Gender-Based Differences in Satisfaction with Academic Preparation and Practice Experiences


Abstract: The purpose of this study was to investigate the effect that practice patterns and other variables had on graduates’ level of satisfaction with dental school preparation and satisfaction with several career experiences and to determine if any gender-based differences occurred in these findings. Dentists who graduated from Creighton University School of Dentistry between 1985 and 2005 were surveyed regarding demographic factors, practice characteristics, satisfaction with educational preparation, and satisfaction with practice experiences. The response data were analyzed using Spearman’s rho, multiple regression analysis, and the Pearson product moment. As a result of this analysis, no statistically significant differences were found between male and female dentists who graduated from Creighton University between 1985 and 2005 with respect to satisfaction with academic preparation and postgraduation practice experiences. The findings indicate that gender is not associated with graduates’ level of satisfaction with their academic preparation while in dental school and their practice experiences.

Dr. Kelsey is Associate Dean for Academic Affairs and Professor of General Dentistry, School of Dentistry; Dr. Kimmes is Assistant Professor of General Dentistry, School of Dentistry; Dr. Williams is Assistant Professor and Interim Chair of Oral and Maxillofacial Surgery, School of Dentistry; Dr. Ogunleye is Assistant Professor of Oral and Maxillofacial Surgery, School of Dentistry; Mr. Ault is Associate Professor of Sociology and Anthropology; and Dr. Barkmeier is Professor of General Dentistry and Dean Emeritus, School of Dentistry—all at Creighton University. Direct correspondence and requests for reprints to Dr. William P. Kelsey, Creighton University School of Dentistry, 2500 California Plaza, Omaha, NE 68178; 402-280-5093 phone; 402-280-5094 fax; wpkelsey@creighton.edu.

This study was supported by the Faculty Research and Scholarship Development Grant Program at Creighton University.

Key words: working women, women dentists, dental practice management, dental education

Submitted for publication 10/2/08; accepted 1/5/09

In 1970, approximately 1 percent of dental school graduates in the United States were women.1,2 Today, females make up approximately 38 to 40 percent of all dental school enrollees and approximately 14 to 17 percent of active dental practitioners.1,3 On the basis of today’s female enrollment in dental school, which has been fairly constant for the past decade,4 the American Dental Association (ADA)’s dental workforce model predicts that women will make up over 40 percent of the dental student body and 28 to 30 percent of the dental workforce in the United States by the year 2020.1,5 The ADA concludes that this demographic shift in the number of female dentists will affect dental workforce trends in the United States throughout the first part of the twenty-first century.6

This influx of women into the profession could have an effect on graduates’ perception of their educational experience. As a general characterization of the past, male dental students were taught by male dentists. As current trends indicate, dentistry is rapidly changing from an almost exclusively male profession to one in which women play a large and significant role. Although women are becoming increasingly involved in the profession, both as practitioners and as educators, the majority of dental school faculty members are still male, and their numbers are disproportionate to the male-female breakdown of their classes. Currently, women constitute 28 percent of dental school faculties, 22 percent of deans, and 31 percent of total academic administrators.7 At Creighton University School of Dentistry, females currently represent 21 percent of the full-time faculty. It has been demonstrated that role modeling is a significant factor in career development.8 This disparity between the gender distribution of the faculty and that of the student body could result in an inadequate number of role models for female students.

Educators have also been concerned with the impact of the educational environment on female students.9 The contention has been that male and female students in the same classroom can have different experiences. This gender-based disparity is believed to diminish the academic performance of
women. This issue has also been examined from the perspective of personality type and learning style preferences. It has been reported that personality type differences occur within a dental student population. Furthermore, these differences in personality types have been demonstrated to affect self-reported degree of fit with various teaching strategies. The occurrence of gender-related differences in learning styles remains an unanswered question. Some authors report positive findings while others do not.

The factors of adequate role modeling and gender-related differences in personality type and learning preference could have an impact on the educational system in terms of recruitment, students' acceptance of the teaching styles of educators, faculty awareness of and adaptation to the learning styles of the students, and students' perceived satisfaction with their dental school education. Another factor that could influence satisfaction with education received and career experience is related to a concept termed gender convergence. This concept refers to women doing what have been traditionally men's jobs—for example, protecting the public, defending the country, and practicing dentistry. In the case of dentistry, women students are placed in an educational model that is hierarchical in nature and emphasizes technology, techniques, and science. This tends to negate some of the social and relationship advantages possessed by women and favors people with analytical and deductive aptitude. By this, it is suggested that the hierarchical, scientific educational paradigm of dentistry detracts from the humanistic and holistic attributes often associated with women. This view is supported by research as well as based on conventional perspectives about male and female role capacities. The phenomenon of gender convergence could result in differing perceptions of satisfaction by females now joining the profession regarding the quality of their dental education and their attitudes about certain aspects of their careers.

Understanding students' motives for choosing dentistry as a career may aid recruiters in designing appropriate recruiting materials by helping to avoid sending wrong messages based on commonly held gender stereotypes while, at the same time, providing students with an accurate picture of the profession. These factors could play a role in the ultimate satisfaction that students express about their education and their selected career, especially if their experiences did not meet their expectations.

Other factors that could affect satisfaction with one's education and/or career choice are type of practice situation, practice income, educational debt, number of hours worked per week, and amount of time off per year. A feeling of unhappiness in one or more of these areas may be translated into lower satisfaction levels with dental school preparation or career experiences.

Many of the earlier studies on motives for attending dental school did not account for gender differences, but once this element was factored into the equation, it soon became apparent that differences did exist. Over et al. found that women were less concerned about income and status potential and more concerned about a desire to work with people. In another study, males identified autonomy, working with people, and financial rewards as their top three reasons for entering dentistry. Women indicated they liked working with people, autonomy, and flexible work time as their three top choices. The extent to which these perceptions are realized upon entry into the profession could have a bearing on responses to satisfaction surveys regarding dental school preparation and various career experiences. Based on the results of previous work, it would not be unreasonable to expect that gender-based differences do exist.

This article reports the results of a survey administered to dentists who graduated from Creighton University School of Dentistry between the years of 1985 and 2005 to determine the effect that practice patterns and other variables had on their level of satisfaction with dental school preparation and satisfaction with several career experiences and to determine if any gender-based differences occurred in these findings.

Methods and Materials

Creighton University Institutional Review Board approval was secured to send surveys to 1,594 dentists who graduated between 1985 and 2005. A total of 1,266 surveys were sent to males, and 328 were sent to females. Two weeks prior to the mailing, the dean of the school sent a letter to each potential respondent, advising them of the project and inviting them to participate. Once received, the survey was to be completed in either of two formats: a paper survey to be returned to Creighton University's Office of Institutional Research in a self-addressed stamped envelope or an identical online version to be completed electronically. All surveys were anonymous and did not contain any information that could be used to identify specific individuals. Recipients were given...
three weeks to reply, after which a final letter was sent thanking those who completed the survey and encouraging nonresponders to do so. This final letter gave its recipients a two-week window to respond.

The first part of the survey dealt with demographics. Questions were asked regarding date of birth, gender of respondent, date of graduation, and date of entry into private practice.

The second section addressed practice patterns or practice descriptions. Questions were asked about first practice or career choice characteristics, current practice or career choice characteristics, educational debt incurred prior to entry into dental school, educational debt incurred in dental school, practice income, hours worked per week, and weeks not worked per year. Respondents could choose from among the following career options: private practicing dentist (solo), private practicing dentist (employee), dental school faculty, HMO staff dentist, dentist for community clinic or nursing home, government dentist (military), government dentist (civilian), and hospital staff dentist.

The third section of the survey addressed satisfaction with educational preparation at Creighton University. A nine-point Likert scale was used in which the lower numbers represented dissatisfaction, the middle numbers signified satisfaction, and the higher numbers represented exceptional satisfaction. Respondents were asked to provide their level of satisfaction for the following domains: community and preventive dentistry, endodontics, oral pathology, operative dentistry, oral diagnosis, oral surgery, craniofacial development and diagnosis, pediatric dentistry, periodontics, fixed prosthodontics, removable prosthodontics, radiology, behavioral science, practice administration, and biomedical sciences.

The final section of the survey dealt with satisfaction with practice experiences. The same nine-point Likert scale that was used to rate satisfaction with dental education was used to measure satisfaction with the following practice experiences: compensation, autonomy, prestige, selecting and hiring staff, interacting with patients, third-party interactions, professional liability, and continuing education opportunities.

The data were first analyzed by the chi square goodness of fit test to determine if there were gender-related differences in survey return rates. The data from each satisfaction section of the survey were then rank ordered by gender and tested by Spearman’s rho (p) to determine the correlation between male and female respondents. This is a nonparametric determination of correlation that measures the linear relationship between two variables after numbers have been converted to ranks. Finally, the data were subjected to regression analysis to determine whether gender, educational debt, or various elements associated with a career in dentistry were related to the respondents’ satisfaction with their dental education and various practice experiences. This was accomplished by determining the Pearson product moment correlation (r), a statistical tool that measures the correlation between two variables. Its values range from -1.00 to +1.00 and reflect a linear relationship between variables. The significance of r was also determined. The following interpretive guide was applied to ρ and r to determine the degree of correlation between the variables tested: -1.00 to -0.70 indicates a strong negative correlation; -0.70 to -0.30 indicates a negative correlation; -0.30 to +0.30 indicates little or no association; +0.30 to +0.70 indicates a positive correlation; and +0.70 to +1.00 indicates a strong positive correlation.

Results

Of the total 1,594 surveys sent, 485 were returned (30.4 percent). Of the 1,266 surveys sent to male graduates, 360 were returned (28.4 percent); of the 328 surveys sent to female graduates, 125 were returned (38.1 percent). Chi square goodness of fit (χ²) demonstrated that the difference in response rate between female and male graduates was not significant (χ²=3.82, p=0.05).

The results of Spearman’s rho treatment of the data for satisfaction with academic preparation are presented in Table 1. The measurement ρ had a value of 0.730 and significance of p=0.005. This denotes a strong positive correlation between female and male rankings that is statistically significant. From this, it can be concluded that gender made very little difference in the level of satisfaction that Creighton graduates had with various aspects of their dental education. To support this, it should be noted that the number one ranking was given to operative dentistry by both males and females and that the four lowest rankings by each gender involved the same disciplines, albeit in a slightly different order.

The results of the regression analysis of the data regarding satisfaction with academic preparation are presented in Table 2. As a result of applying the cited interpretive guide to the values of the Pearson product moment, it can be stated that the variables
measured, including gender, had little or no association with satisfaction with academic preparation. In addition, none of the values of \( r \) was found to be statistically significant. The results of Spearman’s rho treatment of the data for satisfaction with practice experiences are presented in Table 3. The measurement \( \rho \) had a value of 0.952 and significance of \( p=0.020 \). This denotes a strong positive correlation between female and male rankings that is statistically significant. From this, it can be concluded that gender made very little difference in the level of satisfaction that Creighton graduates had with practice experiences. The very high correlation suggests that females and males were almost identical in their rankings. As with the trend demonstrated in satisfaction with dental education, the top rankings for male and female respondents were identical, as were the three lowest rankings.

The results of the multiple regression analysis of the data regarding satisfaction with practice experiences are presented in Table 4. Although some of the variables tested were significantly associated with satisfaction with practice experiences, gender was not. Respondents who functioned as full-time solo practitioners, had higher net incomes, and had more time off expressed greater satisfaction with practice experiences. Although the correlations were significant, the associations were not particularly strong (\( r=0.348, 0.196, \) and 0.161, respectively).

### Discussion

The overall survey response rate of 30.4 percent was acceptable based on the results of research designed to explore techniques for increasing it. A text on research design reported response rates from a low of 13 percent to a high of 31.9 percent.\(^{21}\) A study that compared techniques for distributing surveys reported a rate of 34 percent following multiple contacts designed to encourage responses.\(^{22}\) Our response rate compared favorably with these. Additionally, the proportion of males and females

---

**Table 1. Rankings of satisfaction with academic preparation**

<table>
<thead>
<tr>
<th>Academic Discipline</th>
<th>Female Likert Score</th>
<th>Male Likert Score</th>
<th>Female Ranking</th>
<th>Male Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operative dentistry</td>
<td>7.776</td>
<td>7.572</td>
<td>1(^{st})</td>
<td>1(^{st})</td>
</tr>
<tr>
<td>Oral surgery</td>
<td>6.616</td>
<td>7.283</td>
<td>10(^{th}) (tie)</td>
<td>2(^{nd})</td>
</tr>
<tr>
<td>Biomedical sciences</td>
<td>7.080</td>
<td>7.080</td>
<td>5(^{th})</td>
<td>3(^{rd})</td>
</tr>
<tr>
<td>Fixed prosthetics</td>
<td>7.328</td>
<td>6.947</td>
<td>2(^{nd})</td>
<td>4(^{th})</td>
</tr>
<tr>
<td>Endodontics</td>
<td>6.960</td>
<td>6.897</td>
<td>7(^{th})</td>
<td>5(^{th})</td>
</tr>
<tr>
<td>Radiology</td>
<td>6.728</td>
<td>6.778</td>
<td>9(^{th})</td>
<td>6(^{th})</td>
</tr>
<tr>
<td>Oral diagnosis</td>
<td>7.112</td>
<td>6.767</td>
<td>4(^{th})</td>
<td>7(^{th})</td>
</tr>
<tr>
<td>Removable prosthetics</td>
<td>7.184</td>
<td>6.739</td>
<td>3(^{rd})</td>
<td>8(^{th})</td>
</tr>
<tr>
<td>Community/preventive dentistry</td>
<td>6.616</td>
<td>6.569</td>
<td>10(^{th}) (tie)</td>
<td>9(^{th})</td>
</tr>
<tr>
<td>Oral pathology</td>
<td>7.048</td>
<td>6.461</td>
<td>6(^{th})</td>
<td>10(^{th})</td>
</tr>
<tr>
<td>Periodontics</td>
<td>6.896</td>
<td>6.333</td>
<td>8(^{th})</td>
<td>11(^{th})</td>
</tr>
<tr>
<td>Pediatric dentistry</td>
<td>5.448</td>
<td>5.778</td>
<td>13(^{th})</td>
<td>12(^{th})</td>
</tr>
<tr>
<td>Behavioral science principles</td>
<td>5.320</td>
<td>5.458</td>
<td>14(^{th})</td>
<td>13(^{th})</td>
</tr>
<tr>
<td>Craniofacial development</td>
<td>5.616</td>
<td>5.139</td>
<td>12(^{th})</td>
<td>14(^{th})</td>
</tr>
<tr>
<td>Practice administration</td>
<td>3.560</td>
<td>3.889</td>
<td>15(^{th})</td>
<td>15(^{th})</td>
</tr>
</tbody>
</table>

**Table 2. Regression analysis of satisfaction with academic preparation**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pearson Product Moment (( r ))</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-0.048</td>
<td>0.174</td>
</tr>
<tr>
<td>Practice type: full-time solo</td>
<td>0.064</td>
<td>0.103</td>
</tr>
<tr>
<td>Practice type: full-time employee</td>
<td>-0.072</td>
<td>0.078</td>
</tr>
<tr>
<td>Net income</td>
<td>-0.035</td>
<td>0.246</td>
</tr>
<tr>
<td>Undergraduate debt</td>
<td>0.002</td>
<td>0.484</td>
</tr>
<tr>
<td>Dental school debt</td>
<td>-0.041</td>
<td>0.213</td>
</tr>
<tr>
<td>Hours worked per week</td>
<td>-0.025</td>
<td>0.309</td>
</tr>
<tr>
<td>Amount of time off</td>
<td>0.080</td>
<td>0.058</td>
</tr>
</tbody>
</table>
responding to the survey was not statistically different from the proportion of people to whom the surveys were sent. Accordingly, the results were not skewed by a preponderance of responses from one gender or the other.

The results of this study indicated that there were no statistically significant, gender-based differences in the level of satisfaction with academic preparation among the fifteen discipline-based items queried. Furthermore, no significant differences were identified among the eight variables that might affect satisfaction with academic preparation, including gender. Several comments can be made regarding these observations. In spite of a low percentage of female faculty members, the findings suggest that role modeling occurred for this group of respondents at similar levels of effectiveness for female and male dental students. Based on work previously cited, if an important factor such as role modeling had been better for one gender than the other, gender-based differences in satisfaction would have likely surfaced. Additionally, many observers believe that different generations of females will have different outlooks and professional objectives that will reflect changing social roles and expectations.\(^1\) The eradication of the old boundaries separating the activities of male and females, especially during their educational experience, could explain the lack of gender differences among dental school alumni in satisfaction with their educational preparation.

Although no statistically significant, gender-based differences were noted in academic preparation among the fifteen discipline-based items in the survey, a different pattern of responses was evident for oral surgery. Males gave it the second highest satisfaction score, while females ranked it tenth. This was the largest disparity among the items queried. Evidently, males derived more satisfaction from their oral surgery curriculum than did females; this finding mirrors reported data that indicates only 9 to 12 percent of the participants in postdoctoral oral surgery programs are female.\(^23,24\) A similar trend has been noted in medicine, where women constitute only 15 to 25 percent of the general surgery residents.\(^25-27\) Further study may be warranted to determine whether the apparent male preference to enter a surgical specialty is related to a higher satisfaction with dental school preparation in that area.

Motives for choosing a career are complex, but whatever they are, satisfaction with that choice would seem to be dependent on the degree to which expectations are met. It has been suggested that males and females have different motives for selecting dentistry as a career.\(^17\) Knowing which variables are more male-centered or female-centered would enable the school to develop specific gender-based recruiting strategies.
that emphasize those programmatic strengths associated with practice variables that appeal to one gender or the other. In this manner, recruiting efforts could be improved by providing prospective students with a more accurate picture of the profession as it relates to gender. Additionally, ultimate satisfaction with practice experiences would be improved because students would select those schools whose academic strengths more closely match those practice variables whose satisfaction levels are consistent with their gender. Overall, Creighton University School of Dentistry graduates’ responses to the various practice satisfaction variables were not very different from what has been reported in the literature. Interaction with patients, autonomy, continuing education opportunities, and income received positive ratings. The threat of malpractice action and the demands of practice management were ranked low, indicating that they were viewed as negative aspects of private dental practice. However, unlike previous studies, we found no gender-based differences in this regard. The findings indicate that similar recruiting strategies could be employed for both male and female prospective students since no statistically significant gender-based difference in practice satisfaction was demonstrated.

The results of this study must be interpreted within certain limitations. Respondents were graduates of a single, private, religiously affiliated (Catholic) dental school in the Midwest. Although the student body is both ethnically and geographically diverse, it is possible that graduates of a private school that is not religiously affiliated or of a state-supported school might enter the profession with different career preferences and develop different satisfaction levels. Additionally, Creighton University School of Dentistry does not have any postdoctoral training programs. Graduates from dental schools where these programs exist may also respond to this survey in a manner that is different from those included in this study. An excellent basis for future study would be to administer this survey to alumni of one or more schools with characteristics that are different from Creighton. In this manner, data could be compared to determine differences or pooled to achieve greater applicability.

Conclusion

The results of this study indicate that there is no significant difference in the satisfaction with academic preparation and practice experiences for male and female dentists who graduated from Creighton University School of Dentistry between 1985 and 2005. It was concluded that knowledge of gender had no predictive value with respect to determining satisfaction with academic preparation and practice experiences.

REFERENCES

4. Pasko T, Seidman B. Physician characteristics and distribution in the US. Chicago: American Medical Association, Department of Data Survey and Planning, Division of Survey and Data Resources, 1999.