

Private Practice of Prosthodontists: Current Conditions of Practice in the United States

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Abstract

Purpose: The purpose of this article is to examine data and results from the 2008 Survey of Prosthodontists. Survey results are used to examine current trends and characteristics of prosthodontists in private practice.

Materials and Methods: Characteristics of prosthodontists and conditions of private practice are based on surveys conducted in 2002, 2005, and 2008 sponsored by the American College of Prosthodontists. Survey results are used to estimate several characteristics including age, gender, number of patient visits, hours in the practice, employment of staff, referral sources, and financial conditions (gross receipts, expenses of the practice, and net income of prosthodontists).

Results: The average age of a private-practicing prosthodontist reached 51 years in 2007; 12.3 is the number of years in the current practice; and most prosthodontists (71%) are solo private practitioners. The average amount of time per week by prosthodontists in the practice averaged 36.1 hours, and prosthodontists treated an average of 44.1 patient visits per week. The largest source of patient referrals is the patient themselves. The largest percentage of a prosthodontist's treatment time is spent rendering procedures in fixed prosthodontics, but this percentage has declined since 2001. In 2007, the average gross billings of a practicing prosthodontist reached \$805,675; average total practice expenses were \$518,255; the mean net earnings of practitioners were \$268,930.

Conclusion: In 2007, prosthodontists in private practice paid out about \$1.4 billion in practice expenses to provide \$2.2 billion dollars in prosthodontic care. Based on survey results from 2007 and the previous 6 years, specialization in prosthodontic care continues to be an economically attractive and productive healthcare profession in the United States.

In a recent publication by the American Dental Association (ADA), the total number of practicing dentists reached 179,594, including 38,040 (21.2%) specialists in active practice.¹ There were also an estimated 164,864 dentists in private practice, including 32,535 specialists (19.7%). The total number of practicing prosthodontists was estimated to be 3404 in 2006, and 2707 (79.5%) were estimated to be in private practice. In an article prepared in 2007, it was stated that the private practice of prosthodontics was an attractive profession based on the current

net income of prosthodontists in comparison to other occupations.² Part of these conclusions were based on results from the 2005 Survey of Prosthodontists conducted by the American College of Prosthodontists (ACP).³

The purpose of this article is to update and present additional information on the private practice of prosthodontics in the United States. The conditions and characteristics of private practice by prosthodontists are reviewed based on results from a more recent survey of prosthodontists with data obtained from

the year 2007. Several characteristics of practice are reviewed, including age, gender, and years since graduation; employment of staff, patient visits, and hours treating patients; and revenues, wages, expenses, and net income from practice. Results of the 2008 survey are also used to examine the industry of private practicing prosthodontists including revenue, patients, and expenses.

Materials and methods

The 2008 Survey of Prosthodontists was initially mailed to 2473 members and nonmembers of the ACP in April 2008.⁴ There were three mailings of the survey, including the initial mailing and two follow-up mailings to nonrespondents. In addition to the mailed survey, the final phase of data collection was conducted with an Internet survey developed using the services of Survey Monkey, an Internet survey services business. The Internet survey was sent to 1521 nonrespondents to the mailed portion of the survey with valid email addresses. The purpose of the online survey was to increase the overall survey response and provide information to the ACP about the feasibility of collecting prosthodontics practice data online. The overall response rate to the combined survey was 31.9% based on 788 respondents. There were, however, 15 prosthodontists who responded to both surveys, which reduced the number of respondents to 773 and a 31.5% adjusted response rate.

The mailing of the survey and the processing of the returned surveys were both managed by Data Shop, Inc. (Janesville, WI). The outside firm was responsible for the printing of the survey questionnaire and cover letters, the mailing of all questionnaires, the receipt and processing of all returned surveys, the conversion of survey responses from the mailed questionnaire to electronic data files, and finalization of data sent to the survey analysts for review and tabulation. In addition to the initial mailing of the survey, two additional follow-up mailings were sent to the nonrespondents to the survey. Nonrespondent follow-up mailings were possible, as each mailed questionnaire contained a survey code used to determine who did and did not respond to the survey, while maintaining respondent confidentiality. The survey code allowed follow-up mailings to be sent only to those who had not responded, which helped to minimize the survey mailing costs.

Results of both the 2002 and the 2005 surveys are selectively used in comparison to the results from the 2008 Survey of Prosthodontists. Most of the questions used in the 2005 survey were also included in the 2008 survey with fewer questions included from the 2002 survey. Topics addressed in the 2008 survey included occupation and years in practice; personal and demographic characteristics; education and board status; characteristics of private practice; patients and patient visits; procedures rendered by prosthodontists; gross billings and receipts, fees charged, net income and practice expenses; employment of staff, experience and wages, practice operatories and size; and referral sources for prosthodontists. Respondents to the 2008 survey responded from April through September, 2008. Because respondents were asked to report data about practice conditions during 2007, the results of the 2008 survey reflect a period prior to 2008, a year reflecting the worst financial and economic crisis since the 1930s. It is difficult to determine

Table 1 Demographics and practice characteristics of prosthodontists in private practice, 2004 and 2007

Characteristic	2004	2007
Age group (%)		
<35	6.1	8.1
35–44	24.1	21.7
45–54	34.7	31.5
55–64	27.1	28.5
65+	8.1	10.2
Mean age (years)	50.4	51.0
Median age (years)	51.0	52.0
Gender (%)		
Female	14.0	17.9
Male	86.0	82.1
Mean years since graduation from dental school	23.8	23.9
Mean years since completion of residency	17.4	17.9
Mean years since starting practice as a prosthodontist	17.1	17.8
Mean years since starting in the current practice (at time of survey)	13.3	12.3
Size of the practice (%)		
One	65.6	71.0
Two	20.1	18.1
Three +	14.3	10.7
Region (%)		
Northeast	29.8	24.2
South	30.8	37.1
Midwest	17.1	17.0
West	22.3	21.7

the extent to which survey responses were influenced by the conditions of an impending economic downturn.

Results

Survey results obtained for 2004 and 2007 are shown in Table 1 for selected variables including respondent age, gender, years since key activity dates, size of practice, and region location. In all the tables presented in this report, the results are based only on the responses from private practicing prosthodontists. Among the 773 respondents to the survey, 493 (64%) treated patients in a private practice as a primary or secondary occupation. In addition, the results presented in the tables are based only on the respondents to the specific survey question. In many of the tables, the number of respondents to a survey question was less than the number of respondents to the overall survey; that is, there was item nonresponse.

The age distribution for the 2 years was similar, although there was a slightly larger percentage of the youngest and oldest prosthodontists in 2007. The average age of respondents in 2007 (51.0 years) was almost a year older than in 2004 (50.4 years). The average years since graduation from dental school, years since completion of a prosthodontics residency, and years since starting practice as a prosthodontist were similar for the 2 years (2004, 2007). The average number of years in the current practice (i.e., the practice location at the time of the survey) was about a year lower (12.3 years) than in 2004 (13.3 years). The

Table 2 Employment status and mean scheduled appointment times by all private practicing prosthodontists, 2004 and 2007

Status	2004		2007	
	Number	Percentage	Number	Percentage
Sole proprietor	267	63.3	292	65.3
Partner	63	14.9	62	13.9
Employed	64	15.2	66	14.8
Independent contractor	28	6.6	27	6.0
Total	422	100.00	447	100.00

Appointment times overall				
Appointment time (min)	Mean	Percentage of respondents	Mean	Percentage of respondents
Less than 40	27.52	7.4	28.26	8.4
40 to 59	44.94	19.8	45.00	16.1
60 to 79	61.04	50.1	61.24	47.8
80 to 99	89.69	16.5	89.75	19.6
100 or more	132.92	6.1	131.67	8.2
Total	64.50	99.9	67.18	100.1

Appointments excluding recall exams and postoperative care				
Less than 40	26.94	6.6	26.05	4.9
40 to 59	45.27	9.8	45.44	11.1
60 to 79	61.66	43.3	62.32	43.2
80 to 99	89.46	24.3	89.02	24.2
100 or more	129.34	16.1	133.38	16.7
Total	75.41	362	77.01	234

single most frequent form of organization among respondents was solo practice (i.e., no other prosthodontist in the practice). Most prosthodontists practiced solo or in a practice with two prosthodontists (86% in 2004; 89% in 2007). The regional location of the 2007 group of respondents compared to the 2004 respondents was about the same for the percentage from the Midwest and West regions. There was, however, some difference in the percentages from the Northeast and South. About 24.2% of respondents in 2007 were from the Northeast region compared to 29.8% in 2004. Also, 37.1% of respondents in 2007 were from the South compared to 30.8% in 2004.

The employment status of respondents and the scheduled patient appointment times are summarized in Table 2. The employment status of respondents in 2007 was similar to employment status of the 2004 respondents. Most respondents were sole proprietors or partners (78% in 2004; 79% in 2007). About 15% of respondents in both years were employed prosthodontists, and fewer than 10% of respondents were independent contractors. Respondents were also asked to indicate the scheduled appointment time for all patients and appointments, excluding recall exams and postoperative treatment. For both survey years, the average appointment time, excluding recall and postoperative treatment, exceeds the overall scheduled appointment. In 2007 the average overall scheduled appointment time was 67 minutes compared to an average of 77 minutes for appointments, excluding recall and postoperative treatment. About 75% of respondents indicated overall scheduling appointment times of 60 minutes or greater. But the overall scheduling includes recall and postoperative care, which are generally

shorter appointments. Excluding recall and postoperative appointments, 84% scheduled the same appointment time of 60 minutes or greater.

The 2008 survey contained questions about prosthodontists' patients, including age, gender, and source of payment for care. In addition, respondents reported the volume of patient visits in their practices. Figure 1 contains the percentage distribution of patients by age for 2004 and 2007. The distributions are similar for the two time periods, although there are some differences

Table 3 Percentage of prosthodontists by number of patient visits per week and the mean weekly number of patient visits treated, 2004 and 2007

Weekly patient visits	2004		2007	
	Number	Percentage	Number	Percentage
<10	45	11.5	30	7.4
10–29	105	26.7	115	28.2
30–49	135	34.4	155	38.0
50–69	61	15.5	64	15.7
70+	47	12.0	44	10.8
Total	393	100.1	408	100.1
Mean weekly visits	41.6		44.1	
Standard deviation	34.0		66.8	
Number	393		408	

in the 55 to 64 and 65 to 74 age groups. The fewest prosthodontic patients (16% in 2007) come from the under 35 age group. About 61% of patients are 55 or older, and about one-third of patients are 65 years or older. Although not shown in Figure 1, about 58% of prosthodontics patients are female (in 2007), and respondents estimated that 51% of patients paid for care through private insurance, while 47% were self-pay patients, and 2% paid through public assistance programs.⁴

The volume of patient visits per week (scheduled plus emergency/walk-in) was also reported by the respondent prosthodontists and shown in Table 3. The distribution of respondents by number of patient visits per week was generally similar for the years 2004 and 2007. Relatively fewer prosthodontists reported less than 10 visits per week. About 61% of respondents reported 10 to 49 patient visits per week in 2004 compared to a slightly higher 66% in 2007. The average number of patient visits in 2004 was 41.6 per week compared to 44.1 per week in 2007.

A question about the sources of patient referrals to prosthodontists was also included in the survey, and results are shown in Figure 2. In both years, patients were the largest source (percentage) of patient referrals, including 26% in 2004 and 29% in 2007. In 2007, general practitioners were the next largest source of referral (18%), followed by periodontists (14%), patient self-referrals (13%), and oral surgeons (13%). About 87% of 2007 patient referrals to prosthodontists came from the five sources mentioned above, which is somewhat higher compared to 2004.

The prosthodontists in the survey were asked about the amount of time they spend in the office and specifically, the amount of time they spend in the treatment of patients. Figure 3 contains a comparison of the hours per week spent in the office in 2004 and 2007. In 2004, almost 15% of prosthodontists reported that they spent less than 20 hours per week in the practice, and this compares to less than 10% in 2007. In 2004, 30% of respondents indicated that they spend 30 to 39 hours per week in the office, while 36% reported the same amount of time in 2007. Although not shown in Figure 3, the average number of hours per week in the office showed little difference between 2004 and 2007. The average hours per week were 35.0 hours in 2004 and 36.1 hours in 2007.

In addition to the number of overall hours in the office, survey respondents were also asked to report the number of hours they spend in patient treatment (Fig 4). In 2004, 18% of respondents indicated they spent less than 20 hours per week treating patients, and this decreased to 12% in 2007. Further, in 2004 about 45% of respondents reported spending 30 to 39 hours per week treating patients, while 55% of 2007 respondents reported similar hours. In 2004, the average number of hours per week treating patients was 28.9, which grew to 30.3 hours in 2007, an increase of 4.8% over the 3-year period. On average, prosthodontists spent (in 2007) about 6 hours in the office per week conducting activities other than treatment of patients, including administration, supervision, laboratory work, and other office activities.

The survey was also used to determine how prosthodontists spend their treatment time in providing various dental and prosthodontics services. Prosthodontists were asked to report the percentage of their treatment time they spend in provid-

ing various procedures (Fig 5). The data shown in Figure 5 are the average percentage of time spent by prosthodontists in the procedure categories shown. Prosthodontist respondents reported they spend about a quarter (24.1%) of their time rendering fixed prosthodontics services. Respondents indicated they spend about 77% of their treatment time rendering fixed prosthodontics (24%), implant restoration (18%), complete dentures (13%) (not including removable partial dentures), operative services (11%), and diagnostic services (11%). Figure 6 contains results comparing the percentage of time rendering selected prosthodontics services in 2001, 2004, and 2007. The average percentage of time rendering fixed prosthodontics (excluding implants) has declined over the 6-year period, from 29.2% of time in 2001 to 24.1% in 2007. Percentage of time in implant restoration, and implant placement has all shown increases over the 6-year period from 2001 to 2007. Percentage of time in operative care was the only other procedure showing a decreasing trend over the same period.

Expenses of the practice were another economic activity reviewed by the survey. In 2007, the average practice expenses reported by respondents reached \$518,255 per prosthodontist in the practice and \$558,270 per solo practice. Expenses per prosthodontist are calculated by dividing the expenses of the practice by the total number of prosthodontists treating patients in the practice (full- or part-time, owners or nonowners). Average staff salaries were \$135,070 per prosthodontist; professional salaries averaged \$81,600, and practice-associated officer salaries reached \$121,380 per prosthodontist (Fig 7). Salaries comprise about 65% of the average practice expenses per prosthodontist and 61% of the average expenses of a solo practice. Expenses for staff salaries, space (rent plus mortgage payments), supplies, and commercial laboratory represent 60% of practice expenses per prosthodontist and 60% of the expenses of a solo practice. Total laboratory expenses include commercial laboratory plus in-house laboratory expenses, and were \$99,500 per prosthodontist, and averaged \$108,500 for solo practices. Although not shown in Figure 7, this compares to \$93,500 per prosthodontist in 2004 and \$98,040 for solo prosthodontists in the same year.

The average amount of practice expenses was estimated to be \$629,000 per practice based on responses to the survey. The amount of average expenses, however, partially reflects the variation in size of the prosthodontic practice. To adjust for the size of the practice, the average amount of practice expenses per prosthodontist was estimated to be \$518,255 compared to \$598,700 per owner prosthodontist, and \$558,270 for a solo prosthodontist. The overhead rate (i.e., the ratio of total expenses to gross billings or gross receipts) was estimated to be 63% as a billings rate and 67% as a receipts rate.

In 2007, staff salaries reached \$135,070 per prosthodontist and \$144,200 per solo practice, which makes staff salaries the single largest expense of the prosthodontics practice. Employment of staff is a significant decision regarding the resources necessary for delivery of care to patients. In 2007, prosthodontist practices employed an average of 9.9 staff including 7.5 full-time (FT) staff and 2.4 part-time (PT) staff. Based on the employment of staff shown in Figure 8, 49% of staff employed was dental assistants (2.5 FT, 0.7 PT), dental hygienists (0.9 FT, 0.82 PT), and dental laboratory technicians (0.8 FT, 0.2 PT).

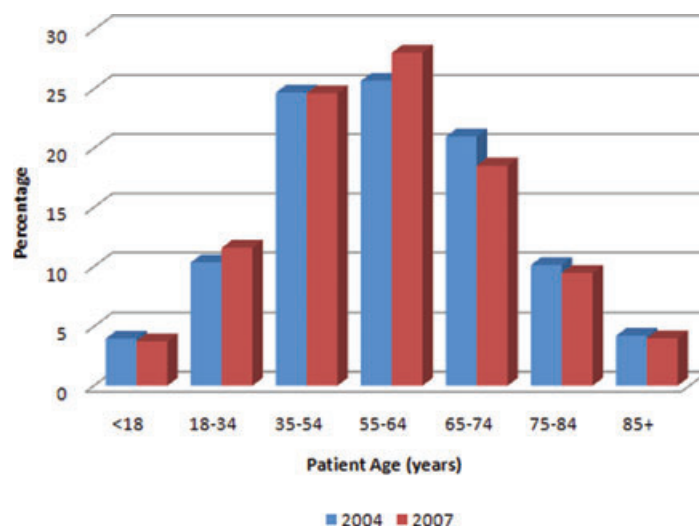


Figure 1 Mean percentage of patients by patient age, 2004 and 2007.

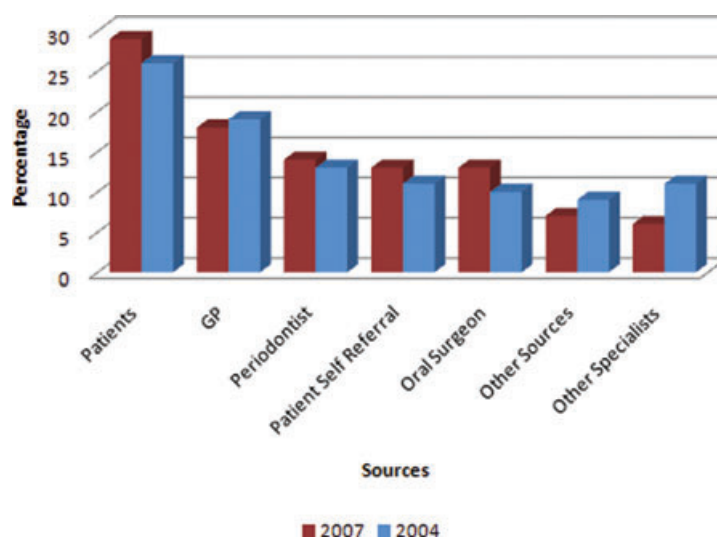


Figure 2 Percentage of respondents by sources of patient referral, 2004 and 2007.

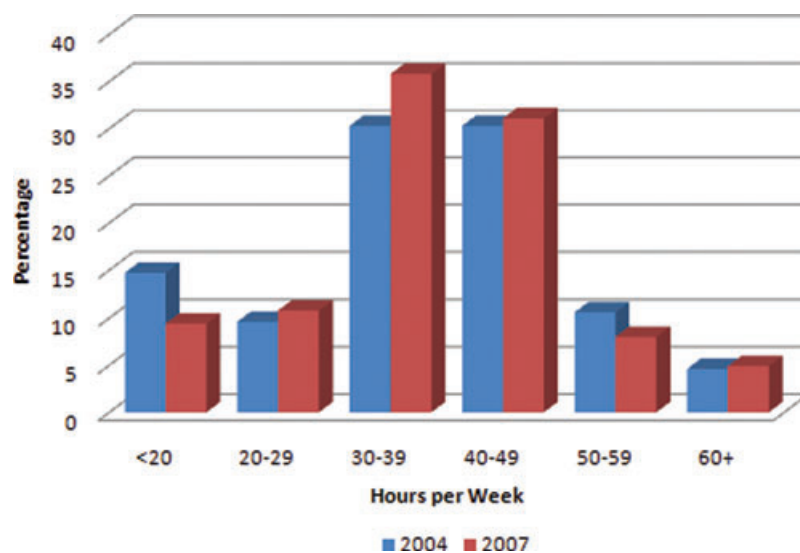


Figure 3 Percentage of respondents by hours per week in the practice, 2004 and 2007.

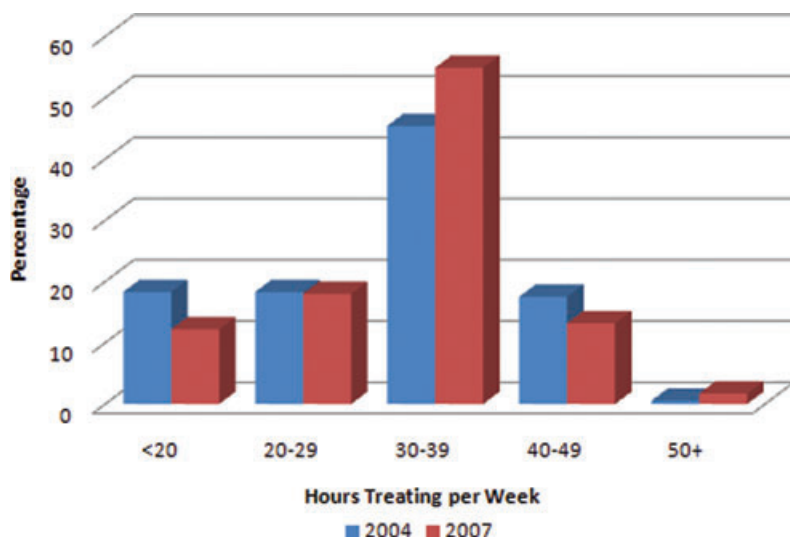


Figure 4 Percentage of respondents by hours treating patients per week, 2004 and 2007.

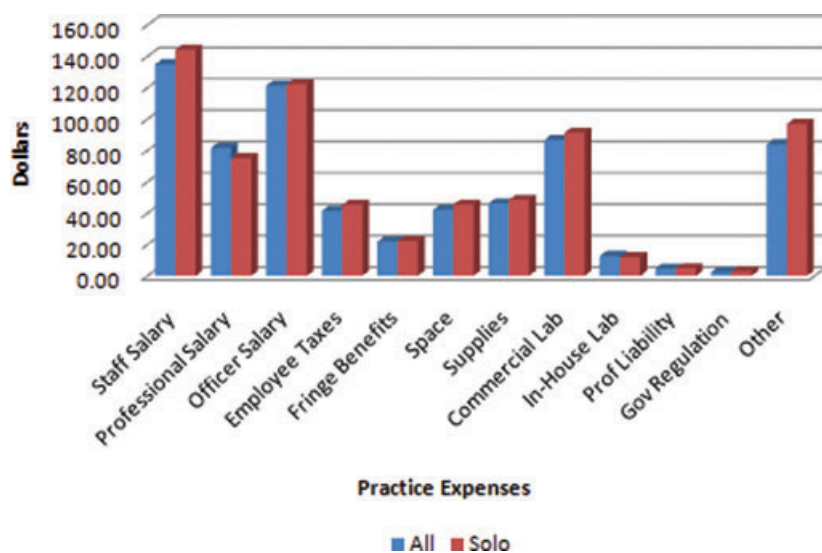


Figure 7 Mean practice expenses per prosthodontist and per solo practice, 2007.

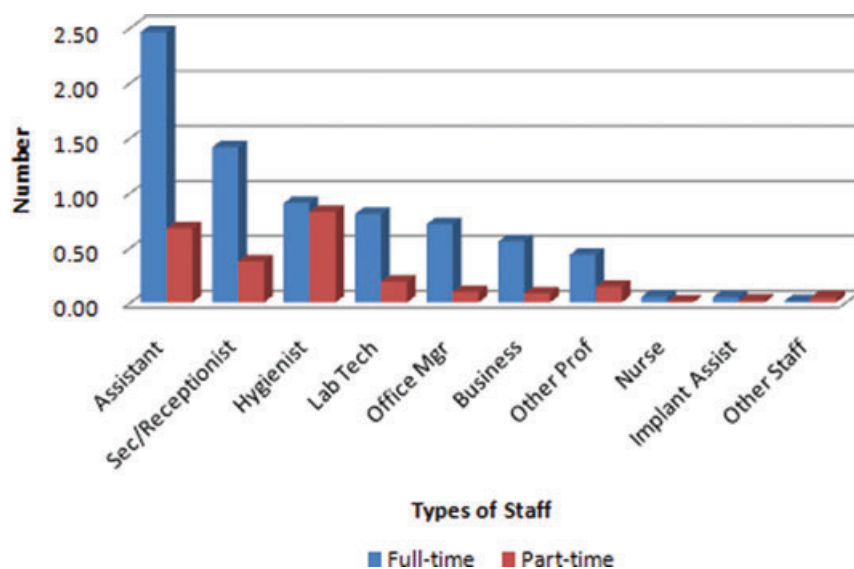


Figure 8 Mean number of employed staff, full-time and part-time, by type of staff, 2007.

The percentage of all staff employed as dental assistants, dental hygienists, and dental laboratory technicians, plus office staff (2.7 FT, 0.6 PT) reached 82% of employed staff. Other staff employed included other professionals (0.5 staff), nurses (0.1 staff), implant assistant (0.1 staff), and other staff (0.1 staff). In 2007, about 75% of employed staff were full-time compared to 69% in 2004.^{3,4}

Figure 9 contains the estimated percentage of respondents who employ each type of staff on a full-time or part-time basis. Dental assistants, dental hygienists, and secretary/receptionists were all employed by more than 80% of prosthodontists on a full- or part-time basis. About two-thirds of respondents reported employment of office managers, and another 50% indicated employment of business staff. About 40% of private practicing prosthodontists employed laboratory technicians on a full-time or part-time basis in 2007, compared to 48% of prosthodontists employing laboratory technicians in 2004.

Dental assistants and dental hygienists are staff positions employed by the highest percentage of respondents, although they employ a higher percentage of full-time assistants than full-time hygienists. About 84% of respondents indicated they employed full-time dental assistants compared to 45% of respondents employing full-time dental hygienists. Wages and salaries of dental hygienists and dental assistants are shown in Figure 10. The average wage per hour for dental assistants was reported to be \$19.42 per hour compared to \$39.62 per hour for dental hygienists. The average hourly wage paid by prosthodontists to dental hygienists tends to increase as the years of experience increase. The average hygienist wage increased from \$35.89 per hour for less than 5 years of experience to \$42.01 for 20 or more years' experience. Experience was calculated as the number of years in the current practice plus years of experience prior to employment in the current practice.

While practice expense reflects the cost to the practice to use various resources to produce and render prosthodontics care, gross revenues reflect the gross economic returns to the practice and are the primary resources used to reimburse for the use of these resources. Figure 11 contains responses about the percentage of respondents reporting by categories of gross billings. In 2001, 26% of respondents reported the gross billings of their practice to be \$1 million or more. By 2007, the percentage reporting \$1 million or more increased to 44%. Table 4 contains the average gross receipts calculated per practice, per prosthodontist, per practice owner, and per solo prosthodontist. Gross receipts are the amount of gross billings reported by respondents as being actually collected. In 2007, the average gross receipts were reported as \$1,072,113 per prosthodontist practice to \$805,674 per prosthodontist. Solo prosthodontists averaged \$865,558 compared to \$925,840 per owner of a prosthodontics practice. The averages shown in Table 4 are nominal figures and have not been adjusted for inflationary influences over the period 2001 to 2007.

Gross billings and gross receipts depend on the amount of prosthodontists' services rendered and fee charged for services. Table 5 contains the national average, median, and 90th percentile of fees charged by prosthodontists in private practice for selected prosthodontics and dental procedures in 2007. The procedures and fees listed in the table are arranged from a ranking of the mean fee in descending order.

The difference between gross billings (receipts) and practice expenses is the net income earned by the prosthodontists who own or share in the ownership of the practice. The overall average net income in 2007 was \$268,930, shown in Figure 12 as the red bar. Net income in the survey was defined as the income received after practice expenses and business taxes, including commission, bonus, and/or dividends. Net income is the highest for the 45 to 54 age range and lowest for both the youngest and the oldest prosthodontists.

Table 6 contains the average net income for various groups of private practicing prosthodontists for the years 2001, 2004, and 2007. Among all prosthodontists, the mean net income was estimated to be \$210,699 in 2001 and increased to \$268,928 by 2007 (an increase of 4.2% per year). Respondents reported 79% of prosthodontists who were owners of a practice or shared in the ownership. The mean net income among owners of the practice was \$229,132 in 2001, and this average increased to \$300,944 by 2007 (an increase of 4.6% per year). Finally, most prosthodontists in private practice treat patients as a solo prosthodontist. In 2001, the mean net income of solo prosthodontists was \$201,671, which increased to \$262,565 in 2007 (an increase of 4.5% per year).

In addition to the net income from the private practice of prosthodontists, income can also be earned from other sources, such as consulting, teaching, hospital care, or other activities such that total net income of prosthodontists is larger than the net income from practice alone. In 2007, 55% of the survey respondents reported income from sources other than private practice. Table 7 contains estimates of the "total" net income from practice of prosthodontics for various groups in 2001, 2004, and 2007. As indicated earlier, the averages for total net income exceed the amounts earned from private practice only.

Discussion

Most practicing prosthodontists in the United States treat patients through a private practice. In 2006, the ADA estimated that 79% of practicing prosthodontists rendered care to patients in a private practice. Most prosthodontists (82%) own or share in the ownership of the practice where they treat patients, and most are in solo practice (71% in 2007).

Based on the results from the 2008 Survey of Prosthodontists, the average age of the private practitioner was 51; 82% of prosthodontists were male; the mean number of years since graduation was about 24 years; and the mean number of years since completion of residency training was 18 years. The latter suggests that a number of prosthodontists may have practiced for a while upon graduation from dental school, but before entering residency training. The estimated number of female prosthodontists in private practice has grown from about 13% in 2001 to 18% in 2007. The largest concentration of prosthodontists is in the Northeast and the South.

Although incomplete, the mean earnings of individuals are often used to judge the economic health of the industry where those individuals work. In the case of prosthodontists, the average earnings of prosthodontists were estimated to be \$268,930, showing a growth of 4.2% per year since 2001. Real economic growth is what takes place after adjusting for inflation, which tends to reduce the "real value" of a given amount of earnings.

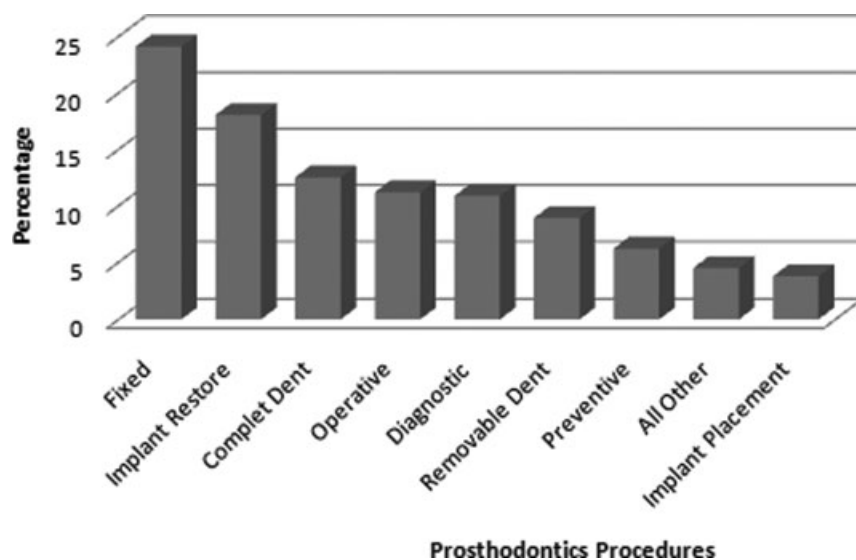


Figure 5 Mean percentage of time by type of prosthodontics procedure, 2007.

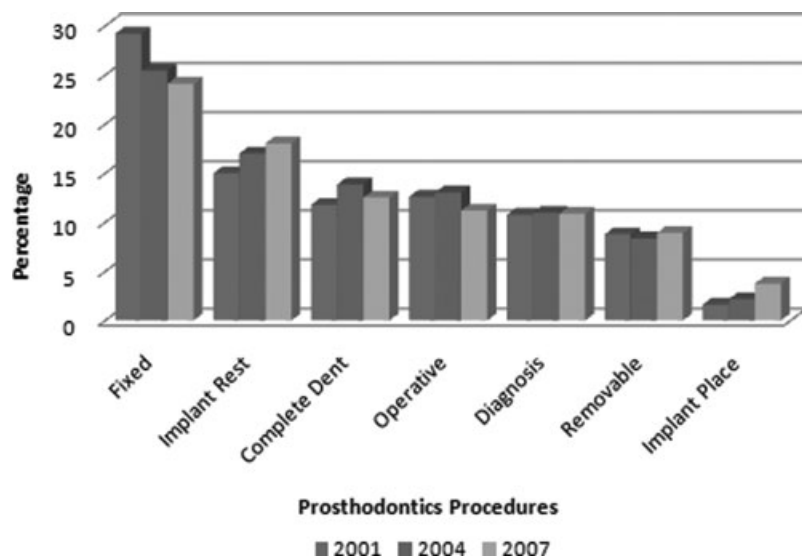


Figure 6 Mean percentage of time by selected type of procedure, 2001, 2004, 2007.

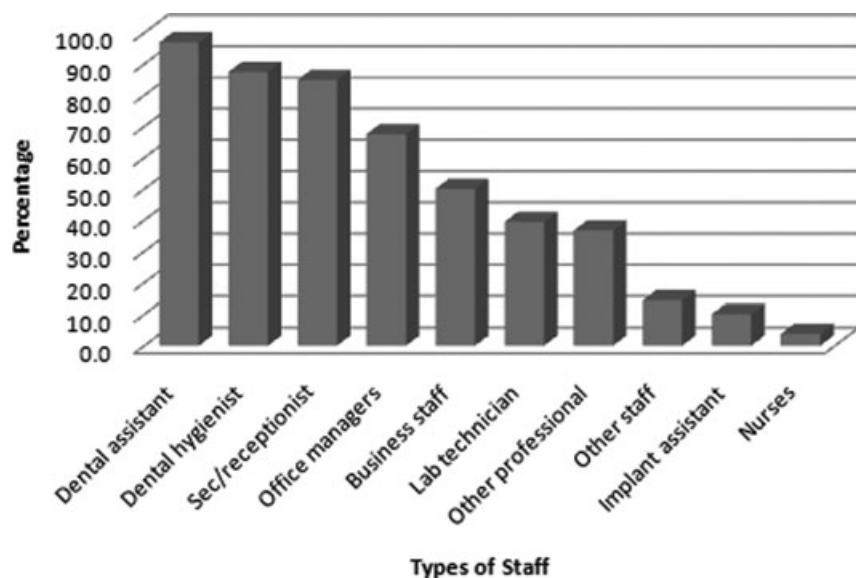


Figure 9 Percentage of respondents employing staff, full-time or part-time, by type of staff, 2007.

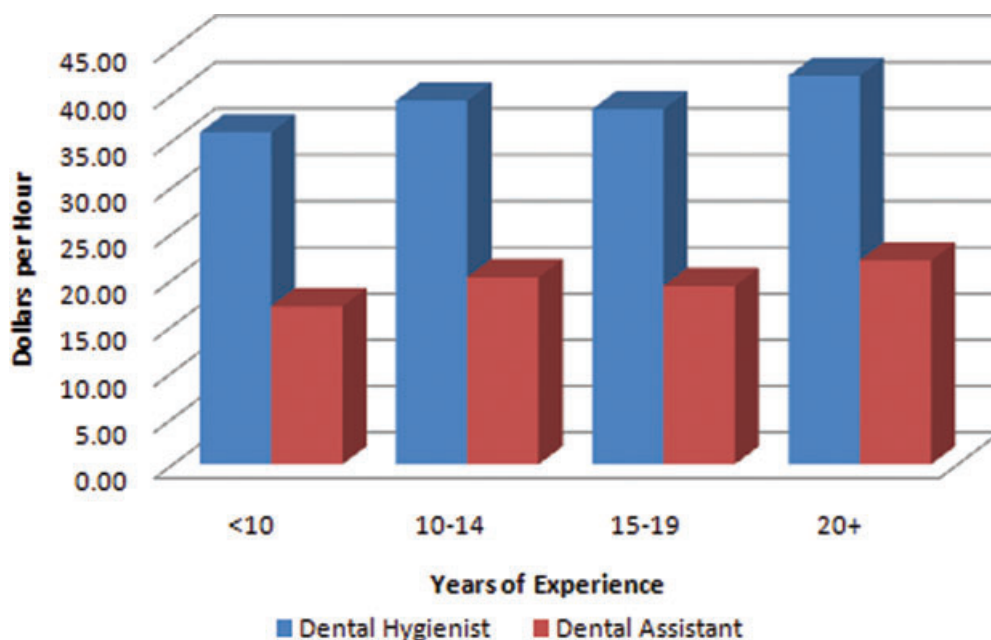


Figure 10 Mean hourly wages for dental hygienists and dental assistants by years of experience, 2007.

Between 2001 and 2007, the average annual growth in inflation was about 2.8%,⁵ so growth in mean net incomes of prosthodontists exceeded the growth in inflation. Similar growth occurred among practice owners and among the prosthodontists who were in solo practice. The growth in average earnings of owner prosthodontists was 4.6% per year, and for solo prosthodontists the growth in earnings was estimated to be 4.5%. The growth in mean earnings of both the latter groups of prosthodontists exceeded the growth in inflation, meaning that not only did

average earnings increase, but so did the purchasing power of those earnings.

In 2007 the ADA published the results of its 2006 Survey of Dental Practice and reported that the mean net income of independent (owner) private practitioners was \$216,550, including a mean of \$198,350 for general practitioners and an average of \$304,020 for all specialists combined.⁶ The latter group of specialists includes private-practicing prosthodontists as well as other specialists. The mean income for owner dentists reported

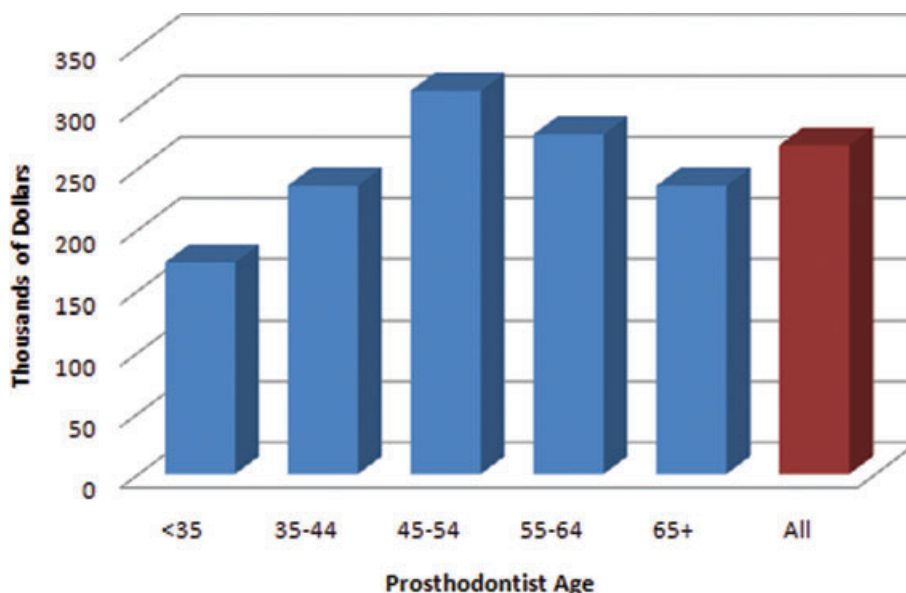


Figure 12 Mean net income from private practice by age of prosthodontist and for all prosthodontists, 2007.

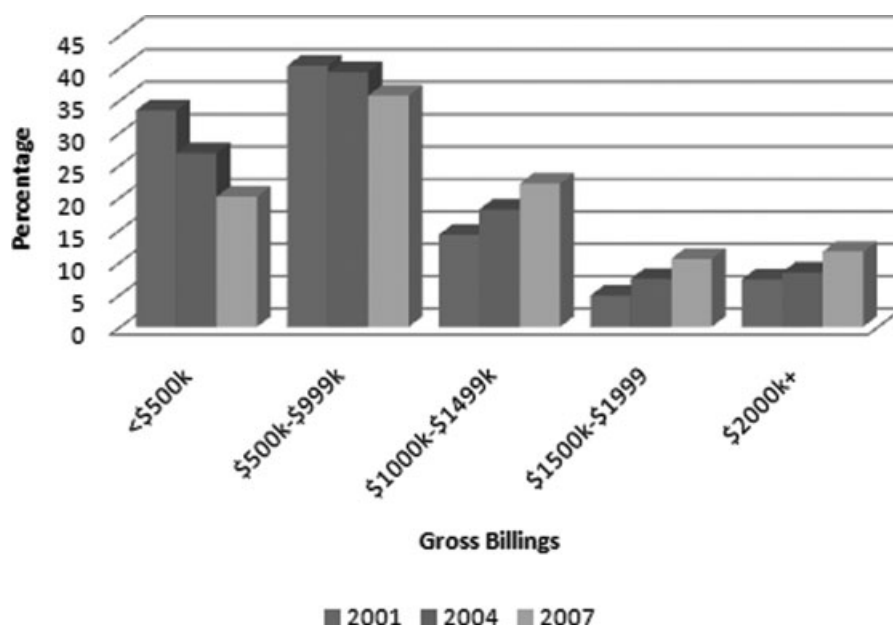


Figure 11 Percentage of respondents by amount of gross receipts of the practice, 2001, 2004, and 2007.

in this article of \$300,944 (Table 6) exceeds the 2006 figure for general practitioners, but is slightly lower than for all specialists as reported by the ADA. An exact comparison cannot be made, however, since there is a difference in the reporting period.

The reliability of the mean net income estimates for private-practicing prosthodontists is influenced by the size of the sample (responding) and the size of the standard deviation (amount of variation) of net income. The lower the standard deviation and the larger the sample size, the greater the reliability of the estimate of mean net incomes shown in Tables 6 and 7. The reliability of the estimates can be examined by calculating, for example, a 95% confidence interval around the mean net income estimates shown in the tables. The confidence interval is computed as the mean net income “plus and minus” a factor

that reflects the size of the standard deviation and the size of the sample.⁷ The 95% confidence intervals calculated for the mean net income of the three groups shown in Table 6 in 2007 are:

- All prosthodontists: \$245,200–\$292,600 (mean = \$268,928)
- All owners: \$274,700–\$327,200 (mean = \$300,944)
- All solos: \$238,703–\$286,426 (mean = \$262,565)

Similar 95% confidence intervals calculated for the mean “total” net income of the three groups shown in Table 7 in 2007 are:

- All prosthodontists: \$284,900–\$334,600 (mean = \$309,776)
- All owners: \$307,000–\$369,400 (mean = \$338,178)
- All solos: \$264,600–\$319,200 (mean = \$291,923)

Table 4 Mean gross receipts per practice, per prosthodontist, per owner, and per solo prosthodontist, 2001, 2004, and 2007

Statistics	Gross receipts group			
	Per practice	Per prosthodontist	Per owner	Per solo
Year: 2001				
Mean	\$690,196	\$543,513	\$654,420	\$616,010
Std deviation	\$545,034	\$375,652	\$451,178	\$376,900
Number	700	687	647	471
Year: 2004				
Mean	\$894,552	\$657,242	\$775,503	\$703,219
Std deviation	\$869,468	\$474,052	\$580,601	\$430,282
Number	294	284	261	194
Year: 2007				
Mean	\$1,072,113	\$805,674	\$925,840	\$865,558
Std deviation	\$941,226	\$520,273	\$595,415	\$542,603
Number	280	274	261	193

Table 5 Mean fees charged by prosthodontists for selected prosthodontics procedures, private practice, 2007

Procedure	Mean fee	Median fee	90th Percentile fee	Number
Implant/abutment-supported removable denture (D6053)	\$4624	\$3500	\$10,000	197
Complete denture, maxillary (D5110)	\$2461	\$2467	\$3600	256
Mandibular partial denture-cast metal with resin (D5214)	\$2395	\$2400	\$3500	243
Surgical placement of implant body, endosteal (D6010)	\$1715	\$1800	\$2170	93
Abutment- or implant-supported crown (D6058)	\$1568	\$1600	\$2200	246
Crown, porcelain/ceramic substrate-single crown (D2740)	\$1340	\$1300	\$1800	251
Pontic, porcelain fused to high noble metal (6240)	\$1336	\$1250	\$1850	244
Crown, porcelain fused to high noble metal (D2750)	\$1327	\$1282	\$1800	256
Crown, porcelain fused to high noble, fixed partial (6750)	\$1324	\$1282	\$1800	246
Labial veneer (porcelain laminate, D2962)	\$1314	\$1250	\$1800	234
Custom abutment-includes placement (D6057)	\$775	\$750	\$1100	221
Bone replacement graft-1st graft in quadrant (D4263)	\$594	\$500	\$953	78
Surgical stent (D5982)	\$418	\$393	\$736	210
Comprehensive oral evaluation (D0150)	\$123	\$100	\$200	248
Intraoral-complete series (including bitewings, D0210))	\$122	\$120	\$175	239
Prophylaxis, adult (D1110)	\$96	\$92	\$135	242
Limited oral evaluation (D0140)	\$71	\$68	\$105	227
Periodic oral exam (D0120)	\$63	\$55	\$100	248
Bitewing X-rays-2 films (D0272)	\$47	\$44	\$75	217

The narrower the 95% confidence interval, the greater the reliability that the calculated mean net income from the “sample” is a reliable estimate of the mean income for all prosthodontists in private practice.

One element of economic growth in the prosthodontic industry concerns the growth in business or the growth in billings for care. The percentage of prosthodontists earning \$1 million of gross revenues or more increased from 28% in 2001 to 34% by 2004, and 44% in 2007. Based on mean gross revenues (Table 4), the size of the prosthodontic industry reached about \$2.2 billion dollars in revenue in 2007, based on 2707⁸ prosthodontists in private practice and an average gross revenue of \$805,675 per prosthodontist. Note that the “total prosthodontics” industry that encompasses dentists and specialists who provide surgical and nonsurgical procedures is larger than the market represented only by prosthodontists.

Estimated practice expenses (Fig 7) can also be used to estimate an industry-wide expenditure by all prosthodontists in private practice. Based on mean practice expenses per prosthodontist, all prosthodontists combined paid out about \$1.4 billion dollars in expenses for resources used to provide patient care. These expenditures are important, not only because they represent the expenses necessary to operate the practice, but also because they represent a flow of revenue to the personnel who work in the practice and the industries (e.g., equipment, supplies, laboratories, and professional services) that support the practice of prosthodontists.

The number of patients and patient visits can also be used to estimate the size of the prosthodontic industry by estimating the total number patients and visits to prosthodontists in private practice. Based on the average weekly number of patient visits (44.1) and an average of 46.2 weeks worked per year, the

Table 6 Mean net income from private practice for selected groups, private practitioners, 2001, 2004, 2007

Statistic	Per prosthodontist	Per owner	Per solo
Year: 2001			
Mean	\$210,699	\$229,132	\$201,671
Std deviation	\$151,183	\$150,607	\$134,350
Number	689	594	480
Year: 2004			
Mean	\$211,659	\$242,498	\$207,357
Std deviation	\$170,560	\$181,336	\$147,230
Number	293	235	195
Year: 2007			
Mean	\$268,928	\$300,944	\$262,565
Std deviation	\$194,399	\$194,629	\$161,314
Number	261	214	178

Table 7 Mean total net income from practice for selected groups, private practitioners, 2001, 2004, 2007

Statistic	Per prosthodontist	Per owner	Per solo
Year: 2001			
Mean	\$233,088	\$247,581	\$218,382
Std deviation	\$158,589	\$163,273	\$142,856
Number	690	596	481
Year: 2004			
Mean	\$270,388	\$291,674	\$260,128
Std deviation	\$203,865	\$217,467	\$174,466
Number	294	234	197
Year: 2007			
Mean	\$309,776	\$338,178	\$291,923
Std deviation	\$224,059	\$231,480	\$184,463
Number	261	214	178

average total number of patient visits is 2033 patient visits per year. The result is an estimated 5.5 million patient visits in private practice in 2007. The 5.5 million patient visits come from an estimated 1 million (different) patients treated in 2007 based on an estimate by the ADA that a patient of record visits the specialist practice five times per year.⁹

In 2007, prosthodontists spent an average of 36.1 hours per week in the office, up slightly from 2004. Respondents also reported that they spent about 84% of the time in treatment of patients and the remaining 16% in supervision, management, and other practice activities. Most treatment time (77%) is spent rendering patient care related to fixed prosthodontics, implant restorations, complete dentures, operative care, and diagnostic services. The average appointment time scheduled by prosthodontists based on respondents was 67.2 minutes based on any care rendered to patients. If patients with recall visits or postoperative care are excluded, the average scheduled appointment time increases by about 10 minutes to an average of 77.0 minutes.

In a previous article the ADA estimated there were about 335,900 completed implant services rendered by prosthodontists.² In 2007, the ADA reported that based on their findings from the 2005 to 2006 Survey of Dental Services Rendered,¹⁰ there were 620,820 implant services (D6000-D6199) completed by prosthodontists. In 2004, prosthodontists estimated they spent about 19% of treatment time in implant services (implant restoration plus implant placement). In 2007, prosthodontists estimated they spent about 21.8% of their time performing implant services per week, an increase of about 1.1 hour per prosthodontist per week (or about 50.7 hours per year per prosthodontist) since 2004. The total amount of time providing implant services in 2007 by all prosthodontists combined is estimated to be about 6.6 hours per week ($21.8\% \times 46.1$ weeks per year), or 304 hours per year. This means that, on average, a prosthodontist produces implant services at a rate equivalent to about 0.75 implant services per hour ($620,820$ implant services per year)/(304 hours per year \times 2707 prosthodontists) based on the ADA's estimate of the number of implant services. The ADA also estimated that about 16.8% of implant services rendered in 2005–2006 were surgical placement of implants, or 104,320 surgical procedures.⁹ Prosthodontist respondents in this survey estimated they spend about 3.7% of their patient time in surgical placement of implants in 2007, an increase from the 1.6% estimated in 2001. This further suggests that in 2007 about 17% of time rendering implant services is devoted to surgical placements (compared to 9.8% in 2001).

Conclusion

A review of the 2008 Survey was presented and included the incorporation of selected data from two previous ACP surveys. Over the span of a 6-year period, there has been an increase in specialty services, represented by the leading activities in

fixed, removable, implant, and diagnostic procedures. Within these areas, the most recent survey demonstrated an increase in implant and diagnostic procedures, while there was a decrease in fixed prosthodontics by 4.1%. While small, the percentage of time spent rendering surgical placements of implants has doubled since 2001. Over the 6-year period there has been a decline in operative procedures. While the economic aspect of clinical practice only represents a segment of the business component, it remains as one of many important factors in choosing this specialty. It was noted that from 2001 to 2007, gross billings of greater than one million dollars increased from 26% to 44% of clinical practitioners. It was also noted that the mean net income of private-practicing prosthodontists increased from \$210,700 in 2001 to an average of \$268,930 in 2007, an increase of 4.2% per year. Over the same period, inflation is estimated to have increased at a rate of 2.75% per year, suggesting that the net income earned by prosthodontists has exceeded the amount of income lost to inflation. When reviewing the outflow of all dental service activities, prosthodontists have made a quantitative and substantial impact in the U.S. oral healthcare market by providing specialty services, including the emerging implant market. Over 21% of their clinical practice time is dedicated to implant patient care. During the past 6 years, the survey data have supported the economic viability of specializing as a prosthodontist. Prosthodontics remains an attractive and productive healthcare profession in the United States.

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