

Predictors of Multiple Jobholding among Dental Hygienists in the State of Iowa

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Abstract:

Purpose: Little is known about the prevalence of multiple jobholding practices among dental hygienists or the factors contributing to these employment patterns. The purpose of this exploratory study was to examine predictors of multiple jobholding practices among dental hygienists in the state of Iowa.

Methods: A mailed paper survey was sent to all licensed dental hygienists (n=2080) in Iowa in May 2018. The dependent variable was whether hygienists worked more than one job in dental hygiene. Key independent variables included individual, family, and practice-related factors. Descriptive, bivariate, and binary logistic regression analyses were completed.

Results: A total of 1215 dental hygienists participated in the survey, for a response rate of 58%. Among respondents, 12.2% worked more than one job overall, with 10.7% working 2 jobs and 1.5% working three or more. Respondents who had at least a bachelor's degree, did not have children in the household, were not married, had worked more years at their primary job, and worked more hours per week, were more likely to hold multiple jobs after adjusting for other factors.

Conclusions: Consistent with national estimates, there was a high multiple jobholding rate among dental hygienists in Iowa. Multiple individual, family, and practice characteristics were found to be related to multiple jobholding, with the strongest predictors being the hygienist's highest level of education and the number of hours worked at the primary job.

Keywords: dental hygienists, multiple jobholding, employment patterns, dental hygiene workforce models

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Introduction

Population oral health and oral health disparities can be improved, in part, by encouraging participation of the dental workforce at, or near, full capacity. However, recent estimates from the Health Resources and Services Administration (HRSA) project that the supply of dental hygienists will outpace demand nationwide in the coming years.¹ Specifically, it is projected that from 2012-2025, there will be a 28 percent increase in the supply of dental hygienists, whereas demand for this workforce is expected to increase by just 10 percent. Workforce surpluses are associated with higher rates of unemployment and underemployment. One potential indicator of underemployment, of particular relevance to the dental hygiene workforce is multiple jobholding, defined as individuals who hold more than one job.²

From 1970 to 2017, the national multiple jobholding rate in the United States (US) has slowly declined from 6.2 percent

to 4.9 percent.³ However, there is considerable variation in multiple jobholding rates across demographic groups (e.g., by age, race/ethnicity, marital status)⁴ and industries.³ For example, women are more likely than men to work multiple jobs,⁵ and workers in education and health service industries typically have higher multiple jobholding rates than those in agriculture or construction.⁶ In 2010, among working women in the US, the dental hygiene occupation had the highest multiple jobholding rate across all industries and sectors, at 12.9 percent, followed by psychologists at 12.5 percent and postsecondary teachers at 11.9 percent.⁶

Reasons for the high multiple jobholding rate in dental hygiene have not been studied extensively, and peer-reviewed research on employment-related factors among dental hygienists has been lacking. However, several state workforce reports provide descriptive information about the dental

hygiene workforce. For example, a recent survey of the dental hygiene workforce in Florida found that among hygienists who had difficulty finding a position (51% of respondents), the main reasons for this difficulty were inadequate benefits, inadequate salary, and difficulty finding full-time employment.⁷ Dental hygienist respondents in Maine reported much higher difficulty finding employment, with 87 percent reporting it was somewhat or very difficult to find employment in their geographic area.⁸

These workforce reports are also the primary source for assessing multiple jobholding variation among dental hygienists across states. Estimates of multiple jobholding vary from 15% in Maine to 25% in Pennsylvania, although survey questions are not standardized so comparisons should be interpreted with caution.⁷⁻¹¹ Other state workforce surveys have inquired about working in multiple sites, conflating hygienists who work for a single employer at multiple locations with those who work for multiple employers, limiting the interpretability of those studies.^{12,13} There is the gap in the literature addressing multiple jobholding patterns and practices of dental hygienists. The purpose of this study was to describe the degree of multiple jobholding among dental hygienists in the State of Iowa, and to examine predictors associated with multiple jobholding.

Methods

A paper survey was mailed to all dental hygienists working in Iowa (n=2080) in May 2018. A postcard reminder was sent one week later, and a second paper survey was sent two weeks later to nonrespondents. Addresses and demographic information – including age and sex – were obtained from the Iowa Dental Board’s 2017 re-licensure data. Dental hygienists were included in the sample if they had a primary work address in the state of Iowa or, if no primary work address was listed, had a mailing address in Iowa. Recipients were also given the option to complete the survey online. Survey items were original or were adapted from previous state or national dental hygiene workforce surveys.^{7,8,12-16} The survey instrument was pretested by members of a project advisory committee who were knowledgeable about the dental hygiene workforce. Three dental hygienists (one working in private practice, one in public health, one in dental hygiene education), pilot tested the survey. Pre-testers and pilot testers provided feedback related to clarity and flow, and changes were made accordingly.

The dependent variable was self-reported multiple jobholding, defined as working more than one job in dental hygiene at the time of the survey. Independent variables

included individual factors (age, sex, race/ethnicity, highest level of education, and urbanicity of home county), family factors (marital status, and whether there were children under age 18 living in the household), and practice-related factors (primary job setting, years at primary job, hours worked per week at primary job, satisfaction with the number of hours at the primary job, desired total work hours, and total work hours across all jobs). Urbanicity of home county was classified using the US Department of Agriculture’s 2013 Rural-Urban Continuum Codes, which are determined by population size and adjacency to a metro area.¹⁷ Codes 1-3 indicate urban counties, and 4-9 indicate rural counties.

Descriptive, bivariate (Chi-square), and binary logistic regression models were completed using SPSS Version 25 (IBM; Armonk, NY). Data were weighted in descriptive and bivariate analyses to account for differences in nonresponse by age group but were not weighted in regression modeling. Sex and race/ethnicity were excluded from bivariate analyses and regression modeling due to low response variance. Response categories for primary job setting and hours worked per week at the primary job were recoded for bivariate analyses and regression modeling to account for small numbers. For the primary job setting variable, the response category “private practice” included those who selected either “private practice” or “corporate/Dental Service Organization” (DSO) in the original response options. Age, hours worked per week, and years at primary job were categorized in descriptive and bivariate analyses for interpretability but retained as continuous variables for the regression model due to improved model fit. Home county urbanicity, desired total work hours, and hours worked per week at all jobs, were excluded from the final model due to lack of significance in bivariate analyses, and the latter two were also excluded due to the high degree of correlation with other variables. The Hosmer and Lemeshow test was used to determine model fit, and model assumptions were confirmed to be met. This project was approved by the University of Iowa Institutional Review Board (ID #201802842).

Results

A total of 1215 (58%) dental hygienists responded to the survey. Of those, 6% (n=75) were not currently working in Iowa and were therefore screened out of the remainder of the survey, and 94% (n=1140) completed the full survey. Respondents were primarily White (97.6%), female (99.7%), married (88.4%), and working in private practice (84.9%) (Table I). Approximately 53% were age 40+, 29.7% had at bachelor’s degree or higher, and 56.8% lived in a rural county. Over half (56.5%) of respondents had children under

Table 1. Respondent demographic and practice-related characteristics (n=1141)

| Individual factors | n (%) | Practice factors | n (%) |
|--|-------------|--|------------|
| Age in years | | Primary job setting | |
| <30 | 161 (14.1) | Private practice | 956 (84.9) |
| 30-39 | 367 (32.2) | Corporate/DSO | 50 (4.4) |
| 40-49 | 260 (22.8) | Community Health Center | 27 (2.4) |
| 50+ | 353 (30.9) | Community-based public health setting | 36 (3.2) |
| Sex | | Education program (DDS, DH, DA) | 39 (3.4) |
| Female | 1137 (99.7) | Other | 17 (1.5) |
| Male | 4 (0.3) | Years at primary job | |
| Race | | 0-5 | 479 (42.6) |
| White | 1105 (97.6) | 6-10 | 201 (17.9) |
| Other race or multiracial | 27 (2.4) | 11-20 | 279 (24.8) |
| Highest level of education | | 21+ | 165 (14.6) |
| Dental hygiene certificate | 96 (8.5) | Hours worked per week at primary job | |
| Associate degree | 703 (61.9) | 8 or fewer | 33 (3.0) |
| Bachelor's degree | 309 (27.2) | 9-20 | 142 (12.8) |
| Master's degree or higher | 28 (2.5) | 21-31 | 293 (26.2) |
| Urbanicity of home county | | 32+ | 648 (58.1) |
| Rural | 630 (56.8) | Hours worked per week at all jobs | |
| Urban | 478 (43.2) | 8 or fewer | 30 (2.6) |
| Family factors | | 9-20 | 102 (9.1) |
| Children under 18 living in household | | 21-31 | 287 (25.6) |
| Yes | 628 (56.5) | 32+ | 700 (62.6) |
| No | 484 (43.5) | Satisfaction with number of work hours at primary job | |
| Marital status | | Very satisfied | 760 (66.8) |
| Married | 983 (88.4) | Somewhat satisfied | 301 (26.5) |
| Divorced, widowed, or separated | 73 (6.6) | Dissatisfied | 76 (6.7) |
| Never married | 56 (5.0) | Desired total work hours | |
| | | More hours | 95 (8.5) |
| | | Same number of hours | 762 (67.9) |
| | | Fewer hours | 265 (23.6) |

age 18 living in the household. Respondents had comparable distributions of work hours whether taking into account the primary job only or total hours across all jobs, with 58.1% and 62.6% working 32+ hours, respectively. Most respondents were either very satisfied (66.8%) or somewhat satisfied (26.5%) with the number of work hours at their primary job. Only 8.5% desired additional total work hours.

Among the respondents, 12.2% worked more than 1 job, with 10.7% working 2 jobs and 1.5% working 3 or more.

Respondents most likely to hold multiple jobs included those who had a bachelor's degree or higher ($p<.001$), did not have children in the household ($p=.026$), were not married ($p<.001$), worked in an education program ($p=.031$), had a shorter job tenure ($p=.002$), worked fewer hours at their primary job ($p<.001$) and were less satisfied with their work hours ($p<.001$) (Table II). The following variables were not significantly associated with multiple jobholding: age, urbanicity of home county, hours worked per week at all jobs, and desired total work hours.

Table II. Bivariate analyses examining multiple jobholding and respondent characteristics (n=1138)

| | Work more than one job in dental hygiene n(%) | | p-value | | Work more than one job in dental hygiene n(%) | | p-value |
|--|--|----------------------|--------------------|--|--|----------------------|-------------|
| | Yes (n=139, 12.2%) | No (n=999, 87.8%) | | | Yes (n=139, 12.2%) | No (n=999, 87.8%) | |
| Individual factors | | | | Practice factors | | | |
| Age in years | | | | Primary job setting | | | |
| <30 | 28 (17.4) | 133 (82.6) | .20 | Private practice | 121 (12.0) | 885 (88.0) | .031 |
| 30-39 | 43 (11.7) | 323 (88.3) | | Education program | 10 (25.6) | 29 (74.4) | |
| 40-49 | 30 (11.5) | 231 (88.5) | | Other | 8 (9.9) | 73 (90.1) | |
| 50+ | 39 (11.1) | 312 (88.9) | | Years at primary job | | | |
| Highest level of education | | | | 0-5 | 79 (16.5) | 400 (83.5) | .002 |
| Dental hygiene certificate or Associate degree | 75 (9.4) | 724 (90.6) | 6-10 | 23 (11.4) | 178 (88.6) | | |
| Bachelor's degree or higher | 64 (19.0) | 273 (81.0) | 11-20 | 22 (7.9) | 257 (92.1) | | |
| | | | 21+ | 14 (8.5) | 151 (91.5) | | |
| Urbanicity of home county | | | | Hours worked per week at primary job | | | |
| Rural | 79 (12.6) | 550 (87.4) | 20 or fewer | 53 (30.1) | 123 (69.9) | <.001 | |
| Urban | 50 (10.5) | 425 (89.5) | 21-31 | 41 (14.0) | 252 (86.0) | | |
| | | | 32+ | 44 (6.8) | 604 (93.2) | | |
| Family factors | | | | Hours worked per week at all jobs | | | |
| Children under 18 living in household | | | | 20 or fewer | 8 (6.1) | 123 (93.9) | .053 |
| Yes | 65 (10.4) | 563 (89.6) | 21-31 | 35 (12.2) | 252 (87.8) | | |
| No | 71 (14.8) | 410 (85.2) | 32+ | 96 (13.7) | 604 (86.3) | | |
| Marital status | | | | Satisfaction with number of work hours at primary job | | | |
| Married | 108 (11.0) | 872 (89.0) | Very satisfied | 73 (9.6) | 684 (90.4) | <.001 | |
| Divorced, widowed, or separated | 11 (15.5) | 60 (84.5) | Somewhat satisfied | 46 (15.3) | 255 (84.7) | | |
| Never married | 16 (28.6) | 40 (71.4) | Dissatisfied | 20 (26.3) | 56 (73.7) | | |
| | | | | Desired total work hours | | | |
| | | | | More hours | 14 (14.6) | 82 (85.4) | .74 |
| | | | | Same number of hours | 91 (11.9) | 671 (88.1) | |
| | | | | Fewer hours | 34 (12.8) | 231 (87.2) | |

In the logistic regression model, having children in the household ($p=0.02$), marital status ($p=.007$), highest level of education ($p<.001$), years at primary job ($p=.006$), and hours worked per week at primary job ($p<.001$) were significantly associated with multiple jobholding (Table III). Respondents who were not married were more than twice as likely as those who were married to hold multiple jobs, and those with a

bachelor's degree or higher were more than twice as likely to hold multiple jobs compared to those with an associate degree or certificate. Increases in both the number of years and the number of work hours at the primary job were associated lower odds of multiple jobholding. Hosmer and Lemeshow test yielded $p=.631$ indicating evidence of good model fit.

Table III. Binary logistic regression model predicting multiple jobholding among respondents (n=1075)

| Individual factors | OR (95% CI)* | p-value |
|--|----------------------|-----------------|
| Age in years | .98 (.96-1.00) | .049 |
| Highest level of education | | |
| Dental hygiene certificate or associate degree | .40 (.26-.60) | <.001 |
| Bachelor's degree or higher | Ref | — |
| Family factors | | |
| Children under 18 living in household | | |
| Yes | Ref | — |
| No | 1.71 (1.09-2.69) | .020 |
| Marital status | | |
| Married | Ref | — |
| Divorced, widowed, or separated | 2.20 (1.06-4.58) | .035 |
| Never married | 2.53 (1.81-5.41) | .017 |
| Practice factors | | |
| Primary job setting | | |
| Private practice | .80 (.43-1.50) | .49 |
| Other | Ref | — |
| Years at primary job | .96 (.94-.99) | .006 |
| Hours worked per week at primary job | .92 (.90-.94) | <.001 |
| Satisfaction with number of work hours at primary job | | |
| Very satisfied | Ref | — |
| Somewhat satisfied | 1.58 (1.02-2.44) | .040 |
| Dissatisfied | 1.82 (.95-3.50) | .071 |

* Odds ratio (95% Confidence interval)

Discussion

The multiple jobholding rate among dental hygienists in Iowa (12.2%) is comparable to the national multiple jobholding rate among dental hygienists,⁶ which is considerably higher than the recent multiple jobholding rate among all occupations nationwide (4.9%) as well as the overall multiple jobholding rate in Iowa (8.6%).² In contrast, Iowa's multiple jobholding rate for dental hygienists is lower than other states' estimates, which range from 15% in Maine to approximately 27% in Florida and Pennsylvania.^{7,8,10,16}

In this study, individual, family, and practice factors all related to multiple jobholding among Iowa dental hygienists. The positive relationship between educational attainment and likelihood of multiple jobholding is consistent with estimates nationally and in other sectors.⁶ Motivations for multiple jobholding have been found to differ by educational attainment; while individuals with lower educational attainment are driven by financial factors, those with higher educational attainment are more likely to be related to job satisfaction or career growth.⁶ This trend is plausible in the dental hygiene workforce as well; dental hygienists with higher educational attainment could be more likely to hold teaching positions which are

often part-time. A systematic review of multiple jobholding among the nursing workforce found that the main motivations for multiple jobholding were financial, dissatisfaction with the main job, and increased flexibility.¹⁸ These specific factors were not addressed in this study, and future research could explore whether these relationships hold true in for dental hygienists.

Results regarding family factors are consistent with other studies, including the finding that single women are more likely to work multiple jobs than their partnered counterparts.^{6,19} While it would seem that this relationship could be explained by the financial pressures of a single-income versus a dual-income household, the national trend is reversed for men; married men are more likely to work multiple jobs than their non-partnered counterparts.⁶ While there is a paucity of literature examining multiple jobholding and the presence of children in the household, it is likely that childrearing responsibilities among this primarily female workforce override the desire or ability to work multiple jobs.

The reasons for the high multiple jobholding rate for the dental hygiene profession as a whole, compared to other occupations, are not well understood. This study's finding that dental hygienists who work multiple jobs had lower satisfaction with the number of hours at their primary job suggests that multiple jobholding is not the preferred employment situation for many dental hygienists. The lack of association among those who were "dissatisfied" with work hours is likely related to a low number of individuals in this category and therefore low power to detect differences. However, although multiple jobholding hygienists may desire additional hours at their *primary job*, they do not appear to desire additional *total* hours any more than single jobholders, given that there was no difference between single and multiple jobholders in the desired total work hours relative to current total work hours. This suggests that the high rate of multiple jobholding may not necessarily be an indicator of underemployment for dental hygienists.

The high multiple jobholding rate may be related to a shortage of full-time employment

opportunities. Previously published results from this survey revealed that among dental hygienists who had been on the job market in the past five years, 58% had difficulty finding desired employment.²⁰ Among dental hygienists reporting job-seeking difficulty, the most common cited barrier to finding desired employment was the inability to find a full-time job (49%), followed by excessive commuting distance (34%), inadequate salary (29%) and inadequate benefits (28%). The high prevalence of difficulty finding desired employment is consistent with results from a Florida employment study, as previously discussed.⁷ Given that the practice of dentistry is still dominated by small, dentist-owned private practices,²¹ hiring decisions are largely made by owner dentists. The market for full-time positions in dental hygiene, along with dentist motivations for offering full- vs. part-time opportunities, warrant further study.

The potential consequences of the high rate of multiple jobholding in the dental hygiene profession include the ability of dental hygienists to access employment benefits and impacts on career satisfaction. The expected dental hygiene workforce surplus could increase multiple jobholding further if dentists are not otherwise incentivized to offer full-time positions. The growth in large group practices in dentistry could be an avenue for increased full-time opportunities given their economies of scale; however, it is not known whether employment opportunities for dental hygienists differ by practice size and structure.

An important limitation to this study is that it only included dental hygienists who worked more than one job in dental hygiene, which excludes those who may have a second job in another sector. This may result in an underestimate of the actual rate of multiple jobholding and may influence the results, as those working multiple jobs in dental hygiene may differ systematically from those working a second job in another sector. However, a specific focus of this study was to obtain an estimate of multiple jobholding within the profession, and future studies should include other-sector jobs to build on this work. Future research should also examine the desirability of multiple jobholding among dental hygienists, and the primary factors driving the high rate within this profession.

Conclusion

Consistent with national estimates, there was a high multiple jobholding rate among dental hygienists in the state of Iowa. An increased likelihood of multiple jobholding was associated with higher educational attainment, not having children in the household, being unmarried, having a shorter job tenure, and fewer number of hours at the primary job.

Future studies should examine motivations for multiple jobholding among dental hygienists, as well as the job market for full-time employment opportunities.

Disclosure

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