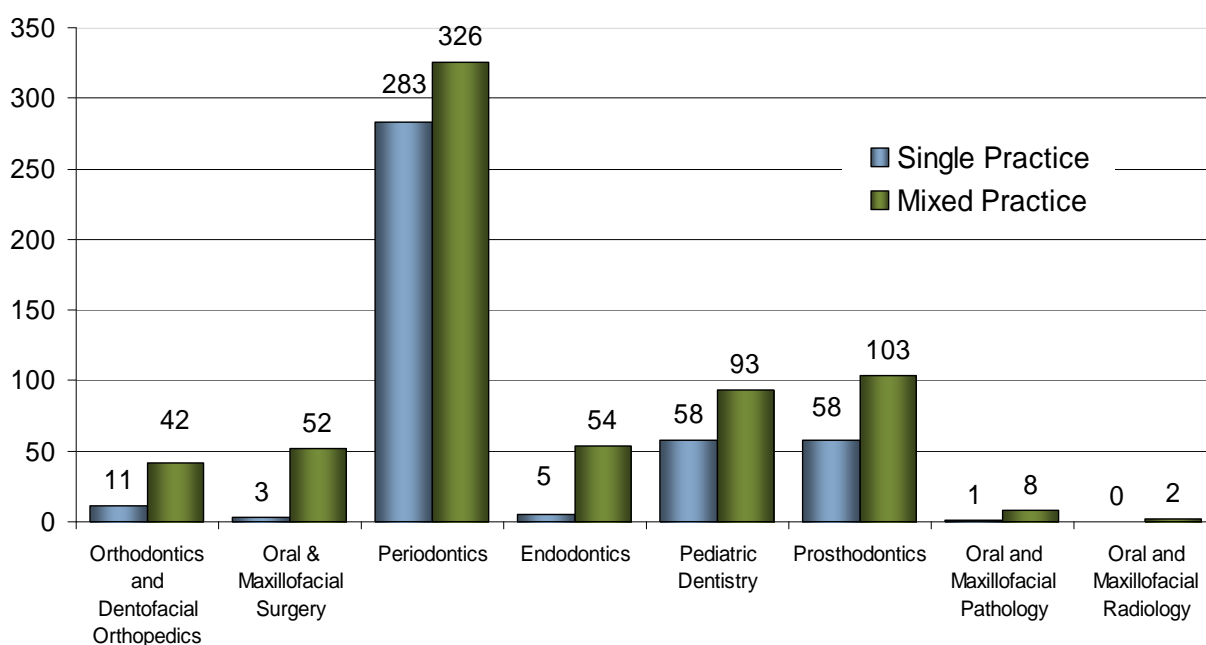
Source: Workforce Survey of Dental Hygienists, 2009-10

*Percentages follow the order of the legend in a clockwise direction.

Figure 3.2 displays the frequency of respondents practicing in Florida who specialize in specific areas of dentistry. The blue columns show counts of respondents who practice only in a single specialty. The green columns show counts of respondents who work in mixed practices. For this figure, mixed practice captures respondents who practice in: (1) two or more specialties, (2) one specialty in combination with general dental hygiene, or (3) one specialty in combination with public health. Counts of mixed practices are not unduplicated, such that dental hygienists in mixed practices were counted in each of their reported specialties. Examining single and mixed practices may help to provide insight into the availability of full-time and part-time work, respectively.

For each specialty, respondents in mixed practices outnumbered those in single practices. Periodontics was the most frequently cited specialty for both single and mixed practices, represented by respondent counts of 283 and 326, respectively. Prosthodontics, pediatric dentistry, endodontics, oral and maxillofacial surgery, and orthodontics and dentofacial orthopedics follow in descending frequency with respondent counts that diminished considerably for both practice types. Oral and maxillofacial pathology and oral and maxillofacial radiology specialties were cited by very few respondents.

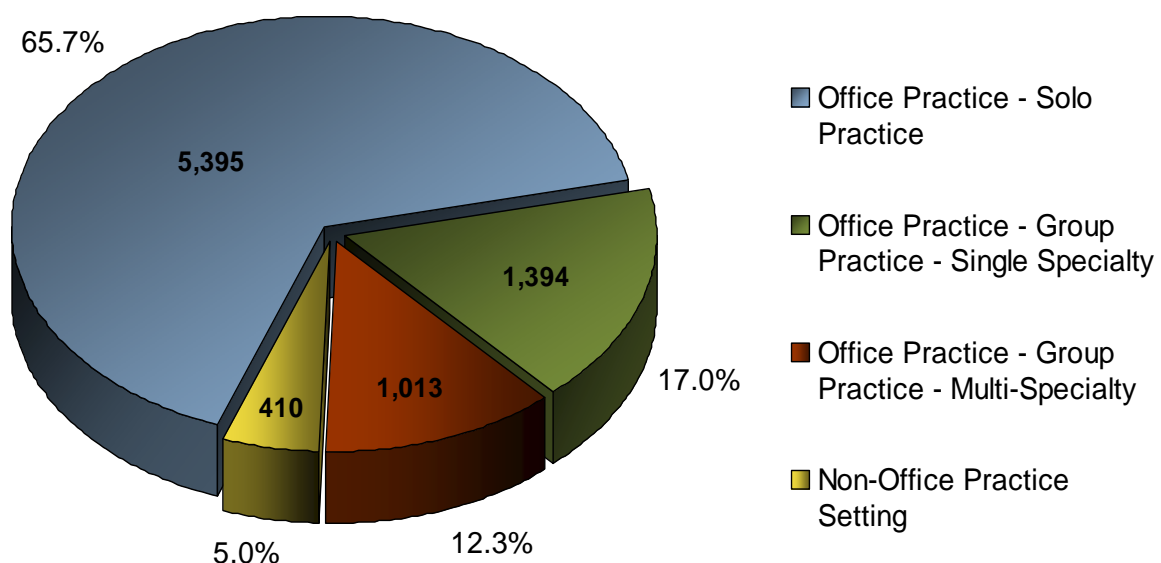
Figure 3.2. Specialties among Respondents Practicing in Florida



Source: Workforce Survey of Dental Hygienists, 2009-10

Ninety-five percent of respondents who reported practicing in Florida worked in a private office setting of any type, while nearly two-thirds (65.7%) worked in a solo private practice office setting (Figure 3.3). Nearly a third of respondents (29.3%) belong to a group private practice and the minority (5%) practice in a non-office practice setting.

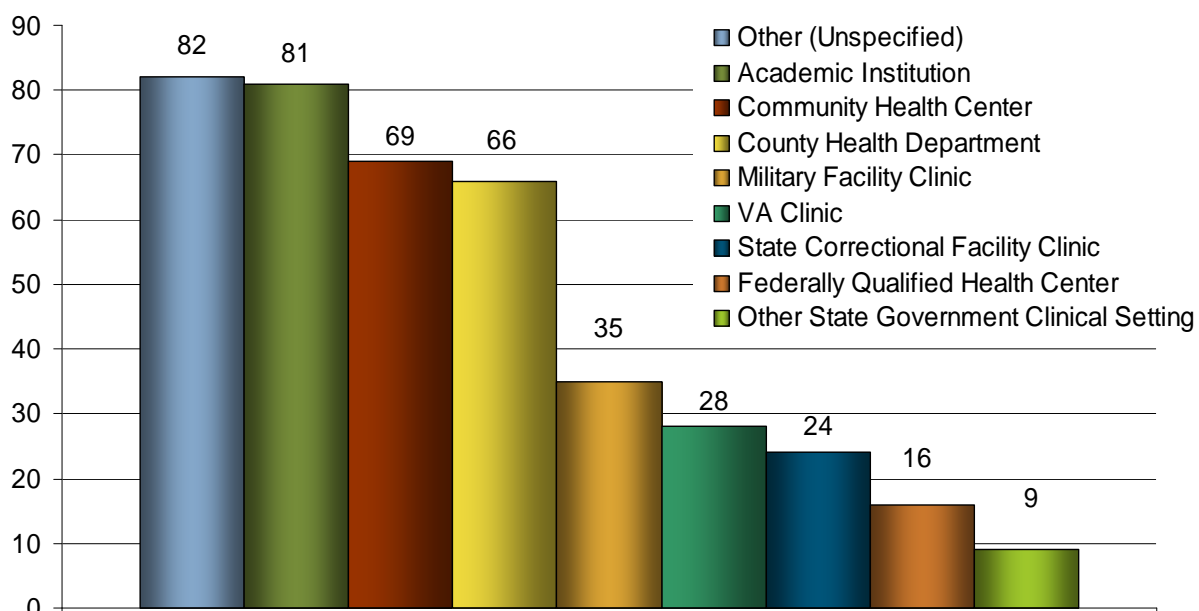
Figure 3.3. Primary Practice Setting among Respondents Who Currently Practice in Florida



Source: Workforce Survey of Dental Hygienists, 2009-10
 *Percentages follow the order of the legend in a clockwise direction.

Figure 3.4 provides additional information on the 5% of survey respondents who practice in non-office settings, specifically the counts of these respondents by specific practice types. The unspecified “other” category had the highest frequency of respondents (n=82) with academic institutions trailing close behind (n=81). Community health centers and county health departments followed with counts of 69 and 66, respectively. Five other setting types each had 35 or fewer respondents. In general, non-private office settings are either run or supported by government organizations. Three of the settings— military facility clinic, Veterans Affairs (V.A.) clinic, and state correctional facility clinic —are intended for specific populations whose eligibility for care is not determined by income level. The other specified settings are intended to serve lower income populations. These five settings— academic institutions, community health centers, county health departments, federally qualified health centers, and other state government clinical settings—constitute “safety-net ” providers for individuals who might otherwise lack access to dental care. Future surveys may consider further explorations of the other non-private office setting type.

Figure 3.4. Respondents Practicing in Non-Private Office Settings by Practice Setting Type



Source: Workforce Survey of Dental Hygienists, 2009-10

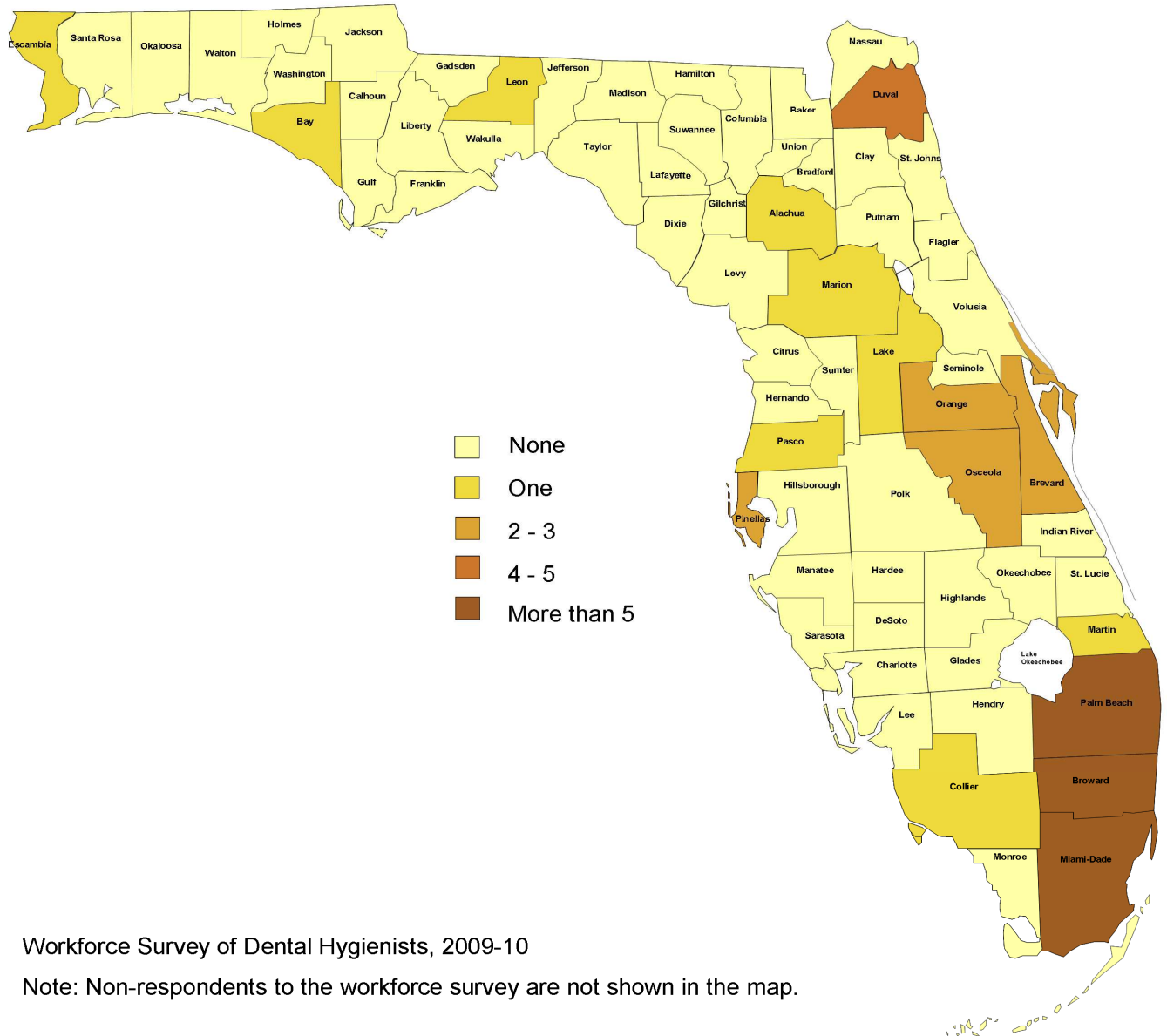
Dental Hygienists Practicing in Florida – Practice Characteristics by County

Summary: Overall, there are few available dental hygienists working with specialists throughout Florida counties, with some exception to major metropolitan areas.

Figures 3.5 to 3.10 display the number of dental hygienists working with specialists by county in a series of Florida maps, each focused on a single specialty. Dental hygienists working with more than one specialist are counted separately for each. Approximately 15% of dental hygienists with an active license were excluded because they did not respond to the survey (n=1,272) or to survey questions about active Florida practice, specialization, or county of practice (n = 480).

The pattern common to all of the maps in Figures 3.5 to 3.10 is the larger presence of dental hygienists working in specialty practices within major metropolitan areas and the lack of dental hygienists working with specialists in many Panhandle counties of Florida. Residents of Panhandle counties who require the services of a specialist with the support of a dental hygienist may face a considerable travel distance. Dental hygienists' absence is extensive for some specializations such as orthodontics and dentofacial orthopedics, oral and maxillofacial surgery, endodontics, and pediatric dentistry. This lack of presence in specialty practices may mean the unavailability of these dental hygienists within a county or neighboring counties. However, the data cannot determine whether dental services are provided by other employees such as dental assistants.

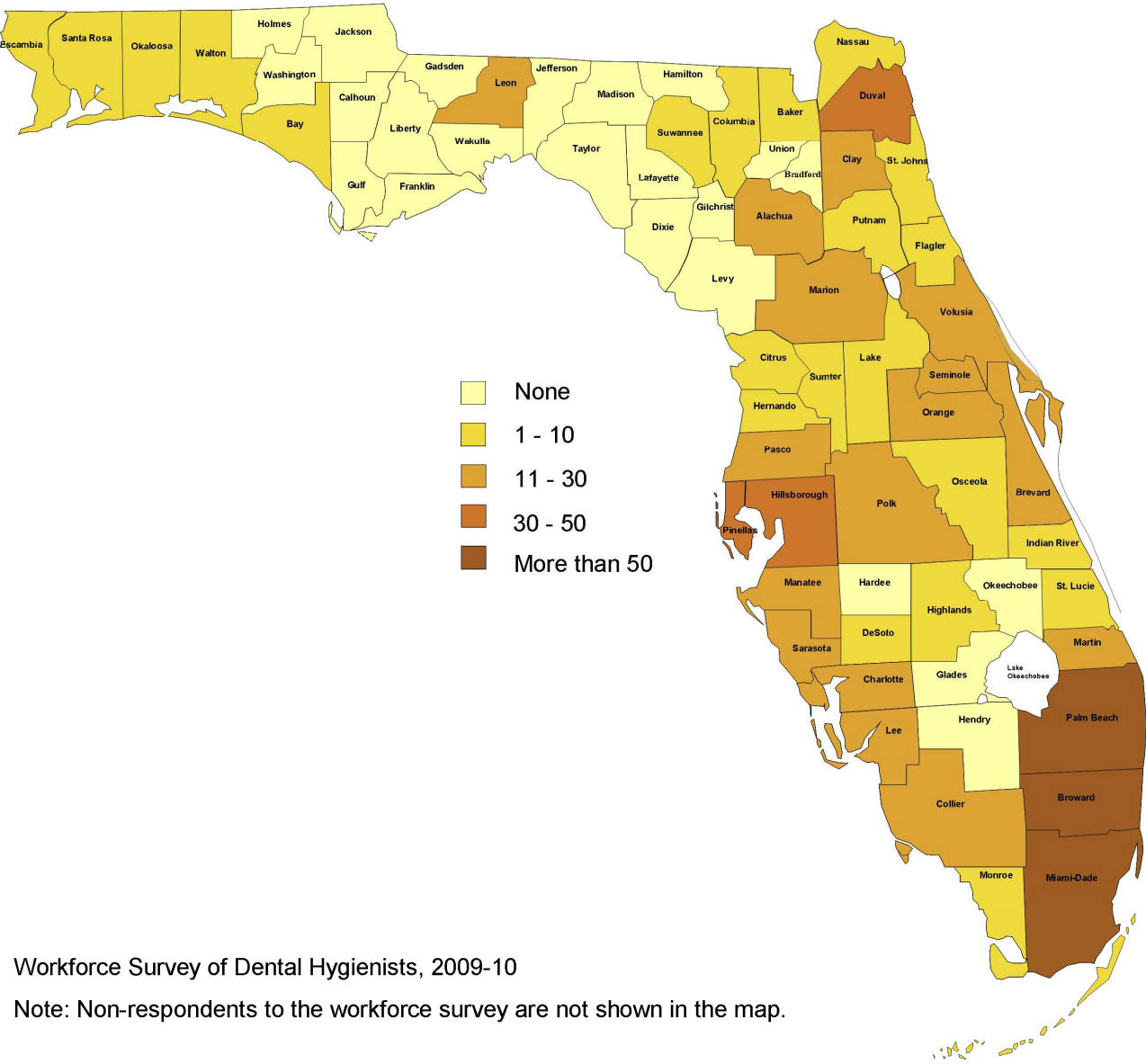
Figure 3.6. Number of Practicing Dental Hygienists by County:
Oral and Maxillofacial Surgery



Workforce Survey of Dental Hygienists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

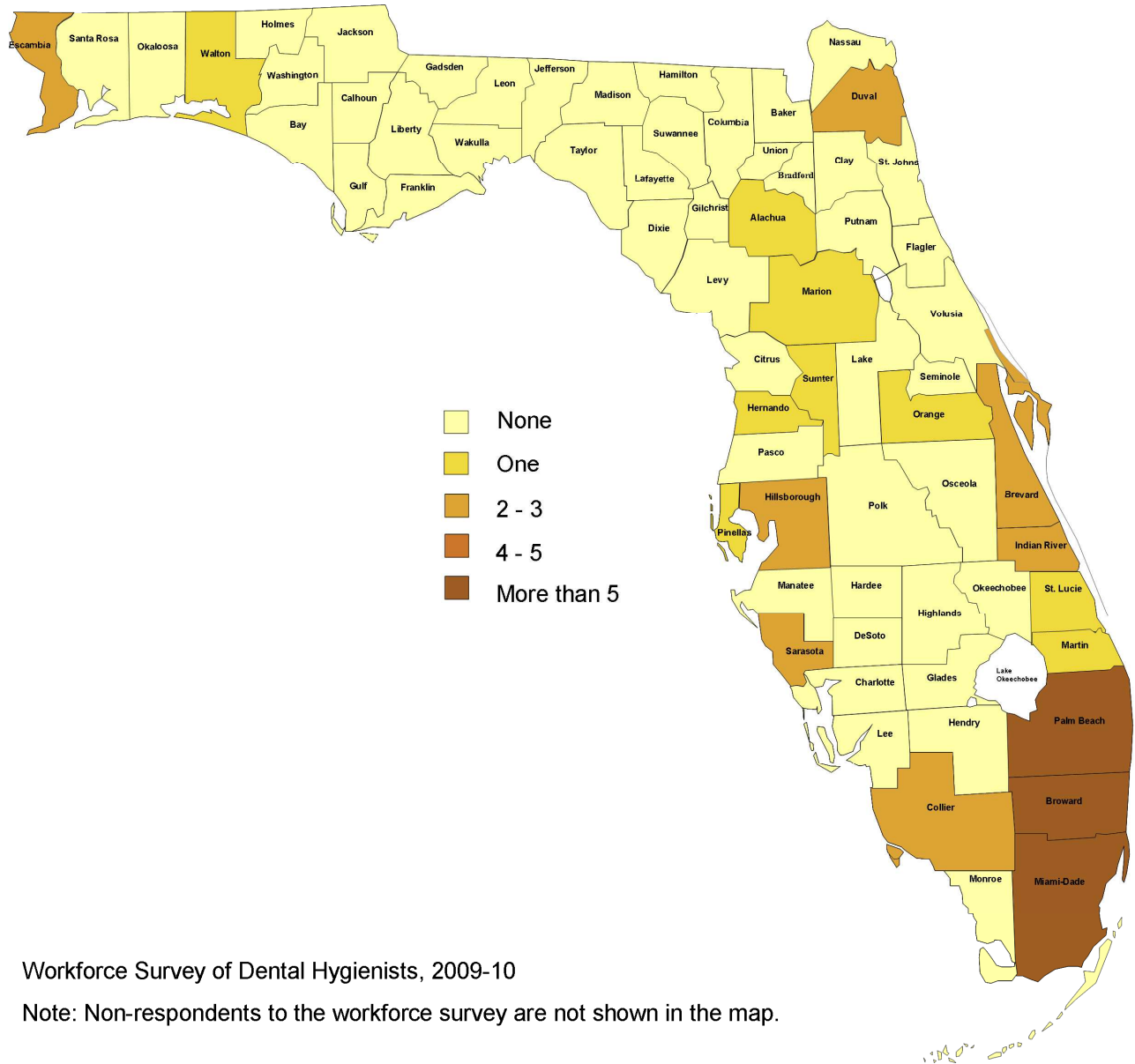
Figure 3.7. Number of Practicing Dental Hygienists by County: Periodontics



Workforce Survey of Dental Hygienists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

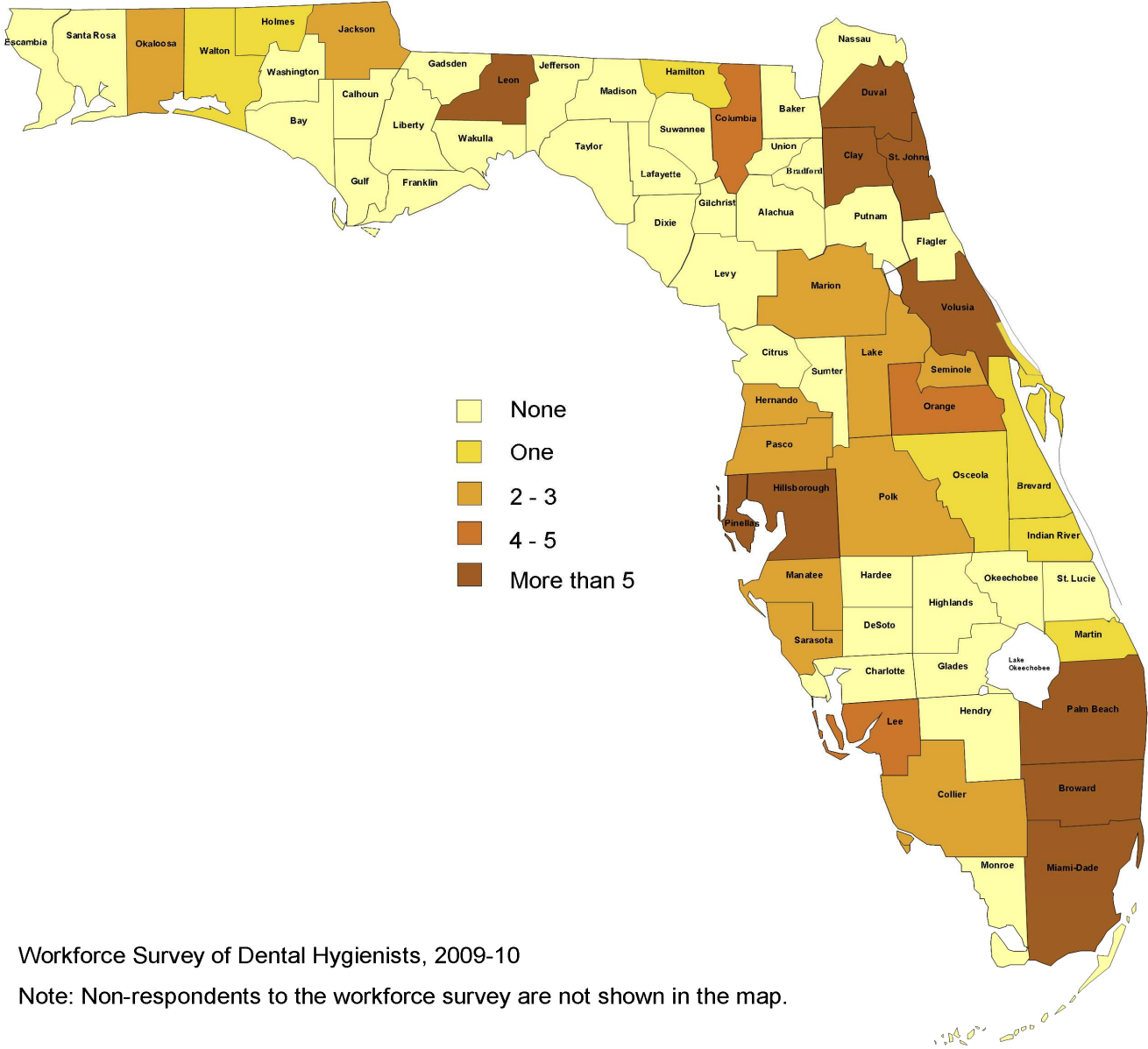
Figure 3.8. Number of Practicing Dental Hygienists by County: Endodontics



Workforce Survey of Dental Hygienists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

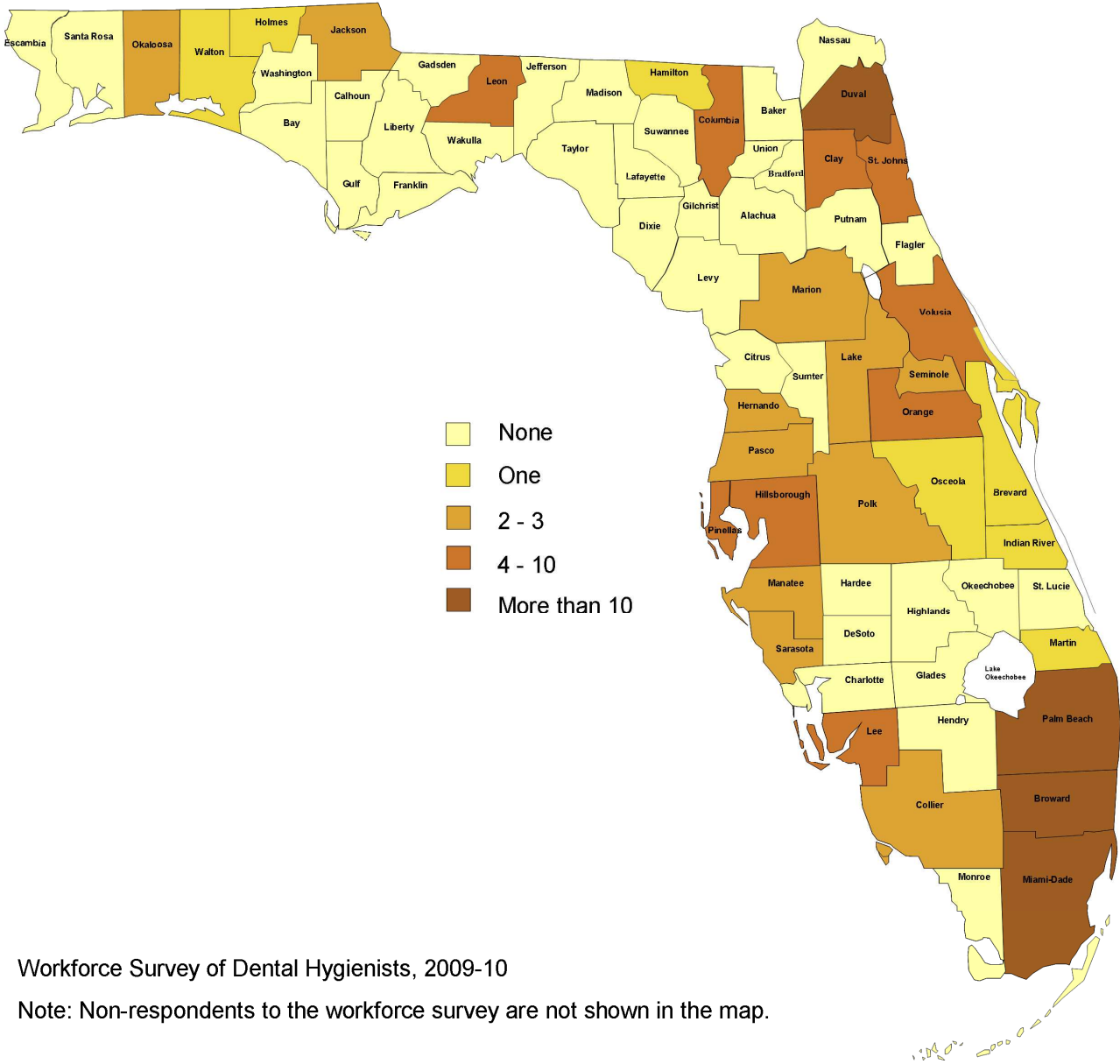
**Figure 3.9. Number of Practicing Dental Hygienists by County:
Pediatric Dentistry**



Workforce Survey of Dental Hygienists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

Figure 3.10. Number of Practicing Dental Hygienists by County: Prosthodontics



Workforce Survey of Dental Hygienists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

Practice Characteristics: A Comparison between Dental Hygienists and Dentists Practicing in Florida

Summary: Most dental hygienist and dentist respondents practicing in Florida classified their practice as general only and worked in solo-office private practice settings. While periodontics was the most reported specialty among dental hygienists in single specialty practices, orthodontics and dentofacial orthopedics was the most reported specialty among dentists in single specialty practices.

Of respondents, 74% of dentists and 86% of dental hygienists classified their practice as general only (Table 3.1). Similarities also existed for primary practice settings. Most respondents practicing in Florida work in a solo-office private practice setting (61% for dentists and 66% for dental hygienists) while few work in non-private office practice settings (7% for dentists and 5% for dental hygienists).

The number of dental hygienist respondents working in mixed practices outnumbered those working in single practices for all specialties. Periodontics was the most cited specialty for both mixed and single practices. In contrast, the number of dentist respondents working in single practices outnumbered those working in mixed practices for each specialty. Orthodontics and dentofacial orthopedics was the most cited single specialty and prosthodontics was the most cited mixed specialty for dentists.

Table 3.1. Selected Practice Characteristics of Dentist and Dental Hygienists Survey Respondents, 2009-2010

Practice Characteristics	Dentists	Dental Hygienists
Practice Classification		
General only	74%	86%
Solo-office setting	61%	66%
Non-office setting	7%	5%
Most Reported Specialty		
Single practice	Orthodontics & Dentofacial Orthopedics	Periodontics
Mixed practice	Prosthodontics	Periodontics

For dentists, the common geographic pattern is the lack of available specialists in many Panhandle counties of Florida. For dental hygienists, the lack of practice extends beyond the Panhandle counties for most specialties. The counties of Palm Beach, Broward, and Miami-Dade had the highest number of both practicing dentist and dental hygienist respondents for each specialty.

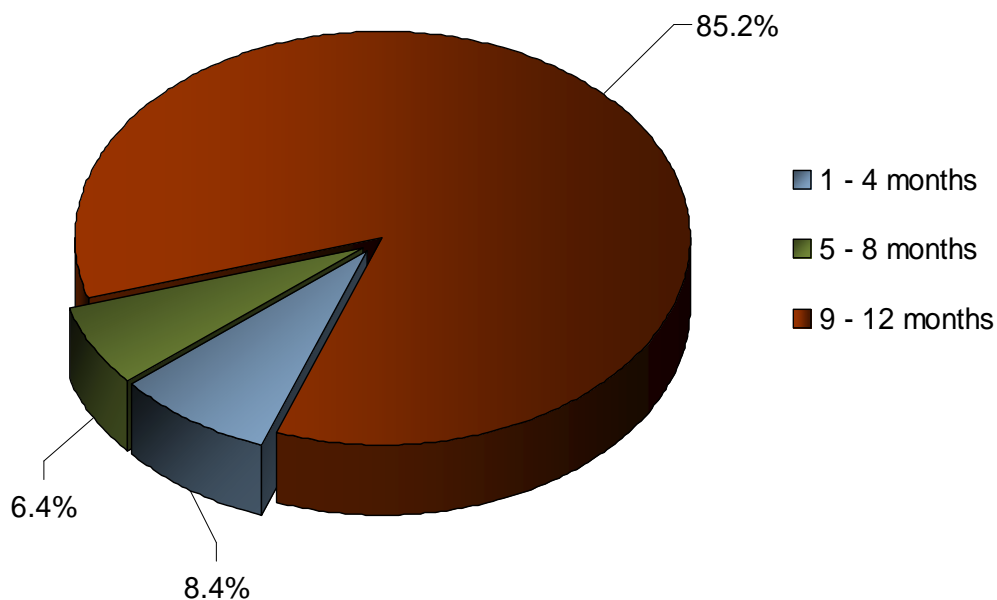
SECTION 4: PRODUCTIVITY

Dental Hygienists Practicing in Florida – Productivity

Summary: Overall, the majority of survey respondents who practiced in Florida (85.2%) worked 9-12 months in the previous year, and approximately 54% practiced 31 or more hours per week. As the age of respondents practicing in Florida increased, the amount of full-time work decreased for both men and women.

More than 85% of the respondents who practiced in Florida worked 9-12 months in the year prior to completing the survey (Figure 4.1).

Figure 4.1. Number of Practice Months in the Past Year among Respondents Practicing in Florida

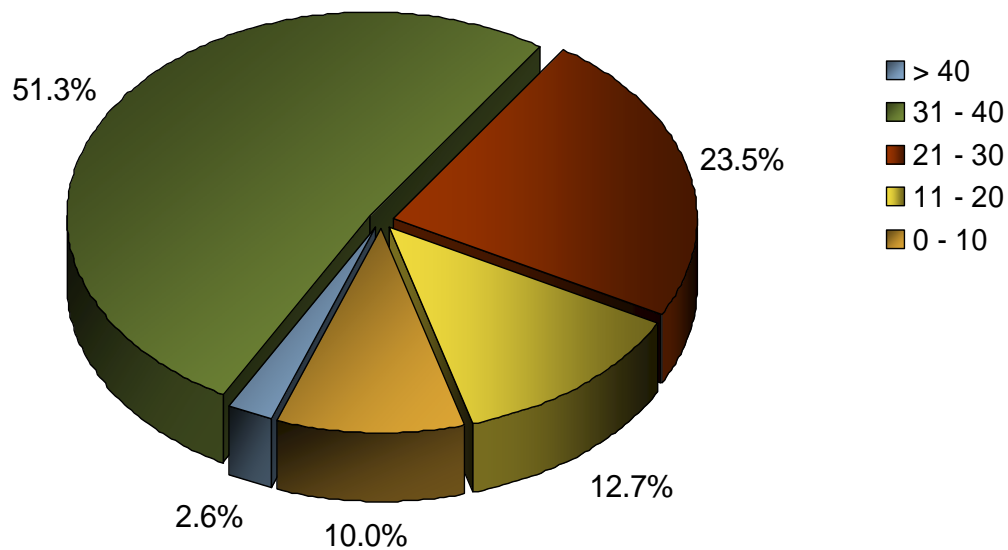


Source: Workforce Survey of Dental Hygienists, 2009-10

*Percentages follow the order of the legend in a clockwise direction.

Figure 4.2 displays the distribution of respondents who practice in Florida by the number of hours they worked in a given week. Approximately 51% of respondents work 31-40 hours weekly, while only 2.6% work more than 40 hours. Approximately 46% practiced dental hygiene part-time (<31 hours per week), including almost 23% who worked 20 hours per week or less.

Figure 4.2. Distribution of Respondents Practicing in Florida by Hours of Practice per Week

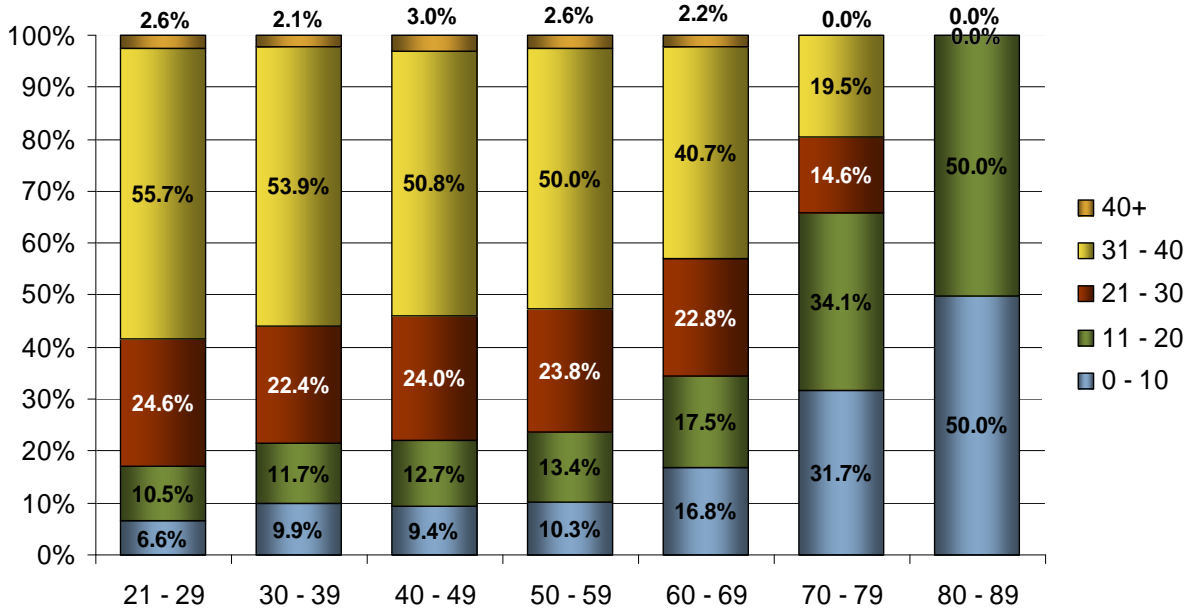


Source: Workforce Survey of Dental Hygienists, 2009-10

*Percentages follow the order of the legend in a clockwise direction.

Figure 4.3 presents the hours worked per week among practicing respondents stratified by respondent age. As age increases, the amount of full-time hours worked per week decreases such that older dental hygienist respondents are more likely to work part-time.

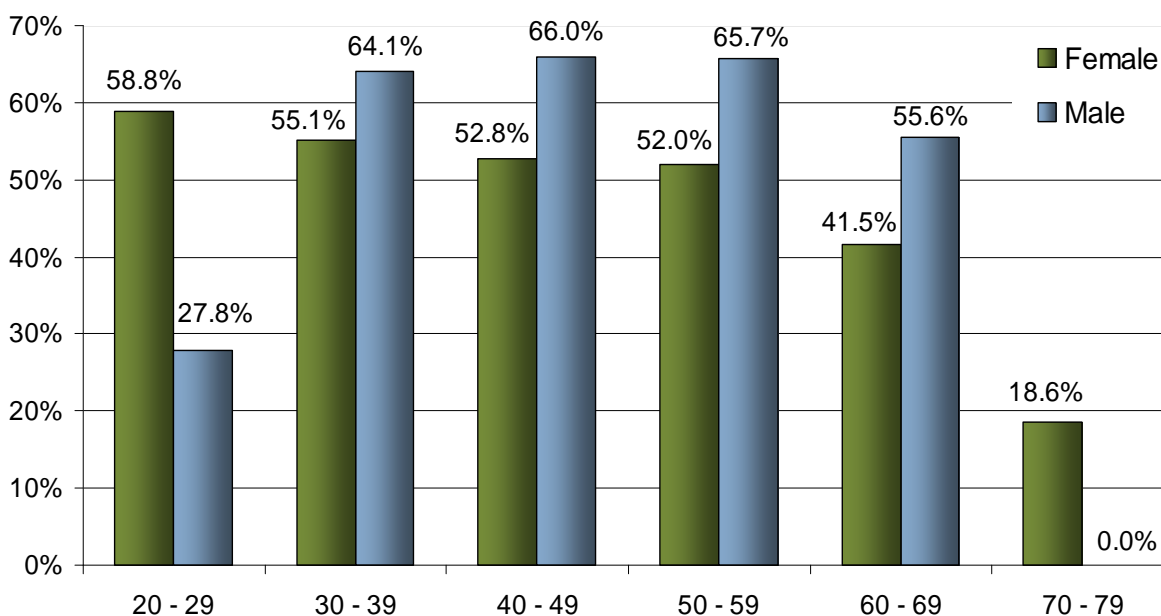
Figure 4.3. Hours Worked per Week by Respondents Practicing in Florida by Age Group



Source: Workforce Survey of Dental Hygienists, 2009-10

The percentage of respondents practicing full-time in Florida varied across age groups and gender (Figure 4.4). From ages 30-69 years, higher percentages of male respondents worked full-time as compared to their female counterparts. In contrast, female respondents in the youngest (20-29 years) and oldest (70-79 years) age groups were more likely to work full-time than their male counterparts. However, the number of participants in these age groups is small and therefore should be interpreted cautiously. After 49 years of age, the percentage of practicing respondents working full-time began to decrease for both genders.

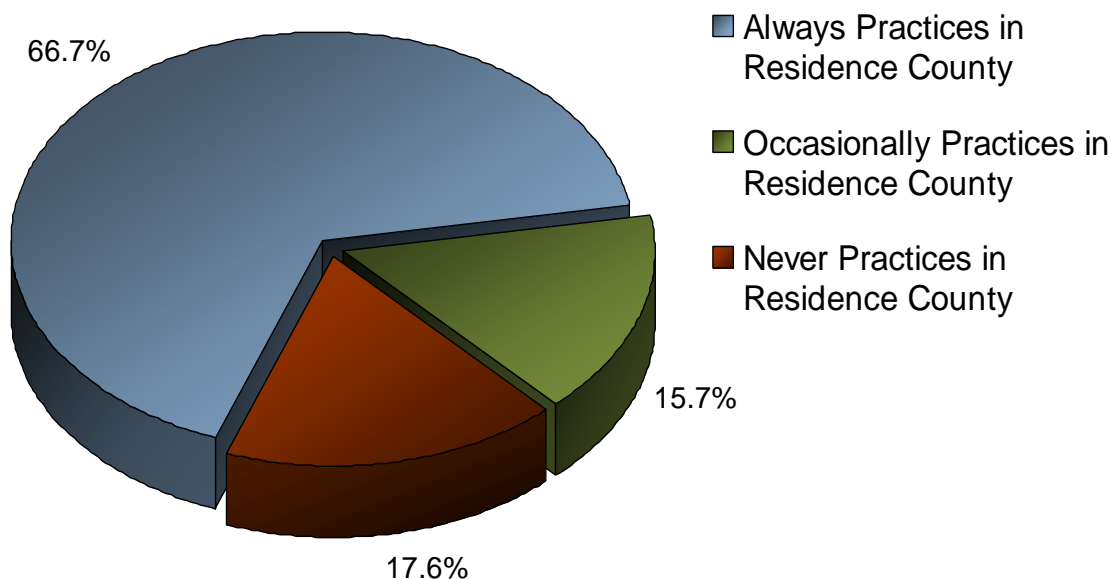
Figure 4.4. Percent of Respondents Practicing in Florida Who Work Full-Time* by Gender and Age Group



*Full-time work is defined as 31 or more hours per week.
Source: Workforce Survey of Dental Hygienists, 2009-10

Availability of care is impacted by the geographic distribution of dental practices and the availability of staff. Approximately two-thirds (66.7%) of respondents who currently practice in Florida work in the same county in which they live (Figure 4.5). However, 15.7% practice only occasionally in the county of their residence and 17.6% practice only in other counties. Collectively, 82% of respondents practice in their residence county whether all or some of the time.

Figure 4.5. Practice Patterns in Residence County among Respondents Who Currently Practice in Florida

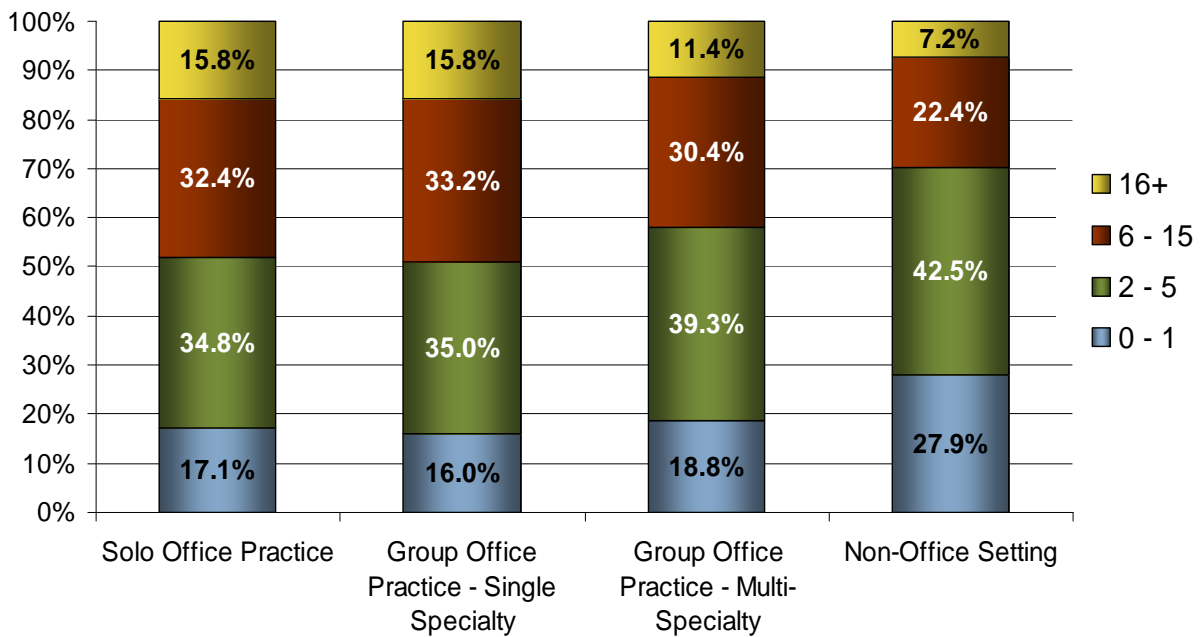


Source: Workforce Survey of Dental Hygienists, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Figure 4.6 illustrates the number of years respondents practiced in their current practice arrangement by practice type. The percentage of survey respondents who worked 16 or more years in their current practice arrangement was higher for those who practice in private office settings than for those who practice in non-private office settings. Among those practicing in private office settings, the percentage of respondents who worked six or more years was slightly higher for those who work in solo office practices and single specialty group office practices than for those who work in multi-specialty group office settings.

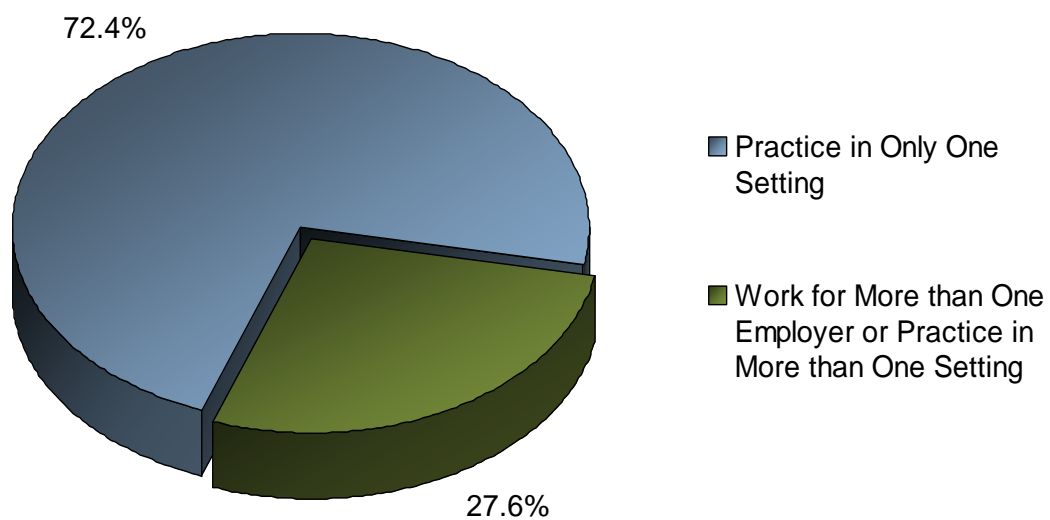
Figure 4.6. Respondents' Years in Current Practice Arrangement by Practice Type



Source: Workforce Survey of Dental Hygienists, 2009-10

The majority of survey respondents (72.4%) work for one employer in one practice setting and 27.6% work for more than one employer or in more than one practice setting (Figure 4.7).

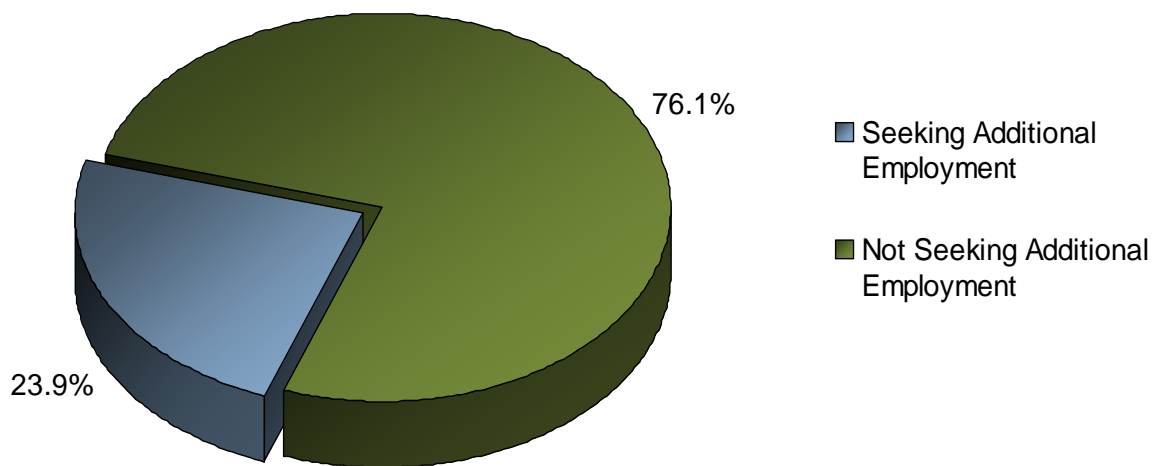
Figure 4.7. Percent of Respondents Who Work for More than One Employer or in More Than One Practice Setting



Source: Workforce Survey of Dental Hygienists, 2009-10
*Percentages follow the order of the legend in a clockwise direction.

Figure 4.8 illustrates the percentage of survey respondents practicing in Florida who are currently seeking additional dental hygiene work. Approximately 76% of respondents reported that they are not seeking additional employment while 24% reported that they are seeking additional employment.

Figure 4.8. Percent of Respondents Currently Seeking Additional Dental Hygiene Employment among Respondents Who Practice in Florida

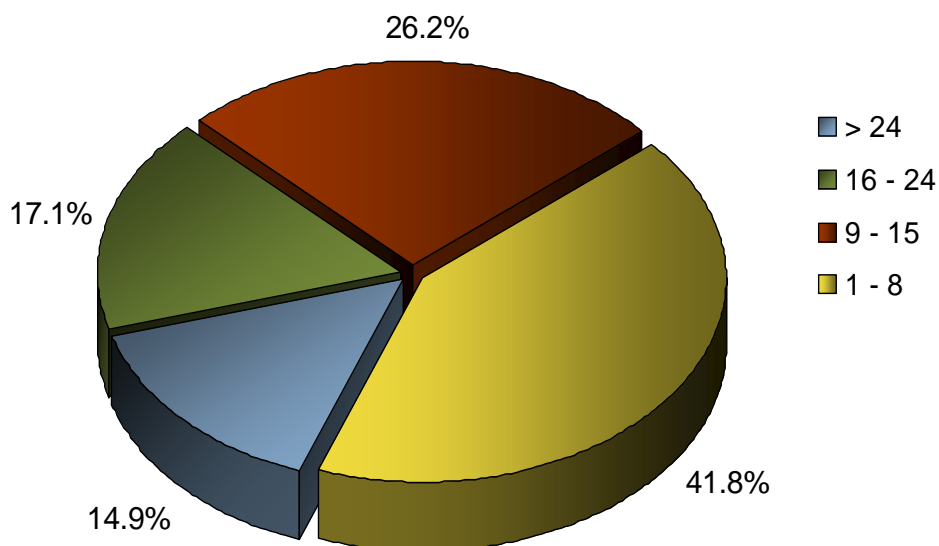


Source: Workforce Survey of Dental Hygienists, 2009-10

*Percentages follow the order of the legend in a clockwise direction.

Of the survey respondents practicing in Florida who indicated they are seeking additional work hours, 41.8% are seeking 1 to 8 additional hours per week while 26.2% are seeking 9 to 15 hours per week. The remaining 32% are seeking 16 or more additional work hours per week (Figure 4.9).

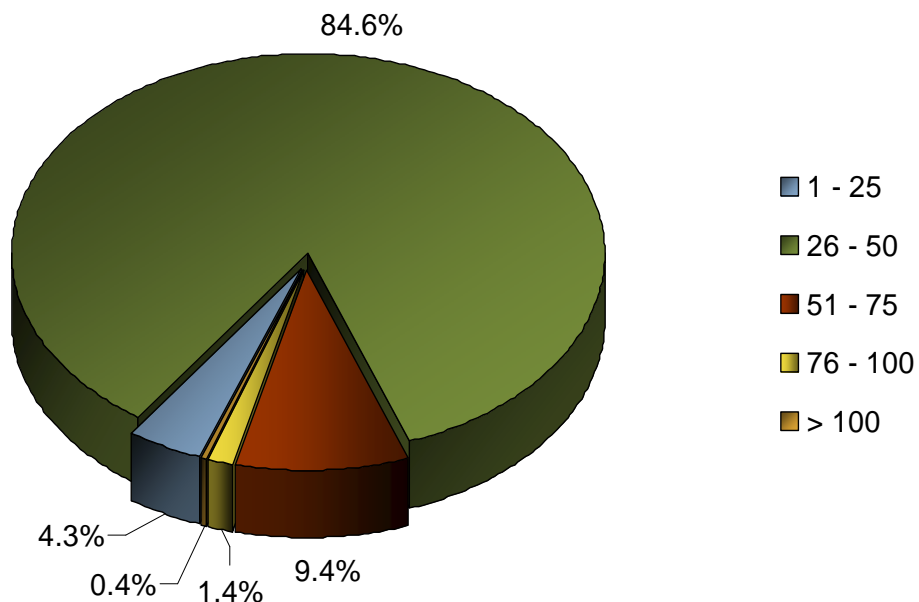
Figure 4.9. Distribution of Additional Hours of Work per Week Respondents Practicing in Florida are Currently Seeking



Source: Workforce Survey of Dental Hygienists, 2009-10
*Percentages follow the order of the legend in a clockwise direction.

Among the survey respondents who work in Florida full-time (≥ 31 hours per week) in private general practice or public health practice, over 84% reported seeing an average of 26 to 50 patients per week while approximately 11% reported seeing an average of over 51 patients per week (Figure 4.10).

Figure 4.10. Average Number of Patients Seen per Week among Florida Dental Hygienists in General Practice or Public Health Practice Who Work Full-Time

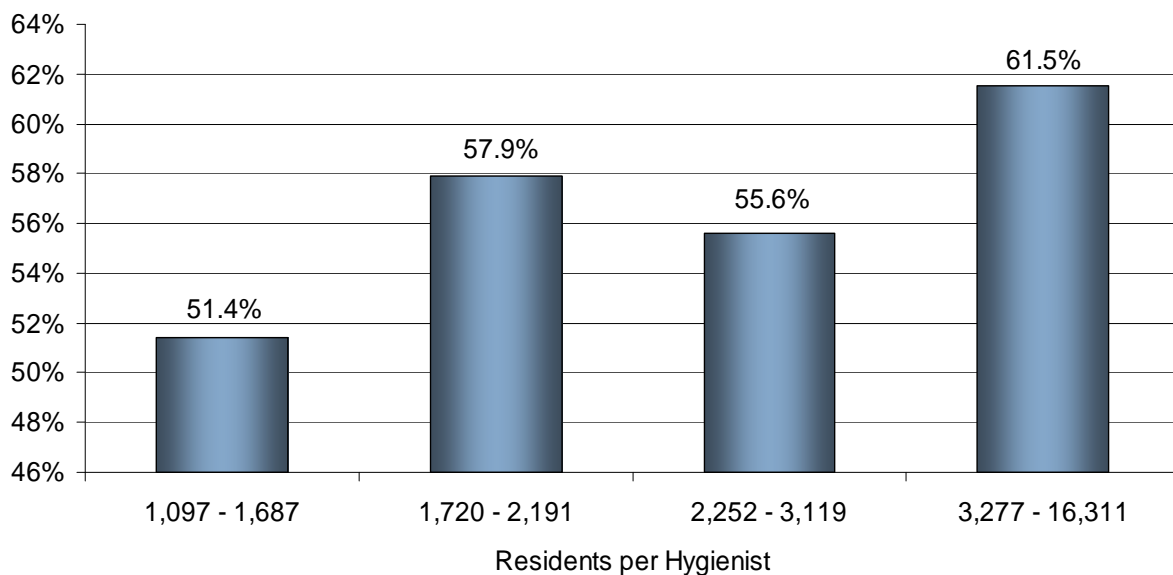


Source: Workforce Survey of Dental Hygienists, 2009-10

*Percentages follow the order of the legend in a clockwise direction.

Figure 4.11 illustrates the percentage of dental hygienists who practice full-time (≥ 31 hours per week), by ranges of resident-to-dental hygienist ratios in Florida's counties. Each range represents approximately 25% of Florida's counties (quartiles). The percentage of dental hygienist respondents practicing full-time fluctuates with respect to the resident-to-dental hygienist ratios. The percentage of respondents practicing full-time is lowest in counties with the fewest number of residents per practicing respondent (51.4%) and greatest in counties with the highest number of residents per practicing respondent (61.5%). Patient volume may have some role in driving practice hours, though other factors also may be involved. Further research is needed to better explain variations in practice hours of dental hygienist respondents.

Figure 4.11. Percent of Dental Hygienists Practicing Full-Time by the Number of Residents per Dental Hygienist*



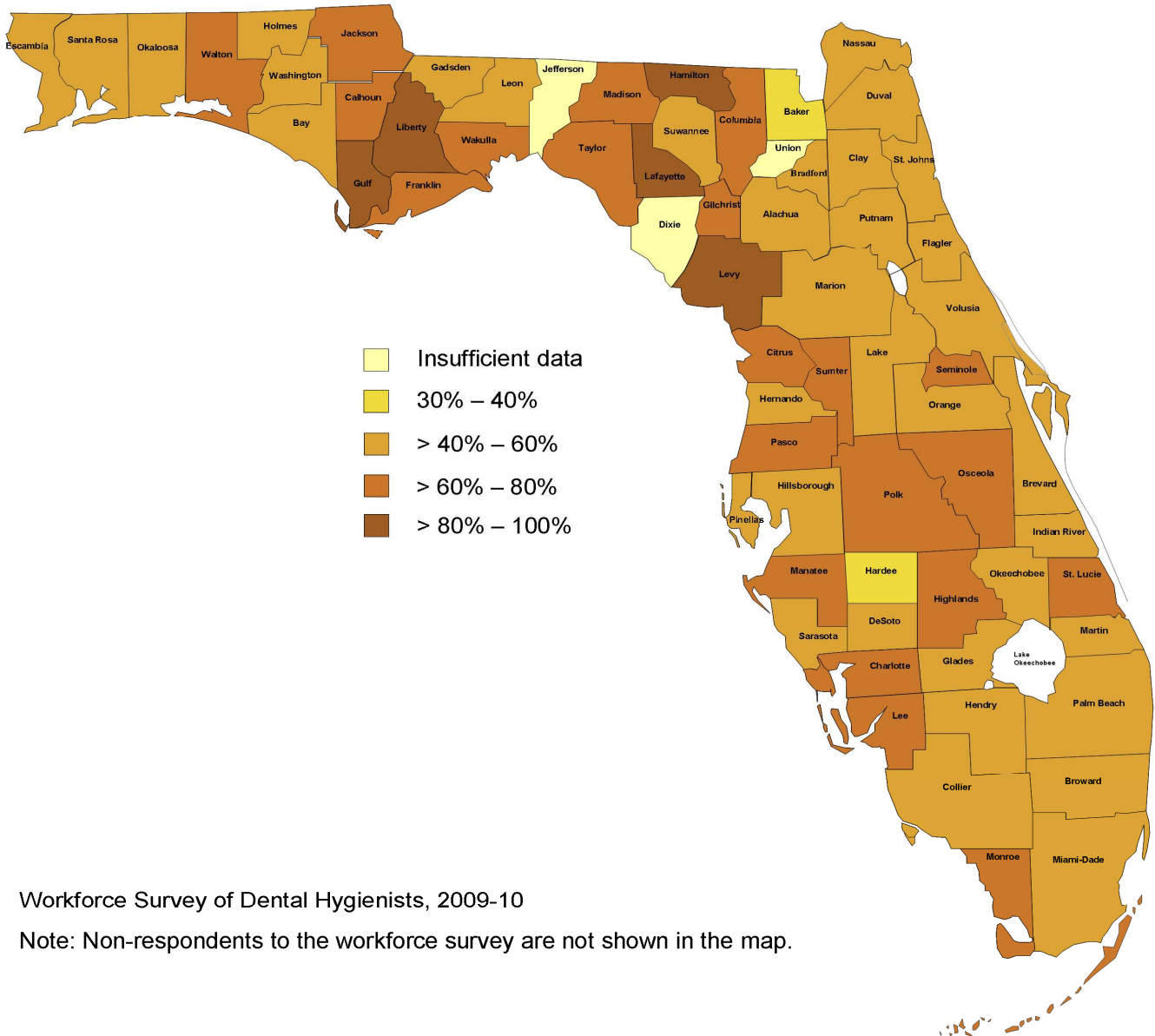
*Hygienists practicing in more than one county are not included. Range groups are based on county quartile rankings in the number of residents per responding hygienist.
 Source: Workforce Survey of Dental Hygienists, 2009-10; DOH Licensure Data; Florida Legislature, Office of Demographic and Economic Research

Dental Hygienists Practicing in Florida – Productivity by County

Summary: More than 50% of all respondents practice full-time (≥ 31 hours per week). The extent of full-time practice does not vary considerably across Florida counties.

Figure 4.12 displays the percent of survey respondents who practice full-time by county. This figure does not include respondents who practice in more than one county. For most counties in Florida, more than 40% of respondents practice full-time. Counties with percentages of full-time respondents that are higher than the statewide percentage of 54% tend to cluster in central and northwestern areas near the panhandle. Baker and Hardee counties had the lowest percentages of full-time respondents. As shown in Figures 3.5 to 3.10, Baker and Hardee counties had no dental hygienist respondents working in any specialty, with some exception for Periodontics (Figure 3.7).

Figure 4.12. Percent of Respondents Practicing Full-Time by County

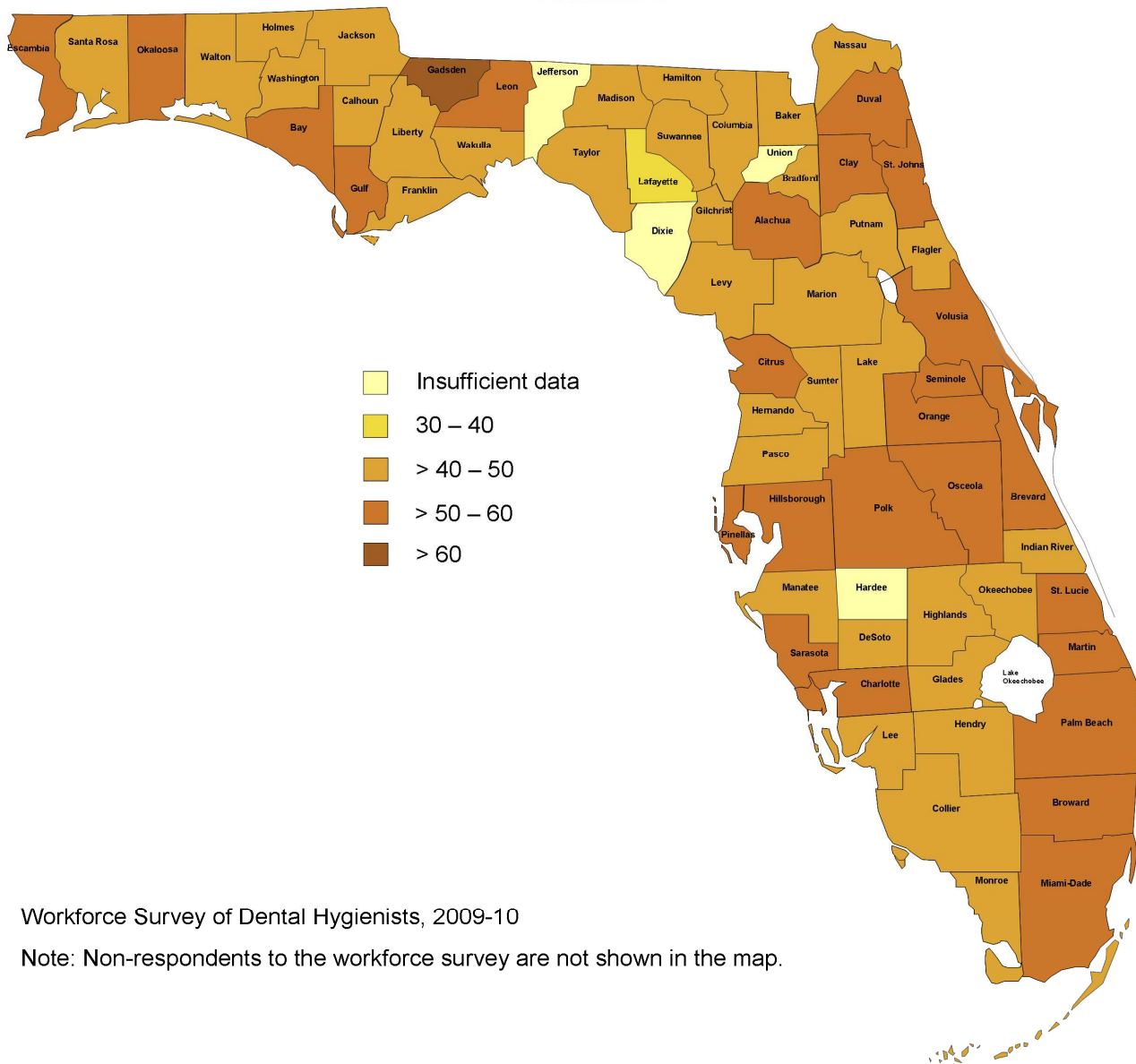


Workforce Survey of Dental Hygienists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

Figure 4.13 shows, by county, averages of the maximum number of patients seen per week among respondents working full-time in private general or public health dental practices. In the majority of Florida counties, the maximum workload reaches 41 to 60 patients per week. Higher maximum workloads were seen only in Gadsden County and lower maximum workloads were seen only in Lafayette County.

Figure 4.13. Averages of the Maximum Number of Patients per Week among Respondents Practicing Full-Time in General or Public Health Practice



Workforce Survey of Dental Hygienists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

Productivity: A Comparison between Dental Hygienists and Dentists Practicing in Florida

Summary: The majority of dental hygienist and dentist respondents who practice in Florida reported working 9 to 12 months in the previous year and 31 hours or more per week. The percentage of full-time respondents practicing in Florida varied by gender and age for both dental hygienists and dentists. The number of patients seen per week by most dental hygienist respondents was between 26-50 and 26-75 for dentist respondents. The percentage of full-time dental hygienist respondents varied by resident-to-dental hygienist ratios without a clearly defined pattern while the percentage of full-time dentist respondents steadily increased with increasing resident-to-dentist ratios.

Of respondents, 94% of dentists and 85% of dental hygienists who practice in Florida worked 9 to 12 months in the previous year. A higher percentage of dentist respondents reported practicing full-time (≥ 31 hours) on a weekly basis than did dental hygienist respondents (78% versus 54%).

Among dentist respondents, higher percentages of males reported working a full-time schedule than did females for all age groups. Among dental hygienist respondents, this pattern was only true for those 30-69 years of age.

Practice patterns in residence locations were similar among dental hygienists and dentists. Approximately two-thirds of respondents who currently practice dental hygiene and dentistry in Florida work only in the county in which they reside and approximately 16% work occasionally in the county in which they reside. Nearly 18% of dental hygienist respondents work only in non-residence counties compared to 16% of dentist respondents. Collectively, nearly 82% of hygienist respondents reported practicing all or some of the time in their residence county compared to 84% of dentist respondents.

Productivity as measured by the average number of patients seen per week for respondents who work full-time in private general practice or public health practice was considerably different for dentist and dental hygienist respondents. Sixty-three percent of dentists reported seeing more than 50 patients per week compared to 11% for dental hygienists. The majority (84.6%) of dental hygienists reported seeing an average of 26-50 patients per week compared to 33% of dentists.

The percentage of dentists practicing full-time steadily increased with increasing resident-to-dentist ratios. The percentage of dental hygienists practicing full-time fluctuated some across resident-to-dental hygienist ratios, but suggested that high percentages of dental hygienists work full-time in areas with high counts of residents per dental hygienists and low percentages work full-time in areas with low counts of residents per dental hygienists.

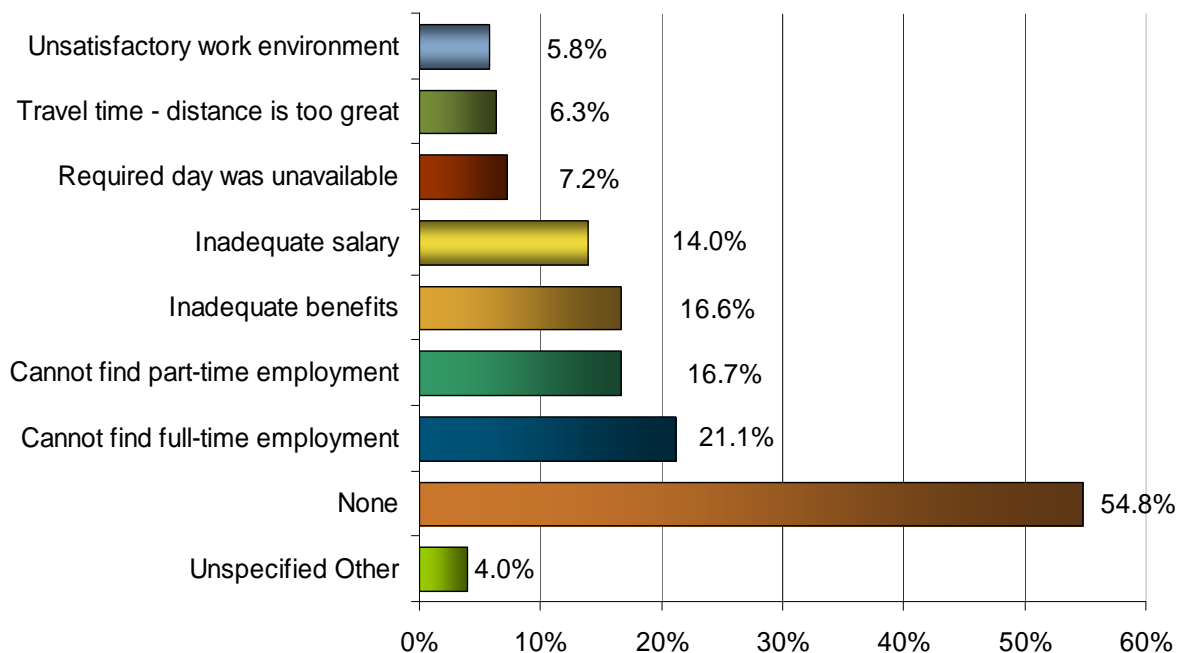
SECTION 5: RETENTION AND ATTRITION

Dental Hygienists Practicing in Florida- Retention and Attrition

Summary: When searching for a position as a dental hygienist, 55% of survey respondents reported experiencing no difficulties. Overall, respondents who do not plan to leave the profession within five years outnumbered those who plan to leave. Endodontics, dental public health, and prosthodontics had the highest percentages of respondents planning to retire within five years. Continued growth in the number of dental hygienists practicing in Florida is projected through the year 2050.

Figure 5.1 displays the difficulties respondents experience when searching for a dental hygienist position. Although 55% of respondents reported experiencing no difficulties, 21% found it hard to obtain full-time work in the field. Other areas of difficulties included finding part-time employment (16.7%), inadequate benefits (16.6%), and inadequate salaries (14%). The least reported difficulties were listed as unspecified other (4%) and unsatisfactory work environment (5.8%).

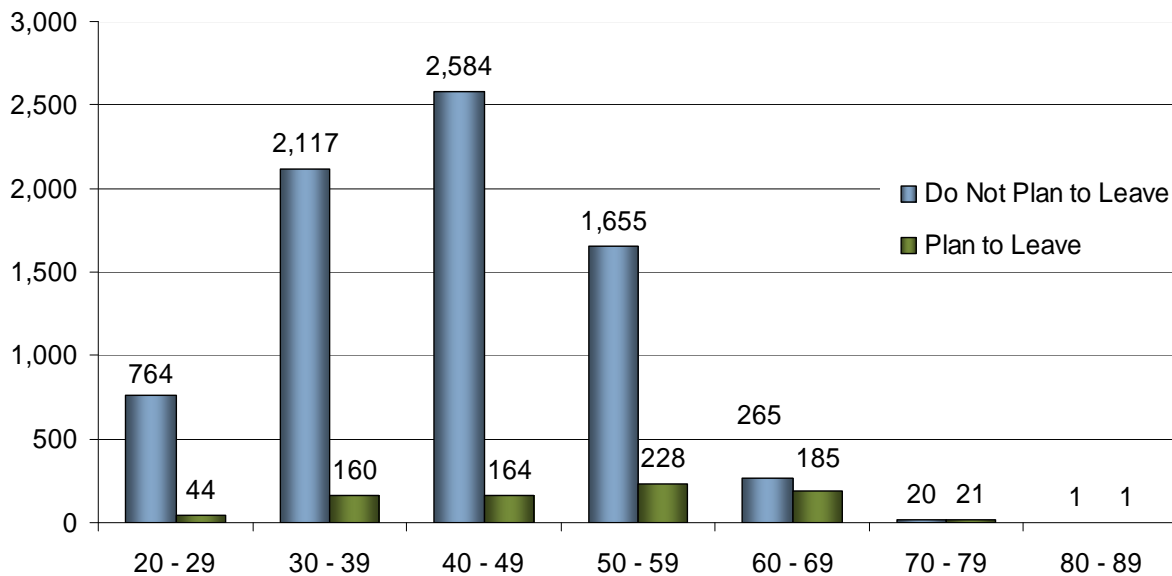
Figure 5.1. Difficulties Respondents Experience in Finding a Position as a Dental Hygienist



Source: Workforce Survey of Dental Hygienists, 2009-10

Overall, 803 (9.8%) respondents plan to leave the profession within five years. Figure 5.2 displays counts of respondents planning to leave the profession within the next five years, by age group. Respondents who do not plan to leave the profession outnumbered those who plan to leave the profession across most age groups (20–69 years). The age group with the highest count of respondents who are planning to leave the profession within five years was 50–59 years (n=228) followed by 60–69 years (n=185).

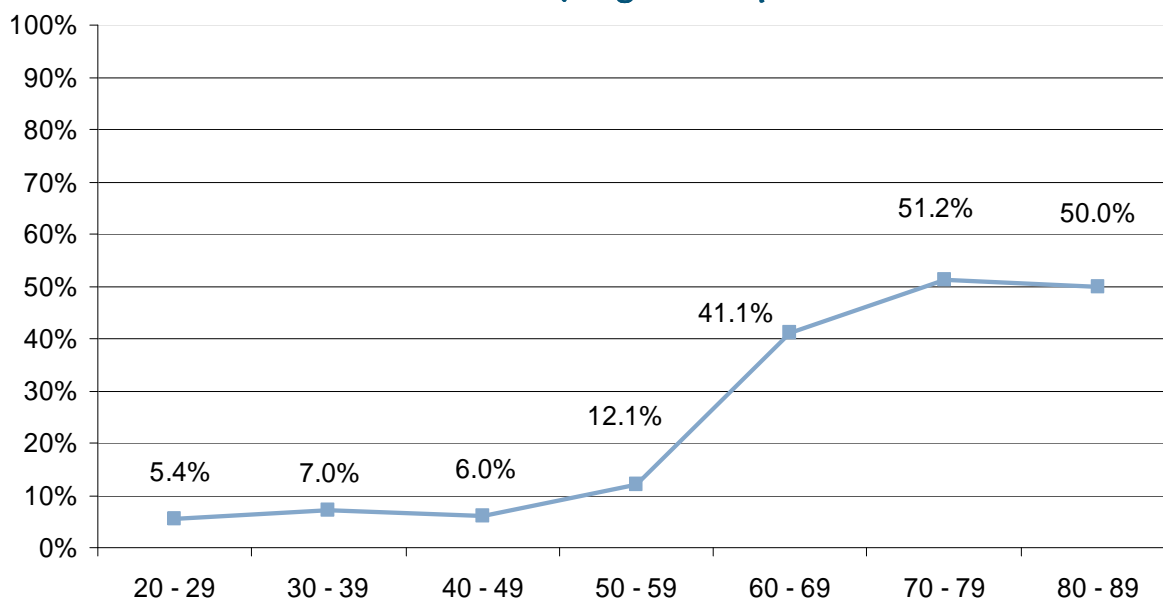
Figure 5.2. Distribution of Respondents Practicing in Florida Who Plan to Leave the Profession within Five Years by Age Group



Source: Workforce Survey of Dental Hygienists, 2009-10

The respondent counts for retirement plans displayed in Fig 5.2 were converted to percentages among each age group and shown in Figure 5.3. Overall, the percentages of survey respondents practicing in Florida with plans to leave the profession within five years remained relatively constant between the ages of 20–49 years and then increased thereafter up to age group 70–79 years. Approximately half of the respondents who were at least 70 years of age reported planning to leave the profession within five years.

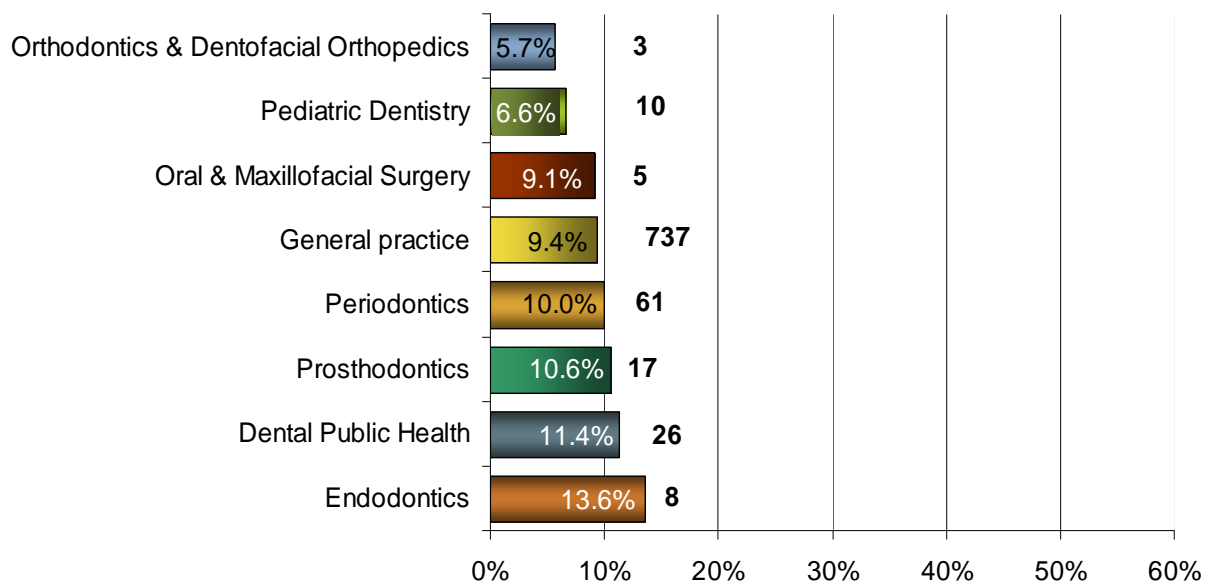
Figure 5.3. Percent of Respondents Practicing in Florida Who Have Plans to Leave the Profession within Five Years by Age Group



Source: Workforce Survey of Dental Hygienists, 2009-10

Both percentages and counts of practicing respondents with plans to retire within five years are presented according to practice types in Figure 5.4. A large proportion of practicing respondents plan to continue to practice in all practice types. The practice types with the highest percentage of respondents planning to retire within five years are endodontics (13.6%), dental public health (11.4%), and prosthodontics (10.6%). The respondent count for general practice was highest (n=737), but it constituted only 9.4% of all respondents who work in general practice. Respondents who practice in orthodontics & dentofacial orthopedics had the lowest respondent count (n=3) and percentage (5.7%) of those planning to retire within five years.

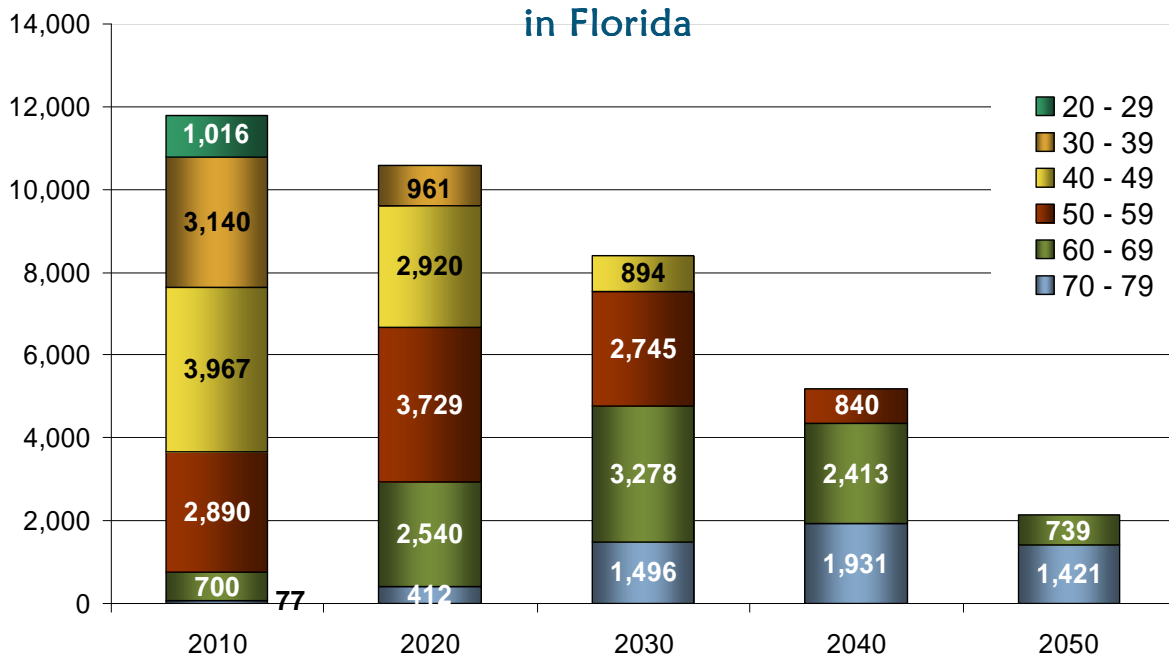
Figure 5.4. Percent and Number of Respondents Practicing in Florida Who Plan Retirement within Five Years by Practice Type



Source: Workforce Survey of Dental Hygienists, 2009-10

The projected workforce attrition of dental hygienists currently licensed in Florida is illustrated in Figure 5.5. The projections rest on a number of assumptions based on percentages in Figure 5.3. For example, retirement from the profession is estimated to be 12% among dental hygienists in their fifties and 41% among those in their sixties. The figure displays the projected size of each age group at 10-year intervals after attrition. For instance, dental hygienists who are currently in their twenties (n=1,016) will be in their sixties in 2050 with an expected count of 739, a decrease of 277. As the decades increase, the youngest age group falls off the figure. Among Florida’s dental hygienists 20–79 years of age who are currently licensed today (n=11,790) 2,160 are projected to be licensed in 2050.

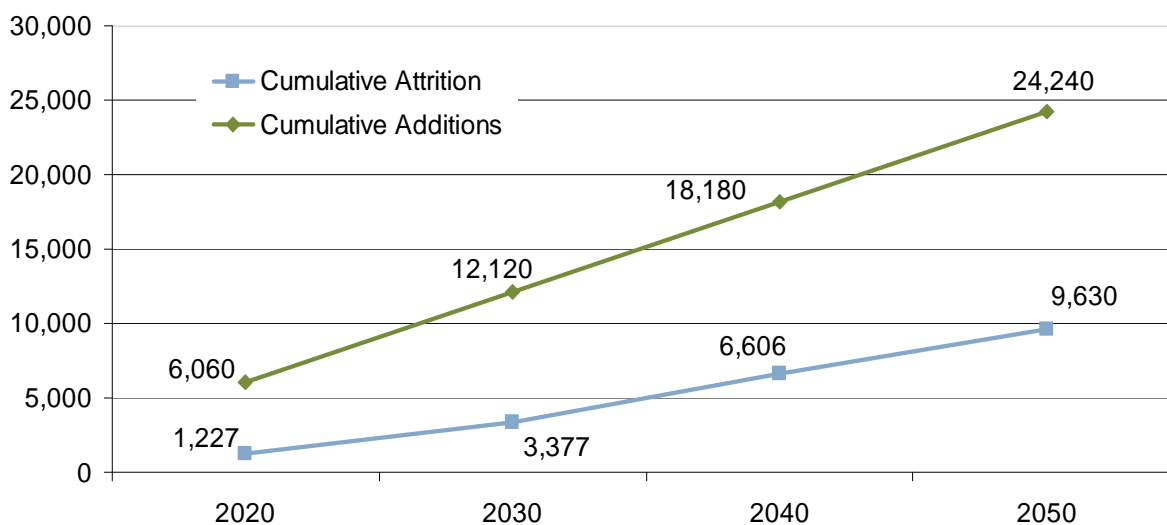
Figure 5.5. Projected Workforce Attrition Associated with the Aging of Hygienists Currently Licensed in Florida



Source: Workforce Survey of Dental Hygienists, 2009-10, and DOH Licensure Data
 Note: This figure excludes three hygienists who were 80 years or older.

The projected cumulative increase of new dental hygienists entering the workforce compared to the projected cumulative decline in the size of the current workforce is illustrated in Figure 5.6. This projection provides insight on whether new incoming dental hygienists are capable of offsetting the losses of older dental hygienists. The green line illustrates the cumulative addition of new dental hygienists. The projection assumes negligible impact of any attrition among the new dental hygienists. The blue line illustrates the cumulative loss of dental hygienists due to retirement. According to the figure, additions projected for the workforce significantly offset the projected losses associated with aging. Continued growth in the number of dental hygienists practicing in Florida is projected through the year 2050. Statewide growth of the workforce does not imply equal growth for every geographical area of Florida. An annual average of new dental hygienists entering the profession during 2005–2006 (n=606) was used to project the cumulative growth of the profession over the coming decades. Attrition is based on reported plans for retirement and does not include mortality or emigration from the state.

Figure 5.6. Projected Workforce Attrition Due to Retirement versus Additions of New Hygienists (2020 - 2050)*



*Includes losses associated with the aging of hygienists currently licensed in Florida and growth through the entry of new hygienists into the workforce.

Source: Workforce Survey of Dental Hygienists, 2009-10, and DOH Licensure Data

Dental Hygienists Practicing in Florida – Retention and Attrition by County

Summary: The percentage of dental hygienist respondents 50 years or older is fairly constant throughout Florida. Two counties in northern Florida have the highest percentages of respondents who are at least 50 years of age while also having relatively small counts of residents and dental hygienists.

Figure 5.7 illustrates the geographic distribution of practicing dental hygienist respondents 50 years and older as a percentage of all practicing respondents within a county. For the large majority of Florida counties, the percent of practicing dental hygienists 50 years or older ranges from 10-50%. For a few counties, however, the percentage is much higher. In Jefferson and Union counties, practicing dental hygienists 50 years and older represent more than 70% of all practicing dental hygienist respondents within the county. These counties are located in northern Florida and have relatively small populations with only a few dental hygienists. Future retirement of dental hygienists serving these counties may have greater impact on the availability of dental hygiene care than will the retirement of dental hygienists practicing in other counties.

Retention and Attrition: A Comparison between Dental Hygienists and Dentists Practicing in Florida

Summary: The percentage of dental hygienists and dentists respondents planning to leave the profession within five years were 9.8% and 9.7%, respectively. Endodontics and dental public health were practice types with the highest percentages of dental hygienist and dentist respondents planning to retire within five years. The projected addition of new dental hygienists and dentists is anticipated to exceed the projected workforce decline because of retirement.

The percentage of dental hygienists and dentist respondents practicing in Florida with plans to leave the profession within five years were similar (9.8% for dental hygienists and 9.7% for dentists).

Dental public health and endodontics were the practice types with the highest percentage of dental hygienist and dentist respondents planning to retire within five years. Among dental hygienist respondents, endodontics had the highest percentage (13.6%) followed by dental public health (11.4%). Among dentist respondents, dental public health (12.8%) had the highest percentage followed by endodontics (9.3%).

Among Florida's dental hygienists and dentists practicing today, approximately 2,160 dental hygienists and 1,004 dentists are projected to be licensed and still practicing in 2050.

Through the year 2050, projected additions of new dental hygienists and dentists to the workforce will offset projected losses from retirement by a large margin.

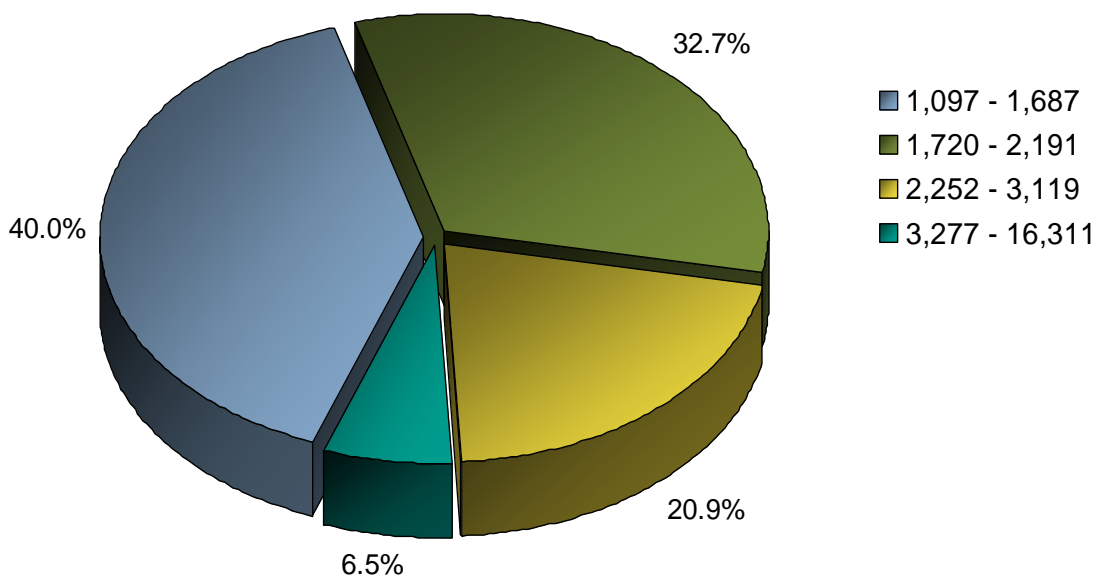
SECTION 6: ACCESS TO HEALTHCARE

Dental Hygienists Practicing in Florida – Access to Healthcare

Summary: Although 73% of Florida's residents live in counties having the lowest resident-to-dental hygienist ratios, 6.5% live in counties with the highest ratios of residents per dentist. Dental hygienists working in private practice are less likely to provide volunteer services than those working in a safety-net setting. Among the respondents, Hispanics portrayed the highest foreign language proficiency (96.2%) compared to Native Americans (7.1%).

Figure 6.1 displays the percent of Florida's population with respect to ranges of the number of county residents for each dental hygienist respondent. Counties with lower ranges (or ratios) theoretically have greater availability of dental hygienists. Approximately 73% of the state's residents live in counties having the lowest resident-to-dental hygienist ratios (1,097–1,687 and 1,720–2,191 residents per dental hygienist). Less than seven percent of Florida's residents live in counties with the highest ratios (3,277–16,311 residents per dental hygienist). There are no established standards for optimal ratios for dental hygienists per population; therefore, the resident-to-dental hygienist ratios cannot be characterized as sufficient or insufficient

Figure 6.1. Percent of Florida's Population by County Resident-to-Hygienist Ranges

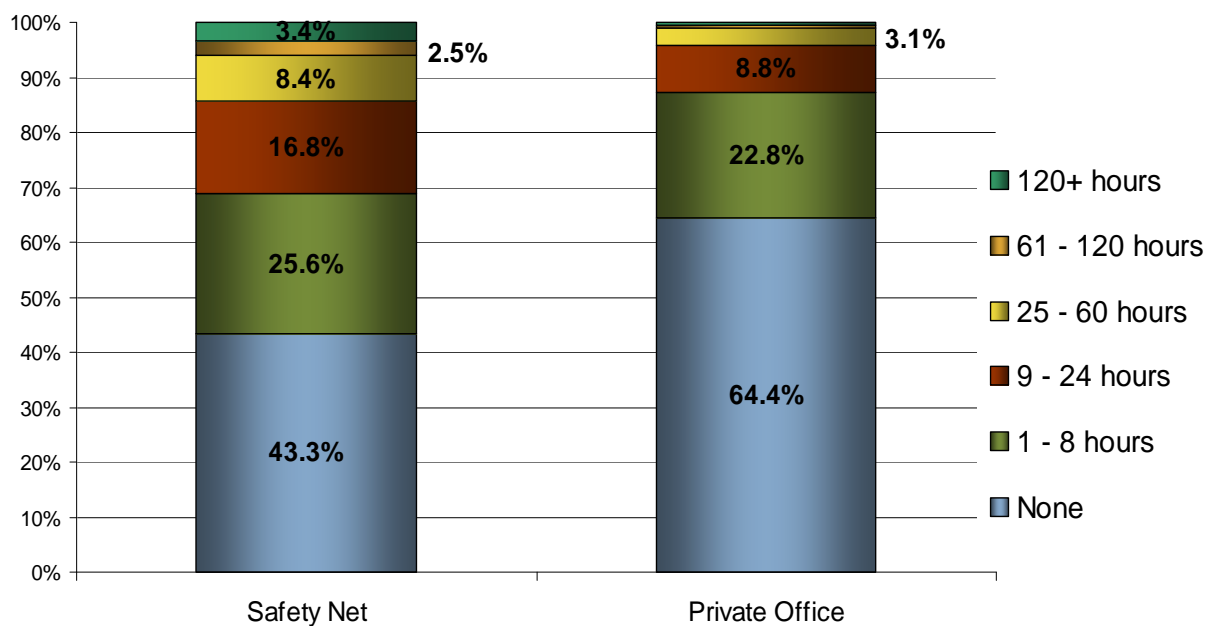


Note: Ranges are based on quartile groupings of residents per hygienist in Florida's counties.

Source: Workforce Survey of Dental Hygienists, 2009-10

In Figure 6.2, the distribution of hours of volunteer work performed in the past two years, by practice type is displayed. A higher percentage of dental hygienists in private office settings provided no volunteer services in the last two years (64.4%) compared to those in safety-net settings (43.3%).

Figure 6.2. Amount of Volunteer Dental Service Provided in the Last Two Years by Practice Type

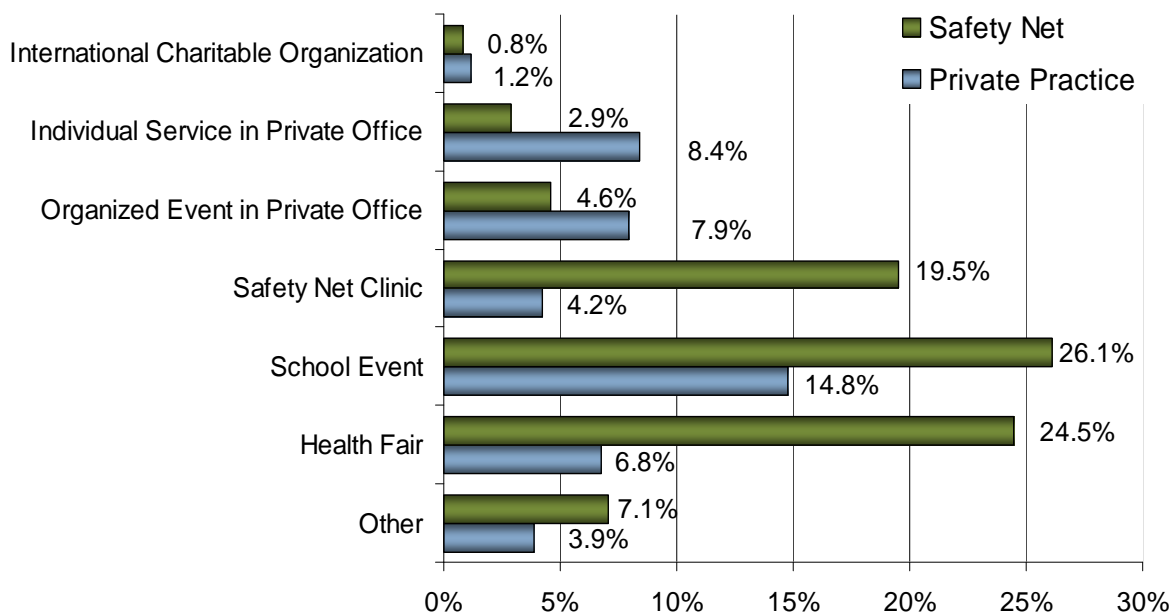


Note: For Private Office, labels for 61 - 120 hours (.5%) and 120+ hours (.4%) are not displayed.

Source: Workforce Survey of Dental Hygienists, 2009-10

Dental hygienists in a safety-net practice most typically perform volunteer work in outside events such as school events or health fairs (Fig 6.3). However, a large percentage of their work is still performed in safety-net clinics (19.5%). In contrast, 16.3% of dental hygienists in private practice settings typically perform volunteer work in their offices whether it is an individual initiative or an organized event. Nevertheless, dental hygienists in private practice settings still perform a large percentage of their volunteer work at school events (14.8%).

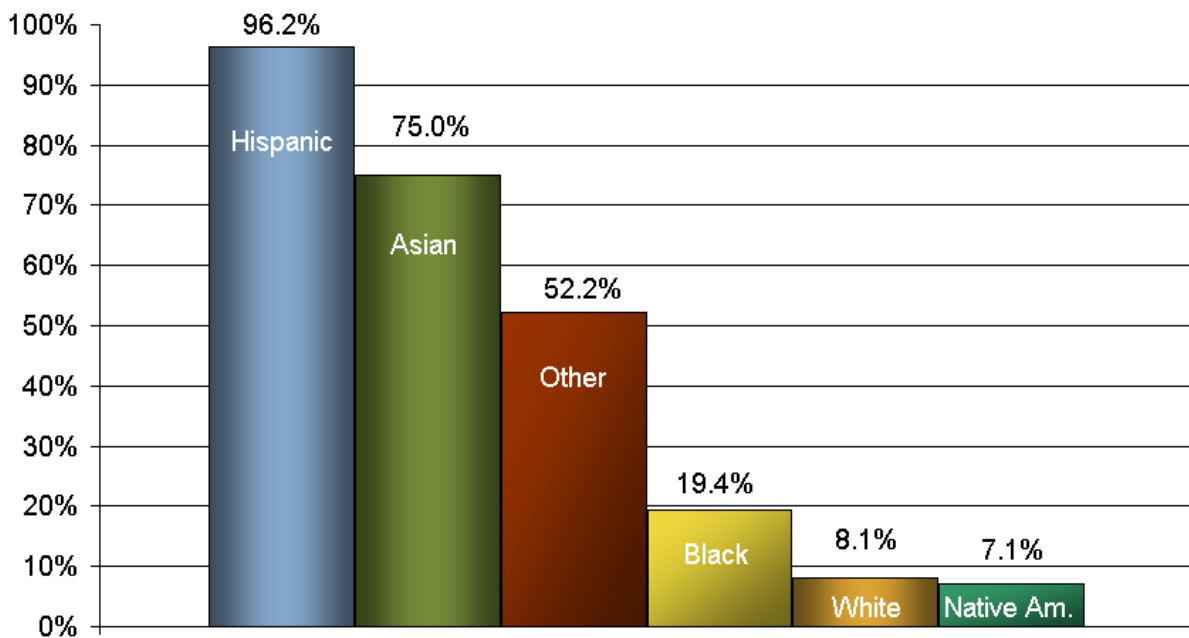
Figure 6.3. Settings for the Provision of Volunteer Services by Practice Type



Source: Workforce Survey of Dental Hygienists, 2009-10

The percentage of respondents practicing in Florida who speak a language other than English is highest among Hispanics (96.2%) and lowest among Native Americans (7.1%) (Figure 6.4). Foreign language proficiency is also high among Asian respondents (75%) and relatively low among Black (19.4%) and White (8.1%) respondents.

Figure 6.4. Percent of Respondents with Non-English Language Speaking Ability by Race/Ethnicity



Source: Workforce Survey of Dental Hygienists, 2009-10

Table 6.1 identifies the non-English languages spoken by respondents practicing in Florida. The table provides the number and percentage of these respondents aggregated by language spoken and race/ethnicity. For each race/ethnicity group, the most frequently spoken language is highlighted in yellow, and the second most frequent is highlighted in blue. Percentages in the table sum to more than 100% as the result of multiple language proficiency beyond English among some respondents.

Spanish is the most frequently spoken language among the Hispanic and White race/ethnicity groups. Among Black respondents, Spanish was the third most frequently spoken language and fifth among Asians. The majority (98.3%) of Hispanic respondents who indicated speaking a non-English language reported speaking Spanish. The majority (71.8%) of Black respondents who indicated speaking a non-English language cited speaking Creole. Spanish and French are the only two languages spoken by all race/ethnicity groups.

Table 6.1. Selected Non-English Languages Spoken by Dental Hygienist Respondents Practicing in Florida by Race/Ethnicity

Language	Asian		Black		Hispanic		White	
	#	%	#	%	#	%	#	%
Spanish	7	5.0%	5	12.8%	1,342	98.3%	224	45.5%
Other	35	25.2%	0	0.0%	0	0.0%	94	19.1%
French	1	0.7%	19	48.7%	24	1.8%	50	10.2%
Tagalog	74	53.2%	0	0.0%	0	0.0%	1	0.2%
German	1	0.7%	0	0.0%	5	0.4%	58	11.8%
Russian	1	0.7%	0	0.0%	0	0.0%	54	11.0%
Portuguese	1	0.7%	0	0.0%	29	2.1%	24	4.9%
Italian	1	0.7%	0	0.0%	15	1.1%	22	4.5%
Creole	0	0.0%	28	71.8%	1	0.1%	2	0.4%
Polish	0	0.0%	0	0.0%	1	0.1%	19	3.9%
Chinese	15	10.8%	0	0.0%	1	0.1%	1	0.2%
Hebrew	0	0.0%	0	0.0%	2	0.1%	15	3.0%
Arabic	0	0.0%	1	2.6%	1	0.1%	10	2.0%
Vietnamese	12	8.6%	0	0.0%	0	0.0%	0	0.0%
Korean	6	4.3%	0	0.0%	0	0.0%	1	0.2%
Japanese	3	2.2%	0	0.0%	0	0.0%	1	0.2%

Source: Workforce Survey of Dental Hygienists, 2009-10

In Table 6.2, ratios of the number of Hispanic residents per Hispanic dental hygienists for the five counties with the largest populations of Hispanic Floridians are presented. Lower ratios theoretically have greater availability of dental hygienists. The table shows that Palm Beach County has a relatively low number of Hispanic residents per Hispanic dental hygienists followed by Broward, Hillsborough and Orange counties. Miami-Dade County greatly exceeds the other counties with a high ratio of 2,183 Hispanic residents per Hispanic dental hygienists. As previously reported, nearly all Hispanic respondents speak Spanish. Thus, in counties with low ratios of Hispanic residents to Hispanic dental hygienists, availability of Spanish-speaking dental hygienists is expected.

Table 6.2. Ratio of Hispanic Residents to Hispanic Dental Hygienists in Florida Counties with the Greatest Number of Hispanics

County	Hispanic Population	Active Hispanic Hygienists	Hispanic Residents per Hispanic Hygienist
Miami-Dade	1,571,910	720	2,183
Broward	429,882	818	526
Orange	299,518	457	655
Hillsborough	282,979	480	590
Palm Beach	230,695	734	314

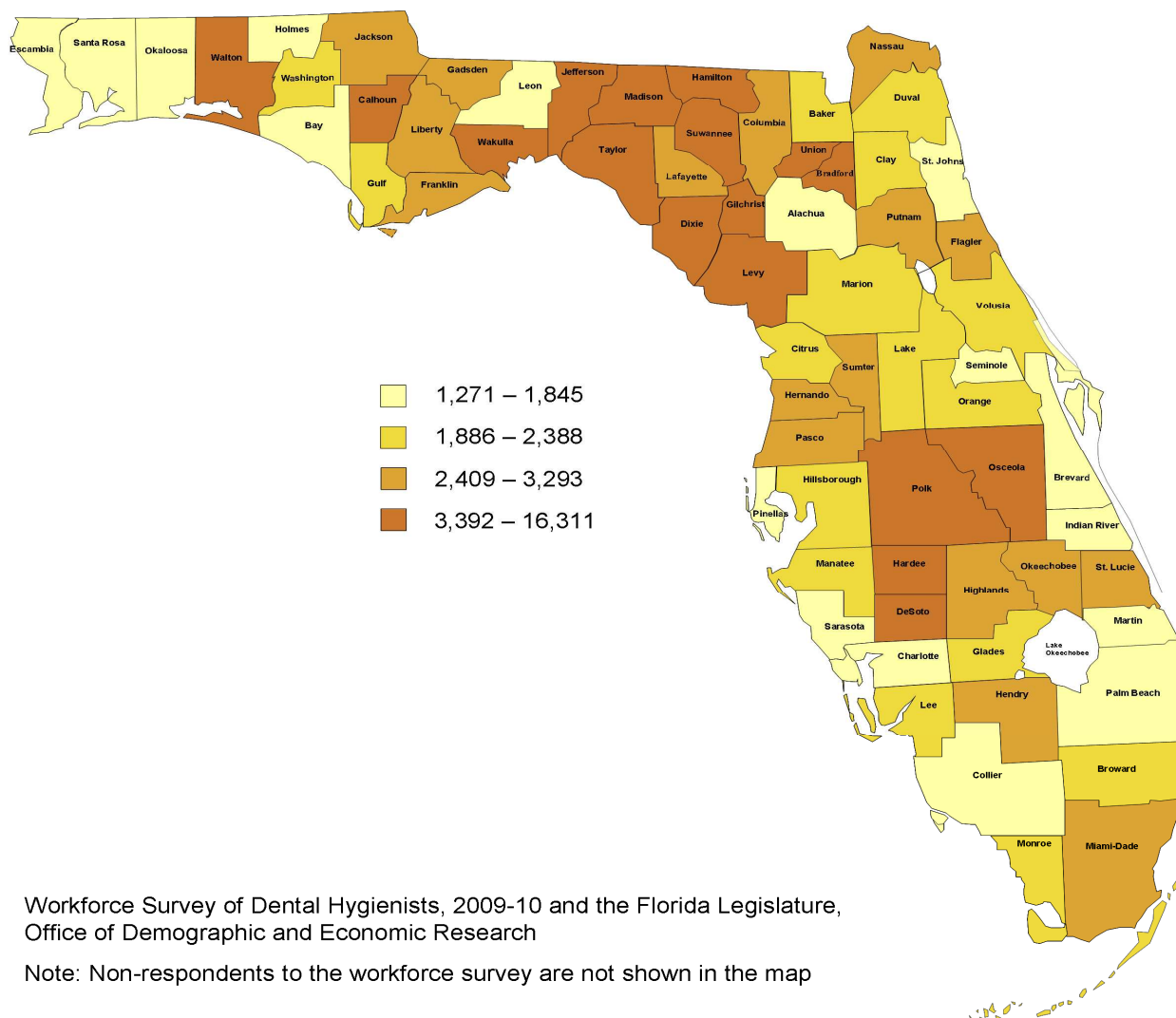
Source: Workforce Survey of Dental Hygienists, 2009-10, and the Office of Economic and Demographic Research, Florida Legislature

Dental Hygienists Practicing in Florida – Access to Healthcare by County

Summary: Overall, the availability of dental hygienists is better in the Northwestern and coastal counties of Southern Florida than elsewhere in the state.

Figure 6.5 illustrates the geographic distribution of residents-to-dental hygienist ratios. Lower ratios theoretically have greater availability of dental hygienists. Overall, counties in Northwest Florida and the coastal counties of South Florida have better availability of dental hygienists (lower resident-to-dental hygienist ratios), while many counties in Northeast Florida (near the panhandle) and Central Florida have lower availability (higher resident-to-dental hygienist ratios) of hygienists. There are no established standards for optimal ratios for dental hygienists per population; therefore, the county resident-to-dental hygienist ratios cannot be characterized as sufficient or insufficient.

Figure 6.5. Florida Counties by Residents per Active Respondent



Workforce Survey of Dental Hygienists, 2009-10 and the Florida Legislature, Office of Demographic and Economic Research

Note: Non-respondents to the workforce survey are not shown in the map

Access to Healthcare: A Comparison between Dental Hygienists and Dentists Practicing in Florida

Summary: The majority of counties in Florida have low numbers of residents per dental hygienist and dentist. Dental hygienists in safety-net settings and dentists in private practice offices tend to provide volunteer services. Non-English language proficiency, particularly Spanish, is highest among Hispanic dental hygienists and dentists.

The majority of Florida's counties have low numbers of residents per dental hygienist (73% have 1,097–2,191 residents per dental hygienist) and residents per dentist (85% have 1,025–2,349 residents per dentist). Approximately 7% of Florida's residents live in counties with the highest numbers of residents per dental hygienist and dentist. Given no optimal ratio for care exists, the resident-to-dental hygienist ratios cannot be characterized as sufficient or insufficient

Volunteer dental services, provided, for example, at school events or health fairs, are more likely rendered by dental hygienists working in safety-net settings rather than those working in private office settings. In contrast, volunteer services among dentists tend to be provided as individual initiatives in their own private practice offices as compared with dentists working in safety-net settings.

Non-English language proficiency among both dental hygienist and dentist respondents were highest among Hispanics, 96% and 97%, respectively. In contrast, Native Americans had the lowest percentage of non-English language proficiency among dental hygienists while Whites had the lowest percentage for dentists, 7% and 23%, respectively.

Spanish is the language most frequently spoken for all race/ethnicity groups, except for Black and Asian dental hygienist respondents and Asian and unspecified "other" dentist respondents. Spanish and French are the only two languages spoken by all racial and ethnic groups for both hygienists and dentists.

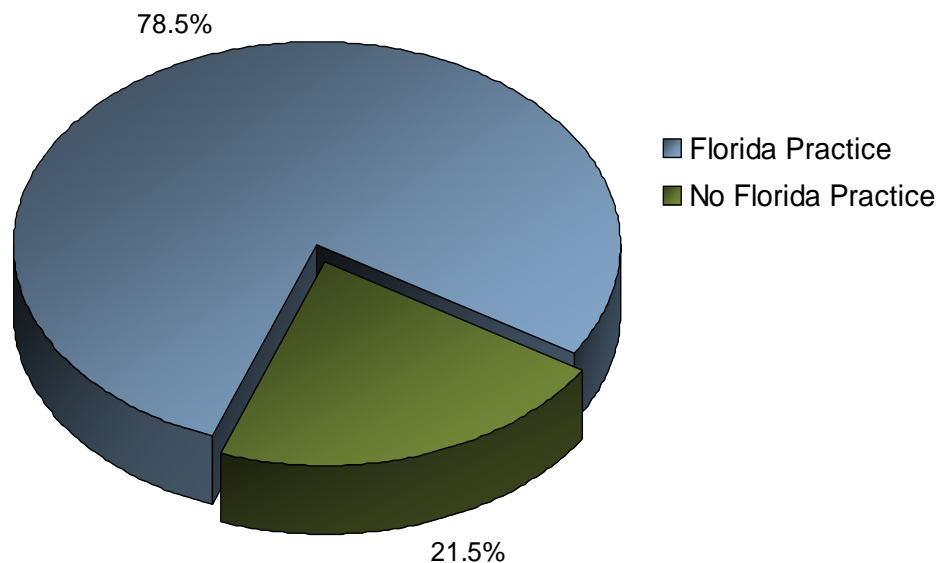
The availability of Hispanic dental hygienists to serve Hispanic residents appears to be highest in Palm Beach County and the availability of Hispanic dentists to serve Hispanic residents appears to be highest in Broward County. The availability of both Hispanic dental hygienists and dentists to serve Hispanic residents seems to be lowest in Miami-Dade County.

SECTION 7: PROFILE OF DENTAL HYGIENISTS NOT PRACTICING IN FLORIDA

Summary: Compared to respondents practicing in Florida, a higher percentage of respondents not practicing in the state received a license from another state and have an out-of-state residential address. A lower percentage of respondents not practicing in Florida identified themselves as Hispanic and received a dental hygiene degree from a Florida school than did respondents who practice in the state.

Percentages of respondents with an active Florida license who reported practicing in Florida or out of the state are displayed in Figure 7.1. While the majority of the survey respondents with an active Florida license do practice in the state (78.5%), 21.5% do not practice in Florida.

Figure 7.1. Florida Dental Hygienist Practice among Survey Respondents with an Active Florida License



Note: Information was not provided by 339 respondents.

Source: Workforce Survey of Dental Hygienists, 2009-10

*Percentages follow the order of the legend in a clockwise direction.

Differences between respondents who practice in Florida and those who do not are presented in Table 7.1. Fifty-six percent of respondents who do not practice in Florida reside in another state compared to 1.2% of respondents who practice in Florida. Approximately 57% of respondents who do not practice in Florida reported holding an out-of-state license compared to 15.2% of respondents who practice in Florida. Relative to respondents who practice in Florida, a lower percentage of respondents not practicing in Florida identify themselves as Hispanic and received a dental hygiene degree from a Florida school.

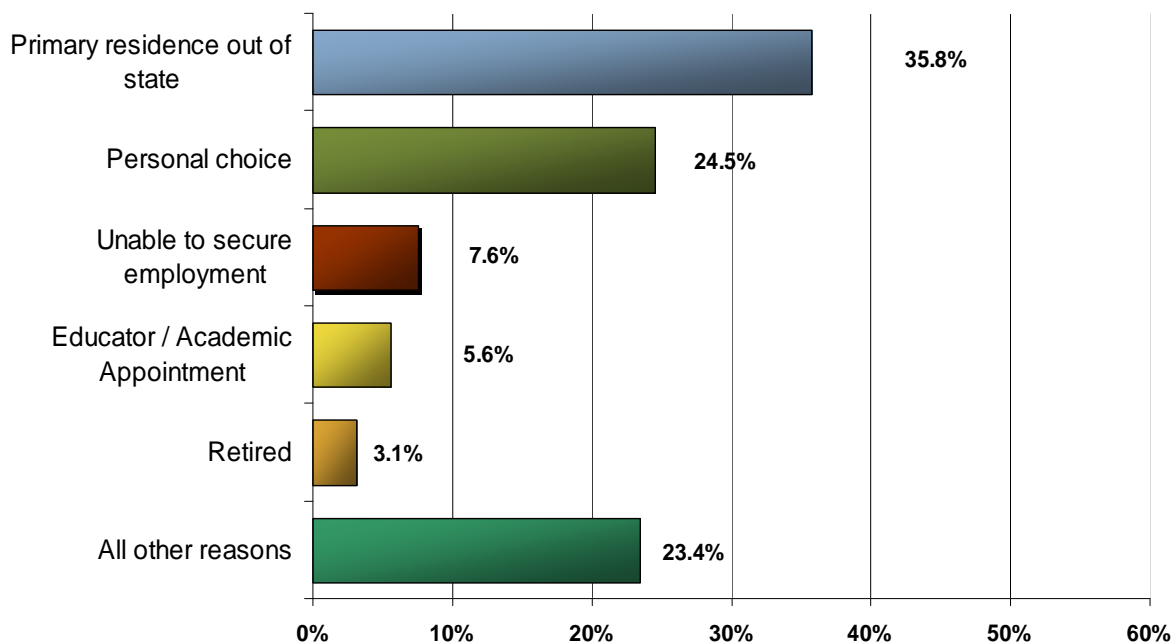
Table 7.1. Profiles of Respondents with an Active Florida Dental Hygienist License by Florida Practice Status

Characteristics	Practices in Florida	Does Not Practice in Florida
Average age	43.4 (Range of 21-85 years)	45.8 (Range of 21-79 years)
% White	73.5%	76.9%
% Hispanic	17.1%	11.5%
% Currently resides out of state	1.2%	56.0%
% Licensed in another state	15.2%	56.6%
% Received dental hygiene degree from a Florida school	70.9%	48.5%
% Practiced dental hygiene > 20 years	31.5%	34.8%

Source: Workforce Survey of Dental Hygienists, 2009-10

The distribution of primary reasons for not practicing in Florida as reported by survey respondents with an active Florida license is presented in Figure 7.2. Primary residence out of state was cited most often (35.8%), followed by personal choice (24.5%), and not being able to secure employment (7.6%). Unspecified reasons and reasons with less than one percent of respondents were grouped into “all other reasons” (23.4%).

Figure 7.2. Main Reason Florida-Licensed Respondents Do Not Practice Dental Hygiene in Florida



Source: Workforce Survey of Dental Hygienists, 2009-10

Profile: A Comparison between Dental Hygienists and Dentists Not Practicing in Florida

Summary: Of respondents with an active Florida License, 21.5% of dental hygienists and 19.1% of dentists do not practice in Florida. Overall, primary residence out-of-state and personal choice, were cited as the top two primary reasons why Florida-Licensed respondents do not practice dental hygiene or dentistry in Florida.

Of respondents with an active Florida License, 21.5% of dental hygienists and 19.1% of dentists do not practice in Florida.

Of the respondents who do not practice in Florida, 56% of dental hygienists reside in another state compared to 75.5% of dentists. Additionally, 56.6% of out-of-state practicing dental hygienists received their license in another state compared to 78.4% of out-of-state practicing dentists.

Primary residence out-of-state and personal choice were cited as the top two primary reasons why Florida-Licensed respondents do not practice dental hygiene (35.8% and 24.5%, respectively) and dentistry (27.0% and 37.5%, respectively) in Florida.

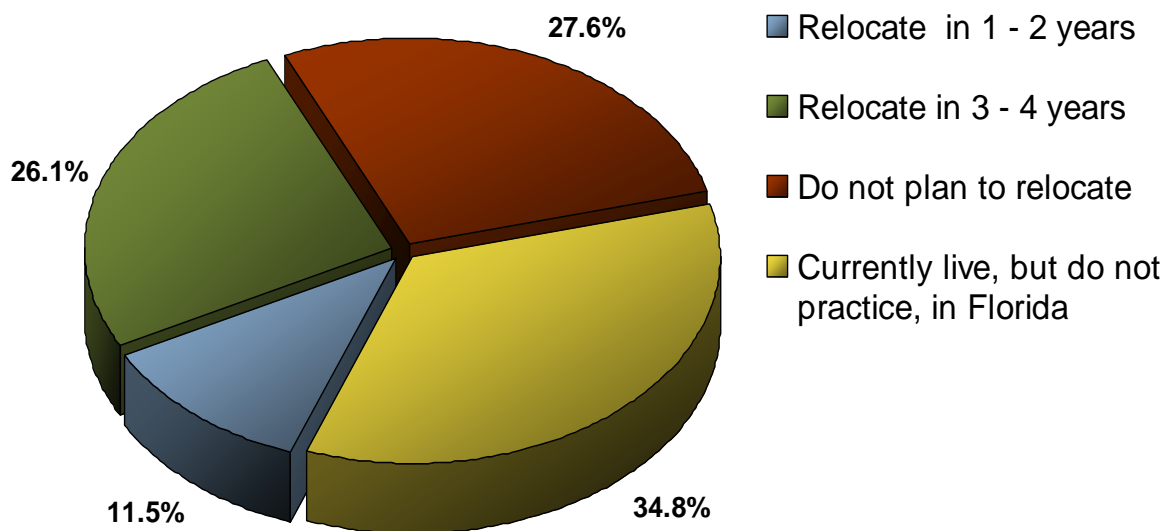
Relative to respondents practicing in Florida, a lower percentage of dental hygienist and dentist respondents who practice in states other than Florida are Hispanic. Slight differences exist between age and number of years in practice for both dental hygienists and dentists.

SECTION 8: FUTURE PLANS OF DENTAL HYGIENISTS NOT PRACTICING IN FLORIDA

Summary: Approximately 38% of respondents not currently practicing in Florida have future plans to relocate and practice in the state.

The description of future plans of respondents not currently practicing in Florida are displayed Figure 8.1. Among the respondents not currently practicing in the state, 34.8% reside in Florida. Another 37.6% of respondents with an active Florida license who do not currently practice in the state report that they intend to practice at some point in the future. Among those with reported plans for future practice, 11.5% plan to practice in one to two years, and 26.1% plan to practice in three to four years. Approximately, 28% indicate no future plans to relocate to Florida.

Figure 8.1. Future Plans to Relocate to Florida among Respondents Not Currently Practicing in the State



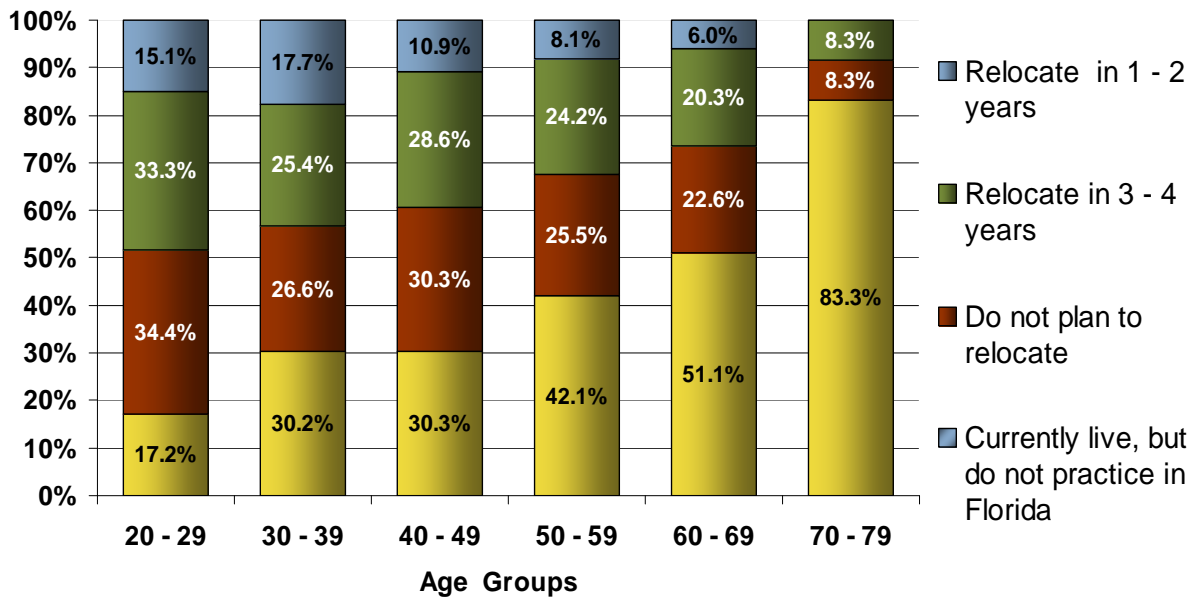
Note: 218 respondents not practicing in Florida did not report future relocation plans.

Source: Workforce Survey of Dental Hygienists, 2009-10

*Percentages follow the order of the legend in a clockwise direction.

Age is closely related to plans for future practice in Florida (Figure 8.2). Among respondents not practicing in Florida, 34.4% of dental hygienists 20-29 years of age reported having no plans to relocate to Florida. Overall, this percentage declined as age increased. While 8.3% of respondents 70-79 years of age did not plan to relocate, 83.3% of this age group lived in Florida, but did not practice in the State. Respondents aged 20-29 have the highest percentage for future Florida practice, with 15.1% indicating practice in one to two years and 33.3% indicating three to four years. There is a steady decline for future plans to relocate to Florida among respondents with an Active Florida License not currently practicing in the State across the remaining age groups.

Figure 8.2. Future Plans to Relocate to Florida among Respondents with an Active Florida License Not Currently Practicing in the State by Age Group



Source: Workforce Survey of Dental Hygienists, 2009-10

Future Plans: A Comparison between Dental Hygienists and Dentists Not Practicing in Florida

Summary: For dental hygienists and dentists not practicing in Florida, future plans to practice in Florida varied by age. Younger dental hygienists tended to have no plans of practicing in Florida compared to older respondents. However, older dentists tended to have no future practice plans in Florida relative to younger dentists.

Among respondents not currently practicing in Florida, 27.6% of dental hygienists and 15.5% of dentists have no plans of relocating to Florida. Among those with reported plans for future practice, 11.5% of dental hygienists plan to relocate and practice in one to two years compared to 12.2% of dentists and 26.1% plan to practice in three to four years, compared to 4.4% of dentists.

Overall, the percentage of dental hygienists with no future plans to relocate and practice in Florida was highest for the youngest age group of 20-29 years (34.4%) and steadily declined as age increased (8.3% for respondents aged 70-79 years). In contrast, the percentage of dentists with no anticipation of future Florida practice was highest for those 80-89 years (41.7%) and decreased as age decreased (2.8% for respondents aged 20-29).

For both dental hygienists and dentists, the percentage for future practice in Florida was highest among the youngest respondents: 15.1% of dental hygienists indicated practicing in 1–2 years and 33.3% indicated 3–4 years compared to 42.5% of dentists practicing in 1–2 years and 12.3% practicing in 3–4 years.

APPENDIX A

2009-2010 DENTAL WORKFORCE SURVEY INSTRUMENT FOR DENTAL HYGIENISTS

Governor Charlie Crist, State Surgeon General Ana Viamonte Ros and the Florida Legislature recognize the importance of assessing Florida's current and future dental workforce. Your responses, which constitute a public record, will be instrumental in shaping Florida's healthcare policies. This survey is voluntary and will be maintained by the Department of Health. Your time and effort in completing the questions below is appreciated.

License Number _____

1. Do you hold a dental hygiene license in any other state(s)?
 - Yes. (___ Drop down list of states _____)
 - No.
2. Please indicate the type of program from which you qualify for holding a Florida dental hygiene license.
 - Florida dental hygiene program. If so, please answer 2a below.
 - Out of state dental hygiene program. If so please answer 2b below.
 - Foreign trained dental program. If so, please answer 2c below.

2a. Please indicate the school(s) or program(s) from which you received your dental hygiene degree(s).

- Brevard Community College
- Broward College (Broward Community College)
- Daytona State College
- Edison State College
- Florida Community College at Jacksonville
- Gulf Coast Community College
- Hillsborough Community College
- Indian River State College
- Manatee Community College
- Miami Dade College (Miami Dade Junior College)
- Palm Beach Community College (Palm Beach Junior College)
- Pasco-Hernando Community College
- Pensacola Junior College
- Santa Fe College
- South Florida Community College
- St. Petersburg College
- Tallahassee Community College
- Valencia Community College
- A Florida program that is not listed

2b. Out of state dental hygiene graduates - Please indicate states where you received your dental hygiene education. Check all that apply.

○ State ___(Drop Down List of States)_____

2c. If you are a foreign trained dental provider check the box which best describes your foreign degree.

- Dentist
- Medical Doctor
- Nurse
- Dental Hygienist
- Dental Technician
- Other

2d. If you are a foreign trained dental provider, please indicate the country where you received your dental hygiene education

- Argentina
- Australia
- Brazil
- Canada
- China
- Columbia
- Cuba
- England
- France
- Germany
- Haiti
- India
- Ireland
- Israel
- Italy
- Japan
- Korea
- Mexico
- Philippines
- Poland
- Portugal
- Russia
- Saudi Arabia
- Scotland
- South Africa
- Spain
- Ukraine
- Vietnam
- Other

3. How many years have you been in the active practice of dental hygiene?
 - 0 – 1.
 - 2 – 5.
 - 6 – 10.
 - 11 – 15.
 - 16 – 20.
 - Greater than 20.
4. Do you practice dental hygiene at any time during the year in Florida?
 - Yes. If yes, proceed to question 5.
 - No. If no, please answer the following:
 - 4a. The main reason you have a Florida license, but don't practice dental hygiene is (choose only one)
 - Educator/academic appointment
 - Retired
 - Malpractice Insurance Rates
 - Liability Exposure
 - Salary
 - Florida rules are too restrictive
 - Maintain primary residence out of state
 - Unable to secure employment
 - Job related health issue
 - Personal choice
 - Other
 - 4b. Do you plan to relocate to Florida?
 - In 1-2 years
 - In 3-4 years
 - Do not plan to relocate
 - I live in Florida, but do not currently practice in Florida

If you DO NOT practice dental hygiene or otherwise work as a dental hygienist in Florida, you are now finished with the survey. Thank you.

5. How many months do you practice dental hygiene in Florida in the past 12 months?
 - 1-4 Months.
 - 5-8 Months.
 - 9-12 Months.
6. Approximately how many hours do you practice in an average week?
 - 0 – 10.
 - 11 – 20.
 - 21 – 30.
 - 31 – 40.
 - Greater than 40.
7. How many patients on average do you see per week?
 - 1 – 25.
 - 26 – 50

- 51 – 75
 - 76 – 100
 - Greater than 100
8. Please use the drop down box to indicate the type of practice in which you work. (Check all that apply).
- General practice.
 - Dental Public Health.
 - Endodontics.
 - Oral and Maxillofacial Pathology.
 - Oral and Maxillofacial Radiology.
 - Oral and Maxillofacial Surgery.
 - Orthodontics and Dentofacial Orthopedics.
 - Pediatric Dentistry.
 - Periodontics.
 - Prosthodontics.
9. Which description best describes your primary practice setting?
- Office Practice-Solo Practice.
 - Office Practice-Group Practice-Single Specialty.
 - Office Practice-Group Practice-Multi Specialty.
 - County Health Department
 - Community Health Center.
 - Federally Qualified Health Center.
 - State Correctional Facility Clinic.
 - Other State Government Clinical Setting.
 - Military Facility Clinic.
 - VA clinic.
 - Academic Institution.
 - Other
10. How many years have you been in your current primary practice setting and/or position?
- 0 – 1.
 - 2 – 5.
 - 6 – 10.
 - 11 – 15.
 - 16 – 20.
 - Greater than 20.
11. Do you work for more than one employer or in more than one practice setting?
- Yes.
 - No.
12. Are you currently seeking additional dental hygiene employment?
- Yes. If yes, please answer 12a below.
 - No.
- 12a. How many additional hours a week are you seeking?
- 1-4
 - 5-8

- 9-12
- 13-16
- 17-20
- 21-24
- 25 or more

13. What kind(s) of difficulty (if any) have you experienced in finding a position as a dental hygienist? (Check all that apply)

- None
- Looking for full time employment and cannot find it
- Looking for part time employment and cannot find it
- The day I required was unavailable
- Inadequate salary
- Inadequate benefits
- Unsatisfactory work environment
- Travel time – distance is too great
- Other

14. Do you practice in the same county where you live?

- Yes, some of the time.
- Yes, all of the time.
- No.

15. In what Florida County(ies) do you practice dental hygiene? (You may select up to 5 counties - See p. 6 for county codes) Please indicate the number of hours dedicated to each location.

Numeri c Code	County Name	0-10 Hrs Per Week	11-20 Hrs Per Week	21-30 Hrs Per Week	30-40 Hrs Per Week	40-50 Hrs Per Week	More than 50 Hrs Per Week

16. How many hours of volunteer dental hygiene service did you provide in the last two years (most recent biennial license period)?

- None
- 1-8 hours
- 9-16 hours
- 17-24 hours
- 25-30 hours
- 31-60 hours
- 61-120 hours
- Greater than 120 hours

17. Where did you provide volunteer dental hygiene services in the past year? Check all that apply.

- I did not provide any volunteer dental hygiene services
- In private office, on my own
- In private office, as part of an organized event (e.g. Give Kids a Smile Day, etc.)

- At a safety-net clinic (e.g. County Health Department, Community Health Center, FQHC, etc.)
 - As part of a health fair
 - As part of a school event
 - International charitable organization
 - Other
18. Do you plan to leave the profession in the next 5 years?
- Yes
 - No
- 18a. If yes, the main reason for retiring (Check only one):
- Time to retire
 - Compensation
 - Family
 - Liability Exposure
 - Malpractice Rates
 - Reimbursement Rates
 - Administrative issues
 - Job related health issue
 - Other
19. Do you speak any other languages besides English?
- Yes. If yes, please answer 19a below.
 - No.
- 19a. If yes, what languages do you speak? Check all that apply.
- Spanish
 - Portuguese
 - French
 - German
 - Italian
 - Russian
 - Polish
 - Creole
 - Chinese
 - Japanese
 - Korean
 - Vietnamese
 - Tagalog
 - Arabic
 - Hebrew
 - Other

County Names and Numeric Codes (Reference for question # 15)

11 ALACHUA

12 BAKER

13 BAY

14 BRADFORD

15 BREVARD
16 BROWARD
17 CALHOUN
18 CHARLOTTE
19 CITRUS
20 CLAY
21 COLLIER
22 COLUMBIA
23 DADE
24 DESOTO
25 DIXIE
26 DUVAL
27 ESCAMBIA
28 FLAGLER
29 FRANKLIN
30 GADSDEN
31 GILCHRIST
32 GLADES
33 GULF
34 HAMILTON
35 HARDEE
36 HENDRY
37 HERNANDO
38 HIGHLANDS
39 HILLSBOROUGH
40 HOLMES
41 INDIAN RIVER
42 JACKSON
43 JEFFERSON
44 LAFAYETTE
45 LAKE
46 LEE
47 LEON
48 LEVY
49 LIBERTY
50 MADISON
51 MANATEE
52 MARION
53 MARTIN
54 MONROE
55 NASSAU
56 OKALOOSA
57 OKEECHOBEE
58 ORANGE
59 OSCEOLA
60 PALM BEACH

61 PASCO
62 PINELLAS
63 POLK
64 PUTNAM
65 ST.JOHNS
66 ST.LUCIE
67 SANTA ROSA
68 SARASOTA
69 SEMINOLE
70 SUMTER
71 SUWANNEE
72 TAYLOR
73 UNION
74 VOLUSIA
75 WAKULLA
76 WALTON
77 WASHINGTON
78 UNKNOWN
79 OUT OF STATE
80 FOREIGN

APPENDIX B

DETAILED METHODS

Florida statute and administrative rules require renewal of dental and dental hygienist licenses biennially by the end of February of even-numbered years. The most recent renewal period ended on February 28, 2010. The Florida Department of Health (DOH) prepared and administered separate workforce surveys of dentists and dental hygienists to coincide with the license renewal process. As part of their on-line renewal, dentists and dental hygienists were asked and encouraged to complete a survey. Those renewing by paper form had the option to download a survey, complete and submit it with their renewal paperwork. Approximately 10 percent of dentists and six percent of hygienists opted for license renewal by paper. Their survey responses were added to responses made on-line. In this way, the survey reached virtually all of Florida's active dentists and dental hygienists. The only group not exposed to a survey were dentists and hygienists initially licensed within 120 days of February 28, 2010. A total of 74 dentists and 82 hygienists fall into this group.

The surveys were designed to obtain information unavailable elsewhere concerning Florida's dental workforce to better inform and shape public healthcare policy and plan for future workforce needs. Analysis of responses is guided by those objectives. To supplement information obtained from the surveys, additional information from the Florida Legislature's Office of Economic and Demographic Research, the 2008 Florida Behavioral Risk Factor Surveillance System Report, the Medicaid Management Information System, and the Florida Department of Health, Division of Medical Quality Assurance, was used in the analyses.

Because any workforce count is inevitably date specific, the reference date for this report is June 23, 2010. Licensure information was "frozen" on that date for use in identifying dental hygienists with active licenses. In contrast to licensure information, practice status as summarized in this report is not tied to a single, specific reference date. Information concerning practice status was obtained from the workforce survey, which was completed over a period of months beginning in November 2009 and ending in June 2010 (for late renewals). Changes in practice status occurring between survey completion and the report reference date would not be reflected in the data. Thus, counts or estimates of dental hygienists actively practicing or not practicing in Florida are approximate with respect to the report's reference date.

During the 2009–2010 biennial license renewal period:

- 12,058 dental hygienists renewed an active or non-active Florida license
- 11,793 dental hygienists renewed an active license
- 11,259 dental hygienists renewing an active or inactive license completed the survey

- 10,963 dental hygienists renewing an active license only completed the survey
- 10,624 dental hygienists renewing an active license only completed the survey and responded to survey question #4 concerning practice in Florida
- Of these 10,624 dental hygienist respondents:
 - 8,335 practiced in Florida
 - 2,289 did not practice in Florida

A total of 10,624 dental hygienists responded to the survey question concerning practice in Florida, representing an unadjusted response rate of 90 percent of the 11,793 dental hygienists renewing an active license. These numbers include late renewals in the period between March 1 and June 23, 2010. While the unadjusted response rate is not uninformative, further editing of the data helps to concentrate the analysis on the primary topic of the survey: dental hygienists who are currently practicing in Florida.

Given that practicing dental hygienists are a subset of dental hygienists with active licenses, licensure information maintained by DOH helps to screen respondents by identifying dental hygienists who are ineligible to practice. Table B.1 illustrates this use. Summarized in the table is the license status of survey respondents as of June 23, 2010. Only the first three rows in the table represent categories eligible for active practice in Florida, but these comprise nearly 97 percent of the respondents. The remainder are dental hygienists with a license status that has changed since the survey (e.g., because of death) or those with renewal of non-active licenses (e.g., inactive licenses, which also are subject to renewal requirements). For purposes of analysis, respondents with non-active licenses are of limited interest, and they will be considered separately. The 10,624 survey respondents with an active license who either practiced or did not practice in the state represented 90 percent of all Florida dental hygienists renewing an active license as of June 23, 2010. A total of 830 dental hygienists with an active Florida license did not respond to the survey and 339 dental hygienists responded to the survey but did not answer survey question #4 concerning practice during the year in Florida. However, demographic and address information on non-respondents is available and was used in the analysis.

Table B.1. License Status of Dental Hygienists Responding to the Workforce Survey of Dental Hygienists

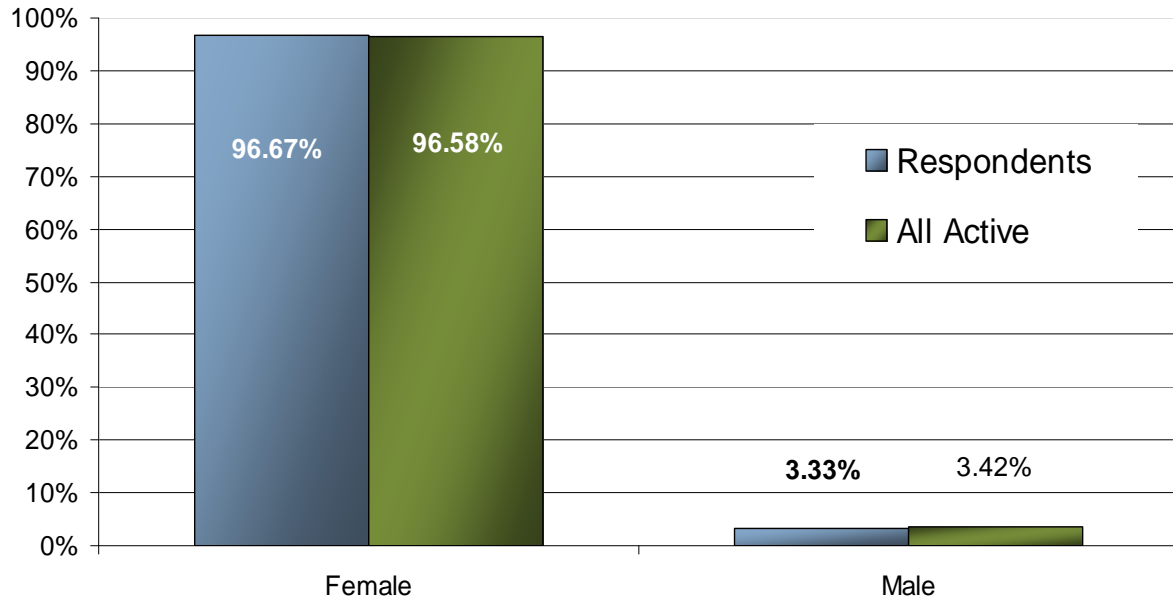
License Status as of June 23, 2010	Respondents	
Active - Clear	10,956	97.3%
Active - Obligations	5	0.0%
Active - Probation	2	0.0%
Inactive - Clear	170	1.5%
Military Active	39	0.3%
Retired	40	0.4%
Active - Delinquent	28	0.2%
Null and Void	11	0.1%
Active - Voluntary Withdrawal	1	0.0%
Inactive - Delinquent	4	0.0%
Voluntary - Relinquished	3	0.0%
Total	11,259	100.00%

Source: Workforce Survey of Dental Hygienists, 2009-10, and Department of Health Licensure Data

At 93 percent of all dental hygienists with an active Florida license, survey respondents constitute a large, sample of active-license Florida dental hygienists. The size of the sample serves to mitigate potential biases associated with self selection for response to the survey. Moreover, available data allow comparison of the sample with the entire active-license population in key demographic characteristics: gender, race/ethnicity, and age. Such comparison can further support the representative nature of the sample.

Figure B.1 displays the gender distribution of survey respondents in comparison to all dental hygienists with an active Florida license. Females significantly outnumber males for both groups.

Figure B.1. Gender Distribution: Survey Respondents versus All Dental Hygienists with Active Florida Licenses*

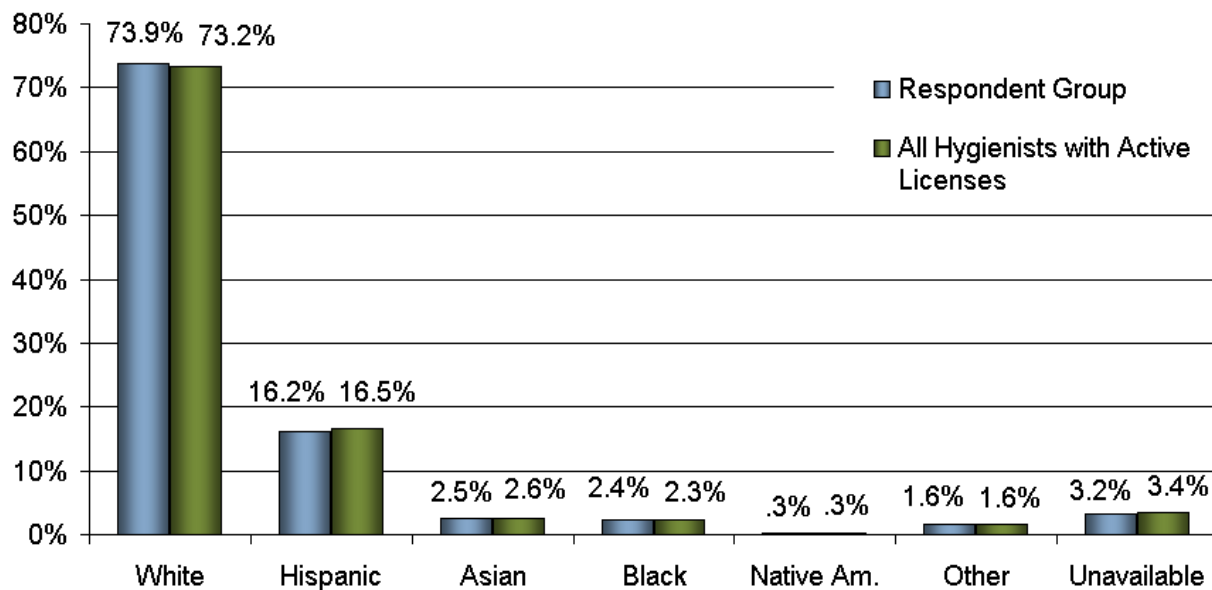


*Survey respondents and all hygienists with active licenses as of June 23, 2010

Source: Workforce Survey of Dental Hygienists, 2009-10

Figure B.2 illustrates the distribution of survey respondents and all dental hygienists with an active Florida license by race/ethnicity. As with gender, a pattern of near equivalence holds. In both groups, Whites have the greatest representation in the sample while Native Americans have the lowest. Combined, Whites and Hispanics constitute more than 90 percent of survey respondents and of all dental hygienists with an active Florida license

Figure B.2. Distribution by Race/Ethnicity: Survey Respondents versus All Dental Hygienists with Active Florida Licenses*

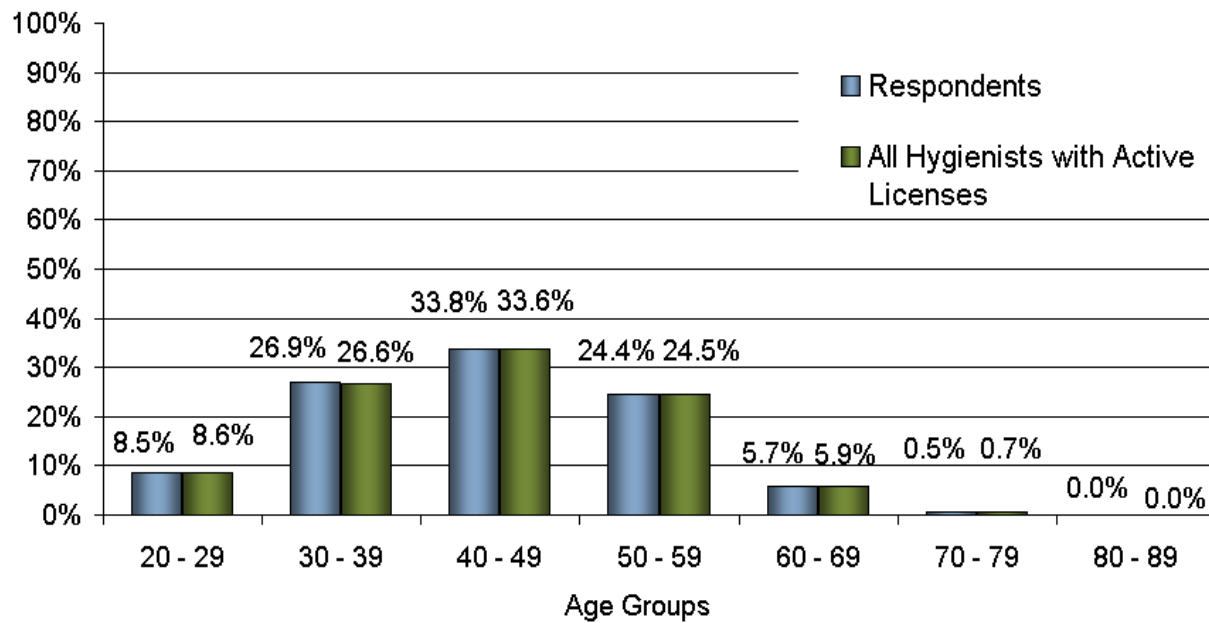


*Survey respondents and all dental hygienists with active licenses as of June 23, 2010

Source: Workforce Survey of Dental Hygienists, 2009-10

Figure B.3 illustrates the age-group composition of survey respondents and all dental hygienists with an active Florida license. The distributions of both survey respondents and all active-license dental hygienists across all age categories are similar.

Figure B.3. Distribution by Age Groups: Survey Respondents versus All Dental Hygienists with Active Florida Licenses*

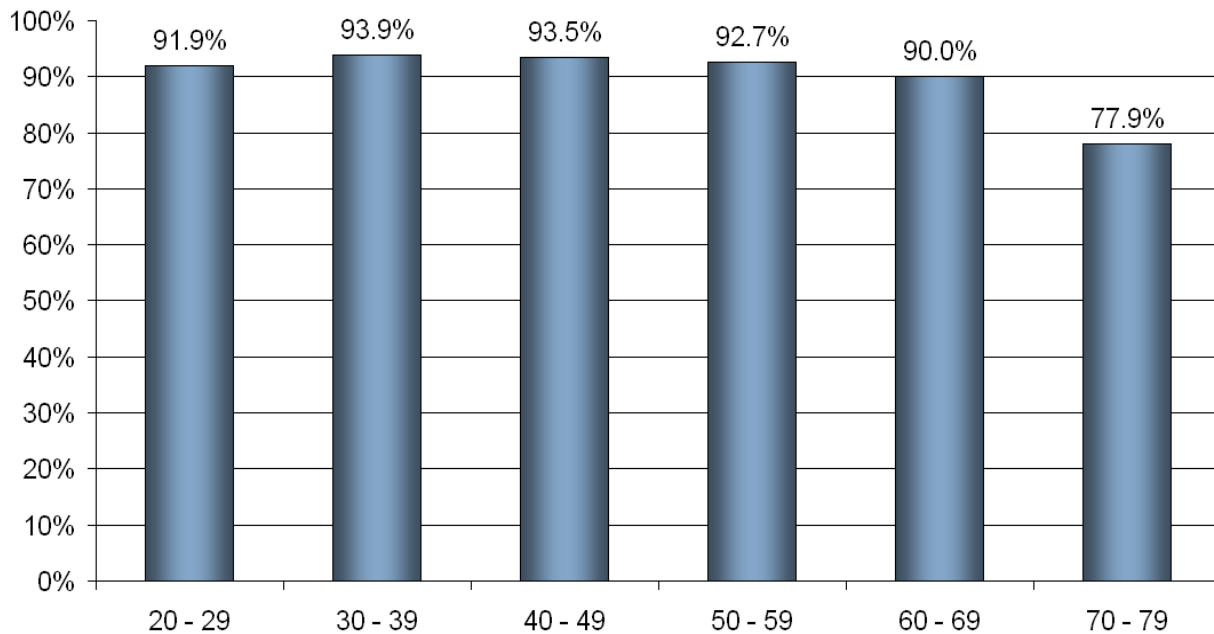


*Survey respondents and all hygienists with active licenses as of June 23, 2010
 Source: Workforce Survey of Dental Hygienists, 2009-10

Figure B.4 illustrates that survey response rates were 90% or higher for active-licensed respondents in age groups from 20 – 29 years to 60 – 69 years. The 70 – 79 year age group had a response rate that was below average.

Overall, the demographic profile of survey respondents conforms closely to that of all dental hygienists with an active Florida license.

Figure B.4. Rate of Survey Response by Age Group*

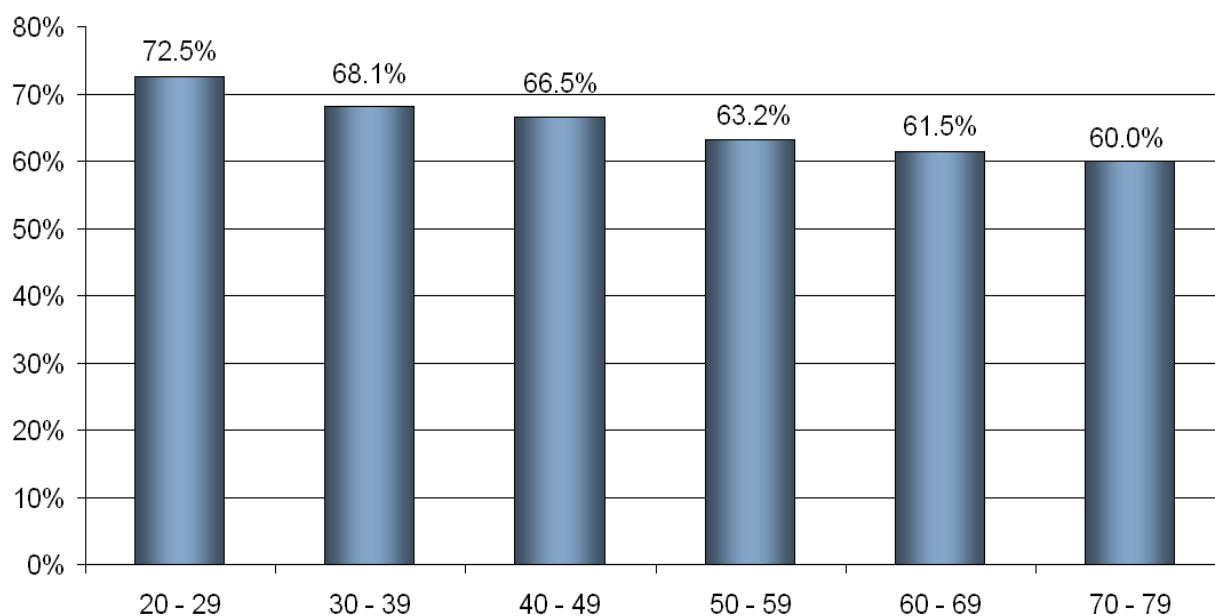


*Respondents and all hygienists with an active Florida license as of June 23, 2010. Age group 80 - 89 had too few cases to report.

Source: Workforce Survey of Dental Hygienists, 2009-10

The survey's high response rate does not imply a high completion rate: Among respondents, 58.1 percent completed all required questions, while 49.1 percent did not respond to one or more required items. Patterns of full completion differ by gender, age, and race/ethnicity of respondents. Females completed all required questions at a slightly higher rate than did males, 59.2 percent versus 57.7 percent. Hispanics had the lowest rate of completion (56 percent) among the race/ethnic groups. As age group increased, the completeness of response steadily declined, as illustrated in Figure B.5.

Figure B.5. Rate of Full Survey Completion by Respondent Age Groups



Source: Workforce Survey of Dental Hygienists, 2009-10

APPENDIX C

FLORIDA ORAL HEALTHCARE WORKFORCE INITIATIVES AND DOCUMENTS

The 2009–2010 Workforce Survey of Dentists and Dental Hygienists follows a number of other initiatives focused on oral healthcare. A brief summary of these initiatives provides some background for the survey.

1. Department of Health Oral Healthcare Workforce Ad Hoc Advisory Committee

The Oral Healthcare Workforce Ad Hoc Advisory Committee was convened in 2008 to evaluate and strategically address the complex range of oral health workforce concerns that were impacting Florida's ability to recruit and retain dental providers, especially for serving the state's disadvantaged and underserved populations. These concerns include issues surrounding public policy, professional practice, supply and demand of services, current and projected education and training, and regulatory questions. The committee's final recommendations were published in a February 2009 report.

2. Health Practitioner Oral Healthcare Workforce Ad Hoc Committee Report: Executive Summary

Florida, with the fourth largest population in the United States, has a diverse population residing in 67 disparate counties. This diversity of population and counties creates challenges in access to healthcare. While there have been considerable improvements in oral health within the State over the last 30 years, the State Surgeon General realizes that many persons in Florida, especially the disadvantaged and underserved, are not receiving basic dental care. While there are many factors that contribute to this disparity in care, the inadequate availability or access to dental providers throughout the State is a major concern. Oral health is essential to general health and well-being. The lack of basic oral healthcare for all people in Florida contributes to the number of people experiencing poor general health. In response to this issue, the State Surgeon General established the Florida Health Practitioner Oral Healthcare Workforce Ad Hoc Committee (Committee) to act as the advisory body for the State oral healthcare workforce initiative. The Committee was comprised of multiple governmental and nongovernmental stakeholders. The mission of the Committee was to evaluate and address the complex range of oral health workforce concerns that impact Florida's ability to recruit or retain available practicing dental providers (dentists, dental hygienists, and dental assistants), especially for Florida's disadvantaged and underserved populations. Through a series of meetings spanning 10 months, the Committee actively reviewed, assessed, and recommended strategies. Staff and invited guests provided the Committee members with information about workforce and workforce trends in Florida and around the country through reviews of the literature, presentations on select topics, and descriptions of best practices from

other States. From this information, the Committee proposed and reviewed an extensive list of strategies. Over the course of meetings, the Committee engaged in vigorous discussion and acted in a spirit of cooperation in an effort to find solutions that will best meet the State's current and future dental workforce needs. The Committee agreed on the following observations:

- **Education and prevention** are crucial to improving the oral health of all people in Florida.
- **New models for the delivery of dental healthcare services** may be necessary to provide access to dental care for certain disadvantaged population groups in Florida.
- **Safety-net providers** such as County Health Department (CHD) and Community Health Center (CHC) dental services are essential to providing dental care to underserved and disadvantaged populations.
- **There is a need for adequate and appropriate training** as a requirement for any provider, program, or new model of dental care delivery in the State of Florida.
- **Most underserved populations** (e.g. low-income children, individuals with special healthcare needs, and seniors) require dental services provided by general dentists who receive additional training and experience in working with special populations as opposed to specialty dentists with post graduate specialty degrees.
- **Reliable qualitative and quantitative data** can provide clear insight about workforce options that may address access issues. Data on Florida workforce, dental needs, and disadvantaged populations is incomplete and should be improved.

The Committee recognized that no one strategy will solve all of the workforce issues. Consequently, the following strategies are all of equal importance and should be considered as such. After review and deliberation of multiple strategies, the Committee proposes the following recommendations grouped in five broad categories in no particular order of importance. These strategies are the beginning steps toward improving access to quality dental healthcare services for all persons in Florida.

Public Oral Health Education and Prevention Services

- Expand community-based oral health prevention services.
- Expand oral health education and preventive programs in schools.

Third Party Payer Issues

- Reduce Medicaid administrative burdens for providers.
- Increase Medicaid reimbursement rates.
- Reduce Medicaid administrative burdens for patients.

Recruitments/Incentives to attract Providers to Public Health Dental Positions

- Examine the compensation and improve the work environment for state-employed dental providers in public health delivery systems such as county health departments (CHDs), Community Health Centers (CHCs), and Federally Qualified Health Centers (FQHCs).
- Fund the loan forgiveness program, reestablishing the Florida State Health Service Corps and increase utilization of the National Health Service Corps.
- Strengthen the local, regional, or statewide coordinated volunteer workforce.
- Provide technical assistance to communities wishing to recruit dental providers through the construction or equipping of dental office space in exchange for provision of dental services in their community.

Legal/Policy Approaches to Expand Workforce or Services

- Expand duties and reduce supervision levels for allied dental providers who practice in health access settings.

Training of Providers

- Provide dental school extern or residency opportunities in safety-net programs.
- Establish short-term training programs in pediatric dentistry.

The Committee recognized that implementing these strategies is not without challenges; many will require policy changes and/or new funding sources. Despite known and as yet unknown barriers to their implementation, the Committee believed these strategies have the greatest potential to affect the dental workforce in Florida and ultimately expand the availability of dental care to Florida's most vulnerable populations. The Committee offered these observations and recommendations to provide guidance to policymakers, professional organizations, advocates, and the public as they consider how to address implementation of strategies that can positively affect Florida's dental workforce challenges.

3. Florida Oral Health Workforce Workgroup supported by a Health Resources and Services Administration (HRSA) Grant

This workforce initiative built upon the recommendations of the State Oral Health Improvement Plan (SOHIP) and the report developed by the Ad Hoc Oral Healthcare Workforce Committee established under former Surgeon General Ana M. Viamonte Ros, MD, MPH. Drawing upon the Department of Health's and SOHIP's existing partnerships, collaborations, and experiences, a statewide oral health workforce workgroup was convened in the fall of 2008. The workgroup was charged with initiating a statewide oral health needs assessment and developing a realistic strategic plan that will act as a blueprint to improve the state's oral health workforce and service delivery infrastructure. Their report was made available in January of 2010 (dated December 2009).

Goal 1: Increase Education and Preventive Efforts

Recommendations:

- Develop oral health messaging utilizing traditional and non-traditional media
- Increase community water fluoridation
- Increase the provision of fluoride treatments to children – fluoride mouthrinse and fluoride varnish
- Increase the provision of dental sealants to age-appropriate children

Goal 2: Improve Data Collection

Recommendations:

- Produce a periodic statewide needs assessment
- Conduct dentist and dental hygienist workforce surveys
- Develop and implement a statewide oral health surveillance system
- Initiate targeted surveys of at-risk populations
- Develop dental provider recruitment and retention surveys – Medicaid providers County Health Department (CHD) providers, etc.
- Survey families who are eligible for the KidCare, Medicaid, and other government funded programs to assess perceptions and utilization issues of those programs

Goal 3: Increase Provider Participation in the Medicaid Program

Recommendations:

- Determine the feasibility of an increase in reimbursement rates
- Reevaluate and suggest recommendations for the Medicaid reform initiative
- Eliminate administrative barriers and improve administrative processes
- Improve the knowledge base of providers about Medicaid policies and procedures

Goal 4: Increase Utilization of Allied Dental Staff

Recommendations:

- Reduce supervision levels of dental assistants in health access settings
- Reduce supervision levels of dental hygienists in health access settings
- Explore the creation of a restorative dental auxiliary for health access settings

Goal 5: Integrate Oral Health Education and Prevention into General Health and Medical Programs

Recommendations:

- Include oral health education, screenings and prevention in programs that serve children and parents
- Include oral health education, screenings and prevention in school health programs
- Include oral health coverage in healthcare reform
- Promote the concept of the dental home

- Integrate oral health education, screenings, and prevention into nursing homes and long term care (LTC) facility health programs
- Integrate oral health curriculum into medical education programs
- Integrate oral health education, prevention and awareness into other Florida Department of Health programs such as Chronic Disease and Tobacco and other programs that include health components such as Head Start and the Department of Education

Goal 6: Increase Training Opportunities for Providers

Recommendations:

- Develop models to train dental providers in the care of very young children
- Continue oral health preventive training for licensed medical providers
- Develop externships/residencies for dental, dental hygiene, and dental assisting students in CHD and Community Health Center (CHC) facilities
- Provide anesthesia/sedation training to CHD and CHC dentists at Florida dental schools
- Provide incentives to providers to receive training in the treatment of the needs of “special” populations (e.g. children, the elderly, individuals with special healthcare needs)

Goal 7: Improve the State Oral Health Infrastructure

Recommendations:

- Increase funding, staffing, awareness, and visibility of the Florida Department of Health’s Public Health Dental Program to establish it as a state leader and authority on oral health
- Continue to expand the membership and geographic coverage of the Oral Health Florida Coalition
- Increase and improve the oral health safety-net
- Develop centers of excellence for special needs populations
- Consider increasing the use of mobile dental units/vans in rural areas or for other isolated populations
- Investigate the use of new technology such as teledentistry, health information technology and electronic dental records to improve access to care in rural areas or for other isolated populations
- Continue the Oral Health Workforce Workgroup

Goal 8: Increase Efforts to Recruit Practitioners to Provide Care to Disadvantaged Populations

Recommendations:

- Implement the Florida Health Services Corps (section 381.0302 F.S.) by funding the loan forgiveness program
- Market the National Health Service Corps and other public health opportunities
- Improve minority recruitment
- Market the health access license and limited license to out of state licensed providers

- Develop incentives to increase volunteerism
- Review sovereign immunity policies to determine potential mechanisms to increase the delivery of volunteer services
- Consider requiring a year of providing dental care in an underserved area as a condition for all applicants wishing to take the Florida dental and dental hygiene licensing examination and gaining a Florida dental license
- Establish local and statewide dental referral networks for defined populations
- Make dental, dental hygiene and dental assisting students aware of public health and public health practice opportunities and make working in public health dental programs more appealing through marketing and partnerships

4. Florida Oral Health Workforce Statewide Needs Assessment

This assessment provided a statewide analysis of Florida’s oral health workforce relative to traditionally underserved populations. Additionally, the assessment served to evaluate access to dental care among low-income children in Florida’s Medicaid and SCHIP (State Children’s Health Insurance Program) programs, including children with special healthcare needs (CSHCN), and to identify the child and family characteristics that are associated with better access to care. The key findings are as follows:

- The workforce-to-population ratio was lowest in rural counties and low-income counties with less variation based on the racial and ethnic composition of the population.
- Counties in the lowest quartile of workforce-to-population ratios typically had at least one type of safety-net provider.
- A substantial proportion of publicly insured children have not been receiving recommended preventive dental care.
- The youngest publicly insured children, those ages 0–4 years, were significantly less likely to have a dental visit than were older children.
- KidCare enrollees with significant acute or chronic conditions (versus healthy), whose parents had a high school education or greater (versus no high school degree), and those who had a primary care provider medical visit (versus no visit) were more likely to have a dental visit.
- Although the workforce-to-population ratio is lowest in rural counties, lower rates of dental utilization among KidCare enrollees in rural areas were not observed in comparison with urban areas.

These findings are consistent with other state and national analyses of the oral health workforce distribution and dental utilization of publicly insured children. Additional data collection and analyses are recommended to better understand the reasons for use and non-use of dental care services among vulnerable and disadvantaged populations, the barriers that they face in accessing care, and the challenges and barriers to recruiting and retaining providers to serve these populations.