

# Dental Residents' Perceptions of Practice and Patient Management Training During Postgraduate Education

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*Abstract:* The purpose of this study was to determine what aspects of practice and patient management matter most to dental residents and how they rate their level of training in these areas. In 2005, residents in twelve postdoctoral training programs at the School of Dentistry, University of California, Los Angeles, were surveyed about the importance of thirteen topics regarding dental practice and patient management. Residents also rated the level of training they received in these areas during their residency and dental school education. Results from the 2005 survey were compared with those from an identical survey administered to residents in 1997. Residents in 2005 rated time management, multidisciplinary coordination, and total quality management as the most important topics. Comparisons between the 1997 and 2005 groups found that time management and total quality management were significantly less emphasized in 2005 than in 1997. Residents from all specialties also rated dealing with health care payers as important to their future practices, but rated it the least emphasized topic in their programs. Results from this survey illustrate which practice and patient management skills are important to residents in comparison to how well they perceive they are being trained in these skills and suggest where programs could enhance their training to help residents run successful practices.

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Graduating dental students often identify practice administration and patient management among the least emphasized topics in their programs, and the majority feel underprepared to run a dental office.<sup>1-3</sup> Over 85 percent of dental graduates plan on entering private practice; consequently, understanding how to best manage a practice and their patients is critical to their success as dentists.<sup>1</sup> While there is abundant information available on dental students' perceptions of their training, it is unclear if dental residents feel similarly unprepared in practice and patient management, which would seem to be especially important given the apparent lack of emphasis in these areas in dental school curricula.

Training in practice management provides the business and ethical context for care delivery and prepares dentists for the economic realities of the world.<sup>4,5</sup> Current literature cites numerous principles of practice and patient management that are familiar and important to dental practitioners, including time management, patient satisfaction, managed care, quality management, multidisciplinary coordination, and financial performance.<sup>6-31</sup>

Time management involves planning and organizing one's time to take care of the most important things first.<sup>6,7</sup> Scheduling patients and procedures effectively is an important part of time management and can be a factor in achieving greater productivity and profitability.<sup>8</sup> Delegation is another key part of time management and can foster growth in personnel, increase chair-side time, and enhance patient care and customer service.<sup>6,9</sup> The better a practitioner manages his or her time, the more quality-focused time patients will receive, and the more confidence they will have in the dentist.<sup>10</sup>

The principle of measuring patient satisfaction and treatment outcomes is valuable to a practice. Although businesses in a variety of industries use this concept with customers, few dental practices have assessed their patients' perceptions of treatment results.<sup>11</sup> Measuring patient satisfaction can be useful in predicting patient behavior and understanding patient needs and desires.<sup>11,12</sup> Some practitioners have reported that surveying patients after treatment uncovered some previously unrecognized issues regarding patient perceptions of and concerns about

the treatment process.<sup>13</sup> Measuring patient outcomes will then aid in determining how well the treatment resolved the patient's problem. Understanding what patients want and measuring how well the treatment worked and whether or not patients are satisfied with it can help dentists better meet their patients' needs.

Managed care is a facet of dentistry that is having a big impact on the profession. The better a dentist knows how insurance programs work, the more rational and informed he or she will be in making business decisions.<sup>14</sup> Dentists need to be aware of differences between practices that participate in managed care programs and those that don't in terms of net income, number of patients seen per week, and appointment length.<sup>15</sup> Managed care systems are certain to become a more important part of dental delivery in the future, and it is important that future practitioners understand this.<sup>14</sup>

Quality, which, in a business sense, involves meeting or exceeding the patient's requirements throughout the entire patient experience, is not understood by many dentists.<sup>16,17</sup> Total quality management (TQM) in a dental setting is a continuously evolving process focused on improving delivery of care to the patient by evaluating and improving the process in which the care is delivered.<sup>17</sup> Waterman notes that as much as 85 percent of problems occurring in dental practices are due to defects in quality management.<sup>17</sup> TQM principles can provide a blueprint for resolving problems, leading to less rework, fewer mistakes, and reduced delays.<sup>18</sup> Also, by managing quality and continuously trying to improve it, a practice can achieve higher staff morale, a more effective office team, decreased costs, and increased profits.<sup>17,19</sup> Most importantly, TQM principles help practices become more patient-focused, thereby effectively meeting and exceeding their patients' expectations.<sup>16-20</sup>

Multidisciplinary coordination can consist of teamwork across specialties in dentistry, coordinating efforts between a dentist and a physician, and collaboration between dentists and hygienists. Coordinating a patient's care with other practitioners requires clear communication.<sup>21</sup> This teamwork could provide the means of targeting patients who are especially at risk for caries, periodontal disease, and cancer.<sup>22</sup> Ultimately, better coordination among dentists, specialists, and physicians will optimize patient management in addressing common problems, thus increasing patient satisfaction.<sup>23</sup>

Many tools and measures exist to help a dental practice understand how well it is performing financially, including benchmarking, utilization review,

and evaluating the cost-effectiveness and quality of care delivered to patients. Benchmarking, though not common in dental practices, helps a practice identify its strengths and weaknesses, determine what is possible, and decide how to accomplish it.<sup>24,25</sup> Utilization review helps practitioners identify unnecessary or poorly used services in their practices, so they can decrease costs as they eliminate or improve these services.<sup>26,27</sup> Evaluating the cost-effectiveness of care delivery enables dentists and specialists to establish the least costly way of delivering services and achieving specific objectives.<sup>28</sup> Also, delivering higher quality treatment to patients can increase profits.<sup>29-31</sup> If dentists know what affects their financial performance and how to measure it, they will be able to find ways to improve it.

This study was designed to determine if a disparity exists between the amount of education dental residents receive in practice and patient management principles and the perceived importance of these principles to their future practices. This study also investigated whether or not residents today assess their training in practice and patient management differently than did residents in 1997.

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## Methods

Residents at the School of Dentistry, University of California, Los Angeles (UCLA) were surveyed in 1997 and 2005 on thirteen topics related to their training in practice and patient management during dental school and during their residencies (Figure 1). These topics covered the practice and patient management principles described above that aid in effectively running a dental practice and improving patient treatment.

After obtaining approval from the Institutional Review Board to administer the survey, residents in 1997 and 2005 were first invited to participate in the paper survey after one of their regularly scheduled classes. This survey was administered toward the end of the school year in both survey years to ensure that residents in one-year programs would have been exposed to whatever training their programs provided. The survey was also mailed to each resident to account for those not present in the earlier classroom-administered survey. The survey was conducted anonymously, asking the residents to include only the residency program they were enrolled in, their post-graduate year, the dental school they graduated from, and the year of their dental school graduation.

1. Total quality management
2. Multidisciplinary coordination
3. Benchmarking to improve clinical practice
4. Literature evaluation for patient care decisions
5. Utilization review
6. Measuring patient outcomes
7. Measuring patient satisfaction
8. Getting patients the services they need from other health care practitioners
9. Examining the cost-effectiveness of care delivery
10. Time management
11. Quality of care affecting a practice's financial status
12. Dealing with health care payers
13. Quality improvement techniques

Respondents were asked to consider their training in each aspect for "(A) your dental school education prior to beginning your residency program at UCLA, (B) your residency program at UCLA, and (C) your perception of the importance of these topics for your future practice" and to rate them on a scale of 1 to 3, in which 1=none, 2=a little, and 3=a lot.

**Figure 1. Aspects of practice and patient management assessed in the survey**

A total of sixty-five residents (81 percent response rate) participated in the 1997 survey from the following programs: advanced education in general dentistry (AEGD) (ten), endodontics (six), general practice residency (GPR) (four), maxillofacial prosthetics (three), oral and maxillofacial surgery (eleven), orofacial pain (five), orthodontics (five), pediatric dentistry (seven), pedo-ortho (five), periodontics (six), and prosthodontics (three). A total of forty-four residents (55 percent response rate) participated in the 2005 survey from the following programs: AEGD (six), dental anesthesiology (one), endodontics (five), GPR (four), orofacial pain (one), oral and maxillofacial surgery (two), orthodontics (ten), pediatric dentistry (seven), pedo-ortho (two), periodontics (three), and prosthodontics (three).

Residents were asked specifically to rate the amount of training they have received in dental school and in residency in the thirteen practice and patient management topics and the importance of these topics to their future practices. Two of the topics, benchmarking and utilization review, were considered to be topics with which many dental residents may not

be as familiar, so definitions of these concepts were included on the survey. Residents' ratings regarding training and importance for each category were tabulated on a Likert-type scale as follows: 3=a lot, 2=a little, 1=none. The results from the 2005 survey were compared to those from the 1997 survey using a two-tailed t-test for significance ( $p=0.05$ ).

## Results

Significant findings resulted from analyzing resident responses from each year and by comparing responses in 2005 to those in 1997. Table 1 shows the survey results numerically, with significant differences ( $p=0.05$ ) indicated by a corresponding symbol. The mean score for each principle is represented in the table, broken down by dental school training, residency training, and perceived importance in the two survey years. In the following review of survey data, principles will be listed with their corresponding principle number in brackets to aid in reading the tables and figures.

## 1997 Survey Analysis

Table 1 shows that when the ratings of the thirteen surveyed practice and patient management principles were averaged, residents rated the amount of their program training higher (2.19) than their training in dental school (1.86). Eight of the thirteen subjects were emphasized significantly more in residency programs than in dental school, with benchmarking [3], patient satisfaction [7], cost-effectiveness [9], quality of care affecting financial status [11], and quality improvement techniques [13] being the only subjects not receiving significantly more emphasis in residency.

Table 1 also shows that residents, as an overall average, rated the importance of the surveyed topics higher (2.67) than they rated the amount of their training on these subjects in residency (2.19). Ten of the thirteen subjects were perceived by the residents to be significantly more important than the level at which they were being trained. Benchmarking [3], literature evaluation [4], and measuring patient outcomes [6] were the only subjects whose perceived importance was not significantly greater than the amount of residency training.

Figure 2 is a graphic representation of the survey responses from 1997 for visualization of the results and trends among the thirteen principles in

that survey year. Literature evaluation [4], TQM [1], and multidisciplinary coordination [2] were rated the three most emphasized topics during residency. TQM [1], time management [10], and multidisciplinary coordination [2] were rated the three most emphasized topics in dental school, and were also perceived by residents as the three most important of the topics to their future practices. Dealing with health care payers [12] was rated the least emphasized topic in both dental school and residency programs, but ranked sixth in importance to the residents.

## 2005 Survey Analysis

Table 1 shows that when the ratings of the thirteen surveyed practice and patient management principles in 2005 were averaged, residents rated the amount of practice management training higher during their postgraduate education (1.97) than during dental school (1.82). However, the increased training in residency over dental school is significantly lower than it was in 1997. In fact, the only subject emphasized significantly more in residency programs in 2005 than in dental school was literature evaluation [4].

Table 1 further shows that residents in 2005 rated the importance of the surveyed topics higher (2.56) on average than they rated the amount of their training in these subjects in residency (1.97). All

**Table 1. Residents' survey results compared by year**

# Principle	Dental Training 1997	Dental Training 2005	Residency Training 1997	Residency Training 2005	Importance 1997	Importance 2005
1 Total quality management	2.1	2.1	2.5*	2.0 <sup>†</sup>	2.8**	2.7**
2 Multidisciplinary coordination	2.0	2.1	2.5*	2.4	2.8**	2.8
3 Benchmarking	1.9	1.8	2.1	2.0	2.4	2.5**
4 Literature evaluation	1.9	1.9	2.7*	2.6*	2.7	2.7
5 Utilization review	1.7	1.8	2.1*	1.8	2.5**	2.3**
6 Measuring patient outcomes	1.7	1.8	2.2*	2.2	2.4	2.3
7 Measuring patient satisfaction	2.0	1.9	1.9	2.0	2.7**	2.6**
8 Getting patients services from other health care providers	2.0	2.0	2.4*	2.1	2.8**	2.6** <sup>§</sup>
9 Measuring cost-effectiveness of care delivery	1.8	1.6	1.9	1.8	2.7**	2.4** <sup>§</sup>
10 Time management	2.1	1.9	2.4*	1.8 <sup>‡</sup>	2.9**	2.8**
11 Quality of care affecting financial status	1.9	1.5 <sup>†</sup>	1.9	1.8	2.7**	2.5**
12 Dealing with health care payers	1.5	1.5	1.8*	1.5	2.7**	2.6**
13 Quality improvement techniques	1.7	1.6	2.0	1.7	2.6**	2.5**
<b>AVERAGE</b>	<b>1.9</b>	<b>1.8</b>	<b>2.2</b>	<b>2.0</b>	<b>2.7</b>	<b>2.6</b>

\*Significantly higher than Dental Training in the same year

\*\*Significantly higher than Residency Training in the same year

<sup>†</sup>Significantly lower than Dental Training in 1997

<sup>‡</sup>Significantly lower than Residency Training in 1997

<sup>§</sup>Significantly lower than Importance in 1997

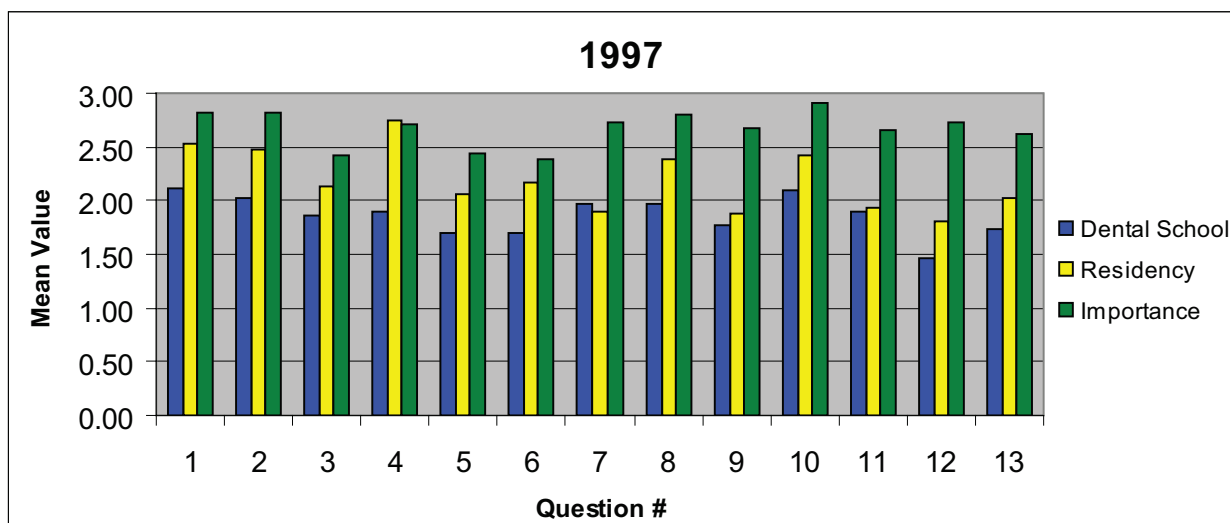


Figure 2. Residents' survey results in 1997

thirteen subjects were perceived by residents to be significantly more important than the level at which they were being trained, with the exception of multidisciplinary coordination [2], literature evaluation [4], and measuring patient outcomes [6].

Figure 3 displays the survey results from 2005 graphically. TQM [1], multidisciplinary coordination [2], and getting patients services from other health care providers [8] were rated the three most empha-

sized topics in dental school. Literature evaluation [4], multidisciplinary coordination [2], and measuring patient outcomes [6] were rated the three most emphasized topics in residency. Time management [10], multidisciplinary coordination [2], and TQM [1] were perceived by the residents as the three most important of the subjects to their future practices.

Time management [10] ranked ninth in residency training, but ranked first in importance to the

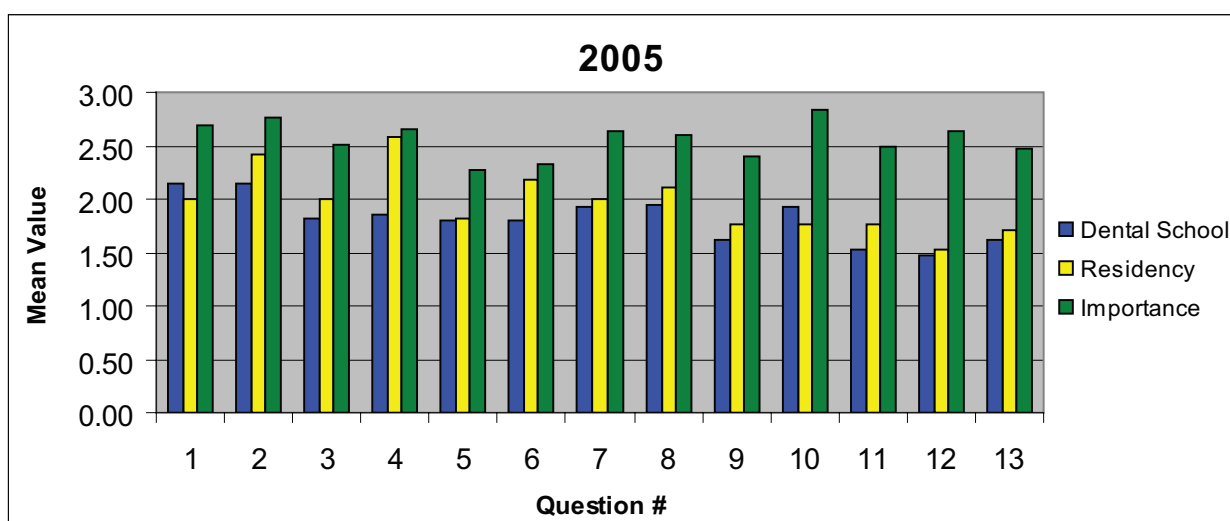


Figure 3. Residents' survey results in 2005

residents. Dealing with health care payers [12] was felt to be the least emphasized topic in both dental school and residency programs again, but ranked fifth in importance to the residents.

## 1997 vs. 2005

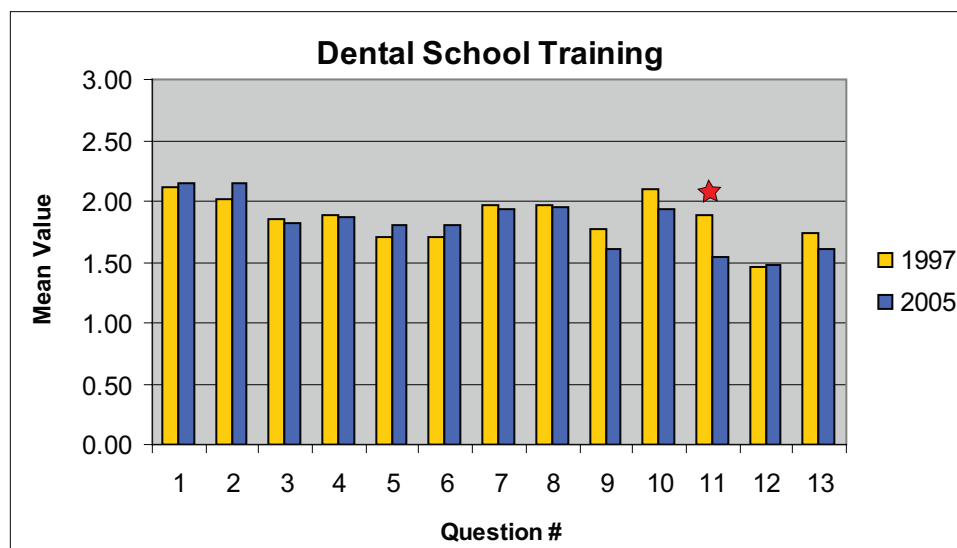
Figures 4–6 present a graphic comparison of the survey results from 1997 to those from 2005 in amount of dental school training, residency training, and perceived importance. In general, most of the survey responses from residents in 2005 were consistent with those of the 1997 survey. Residents in both years perceived time management [10], TQM [1], and multidisciplinary coordination [2] as the three most important of the surveyed topics to their future practices. Literature evaluation [4] and measuring patient outcomes [6] were perceived by residents as important at the same level they were being trained in both survey years. Residents in both 1997 and 2005 rated dealing with health care payers [12] last in both dental school and residency training.

Figures 4–6 additionally show a few significant differences in subject ratings between the two survey years. Residents in 2005 rated their dental school training in quality affecting financial status [11] significantly lower than did residents in 1997 (Figure 4). Residents in 2005 rated the amount of their

residency training in TQM [1] and time management [10] significantly lower than did residents in 1997 (Figure 5). Residents in 2005 rated the importance of getting patients services from other health care providers [8] and measuring the cost-effectiveness of care [9] significantly lower than did residents in 1997 (Figure 6).

## Discussion

The Commission on Dental Accreditation requires that most advanced specialty education programs and postdoctoral general dentistry education programs train residents in practice management. The postdoctoral programs with this requirement include AEGD, GPR, oral and maxillofacial surgery, orthodontics, endodontics, pediatric dentistry, periodontics, and prosthodontics.<sup>32-39</sup> Interestingly, the other ADA-recognized postdoctoral dental programs—namely, dental anesthesiology, dental radiology, oral medicine, oral pathology, and dental public health—do not have any requirement to train residents in practice management, possibly due to the less private-practice-oriented nature of these fields.<sup>40-44</sup> This study focused on residents from programs that have practice management as an accreditation requirement, as only one resident

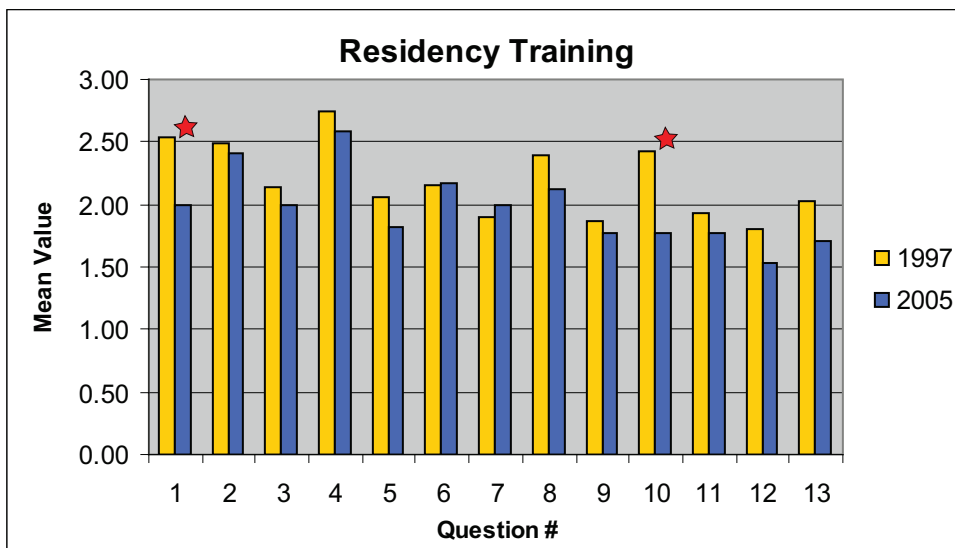


Star=significant difference (p=0.05)

Figure 4. 1997 vs. 2005 comparison of dental school training

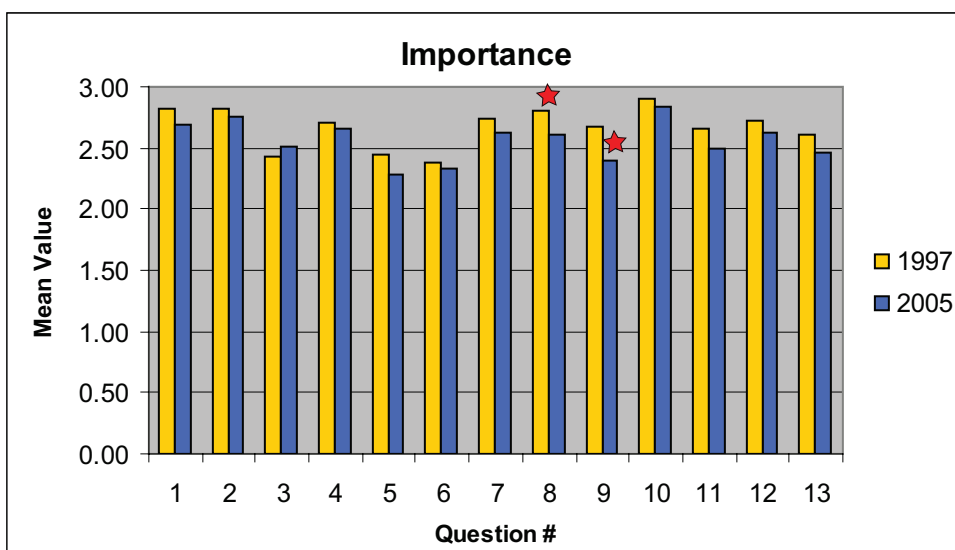
from a program without practice management as an accreditation requirement, dental anesthesiology in 2005, participated in the survey.

In general, residents who participated in these surveys evaluated the quality of their training in practice and patient management principles signifi-



Star=significant difference (p=0.05)

Figure 5. 1997 vs. 2005 comparison of residency training



Star=significant difference (p=0.05)

Figure 6. 1997 vs. 2005 comparison of perceived importance



cantly lower than the perceived importance of these principles to their future practices, demonstrating that residents perceive a need for enhanced education in these principles. This finding is consistent with previous research indicating that dental graduates believe that practice and patient management are underemphasized in their curricula.<sup>1-3</sup> Critical evaluation of literature for patient care decisions was the only topic whose perceived importance equaled its emphasis in dental school and residency programs. Clearly, there is a disparity between subject emphasis in practice and patient management that residents expect and the amount they are receiving.

In particular, residents perceive time management and TQM as two of the most important principles to prepare for their careers, yet they do not report adequate focus on these principles in dental school or residency programs. Time management and TQM were both perceived as being emphasized more in 1997 than in 2005, and now are perceived to be emphasized more in dental school than in residency. Although residents rated time management as having the highest importance, this topic ranked only ninth among the thirteen topics in resident training, suggesting the need for better time management curricula in residency programs.

Measuring patient satisfaction was another principle with high self-assessed importance and low perceived training in residency. Patient surveys in these programs can be effective in improving care delivery. Travess et al. described a patient-based measure they used for auditing the quality of care received by patients undergoing orthodontic-orthognathic treatment.<sup>13</sup> They found that completing a survey after treatment was acceptable to patients, and this assessment resulted in the discovery of previously unrecognized issues and concerns that patients had about treatment. This study is one example of how effective the use of patient surveys can be in improving care delivery. Strategies for implementing assessments of patient satisfaction with treatment outcomes and overall quality of care measures could be taught in residency.

Dealing with health care payers/managed care programs ranked last in dental school and residency training, both in 1997 and 2005. However, residents rated it sixth in importance in 1997 and fifth in 2005. A study by Bramson et al. found that practicing dentists who participate in managed care programs had practices with a lower net income, more patient visits per week, more emergency and walk-in pa-

tients, fewer visits per patient per year, and shorter appointment times.<sup>15</sup> Other studies are in agreement with these findings and further conclude that many dentists feel that third-party payers, in particular managed care programs, interfere with the dentist-patient relationship.<sup>45-47</sup> New dentists should understand these differences and concerns so they can enter, or create, a practice that suits them best. Due to the complexity of some managed care systems, learning about this topic may be best accomplished in a more hands-on approach that uses computerized models of running a dental practice in real time to enhance residents' comprehension of managed care and compensation, such as an approach described by Sanders and Ferrillo.<sup>5</sup> However this goal is achieved, graduating residents should develop an understanding of how dental practitioners interact with health care payers.

Residents also consistently rated multidisciplinary coordination as one of the most important principles to their careers. Buttke outlines a common example of the importance of this coordination with orthodontic treatment.<sup>48</sup> He discusses how general dentists are usually the first to recommend orthodontic treatment to their patients, and the more orthodontists collaborate with general practitioners, the better will be the continuity of patient care from the general dentist to the orthodontist. Furthermore, orthodontic treatment can improve the prognosis of future implants and periodontal or restorative treatment that a patient may need, and dentists or other specialists should work with orthodontists as a team in these situations. This teamwork must be taught to residents since their future patients will usually be cared for by a team of dental professionals.

Despite the disparity between the level of training residents want in these topics and the level they are receiving, two important considerations should be noted. First, residency programs have a finite amount of time to teach everything they must to produce competent practitioners. There may not be enough time for a program to incorporate all aspects of patient and practice management into their curricula.<sup>3</sup> Second, while training in practice management is essential prior to graduation, the amount of practice management education a dental practitioner gains after graduation is just as important.<sup>49</sup> Dentists and dental specialists should try to gain knowledge about how to run a successful practice throughout their careers; the more they learn, the better prepared they'll be.



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## Conclusion

The findings from this study indicate that residents at one dental institution do not believe that adequate attention is being devoted to practice and patient management strategies during postgraduate education. These results suggest that residency programs may need to evaluate the scope and extent of training they provide in practice and patient management. These findings identify topics that residents perceive to be the most important, which may provide guidance for residency program directors in planning enhanced learning experiences for their residents.

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