

Job satisfaction among Canadian orthodontists

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Job satisfaction has been well researched for many professions, including general dentistry. The job satisfaction of orthodontists has not been adequately studied. The aims of this study were to describe job satisfaction among orthodontists and to determine characteristics associated with job satisfaction in the profession. A self-administered, anonymous survey was mailed to Canadian orthodontists. It included a modified version of the Dentist Satisfaction Survey, an overall occupational stress score, and items addressing various characteristics of the respondents. Of 654 mailed surveys, 335 were returned, for a response rate of 51.2%. Most orthodontists (79.3%) were classified as satisfied according to the overall job satisfaction scale of the Dentist Satisfaction Survey; however, some (2.5%) were classified as dissatisfied. The facets of orthodontics with the highest degree of satisfaction were patient relations (93%), delivery of care (86%), respect (84%), professional relations (80%), and staff (76%). The most dissatisfaction was associated with personal time (26%) and practice management (15%). Stepwise multiple regression analysis resulted in a model including overall occupational stress, membership in the Canadian Association of Orthodontists, total number of staff, and age to account for 27.1% of the variation in the overall job satisfaction scale. Based on accountable sources of variance, the overall job satisfaction scale seems to be more affected by other variables than the characteristics evaluated by this survey. (*Am J Orthod Dentofacial Orthop* 2003;123:695-700)

Life satisfaction is a universal goal. One component of our feelings about our lives is our attitude toward our work. Job satisfaction has been defined as “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences.”¹ Studying job satisfaction is important because of its reported influence on a person’s physical and mental well-being and its possible effects on job-related behaviors and performance.²

The difficulties associated with measuring job satisfaction are similar to those experienced when describing any attitude. The main problem is in establishing validity of the measure without direct measures of the attitude.³ The validity of an instrument to measure an attitude can only be assumed after comparison with

established attitude theory and other measurement methods.

The most widely reported comprehensive instrument used to evaluate job satisfaction in dentistry is the Dentist Satisfaction Survey.⁴⁻⁸ The Dentist Satisfaction Survey uses 10 items to evaluate overall job satisfaction. An additional 44 items are used to measure 11 facets of job satisfaction: delivery of care, patient relations, perception of income, personal time, practice management, professional environment, professional relations, professional time, respect, staff, and stress. An additional 6-item overall quality-of-life scale is used in conjunction with the Dentist Satisfaction Survey.

Other studies have indirectly evaluated job satisfaction in dentistry with single questions, such as “If given the chance, would you choose dentistry again?”⁹⁻¹³ or “If your child were considering dentistry as a career, would you encourage him/her?”¹⁰

Many studies have evaluated job satisfaction in dentistry, but job satisfaction in orthodontics has not been adequately reported. Only 1 study has described job satisfaction in a sample of orthodontists. Humphris et al¹⁴ used the Occupational Stress Indicator, which includes a 22-item job satisfaction scale, to compare small sample groups from 3 dental specialties. The results showed that restorative dentists were significantly less satisfied with their jobs than oral surgeons and orthodontists. The same differences were seen on 3

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of the 5 job satisfaction subscales: organizational processes, achievement, and satisfaction with the job itself. No differences were reported in the status and personal relationships subscales.

The objectives of this study were (1) to measure overall job satisfaction in a group of orthodontists, (2) to measure orthodontists' satisfaction with specific facets of practice, and (3) to evaluate how various personal and practice characteristics influence reports of overall job satisfaction.

MATERIAL AND METHODS

The survey evaluated job satisfaction with a modified version of the Dentist Satisfaction Survey.⁵ Some items were reworded to apply to the orthodontic practitioner. In total, 52 items were used; 10 comprised the overall job satisfaction scale, and 42 measured 10 facets of job satisfaction. The facets were patient relations, respect, delivery of care, professional relations, staff, professional environment, perception of income, professional time, practice management, and personal time. An additional 6 items formed a quality-of-life scale. For each item, the respondent was asked to indicate his or her agreement using a 5-point Likert-type scale: strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree.

The survey evaluated overall occupational stress with the question, "Overall, how stressful do you find the practice of orthodontics?" A scale from 0 (not stressful) to 100 (very stressful) was used. This was defined as the overall occupational stress score.

The survey included items addressing the personal and practice characteristics of the respondents. Most of these characteristics had been reported to affect job satisfaction or occupational stress in general dentistry or other professions.^{8,15-17} The characteristics addressed were age, gender, marital status, parenthood, years of professional experience, general dental experience, other specialty training, previous occupational experiences, province of practice, population of community, type of practice (solo, associateship, partnership, group practice, or academic), staffing, satellite offices, part-time academic involvement, hours worked per week, weeks of vacation per year, gross income, professional affiliations (membership in the Canadian Association of Orthodontists [CAO], fellowship in the Royal College of Dentists of Canada [FRCD(C)], diplomate status with the American Board of Orthodontics [ABO]), continuing education practices, and stress management practices.

An initial version of the survey was distributed to 3 practicing orthodontists, who acted as a test group. Minor revisions were made based on their feedback.

This study was part of a larger study examining occupational stress and job satisfaction among orthodontists (S.F.R. masters thesis).

Listings of orthodontists licensed in Canada were collected from provincial regulatory bodies in January 2001. Eight orthodontists were excluded because of their involvement in constructing the survey. The remaining 658 orthodontists formed the study population.

The surveys were mailed with an introduction letter, a postage-paid return envelope, and a stamped response card. The response card was intended to be returned separately from the survey. The cards provided a record of who had returned the survey, although the surveys remained anonymous. The response card also allowed the respondent to request a copy of the results (an incentive to return the survey).

Fifteen mailings were returned because the initial address was not current. An updated address was found for 11 of these, and they were remailed. The total number of orthodontists who received the survey was therefore 654. Approximately 6 weeks after the general mailing, a reminder card was sent to those who had not returned the response card.

The survey data was manually entered and then analyzed with Microsoft Excel 2000 (Microsoft, Redmond, Wash) and SPSS 10.0 for Windows (SPSS, Chicago, Ill). Twenty percent of the returned surveys were selected by random number generation to be hand checked by a third person to determine the rate of data entry errors.

As with previous studies in which the Dentist Satisfaction Survey was used, responses were transformed to a numerical scale (strongly disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, strongly agree = 5). Scores for the items in each scale were averaged to determine a scale score. Categories, based on scale scores, were established to evaluate level of overall job satisfaction and satisfaction with quality of life: dissatisfied (1.0 to 2.5), neutral (>2.5 but <3.5), and satisfied (3.5 to 5.0).

Three items from the Dentist Satisfaction Survey were selected for further analysis: "If my child were interested in orthodontics, I would encourage him or her"; "Knowing what I know now, I would choose orthodontics again"; and "Overall, I am extremely satisfied with my career." The percentages of respondents disagreeing (strongly disagree or disagree), neutral, and agreeing (agree or strongly agree) with these statements were calculated.

Pearson correlation coefficients were used to determine significant correlations between the overall job

Table I. Key descriptive data of survey respondents

Characteristic	n	Mean (SD) or %
Age (y)	313	47.7 (10.4)
Sex		
Men	269	84.3
Women	49	15.4
Total	318	
Years practicing orthodontics	318	16.6 (10.4)
Province of primary practice		
British Columbia	59	19.3
Alberta	32	10.5
Saskatchewan	9	2.9
Manitoba	12	3.9
Ontario	125	40.8
Quebec	52	17.0
New Brunswick	8	2.6
Prince Edward Island	1	.3
Nova Scotia	6	2.0
Newfoundland	2	.7
Total	306	
Primary type of practice		
Solo practice	206	65.0
Associateship-associate	22	6.9
Associateship-practice owner	22	6.9
Partnership	41	12.9
Group practice	18	5.7
Academic	8	2.5
Total	317	
Part-time academics		
No	231	74.3
Yes	80	25.7
Total	311	

Totals vary due to nonresponses; maximum total, 319.

satisfaction scale, the quality of life scale, the 10 facet scales, and the overall occupational stress score.

Individual analyses were completed to identify characteristics with significant effects on the overall job satisfaction scale. Pearson or Kendall correlation analysis was used when appropriate.

A stepwise multiple regression analysis was completed, with the overall job satisfaction scale as the dependant variable. Personal and practice characteristics and the overall occupational stress score were included in the regression equation. The only characteristic not included was the province of primary practice, owing to the large variation in the number of respondents from each province. Categorical variables were either transformed to a linear scale (number of children, population of community, gross income) or included with indicator variables (marital status, practice type).

RESULTS

A total response rate of 51.2% was obtained. Sixteen respondents were not currently practicing ortho-

Table II. Rank order of job satisfaction facet scales based on mean value

Job satisfaction facet	Mean	SD
Patient relations	4.2	0.5
Overall quality of life	4.1	0.5
Respect	4.1	0.6
Delivery of care	4.0	0.5
Professional relations	4.0	0.7
Staff	3.9	0.7
Professional environment	3.8	0.9
Perception of income	3.7	0.8
Professional time	3.6	0.6
Practice management	3.4	0.7
Personal time	3.3	1.0

dontics. Therefore, the total number of usable responses was 319 (48.8%). Key descriptive data of the respondents is shown in Table I.

The data entry error rate was 0.089% (13 errors in 14,656 data points). This was considered low enough to forgo confirming the entry of the remaining data.

The mean value for overall job satisfaction scale was 4.02 (SD = 0.63). The mean value for quality-of-life scale was 4.07 (SD = 0.50). Mean values for facet scales are shown in Table II. The categorization of overall job satisfaction and quality-of-life scales are given in Figures 1 and 2.

The responses to the 3 key indicators of job satisfaction also showed a high degree of satisfaction with the profession (Table III).

Significant correlations were found between the overall job satisfaction scale, the quality of life scale, the facets of satisfaction scales, and overall occupational stress score (Table IV). Individual analysis showed 6 characteristics to be significantly related ($P < .05$) to the overall job satisfaction scale. These characteristics were having a patient coordinator ($r = 0.19$), total number of staff ($r = 0.16$), gross income ($r = 0.09$), weeks of vacation taken per year ($r = 0.16$), membership in the CAO ($r = 0.25$), and being a diplomate of the ABO ($r = 0.12$).

Stepwise multiple regression analysis developed a model involving 4 characteristics that accounted for 27.1% of the variation in the overall job satisfaction scale (Table V).

DISCUSSION

A high response rate to the survey was obtained. The respondents' descriptive data indicate that a broad spectrum of orthodontists responded to the survey. Therefore, it is reasonable to assume that the results from this sample represent orthodontists practicing in Canada.



Fig 1. Distribution of overall job satisfaction (scale of 1 to 5). Respondents (n = 319) were categorized as dissatisfied (1.0 to 2.5), neutral (>2.5 but <3.5), or satisfied (3.5 to 5.0).

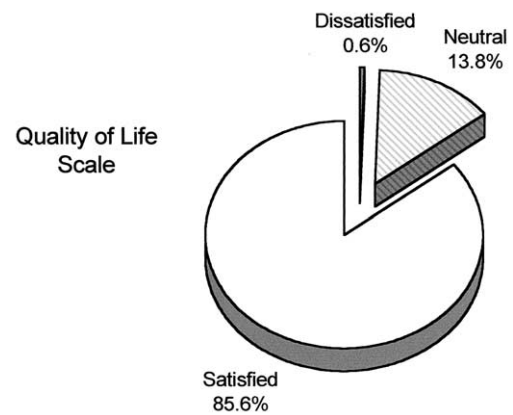


Fig 2. Distribution of quality of life (scale of 1 to 5). Respondents (n = 319) were categorized as dissatisfied (1.0 to 2.5), neutral (>2.5 but <3.5), or satisfied (3.5 to 5.0).

Table III. Distribution of responses to key indicators of job satisfaction

Statement	n	Strongly disagree or disagree (%)	Neither agree nor disagree (%)	Agree or strongly agree (%)
If my child were interested in orthodontics, I would encourage him or her.	310	6.5	9.3	84.2
Knowing what I know now, I would choose orthodontics again.	314	7.3	5.4	87.3
Overall, I am extremely satisfied with my career.	313	4.2	10.5	85.3

The modified Dentist Satisfaction Survey was used to measure job satisfaction in orthodontics. Validity testing was not done because of the extensive previous validity studies and use of the Dentist Satisfaction Survey.⁴⁻⁸

The categorization of the overall job satisfaction scale shows that approximately 80% of orthodontists are satisfied with their profession. This compares very favorably with the level of job satisfaction reported in dentistry. Using a similar survey tool and analysis method, Logan et al⁷ reported that 60% of dentists were satisfied, and Shugars et al⁵ reported that only 50% of dentists were satisfied.

The items considered to be key indicators of job satisfaction also indicate a high level of job satisfaction with the orthodontic profession, with more than 80% reporting that they agreed or strongly agreed with each of the statements. Whereas 87% of orthodontists would choose the same career again, only 49% to 65% of dentists have been reported to be willing to do the same.⁹⁻¹³ Similarly, although 84% of orthodontists would encourage an interested child to pursue ortho-

odontics, only 52% to 66% of dentists would encourage their children to enter dentistry.^{10,11}

Job satisfaction in orthodontics also compares favorably with other health professions. A recent study of physicians in Ontario reported a mean score of 3.50 (SD = 0.50) of 5 on overall job satisfaction.¹⁸ A recent report of health maintenance organization physicians found mean overall job satisfaction scale scores of 3.4 to 3.7 of 5, depending on specialty.¹⁹ Another recent study found that 56.5% of physicians describe themselves as satisfied or very satisfied with their profession.²⁰ A large survey of female physicians reported that 69% would probably or definitely become a physician again.²¹ Another survey found that 51% of radiologists would recommend a career in radiology to a college-aged adult.²²

One explanation for the high level of job satisfaction among orthodontists is indicated by the quality of life scale. An overwhelming majority of orthodontists were satisfied with their quality of life as orthodontists. Based on Table II, it appears that the work involved in orthodontics; interactions with patients, staff, and col-

Table IV. Pearson correlation coefficients between overall job satisfaction, quality of life, and facets of job satisfaction

Facet	Overall job satisfaction scale (r)	Quality of life scale (r)
Delivery of care	0.48	0.52
Patient relations	0.56	0.56
Perception of income	0.49	0.34
Personal time	0.29	0.42
Practice management	0.39	0.40
Professional environment	0.25	0.16
Professional relations	0.16	0.28
Professional time	0.35	0.46
Respect	0.67	0.55
Staff	0.45	0.40
Overall occupational stress score	-0.39	-0.34
Overall quality of life	0.58	

All correlations significant to $P < .01$. $n = 318$ or 319 .

leagues; and the respect derived from being an orthodontist are all positive aspects of the position. Patient relations has also been reported as the facet with the highest proportion of satisfaction in dentistry: between 90% and 95%.^{5,7} The Dentist Satisfaction Survey might not have evaluated other factors responsible for the high level of job satisfaction in orthodontists.

More differences are seen between orthodontics and dentistry in areas of dissatisfaction. Although many in both professions are dissatisfied with the amount of personal time, the most dissatisfaction in dentistry was reported as professional environment, a facet mainly dealing with the threat of litigation.⁵ The high degree of dissatisfaction with the threat of litigation could be a result of differences in the professions or of litigious differences in the countries of the 2 samples. Differences in third-party billing practices and regulatory restrictions between Canada and the United States might influence comparison of our results with those of previous studies. More dentists were also dissatisfied with their practice incomes.

Correlation analyses found that all facets of job satisfaction are significantly related to overall job satisfaction and the quality-of-life scale. The facets with the strongest correlation to overall job satisfaction were respect, patient relations, income, and delivery of care. Most of these facets were also strongly correlated with the quality-of-life scale and showed a high degree of satisfaction among the orthodontists. As could be expected, satisfaction with personal time was more strongly associated with quality of life than with overall job satisfaction.

Respect is also reported as the facet with the highest correlation to overall job satisfaction in the dental

Table V. Stepwise multiple regression for overall job satisfaction

Characteristic added to model	Nature	P
Overall occupational stress score	-	.000
Membership in CAO	+	.001
Total number of staff	+	.016
Age	-	.020

Overall $R^2 = 0.271$.

population.^{5,7,8} Again, the similarities between the 2 professions seem greater than the differences. Overall occupational stress was found to correlate with overall job satisfaction. The strength of this relationship is quite similar to that reported in previous dental studies.

The effect of job satisfaction on overall life satisfaction is also evident in these results. This helps to emphasize the importance of researching job satisfaction and trying to maximize satisfaction at the workplace.

We identified characteristics with significant correlations to job satisfaction with the hope of discovering areas in which practitioners can improve their levels of job satisfaction. This was done with the understanding that correlational analyses indicate a significant association and might not necessarily indicate causation. For example, members of the CAO were found to have significantly higher overall job satisfaction scores; this might be because satisfied orthodontists are more likely to join the organization, rather than because joining the CAO will increase an orthodontist's satisfaction.

The same dilemma is evident when interpreting the other characteristics with significant effects on overall job satisfaction through individual analysis. Although it is possible that hiring a patient coordinator, increasing staff size, and taking more frequent vacations can increase an orthodontists' satisfaction, these characteristics are likely more common in a successful, satisfying practice. Similarly, an orthodontist who enjoys the profession is more likely to obtain diplomate status with the ABO.

Studies of dentists and physicians have reported that increasing age is associated with increasing job satisfaction scores.^{5,8,19,21} This observation was not made in our sample.

Another factor directly related to reports of job satisfaction is income. Among orthodontists, income was found to be negatively related to overall job satisfaction only when gross annual income was less than \$50,000 a year. For all other categories of income, no significant effect was evident. The number of respondents in this category was small, and some respondents indicated that they had only recently es-

tablished their practices. In these cases, other factors are probably affecting job satisfaction as well.

Multiple regression analysis evaluated the maximum combined effect of the characteristics in the survey. The final model included 4 characteristics and explained approximately one third of the variation in overall job satisfaction. Membership in the CAO and total number of staff showed significant relationships to overall job satisfaction scores. A possible effect of age was seen. Orthodontists with more experience in other areas of dentistry might be more likely to be satisfied with orthodontics.

Through multiple regression analysis, the strongest predictor of overall job satisfaction scores seems to be occupational stress scores.

CONCLUSIONS

- Overall job satisfaction among orthodontists is high.
- The most satisfying aspects of orthodontics are delivery of care, relationships with patients, staff, and colleagues, and the respect received as a member of the profession.
- The least satisfying aspects of orthodontics are practice management and the amount of personal time.
- Multiple regression analysis identified a model including overall occupational stress, membership in the CAO, total number of staff, and age that accounts for 27.1% of the variation in overall job satisfaction scores.

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