

# Gender Differences and Predictors of Practice Ownership in a Sample of Ontario Dentists

Julia C. McKay, DDS, PhD; Atyub Ahmad, BSc(Hon), MMI, DDS; Fahim Rashid, DDS, MSc, FRCD(C); Jodi L. Shaw, DMD, MSc, FRCD(C); Alicia Clancy, DDS, MSc, BMSc; Courtney David, DDS; Rafael Figueiredo, DDS, MSc, FRCD(C); Carlos Quiñonez, DMD, MSc, PhD, FRCD(C)



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## Abstract

**Purpose:** To examine the influence of gender on practice ownership among Ontario dentists.

**Methods:** In 2012, a 52-item survey was sent to a random sample of 3000 Ontario dentists (1500 men and 1500 women) to collect information on personal, professional and sociodemographic characteristics. The resulting data were analyzed using descriptive statistics and linear regression modeling.

**Results:** The 867 respondents included 463 men, 401 women and 3 people whose gender was unreported, yielding a response rate of 29%. Univariate regression analyses revealed that male dentists were 2.2 times more likely to be practice owners than female dentists. Dentists > 60 years were less likely to be owners than younger dentists. The odds of practice ownership were lower for dentists who preferred the ability to secure part-time work. A higher level of confidence in one's business acumen significantly predicted practice ownership. Dentists making concessions in their career to pursue family life were more likely to be associates, and those who perceived that their partners made concessions to aid in their career were more likely to be owners. In multivariate analyses, the effect of gender on practice ownership became insignificant, yet the influence of age, preference for career aspects, confidence in business skills and perceptions regarding concessions by self and partner persisted. Gender-stratified analyses revealed that familial factors significantly predicted ownership for female dentists, but not for male dentists.

**Conclusion:** Gender appears to be linked to practice ownership, but when other factors are considered such as age, preference for part-time work, higher levels of confidence in business skills and perceptions of career concessions, the relationship does not remain.

### See also:

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The shift in demographic characteristics of Canada's dentist workforce is well-documented.<sup>1</sup> From 2008 to 2011, the proportion of female dentists in the workforce increased from 27% to 30%,<sup>1</sup> and, in 2008, 6 out of 10 Canadian faculties of dentistry had more female graduates than male.<sup>1</sup> The shift is further reflected in the fact that, in 2009, although 72% of Canadian dentists were men, over 58% of those under 30 years of age were women. In contrast, only 8% of dentists over 60 years of age were women.<sup>2</sup>

The impact of this trend on workforce characteristics (e.g., practice style, weekly work hours and income) has not been thoroughly explored. With limited data and the newness of the shift toward more female than male dentists entering the workforce, long-term predictions are limited. Some evidence indicates that female dentists work fewer hours than male dentists, are less interested in the business aspect of the profession and are underrepresented in academia and specialty practice.<sup>1-3</sup> Although such differences have been observed, the factors that play a role in predicting them and their significance have yet to be examined.

In Canada, it has been more than a decade since the last survey assessing differences in work characteristics between male and female dentists.<sup>3</sup> In a previous paper, we speculated on the impact of the demographic trends on the future of the Canadian dental profession.<sup>1</sup> We then conducted a survey among Ontario dentists regarding a variety of professional characteristics and demonstrated minor differences in weekly work hours between male and female dentists and highlighted the factors that predict these differences (e.g., age, practice ownership, training location and degree of spousal support for household and caregiving responsibilities).<sup>4</sup>

In this paper, we concentrate on whether there are gender differences in terms of being a practice owner (sole owner/partner) or an associate. The literature suggests that female dentists are less likely than male dentists to be practice owners. A 2002 survey of Ontario dentists revealed that 27% of female dentists work as associates as opposed to only 9% of male dentists.<sup>3</sup> Consistent with this finding are the results of a nation-wide New Zealand survey that reported 48% of female dentists compared with 22% of male dentists work as associates.<sup>5</sup> In the United States, a 2011 survey that examined the differences in practice patterns of male and female dentists showed that 54% of women were practice owners or partners compared with 74% of men.<sup>6</sup> This tendency was further confirmed in a German study that showed only 37% of all self-employed dentists were female.<sup>9</sup>

In general, the evidence suggests that practice owners tend to be older, have more children and work longer hours than those who do not own a practice. Yet, although such differences have been observed, studies controlling for practitioner age, marital status, children, practice patterns and preferences are missing in the literature. Therefore, we also explore whether practice ownership (as opposed to associateship) by male and female dentists in Ontario is influenced by familial responsibilities, demographic and/or work-related characteristics.

## Methods

### Study Design

We describe the design, sample and survey instrument in detail in a companion article.<sup>4</sup> In short, a random sample of 3000 dentists (1500 men and 1500 women) selected from the Royal College of Dental Surgeons of Ontario provider listing, was surveyed to assess gender differences with respect to professional issues (e.g., work-practice characteristics and patterns, clinical decisions, retirement, business knowledge, relationship with staff, specialty and advanced education, satisfaction with career, career breaks, leadership, academia) and personal issues (e.g., marital status, children, familial responsibilities, stress/conflict in balancing multiple roles). Ethics approval was received from the University of Toronto's Office of Research Ethics (protocol reference #27977) and a single mail-out of a 52-item survey was completed in the summer of 2012.

### Statistics

STATA v. 13.0 (StataCorp LP, College Station, Texas, USA) was used to report descriptive statistics and to fit logistic regression models to the data. Data were analyzed to observe whether gender was a determinant of the odds of being a practice owner (sole proprietor or partner), as opposed to being an associate, and to determine which personal, professional and sociodemographic factors predict the odds of practice ownership among male and female dentists.

### Analysis

An initial descriptive analysis of the sample data was conducted, providing means or proportions of dentists for each selected variable.<sup>4</sup> A gender-stratified analysis indicated significant differences between male and female dentists in terms of various demographic, work and familial characteristics. For this analysis, preliminary univariate regressions were conducted to assess the significance of selected variables in predicting the odds of being a practice owner. Among work-related predictor variables, the "most enjoyable aspects of career" was used. In addition, a composite of 5 variables assessing respondents' self-reported business acumen (project management, organizational business/ethics, evidence-based practice, critical thinking and analysis and outcomes management) was constructed. Predictor variables assessing familial characteristics such as the "degree of concessions to career made by self to pursue family" or the "degree of concessions made by partner to aid in the dentist's career" were also used.

### Regression Estimation Procedures

To assess the main outcome of interest, the odds of practice ownership, a logistic regression model was developed. The effects of various demographic, familial and work-related predictors on the dependent variable were assessed as odds ratios. To assess for improvements in model fit after the addition of the 2 predictor variables of interest, namely

"concessions made by self" and "concessions made by partner," a log likelihood ratio test was conducted. This test allowed for comparison of the log likelihood ratios from the base (without) and final (with the added variables) specifications. A significant test result ( $p < 0.05$ ) indicated that the addition of the 2 variables significantly improved the model fit. Finally, gender-stratified regression analyses were conducted to examine the strongest predictors of practice style among male and female dentists individually using the same variables as in the previous analysis.

## Results

Detailed results of the descriptive analysis of our sample population are provided elsewhere.<sup>4</sup> The 867 dentists who responded included 401 women (46%), 463 men (54%) and 3 people whose gender was unreported; after taking into account undeliverable surveys, this yielded a response rate of 29%. Most respondents were general practitioners (86%), 40–59 years of age (60%), had completed their dental undergraduate training between 1981 and 2000 (57%) and were Canadian-trained (80%). Gender-stratified analysis of practice ownership revealed that male dentists in Ontario were significantly more likely than female dentists to be practice owners (84% men vs. 71% women,  $p < 0.01$ ) and to perceive a higher level of self-confidence, on a scale of 1 to 5, in a composite measure of business knowledge and skills (3.8 men vs. 3.7 women,  $p < 0.01$ ).<sup>4</sup>

We used univariate (Table 1) and multivariate (Table 2) regression analyses (using base and final specifications) to determine the odds of being a practice owner as opposed to being an associate. These relations, which were found to be significant by both univariate and multivariate analysis, were characterized as follows. Age had a strong effect on practice ownership; dentists under 60 years of age were more likely to be owners than those over 60 years ( $p < 0.05$ ). Dentists in the youngest cohort ( $\leq 39$  years) were most likely to assume practice ownership than those  $\geq 60$  years ( $p < 0.01$ ), with the odds of being an owner decreasing as age increases. Dentists who perceived the ability to work part-time as the most enjoyable career aspect were significantly less likely to be practice owners ( $p < 0.01$ ), whereas those who perceived a higher level of confidence in their own business knowledge and skills were more likely to be practice owners ( $p < 0.01$ ).

**Table 1:** Results of univariate regression analysis showing the odds of Ontario dentists being practice owners (sole or partner) as opposed to associates.

Factor	Odds ratio (95% CI)	p
<b>Gender (reference: female)</b>		
Male	2.154 (1.545, 3.004)	< 0.001
<b>Age (reference: <math>\geq 60</math> years)</b>		
20–39 years	6.301 (3.780, 10.504)	< 0.001
40–59 years	6.023 (3.449, 10.517)	< 0.001
<b>1 or more children by age group (reference: no children)</b>		
0–3 years	1.397 (0.835, 2.338)	0.203
4–7 years	2.651 (1.415, 4.968)	0.002
8–12 years	4.028 (2.050, 7.914)	< 0.001
$\geq 13$ years	3.619 (2.356, 5.559)	< 0.001
<b>Marital status (reference: single)</b>		
Non-married relationship	0.487 (0.197, 1.204)	0.119
Married	1.493 (0.766, 2.908)	0.239
Divorced/separated	1.497 (0.581, 3.860)	0.404
<b>Preference for career aspects (reference: enjoy aspects other than part-time work)</b>		
Enjoy ability to secure part-time work most	0.206 (0.145, 0.291)	< 0.001
<b>Confidence in business acumen</b>		
Mean confidence in business knowledge and skills	2.047 (1.662, 2.523)	< 0.001
<b>Perception of level of significant concessions in own career to pursue family life (reference: 1, none)</b>		
2 (none to some)	1.470 (0.877, 2.462)	0.143
3 (some)	0.828 (0.540, 1.270)	0.388
4 (some to many)	0.668 (0.377, 1.183)	0.167
5 (many)	0.496 (0.277, 0.887)	0.018
<b>Perception of level of significant concessions that partner made in their career to aid in dentist's career (reference: 1, none)</b>		
2 (none to some)	1.061 (0.647, 1.740)	0.813
3 (some)	1.071 (0.700, 1.639)	0.752
4 (some to many)	2.267 (1.165, 4.411)	0.016
5 (many)	2.753 (1.351, 5.610)	0.005

Note: CI = confidence interval.

Looking at familial factors (**Table 2**, final specification), dentists who perceived themselves as having made many concessions in their own career to pursue family life were significantly less likely to be practice owners than those who perceived themselves as having made no such concessions ( $p < 0.05$ ). In contrast, dentists who perceived that their partner had made significant concessions in their career to aid in the dentist's career were significantly more likely to be practice owners than those who perceived that no such concessions had been made ( $p < 0.05$ ).

The effect of marital status on practice ownership was insignificant in both univariate and multivariate analyses, whereas the increased odds of male dentists being owners was significant in univariate analysis, but became insignificant in both base and final multivariate models. Dentists with children  $\geq 4$  years of age showed increased odds of practice ownership in univariate analysis; however, in multivariate analysis, the effect became insignificant.

Results of gender-stratified regression analyses (**Table 2**) show that, among female dentists, the increased odds of practice ownership were significantly higher for the 20–39 and 40–59 year age groups, compared with the  $\geq 60$  years cohort ( $p < 0.05$ ); among men, only the youngest cohort of dentists showed significantly higher odds of practice ownership compared with the oldest cohort ( $p < 0.05$ ). Female dentists who had a higher level of confidence in their business knowledge and skills were significantly more likely to be owners than associates ( $p < 0.01$ ); for male dentists, this effect was insignificant.

Finally, familial factors had a significant effect on the odds of practice ownership for female dentists. The perception that concessions were made in a dentist's career to pursue family life significantly reduced practice ownership among female dentists ( $p < 0.05$ ), and the perception that a partner made such concessions to aid in the dentist's career significantly increased the odds of practice ownership among female dentists ( $p < 0.05$ ). Both effects were insignificant for male dentists.

## Discussion

Our results suggest that a higher proportion of male dentists in Ontario are practice owners compared with female dentists. A similar trend has been noted in previous studies.<sup>3,5,6,9</sup> However, when controlling for demographic, work-related and familial factors, gender no longer influences the tendency to own a dental practice. This indicates that the relation between gender and practice ownership is multifaceted. Specifically, the decision to be a practice owner is influenced by the dentist's age, preference for

obtaining part-time work, level of confidence in business skills, degree of concessions made to pursue family life and the degree of concessions made by the dentist's partner to aid in the dentist's career.

Entrepreneurship in dentistry is typically perceived to be rewarded with high status and limitless potential income. Yet, owning a dental practice usually requires considerable time and financial commitments, is stressful and requires enhanced business skills. For example, a 2002 survey of female dentists in England revealed that 32% of women owned a dental practice; those who were self-employed reported enjoying the benefits associated with practice ownership, including autonomy in determining the number of hours spent practising, the ability to allocate work and the potential to build their own team.<sup>10</sup> Yet, only a quarter of non-practice owners (some of whom were previous practice owners) were keen to own a practice, citing reasons such as the additional responsibility and commitment required in practice management, lack of business skills, satisfaction with their current position and lack of fit with their partner's career. These findings reflect those seen in our study.

Our previous work examined predictors of the number of hours worked by dentists and found that practice ownership, among other variables, increases the number of weekly work hours.<sup>4</sup> The current study shows that both male and female dentists who prefer part-time work are significantly more likely to select associateship positions. Reports of female physicians have documented that women often seek jobs that offer flexibility and an accommodating work schedule, allowing time for parenting and achieving a personal and professional balance.<sup>11,12</sup> Similarly, female community pharmacists in the United Kingdom have reported struggling to work full-time hours, given the challenges of balancing domestic responsibilities with long working hours.<sup>13</sup> Another report stressed the importance of work-life balance to female pharmacists, who preferred flexible work schedules and the option to take maternity leave.<sup>14</sup> Female orthodontists in Canada have also described the decisions needed to maintain a work-life balance, including whether to buy into a practice or to work as an associate.<sup>15</sup> It has been reported that the decision to select associateship early in their careers helped them to better incorporate domestic and familial duties. These reports support the finding in this study that female dentists who make concessions in their careers to pursue family life are less likely to own a practice.

In our study, the odds of being a practice owner were higher for younger than older cohorts. Male dentists 20–39 years of age were more likely to be practice owners than those 60 years of age or older, whereas female dentists 20–59 years of age were more likely to be practice owners than those in the oldest age group. These findings are in

**Table 2:** Results of multivariate regression analysis identifying factors that predict the odds of Ontario dentists being practice owners (sole or partner) as opposed to associates, overall and by gender.

Factor	All dentists (base specification, n = 718)		All dentists (final specification, n = 667)		Male dentists (n = 374)*		Female dentists (n = 294)	
	Odds ratio (95% CI)	p	Odds ratio (95% CI)	p	Odds ratio (95% CI)	p	Odds ratio (95% CI)	p
Gender (reference: female)								
Male	1.356 (0.876, 2.101)	0.172	0.932 (0.559, 1.552)	0.785				
Age (reference: ≥ 60)								
20–39	4.458 (2.325, 8.548)	< 0.001	6.379 (3.062, 13.290)	< 0.001	4.245 (1.285, 14.021)	0.018	8.889 (2.941, 26.864)	< 0.001
40–59	2.390 (1.055, 5.418)	0.037	2.970 (1.199, 7.353)	0.019	1.392 (0.368, 5.273)	0.626	6.916 (1.488, 32.144)	0.014
1 or more children by age group (reference: no children)								
0–3 years	1.753 (0.869, 3.536)	0.117	1.266 (0.548, 2.923)	0.580	1.753 (0.490, 6.270)	0.388	2.208 (0.494, 9.875)	0.300
4–7 years	1.869 (0.847, 4.125)	0.121	1.230 (0.500, 3.027)	0.653	1.275 (0.343, 4.735)	0.716	1.761 (0.369, 8.403)	0.478
8–12 years	2.924 (1.234, 6.929)	0.015	2.043 (0.762, 5.478)	0.156	3.809 (0.639, 22.691)	0.142	3.459 (0.689, 17.360)	0.132
≥ 13 years	2.514 (1.310, 4.825)	0.006	1.900 (0.886, 4.077)	0.099	2.493 (0.891, 6.971)	0.082	3.337 (0.759, 14.677)	0.111
Marital status (reference: single)								
Non-married relationship	0.660 (0.221, 1.973)	0.457	0.210 (0.020, 2.190)	0.192			0.195 (0.012, 3.172)	0.250
Married	1.183 (0.476, 2.941)	0.718	0.507 (0.055, 4.695)	0.550			0.769 (0.060, 9.862)	0.840
Divorced/separated	1.860 (0.552, 6.263)	0.316	1.041 (0.089, 12.224)	0.974			3.308 (0.141, 77.604)	0.457
Preference for career aspects (reference: enjoy aspects other than part-time work)								
Enjoy ability to secure part-time work most	0.191 (0.124, 0.293)	< 0.001	0.205 (0.129, 0.325)	< 0.001	0.256 (0.138, 0.475)	< 0.001	0.117 (0.051, 0.266)	< 0.001

Confidence in business acumen								
Mean confidence in business knowledge and skills	1.865 (1.465, 2.375)	< 0.001	1.598 (1.233, 2.069)	< 0.001	1.077 (0.737, 1.574)	0.700	2.640 (1.694, 4.113)	< 0.001
Perception of level of significant concessions made in own career to pursue family life (reference: 1, none)								
2 (none to some)			1.672 (0.764, 3.661)	0.199	1.269 (0.512, 3.148)	0.607	1.559 (0.322, 7.551)	0.581
3 (some)			0.719 (0.380, 1.362)	0.312	0.735 (0.329, 1.640)	0.452	0.406 (0.109, 1.513)	0.179
4 (some to many)			0.514 (0.226, 1.168)	0.112	0.697 (0.224, 2.173)	0.534	0.198 (0.043, 0.926)	0.040
5 (many)			0.395 (0.164, 0.954)	0.039	0.849 (0.098, 7.349)	0.882	0.164 (0.037, 0.718)	0.016
<b>R2</b>	-300.3		-263.5		-141.9		-109.1	
<b>Likelihood ratio test†</b>			$\chi^2 = 19.84$	0.011				

Note: CI = confidence interval.

\* Marital status omitted because of lack of sufficient sample.

† To determine whether log likelihood of base and final specifications differ significantly, assuming that the base model is nested in the final model. p = 0.011 indicates that the addition of self and partner concession variables significantly improves model fit.

contrast to the literature, which suggests that associates tend to be younger than solo owners or practice partners.<sup>3,16</sup> It is generally assumed that before owning a dental practice, recent graduates choose associateships and/or salaried positions to pay off debts, improve their skills and save to purchase a practice in the future. However, the discrepancy seen in our study can be explained by higher rates of early retirement among high-income earners<sup>17</sup> (such as dentists) and a changing attitude toward full-time work. Older dentists may choose to sell or close their practices and enter semi-retirement, working fewer hours in associate positions.

Also of interest is that female dentists reported having less confidence in their business knowledge relative to men, albeit marginally. Higher levels of business acumen also predicted practice ownership among female dentists, but not male dentists. Residents in North American dental programs have noted that current dental curricula lack the necessary practice management training and a revision of current programs is required to ease the transition into

successful business ownership.<sup>18,19</sup> Appropriate support is also needed in the form of postgraduate training programs to ensure that practitioners are empowered as they further their careers. For male dentists, in particular, social expectations, such as the desire for autonomy, willingness to assume financial risks, motivation to accept additional professional responsibilities and the drive to expand their income, may play a greater role in the decision to become a practice owner,<sup>9</sup> overshadowing any perceived lack of business knowledge.

## Conclusion

Although univariate analysis showed that male dentists are more likely than women to own their practice, multivariate analysis revealed that only age, preference for part-time work, higher levels of confidence in business skills and perceptions of career concessions made by dentists and/or their partner remain predictors of practice ownership among Ontario dentists.

## THE AUTHORS



**Dr. McKay** is an oral and maxillofacial surgeon resident at the Montefiore Medical Center, department of dentistry, New York City, New York.



**Dr. Ahmad** is in private practice in Barrie, Ontario.



**Dr. Rashid** is a dental consultant with Peel Public Health, Mississauga, Ontario.



**Dr. Shaw** is director of dental services 2 policy and programs, Canadian Forces Health Services Group Headquarters, Department of National Defence, Ottawa, Ontario.



**Dr. Clancy** is in private practice in Whitby, Ontario.



**Dr. David** is a general practice resident at the University of Alberta faculty of dentistry, Edmonton, Alberta.



**Dr. Figueiredo** is provincial dental public health officer, Alberta Health Services, Edmonton, Alberta



**Dr. Quiñonez** is associate professor and program director, discipline of dental public health, faculty of dentistry, University of Toronto, Toronto, Ontario.

**Correspondence to:** Dr. Carlos R. Quiñonez, Faculty of Dentistry, University of Toronto, 521-124 Edward St., Toronto ON M5G 1G6. Email: [carlos.quinonez@utoronto.ca](mailto:carlos.quinonez@utoronto.ca)

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