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Practice Patterns and Characteristics of Dental Hygienists in Washington State

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ABSTRACT

The goal of this survey was to describe the practice characteristics, scope of practice, educational background, career plans and satisfaction, and demographic information of the dental hygienist workforce in Washington State. Using data from the state's health care professional licensing records, we surveyed a random sample of 40% of urban and all rural dental hygienists with active licenses and received responses from 71.5% of the sample. Respondents were 96% female, 93% white, and nearly 44 years of age, on average. Most received their hygienist education in Washington, and 88% of license holders were practicing. The majority of Washington's dental hygienists worked less than full time, almost all worked in private dental offices, and rural hygienists were more likely than urban hygienists to provide care to Medicaid patients. Dental hygienists who worked full time were significantly more likely to receive benefits than those working less than 30 hours per week. More than three-quarters worked in just one location, and nearly 20% worked in two locations. Salaries were similar in rural and urban areas of the state, and while those working in specialist practices earned more than those who worked in generalist practices, dental hygienists in specialist practices were less likely to receive benefits. Utilization of Washington's relatively liberal dental hygienist scope of practice varied by allowed procedure, with most hygienists administering anesthesia but less than 6% practicing independently. Pain or discomfort attributed to their work was reported by more than three-quarters of the state's practicing dental hygienists. Nevertheless, the vast majority of the state's dental hygienists reported being satisfied with their profession. Washington's dental hygienist workforce appears well positioned to help continue to improve access to oral health care in the state, but there is need to monitor the state's education capacity and explore ways to retain dental hygienists in the workforce longer in order to assure the future supply meets demand in the state.

INTRODUCTION

Very little is known about the dental hygienist workforce in Washington State and their practice patterns. The state included a brief workforce questionnaire with health care professionals' licenses and renewals in the 1990s, but that survey has not been conducted since 1999. Comprehensive, current information about the work practices, satisfaction, demographics, and education of dental hygienists in Washington is not available. Our major motivation for this study was to fill this information void.

In addition to describing Washington's dental hygiene workforce, we hoped to address a number of topics that were being debated in the field. Among these topics was the dispute regarding the supply and availability of hygienists for hire. Some groups have suggested that there is a shortage of hygienists and new training programs should be opened. Others contend that many dentists hire a large proportion of part-time hygienists in order to minimize costs by not providing employee benefits such as medical insurance and retirement plans. This group suggests that hygienists are piecing together multiple jobs to work full-time. We were interested in seeing the extent to which these situations exist in Washington State.

Dental hygienists' scope of practice has been a controversy in Washington for years. Many hygienists have long sought to have the ability to practice independently of dentists and assert that doing so would help to address oral health care access problems that so many people experience. Finally there has been growing concern among dental hygienists that their occupation is experiencing repetitive motion injuries that cause chronic pain and sustained debilitating injuries. We were interested in addressing all of these topics and set out to do in the 2004 Washington Dental Hygienist Survey.

METHODS

SURVEY DEVELOPMENT

A questionnaire was developed by the University of Washington Center for Health Workforce Studies (CHWS) in cooperation with the Washington State Dental Hygienist Association (WDHA). The survey was designed to provide a comprehensive look at the states' dental hygienist workforce. The questionnaire specifically addressed practice characteristics, scope of practice, educational background, career plans and satisfaction, demographic information and very specific information regarding multiple practice locations. Hygienists were asked to provide weekly hours, wages and benefit information for up to three different practice locations. A copy of the questionnaire is attached as an appendix.

HUMAN SUBJECTS

This study was reviewed and approved by the University of Washington Institutional Review Board.

SAMPLING FRAME

Using health professionals' licensure data from the Washington Department of Health's Health Professionals Quality Assurance Division, we identified all currently licensed dental hygienists. We used their mailing address ZIP code to assign rural or urban designation according to the ZIP code version of the Rural-Urban Commuting Area (RUCA) codes (Morrill et al., 1999; WWAMI Rural Health Research Center, 2006). The RUCA taxonomy assigns each ZIP code to one of thirty RUCA codes. These codes can be collapsed into categories representing urban and rural areas. The classification of a place is based not only on its population and location, but also considers its work-commuting patterns in relationship to surrounding cities and towns. For some analyses, we compare results of for overall rural areas versus urban areas, and for other analyses (where we have sufficient data) we examine results by large rural, small rural, isolated small rural and urban areas.

We mailed questionnaires to all licensed dental hygienists with mailing addresses located in a rural location in Washington (N = 455). Additionally, we selected and surveyed a random sample of 40% of licensed hygienists with mailing addresses in urban locations (N = 1,389). Because a hygienist may not practice in the same area as he or she resides (presumed to be the area of his or her mailing address). We revisited the hygienists' rural-urban status at the completion of the survey. Hygienists who completed the questionnaire provided the ZIP code of their practice location(s). Using the ZIP code of the primary practice location provided by respondents, we re-classified each as rural or urban. We found that 95.4% of hygienists had been correctly classified for practice location using the mailing ZIP code in the licensing data. Of the respondents, 4.6% had either been originally classified as urban and practiced in a rural location (1.6%) or were classified as rural but practiced in an urban location (3.0%).

MAILINGS

We mailed a four-page questionnaire, including an introductory letter from the CHWS investigators and WDHA, and a postage-paid, return envelope to all survey participants during the summer of 2004. Questionnaires that were returned because of incorrect addresses were re-sent with address corrections when they could be found. At four-week intervals, all nonrespondents were sent up to three additional mailings. Each mailing included another cover letter, questionnaire and postage-paid return envelope. Subsequently, some hygienists were determined to be out of scope because of retirement, relocation outside of the state or because they were unable to be located. The overall study response rate was 71.5%. Rural hygienists had a 73.0% response rate and urban hygienists had a slightly lower response rate of 71.0%.

We calculated weights and applied them for survey respondents so that overall estimates accurately reflect the Washington dental hygienist population.

CODING, DATA ENTRY, AND DATA CLEANING

We coded and entered into analysis data sets the information from the returned questionnaires and checked the data for systematic errors during routine analysis. When data that were part of a series of questions could be imputed with a high-level of certainty from other data, we performed those imputations. We used SPSS Statistical Software Version 11.0, and statistical tests included chi-square, t-test, and one-way analysis of variance statistics.

RESULTS

DEMOGRAPHICS, EDUCATION, AND PRACTICE STATUS

In 2004, the dental hygienist workforce in Washington was almost exclusively female (96.4%) and largely white (93.3%). Asians were the largest nonwhite group of dental hygienists and represent 3.4% of the workforce. Hispanics made up 1.6% of the workforce. The average age of dental hygienists was 43.7 years and the average length of time hygienists reported working in the field was 16 years (Table 1). More than a quarter (28%) of practicing hygienists were over 50 years of age and slightly more than a third of practicing hygienists (35%) were under 40 years of age.

The large majority of Washington's dental hygienists were educated in Washington, with 80.5% of dental hygienist certificates and associate degrees among respondents being granted by a school within Washington. More than a quarter (26.8%) of hygienists held a second license outside of Washington State.

We found that an estimated 11.6% of Washington's current dental hygienist license holders were not practicing, which may be an underestimate because nonpracticing hygienists probably were less likely to respond to the survey. The most common reason reported by hygienists for not being currently employed as a hygienist was injury and/or health (28%). The next most frequently cited reason was family responsibilities (24%). Eleven percent of hygienists who were not working reported that they had retired.

PRACTICE INFORMATION

Among those who reported they were practicing at the time of the survey, dental hygienists work 28 hours per week on average, 26 hours of which were spent in direct patient care. These hygienists reported performing an average of 28 patient visits per week. Among employed dental hygienists, 10% indicated that they were actively looking for additional work. The median number of additional hours per week being sought was 8, or 1 additional day per week.

Not surprisingly, 95% of dental hygienists work in a private office or clinic as their primary place of employment. Ninety-two percent of hygienists work only in a private office or clinic setting, while the remaining 8% work at least part time in either a public/community health clinic or in a teaching/research or other nonclinical position.

Dental hygienists practicing in small/isolated rural places were more likely to treat any patients with Medicaid coverage than their urban or large rural counterparts (50.4% versus 22.6% and 35.7% respectively) (Figure 1). Additionally rural hygienists who treat Medicaid patients did so at a much higher rate than urban hygienists. On average, hygienists practicing in small/small isolated rural places, who treat Medicaid patients, see an average of 13.4 patients per week. Dental hygienists who work in large rural places reported treating an average of 6.3 Medicaid patients per week, while those hygienists practicing in urban locations care for an average of 5.7 Medicaid patients per week.

WAGES AND BENEFITS

Hygienists were asked to provide the number of hours and their wage at each location at which they worked. When a hygienist worked at multiple locations, his or her average wage was calculated by weighting their wage at each location by the number of hours worked at that location. Employed urban hygienists earned $38.98 hourly on average while hygienists practicing in large rural and small/isolated small rural locations earned an average of $38.32 and $37.04, respectively (Table 2).

Figure 1: Percent of Dental Hygienists Treating Any Medicaid Patients, by Rural Status

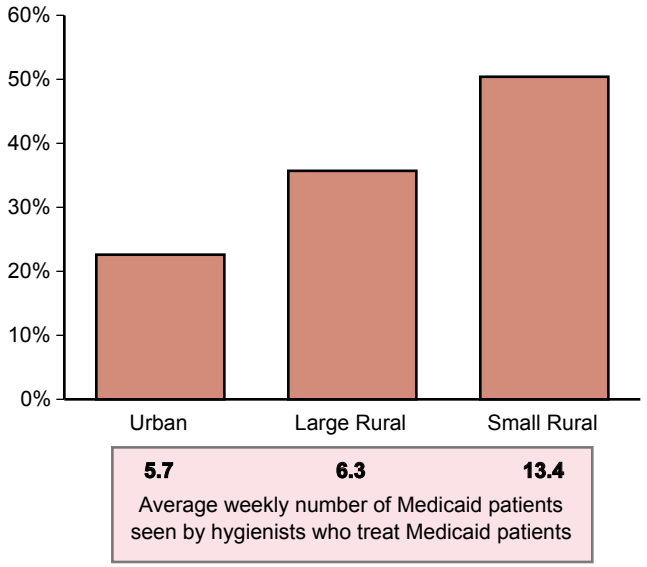


Table 1: Demographic, Education, and Practice Status of Washington's Dental Hygienists

Age	43.7 years
% white	93.3%
% female	96.4%
% associate degrees/certificates granted in Washington	80.5%
% bachelor degrees granted in Washington	70.9%
% licensed dental hygienists currently practicing	88.4%
Years practicing as dental hygienist	16.0 years

Hygienists who reported working with a specialist dentist earned significantly more per hour ($43.11 on average) than their counterparts that worked in a general dentistry office ($38.89). Among hygienists who reported working with a specialist dentist, however, a lower percentage received vacation benefits (37%) or sick leave benefits (71%) than those who worked with a general dentist (50% of hygienists working with a general dentist received vacation benefits and 79% received sick

Table 2: Wages and Percent of Dental Hygienists Receiving Benefits, by Work Time Category and Rural Status

	Urban	Large Rural	Small/Isolated Small Rural
Average hourly wage	$38.98	$38.32	$37.04
Medical benefits			
Full time (30+ hours/week)	79%	68%	70%
Majority time (20-<30 hours/week)	54%	44%	37%
Sick leave benefits			
Full time (30+ hours/week)	65%	61%	66%
Majority time (20-<30 hours/week)	47%	46%	51%
Vacation benefits			
Full time (30+ hours/week)	95%	95%	91%
Majority time (20-<30 hours/week)	79%	75%	84%
Retirement benefits			
Full time (30+ hours/week)	82%	71%	81%
Majority time (20-<30 hours/week)	66%	70%	54%

leave benefits). There was no significant difference in the proportion of hygienists who received medical benefits between hygienists practicing with a specialist and a general dentist. Hygienists who worked with a specialist were, on average, older (44.7 years), and had practiced longer (19.1 years) than those practicing in a general dentistry office (43.0 years and 15.7 years respectively).

We annualized hygienists' average hourly wage to a standard 2,080 annual hours, which resulted in an annualized average salary of $81,078 for urban hygienists, $79,705 for large rural hygienists, and $77,043 for hygienists practicing in small/small isolated rural places. Because few hygienists work 40 hours per week, we also calculated an annual salary based on the average number of hours per week reported by respondents. . Using the urban hygienist average of 28 weekly hours, the urban hygienists' annual salary was $57,572 while the hygienists in large rural and small/isolated small rural places earned $56,599 and $54,710 annually, respectively.

SCOPE OF PRACTICE

Restorative Treatment: According to Washington State statute (WAC 246-817-560), licensed hygienists can perform certain restorative procedures under the close supervision of a dentist. These procedures include soft-tissue curettage, administration of local anesthesia, placement of restorations in a cavity prepared by a dentist and administration of nitrous oxide analgesia. We found that an estimated 24.4% of hygienists provide restorative treatment and report spending 5.9 hours per week doing so. Our estimates show that 91.4% of hygienists administer anesthesia to their patients and that they administer it to an average of 8.9 patients weekly.

Independent Practice: Dental hygienists are also allowed to practice independently providing limited services according to RCW 18.29.056. This law provides that hygienists with at least two years experience practicing with a dentist in the previous five years may be employed by a "health care facility" (including, but not limited to, nursing homes, tribal clinics, group homes, prisons and community health clinics) to provide dental hygiene procedures to the facility's residents without a dentist's supervision. These procedures are limited to removal of deposits and stains from the surfaces of the teeth, application of topical preventive or prophylactic agents, polishing and smoothing restorations, and performance of root planning and soft-tissue curettage. The proportion of hygienists choosing to practice in this way varied across the three rural categories. Only 2.4% of urban hygienists practice independently. In large rural places 5.1% of hygienists practice independently and in small and isolated small places the percentage increases to 5.8%. The majority (51%) of hygienists who reported working independently in urban places worked at federal, state or tribal institutions. Another 24% of these hygienists worked at local public health clinics. In large rural areas, most (85%) independently practicing hygienists worked at local public health or community/migrant health clinics. In isolated small rural places, 48% of independent hygienists practiced in federal, state or tribal institutions and another 39% provided care in local public health clinics.

MULTIPLE PRACTICE LOCATIONS AND BENEFITS

Dental hygienists were asked to provide the ZIP code of up to four of their practice locations. Among employed hygienists, 76.8% reported working in only one location, 19.8% reported working in two practice locations and 3.4% reported working in three or more different practice locations.

If hygienists reported receiving medical benefits, they received them at their primary work location. Hygienists working full-time (more than 30 hours per week) received medical benefits at a significantly higher rate than those hygienists working majority time (20-30 hours per week) at their primary work location. This was true for hygienists practicing in urban and rural locations.

The percentage of hygienists who reported receiving sick leave and vacation leave followed a similar pattern; 64.6% of hygienists working full time reported receiving sick leave benefits, while 47.3% of those working between 20 and 30 hours weekly received sick leave benefits. Vacation and retirement benefits also followed this pattern (Figure 2). There were no significant differences in the proportions of hygienists receiving benefits across the three rural categories.

PAIN/DISCOMFORT

Dental hygienists were asked if they had experienced pain or discomfort in the hands, wrists, arms, shoulders, or neck in the past 12 months and if they attributed it to their dental hygiene work. More than three out of four (78%) hygienists reported having pain, and of those experiencing pain, 92% attributed it to their work as a dental hygienist. Of those hygienists who experienced pain and/or discomfort, 63% reported daily pain/discomfort that lasted for a week or more.

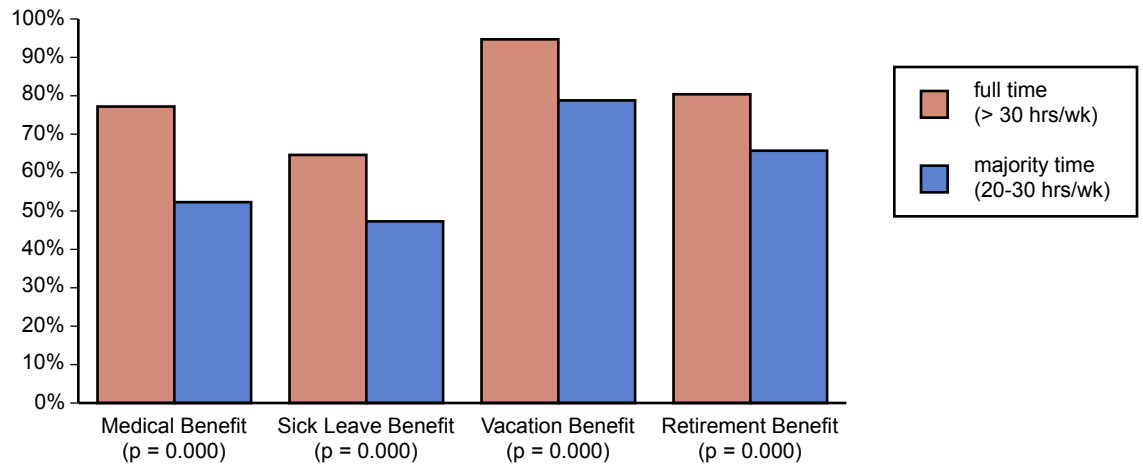
CAREER SATISFACTION

Overall, dental hygienists reported high levels of career satisfaction. More than 90% of hygienists indicated they were "somewhat satisfied" or "extremely satisfied" with their career in oral health. In small and isolated small rural places, 66% or hygienist said they were "extremely satisfied". In large rural places 60% of hygienists reported being 'extremely satisfied', and in urban places, more than half (54%) said the same.

Dental hygienists who had changed jobs in the past year did so for a variety of reasons. Among practicing dental hygienists, 25% of said they had changed jobs in the previous year. The most commonly reported reason for changing jobs was because of their relationship with the dentist for whom they worked (10.7%). Among hygienists who said they changed jobs due to their relationship with the dentist, 50.4% also cited the quality of care patients received as a reason for leaving. Almost half of these same hygienists (46.8%) indicated their relationship with office staff was also a reason for their job change. Job location was the second most frequently cited reason for changing jobs (9.2%). Only 5.5% of hygienists who changed jobs reported doing so for higher pay, and 4.8% indicated their motivation for job change was for more benefits.

Survey respondents were asked to list the two most significant sources of dissatisfaction in their practice as a dental hygienist. The most commonly listed issue (24.5%) named as either a primary or secondary source of dissatisfaction was not having adequate time, due to monetary constraints, to provide the quality of care they would like for their patients. The second most frequent source of dissatisfaction, cited by 23.7% of dental hygienists, was the physical demands of practicing dental hygiene. Both poor and lack of job benefits, and office relationships, were named by 17.4% of responding hygienists as their most

Figure 2: Percent of Dental Hygienists Receiving Benefits, by Work Time Status



significant sources of dissatisfaction. Wages were only mentioned by 6.1% of hygienists as either their primary or secondary source of dissatisfaction.

FUTURE PLANS

Almost half (47%) of practicing dental hygienists reported working as a dental assistant prior to becoming a dental hygienist, and 9% reported they were currently pursuing additional education. Eighteen percent of practicing urban hygienists and 31% of rural hygienists say they would pursue additional education if a baccalaureate or degree-completion program were available in their community. One-quarter of urban hygienists and 34% of rural hygienists say they would pursue additional education if a distance-learning program were available. Less than 1% of practicing hygienists said they were planning on attending dental school.

LIMITATIONS

This study was subject to a variety of limitations. Nonrespondent biases could be present if those dental hygienists who chose not to respond were systematically different than the responding hygienists. Ideally, the two groups would have been compared, but this was not possible due to our lack of data on nonrespondents. However, the relatively high response rates mitigate these concerns to some extent.

Although the questionnaire contained questions about the number of hygienists employed and the number of vacant hygienist positions at each location, we were suspect of our findings from these analyses. Using the standard method for vacancy rate calculations of summing the total number of vacant positions and dividing that by the sum of all positions (vacant or filled) resulted in extremely low estimated vacancy rates. We concluded that hygienists may not be aware of all positions (either vacant or filled) in all of their work locations, and as a result the rates were so low as to be deemed invalid.

DISCUSSION

Career satisfaction among practicing dental hygienists in Washington State is extremely high. The percentage of hygienists who reported being somewhat or extremely satisfied with their career in oral health care (90%) is very similar to the percentage reporting the same in Oregon (86%) and Wisconsin (95%) (Innovative Resource Group, 2000; Oregon Area Health Education Centers Program, 2003).

Factors that likely contribute to hygienists' overall satisfaction are numerous. Hourly wages for dental hygienists in Washington are among the highest in the country (Hart, 2002), which allows many hygienists the possibility of part-time work. Numerous hygienists reported in their responses that their work as hygienists allowed them independence and a meaningful part-time career. It is worth noting that the same factors that frustrate some hygienists are valuable to others. For example, some hygienists report the lack of full-time work and benefits in a single location as their greatest source of dissatisfaction. Others cite the availability of part-time work with a high hourly wage regardless of benefits as a primary source for their job satisfaction. For many hygienists who are second wage earners in their household, and/or primary caregivers to children, higher wages without medical benefits may be more valuable than medical insurance if they can get medical insurance through a spouse or partner's employment.

Although career satisfaction is high, a large percentage of practicing dental hygienists in Washington reported experiencing work-related pain and/or discomfort in their neck, hands, wrists, arms, or shoulders (78%). This number was comparable to other studies where the percentage experiencing pain and/or discomfort ranged from 63% to 93% (Anton et al., 2002; Lalumandier et al., 2001). Almost half (45.1%) of Washington's practicing hygienists report experiencing daily pain lasting a week or more that they attribute to their work as a dental hygienist. Clearly efforts to address and prevent musculoskeletal disorders are important. Loss of workdays and productivity are only part of the cost. In Minnesota, half of hygienists experiencing musculoskeletal pain stated the pain affected their clinical practice, including reducing the speed and quality of their work (Osborn et al., 1990).

Dental hygiene continues to be a female-dominated profession throughout the nation (Innovative Resource Group, 2000; Oregon Area Health Education Centers Program, 2003; U.S. Bureau of Labor Statistics, no date), and this is also the situation in Washington State where 97% of hygienists are women. The ability to work part-time is considered an asset reported by many hygienists, and many still choose to leave the workforce during the traditional child-rearing years (Gibbons et al., 2001). "Family responsibilities" was the most frequently cited reason for leaving the profession in several studies (Gibbons et al., 2001; Miller, 1990). In Oregon, 8% of hygienists aged 21-39 reported that they planned to take a temporary leave from dental hygiene, significantly more than Oregon's hygienists over the age of 40 (2%) (Oregon Area Health Education Centers Program, 2003). This temporary career break is the source of an ongoing reduction in the overall supply of hygienists.

The large majority of hygienists currently practicing in both Washington and Oregon were educated in the state in which they practice (80% and 77% respectively) (Oregon Area Health Education Centers Program, 2003). Vacancy rates among dental hygiene positions are much higher in Washington State (24.5%) than nationwide (Hart, 2002). Additionally, 43% of these

vacancies remain open for more than six months (Hart, 2002). Washington State ranks 27th among the states in dental hygienist to dentist ratios (Bureau of Health Professions, 2000).

Washington's dental hygienists have a liberal scope of practice when compared to their counterparts around the country. At the time of this survey, only Colorado had a higher overall Dental Hygiene Professional Practice Index (DHPPI) (Wing et al., 2005). The DHPPI combines practice regulations, supervision requirements, reimbursement options, and permitted tasks scores to calculate an overall state score of the legal practice environment for dental hygienists. Studies in both California and Colorado suggest DHPPI scores are significantly and positively correlated with a number of indicators of utilization of oral health services and therefore are associated with greater access to oral health care. According to the authors, this improved access to oral health care for one or another underserved populations carried no increased risk to health and safety.

Access to dental services continues to be a significant problem for many populations (Drury et al., 1999). With a dental hygienist workforce that is largely very satisfied with their profession, and having the legal opportunity for liberal scope of practice, it would appear that Washington is well-positioned to use dental hygienists to continue to improve access to oral health care in the state. Because Washington's population is expected to continue to grow and increase demand for oral health care services, and because many dental hygienists work part time and have relatively short dental hygiene careers, the supply of dental hygienists will very likely need to grow. As a result, there will continue to be a need to monitor the education capacity for dental hygienists in the state and to explore ways to retain dental hygienists in the workforce longer than their current length of service.

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Appendix A:

Questionnaire

2004 Washington Dental Hygienist Survey

A. Employment

A1. Over the course of your career, how many years have you worked as a dental hygienist (e.g., if you started 10 years ago but took 2 off, respond 8)? _____ years

A2. Are you currently employed as a dental hygienist?
☐ Yes ☐ No ➔ Why not? _____ **➔ SKIP TO QUESTION D1**

A3. During a ***typical practice week***, how many hours do you spend in the following activities?
_____ Direct patient care
_____ Clinical practice administration
_____ Teaching
_____ Research
_____ Other professional activities (please describe: _____)
_____ TOTAL *(add above items—this should represent your weekly average hours of work)*

A4. In the past 12 months, how many weeks did you work? *(For example, if you work all year and take two weeks vacation, you would work 50 weeks.)* _____ weeks

A5. How many patient visits do you perform in a ***typical week***? _____ visits

A6. How many Medicaid patient visits do you perform in a ***typical week***? _____ visits

A7. During a ***typical week***, how many hours of your time are spent providing restorative treatment (per week) (WA 246-817-560)? _____ hours

A8. During a ***typical week***, on how many patients do you administer local anesthesia? *(If none, enter zero.)* _____ patients

A9. Are you actively looking for ***additional*** dental hygiene work?
☐ Yes ➔ How many additional hours per week? _____ hours
☐ No

A10. Please indicate whether or not you have changed jobs in the last year for each of the following reasons:
☐ Yes ☐ No Family responsibilities
☐ Yes ☐ No Location
☐ Yes ☐ No Change of careers
☐ Yes ☐ No Return to school
☐ Yes ☐ No More pay
☐ Yes ☐ No For more benefits
☐ Yes ☐ No Relationship with dentist
☐ Yes ☐ No Relationship with staff
☐ Yes ☐ No Quality of care
☐ Yes ☐ No Safety assurance
☐ Yes ☐ No Job-related injury or disability
☐ Yes ☐ No Other: _____

A11. a. In the past 12 months, have you had pain or discomfort in your hands, wrists, arms, shoulders, or neck? *(Discomfort can mean pain, burning, stiffness, numbness, or tingling.)*
☐ Yes
☐ No ➔ **SKIP TO QUESTION A12**

b. Do you attribute this pain or discomfort to dental hygiene work?
☐ Yes ☐ No

c. During the last 12 months, have you had this pain or discomfort every day for a week or more? ☐ Yes ☐ No

A12. For each location in which you work as a dental hygienist, please complete the following:

	Practice Location 1	Practice Location 2	Practice Location 3
a. ZIP code	___ ___ ___ ___ ___	___ ___ ___ ___ ___	___ ___ ___ ___ ___
b. How many hours per week do you work, on average, in each location?	_____ hours	_____ hours	_____ hours
c. Type of work setting that best describes this practice	☐ Private office or clinic ☐ Public/community health clinics ☐ Teaching/research ☐ Other nonclinical setting ☐ Other: _____	☐ Private office or clinic ☐ Public/community health clinics ☐ Teaching/research ☐ Other nonclinical setting ☐ Other: _____	☐ Private office or clinic ☐ Public/community health clinics ☐ Teaching/research ☐ Other nonclinical setting ☐ Other: _____
d. How many total dental hygienists are employed in this location?	_____ (#) full-time positions _____ (#) part-time positions	_____ (#) full-time positions _____ (#) part-time positions	_____ (#) full-time positions _____ (#) part-time positions
e. How many dental hygienist position ***vacancies*** are being actively recruited for this location?	_____ (#) full-time positions vacant _____ (#) part-time positions vacant ☐ Don't know	_____ (#) full-time positions vacant _____ (#) part-time positions vacant ☐ Don't know	_____ (#) full-time positions vacant _____ (#) part-time positions vacant ☐ Don't know
f. Are you employed directly, self-employed, or employed through a third party such as a temporary services or contract agency?	☐ Employed directly ☐ Employed through temporary service ☐ Employed through contract agency ☐ Self-employed	☐ Employed directly ☐ Employed through temporary service ☐ Employed through contract agency ☐ Self-employed	☐ Employed directly ☐ Employed through temporary service ☐ Employed through contract agency ☐ Self-employed
g. Do you receive medical benefits and/or sick leave with this position?	Medical benefits: ☐ Yes ☐ No Sick leave: ☐ Yes ☐ No	Medical benefits: ☐ Yes ☐ No Sick leave: ☐ Yes ☐ No	Medical benefits: ☐ Yes ☐ No Sick leave: ☐ Yes ☐ No
h. Do you receive vacation benefits with this position?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
i. Do you receive retirement benefits with this position?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
j. What is your hourly wage at this location?	$_____ per hour	$_____ per hour	$_____ per hour
k. With how many of each type of dentist do you practice?	_____ (#) general dentists _____ (#) specialists (specify: _____) ☐ No dentist	_____ (#) general dentists _____ (#) specialists (specify: _____) ☐ No dentist	_____ (#) general dentists _____ (#) specialists (specify: _____) ☐ No dentist

A13. Do you work as a dental hygienist in any additional locations? ☐ Yes (please provide ZIP code: _____)
☐ No

B. Scope of Practice

B1. Are you currently practicing under RCW 18.29.056 (working without the supervision of a dentist in hospitals, home health agencies, public health clinics, community/migrant health clinics, nursing/assisted living/group homes, or federal/state/tribal institutions)?

☐ Yes ☐ No ➔ **SKIP TO QUESTION B4**

B2. If you answered ***yes*** to question B1 above, in what organization/practice setting(s) do you work?
(Check all that apply.)

☐ Hospital
☐ Home health agency
☐ Local public health clinic
☐ Community/migrant health clinic
☐ Nursing home/assisted living home/group home
☐ Federal/state/tribal institution

B3. If you answered ***yes*** to question B1 above, who compensates you for the services you provide?
(Check all that apply.)

☐ Hospital
☐ Home health agency
☐ Local health jurisdiction
☐ Community health clinic
☐ Nursing home/assisted living home
☐ Federal/state institution
☐ Patient (insurer/MAA or self-pay)

B4. Do you currently provide sealants and/or varnish in school-based programs? ☐ Yes ☐ No

C. Satisfaction and Career Plans

C1. Thinking about your overall satisfaction with your career in oral health care, would you say that you are:

☐ Extremely satisfied ☐ Somewhat satisfied ☐ Neither satisfied nor dissatisfied ☐ Somewhat dissatisfied ☐ Extremely dissatisfied

C2. In your practice as a dental hygienist, what are the two most significant sources of dissatisfaction?

(1) Most significant: _____
(2) Second most significant: _____

C3. Please indicate whether or not you expect each of the following changes in your professional practice within the next two years:

☐ Yes ☐ No No major change expected
☐ Yes ☐ No Plan to leave Washington
☐ Yes ☐ No Plan to retire, will not practice
☐ Yes ☐ No Plan to receive additional education and work as another type of health professional
☐ Yes ☐ No Plan to change careers, will not practice as a health professional
☐ Yes ☐ No Other (specify: _____)

D. Education

D1. Please indicate whether you have obtained each of the following certificates or degrees, the state in which you received each one, and when you received each one:

		Degree	State Received	Year Completed
☐ Yes	☐ No	Certificate	_____	_____
☐ Yes	☐ No	Associate degree	_____	_____
☐ Yes	☐ No	Baccalaureate degree	_____	_____
☐ Yes	☐ No	Masters degree	_____	_____
☐ Yes	☐ No	Doctoral degree	_____	_____

D2. Are you currently pursuing additional education?

☐ Yes

If yes, which category below best describes the education you are pursuing?

☐ A degree relevant to dental hygiene (specify: _____)

☐ A degree relevant to other oral health professions (specify: _____)

☐ A degree not directly relevant to the oral health profession

➔ **SKIP TO QUESTION D4**

☐ No

D3. Would you pursue additional oral health education if:

A baccalaureate or degree-completion program were available in your community?

☐ Yes ☐ No ☐ Don't know

A degree-completion program were available through distance learning? ☐ Yes ☐ No ☐ Don't know

D4. Before becoming a dental hygienist, were you ever employed:

As a dental assistant? ☐ Yes ☐ No

In another capacity in a dental office? ☐ Yes ☐ No

(***If yes***, specify position: _____)

D5. Are you planning on attending DDS school? ☐ Yes ☐ No ☐ Don't know

E. Background Information

E1. Are you currently a member of the American Dental Hygienists Association? ☐ Yes ☐ No

E2. Are you licensed as a dental hygienist in a state or province other than Washington?

☐ Yes ☐ No

E3. What is your age? _____

E4. What is your gender? ☐ Female ☐ Male

E5. What is your home ZIP code? ___ ___ ___ ___ ___

E6. Are you of Spanish/Hispanic/Latino origin? ☐ Yes ☐ No

E7. The Spanish/Hispanic/Latino question is about ethnicity, not race. Please continue to answer the following question by marking ***one or more*** boxes to indicate what you consider your race to be:

☐ White
☐ Black or African American
☐ American Indian or Alaska Native
☐ Asian
☐ Native Hawaiian/Pacific Islander
☐ Some other race

Please add any comments you think would be helpful to this study:

_____

_____

_____

_____

_____

Thank you for your time and effort!

RELATED RESOURCES FROM THE WWAMI CENTER FOR HEALTH WORKFORCE STUDIES AND THE RURAL HEALTH RESEARCH CENTER

PUBLISHED ARTICLES

Rosenblatt RA, Andrilla CHA, Curtin T, Hart LG. Shortages of medical personnel at community health centers: implications for planned expansion. *JAMA.* Mar 1 2006;295(9):1042-1049.

REPORTS

Andrilla CHA, Hart LG. *Montana dental workforce technical report.* Working Paper #51. Seattle, WA: WWAMI Center for Health Workforce Studies, University of Washington; 2001.

Andrilla CHA, Lishner DM, Hart LG. *Rural dental practice: a tale of four states.* Working Paper #107. Seattle, WA: WWAMI Rural Health Research Center, University of Washington; 2006.

Larson EH, Johnson KE, Norris TE, Lishner DM, Rosenblatt RA, Hart LG. *State of the health workforce in rural America: profiles and comparisons.* Seattle, WA: WWAMI Rural Health Research Center, University of Washington; 2003.

Patterson DG, Skillman SM. *Health professions education in Washington State: 1996-2000 program completion statistics.* Working Paper #73. Seattle, WA: WWAMI Center for Health Workforce Studies, University of Washington; 2002.

Patterson DG, Skillman SM. *Health professions education in Washington State: 1996-2004 program completion statistics.* Working Paper #94. Seattle, WA: WWAMI Center for Health Workforce Studies, University of Washington; 2004.

Patterson DG, Skillman SM, Hart LG. *Washington State's dental hygienist workforce through 2020: influential factors and available data.* Working Paper #92. Seattle, WA: WWAMI Center for Health Workforce Studies, University of Washington; 2004.

Wright GE, Paschane DM, Baldwin LM, Domoto P, Cantrell D, Hart LG. *Distribution of the dental workforce in Washington State: patterns and consequences.* Working Paper #60. Seattle, WA: WWAMI Center for Health Workforce Studies, University of Washington; 2001.

WWAMI Center for Health Workforce Studies, University of Washington. *Data snapshot: race and ethnicity of Washington State health professionals compared with state population.* Seattle, WA: Author; 2000.

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