

# Opinions of pediatric dentists regarding their board certification process

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## SCIENTIFIC ARTICLES

### Abstract

Despite frequently heard criticisms of the board certification process in pediatric dentistry, pediatric dentists have never been surveyed on this issue. To achieve a representative opinion, a formal survey was conducted during the summer and fall of 1990. The survey sample consisted of 300 practitioners selected randomly from the list of 4300 United States pediatric dentists. The survey form included demographic data, board status, general opinions about the process, and specific estimates of the reliability, validity, and utility of each of the five examination components. Comments were encouraged. A follow-up reminder was sent several weeks after the initial mailing. Ten forms were returned as undeliverable, reducing the sample to 290. In all, 150 forms were returned, for a return rate of 52%. One hundred and thirty-eight forms were completed and analyzed. This number included 54 pediatric Diplomates and 84 nonboarded pediatric dentists. The Written and Oral sections generally were rated more favorably than the Case History, Site Visit, and Simulation sections. Nonboarded respondents were significantly more critical of the process on every item, without exception. All differences exceeded the 0.01 level. (*Pediatr Dent* 14: 75-81 1992)

### Introduction

The American Board of Pedodontics was founded in 1940 by the American Society of Dentistry for Children, and the original board members were charged with developing plans for certification examinations that would thoroughly test the qualifications of candidates who wanted to be specialists.<sup>1</sup> The first examination was administered at Northwestern University Dental School on February 11-12, 1949. The examination at that time consisted of four components: a Case History Section, a Clinical Section performed on an ivory dentoform model, Written and Oral sections, and a section in which the candidate was required to review case histories. There have been many alterations in the examination process over the past 41 years. The current examination still has four components (a written section, an oral section, a case history section, and a clinical site visit or simulation), but each component has undergone numerous modifications. An in-depth review and description of the individual modifications through 1984 is provided by Lee.<sup>1</sup> A clinical simulation was added in 1988 to provide an alternative to the clinical site visit. These modifications have been made in an effort to standardize the testing and grading procedures, make it more convenient for the candidates to participate, broaden the scope of input and expertise

within the individual sections, and improve the validity and reliability of the overall examination. The common thread through all of these changes has been a desire on the part of the board to stimulate and encourage more candidates to take the examination.<sup>1</sup>

The most recent data from the academy reveal that 17.44% of pediatric dentists have completed the board certification process.<sup>2</sup> Consequently, despite continuing efforts on the part of the board to encourage increased participation, it appears that significant numbers of educationally qualified pediatric dentists still do not take the examination.

In the last few years, increasing numbers of criticisms have been expressed about various aspects of the examination process, and there seem to be differences of opinion among pediatric dentists about the purposes and values of the process, as well as its appropriateness and fairness. However, no organized effort has been made to determine whether these criticisms reflect the attitudes of pediatric dentists in general, or only those of a vocal minority. At the time of this report, an external audit had been requested by the academy and a committee formed to evaluate the process. An organized approach directed at soliciting opinions concerning the process could help to determine why some pediatric dentists choose not to complete the certification process.

For this reason, we conducted a systematic survey of pediatric dentists to learn their views about the general process and the individual components. The purpose of this article is to report the findings from that survey.

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*Editor's Note: Significant changes have occurred in the examination process since the acceptance of this article. The reader is referred to Badger GR: Changes in board certification examination, *Pediatric Dentistry* 14:52-53, 1992.*

## Materials and Methods

A random sample of 300 pediatric dentists selected from the list of 4300 pediatric dentists residing in the United States and associated territories was mailed a questionnaire designed to collect their opinions regarding the process of certification required for Diplomate status by the American Board of Pediatric Dentistry. The questionnaire was divided into two main sections. The first section dealt with the personal data of the pediatric dentists and was developed to determine the age and gender of the practitioner, number of years in practice, type of practice, and board certification status. Included in the portion inquiring about board certification status were questions about parts of the board completed and parts retaken. The second section was divided into three subsections and inquired about opinions of the certification process in general as well as of specific components of the examination. The first subsection dealt with perceived purposes of the board certification process and requested a ranking of these purposes in order of importance. The second dealt with the relationship between the academy and the board and access of the academy membership to the board. The third subsection dealt with the five components of the examination and asked for specific estimates of their reliability, validity, and utility. Comments sections were provided under each item in subsections 2 and 3 and a large general comments section was available at the end of the survey document.

A computer utility program which scans frequencies was designed and utilized for this analysis. Once the frequency of each response was determined, the frequencies were categorized in terms of board certification status.

## Results

### Return Rate

Ten forms were returned as undeliverable, reducing the original sample to 290. In all, 150 forms were returned for a return rate of 52%. One hundred and thirty-eight forms were completed sufficiently to be analyzed. This number included 54 Diplomates and 84 nonboarded pediatric dentists.

### Demographic Characteristics of Respondents

The demographic information provided by respondents indicated that they represent a broad spectrum of pediatric dentists. There were 126 males and 12 females. Their average age was 46; average number of years in practice, 17. Forty had trained in dental school programs, 35 in hospital-based programs, and 49 in combined programs. Fifty-six had received certificates, while 32 also had obtained the Masters degree.

As for their practice arrangements, 72 reported solo practice, 40 reported group practice, and 30 held academic positions (16 were full-time, four military, and 11 were retired). Eighty-eight work full time, and 14 work part time. These data suggest a broad spectrum of pediatric dentists.

The 84 nonboarded respondents had had a variety of experiences with the certification process: 61 had taken the Written Section (12 of these had been out of training only three years or less), 30 had taken the Oral Section nine had presented Case Studies, nine had experienced a Site Visit, and two had taken the Simulation Test. A number reported having retaken portions of the board: nine retook the Written Section; six, the Orals; nine, the Case Histories; seven, the Site Visit; and one, the Simulation Test.

### Perceived Purposes of Certification

When asked to indicate whether they thought the purpose of the board certification process was to measure competence or excellence, opinions were mixed: 44 chose competence, 40 chose excellence, 11 chose both, 10 chose neither, and 33 did not respond. In reply to the question, "What should it measure?", 57 indicated competence, 37 excellence, 21 both, one neither, and 22 did not respond.

Another attempt to discover their perception of the overall purpose of the board certification process asked respondents to rank order a list of potential purposes. When the rankings were averaged, the rank order came out as shown in Table 1. The highest rank was given to "demonstrate competency," second highest to "demonstrate excellence," and the others received lower ranks as shown in Table 1.

Thus, although opinions varied widely as to the fundamental purpose of board certification, it was clear that first and foremost it was viewed as a recognition of one's professional capability, whether described as com-

**Table 1. Rank-ordered ratings of the purposes of board certification**

<i>Rank</i>	<i>Stated Purpose</i>
1	Demonstrate competency in specialty
2	Demonstrate excellence in specialty
3	Strengthen the specialty
4	Assure quality for the public
5	Signify status for the individual
6	Necessary for academic promotion
7	Demonstrate higher level of competency to peers
8	Necessary for hospital privileges

petence or excellence. The results suggested a modest majority view that perhaps its emphasis should be competence rather than excellence.

### Ratings of General Characteristics of the Board Certification Process

In the next section of the survey form, respondents were asked to express their opinions about a variety of issues related to the board certification process in general. Nine statements were presented, each calling for a reply on a five-point Likert scale from strongly agree to strongly disagree. The results of this section in terms of central tendencies are summarized in Table 2. Because it was felt that there might be differences between board-certified and noncertified respondents, the average scores were computed for the two groups separately and listed in Table 2 as averages on the five-point scale (1 = strongly agree; 5 = strongly disagree). The wording of the statements is such that agreement suggests satisfaction with the process; disagreements indicate lack of satisfaction. The lower the numerical score, the greater was the group's satisfaction with the process.

Inspection of Table 2 reveals several interesting outcomes. Not surprisingly, the board-certified group indicated greater general satisfaction than the nonboarded group. The difference was consistent on all nine issues. A *t*-test computed for the smallest mean difference — item 4 (“The process is equitable”) — resulted in a *t* value of 3.90 which is statistically significant beyond the 0.01 level. Since the differences between the two group means are even greater on the other eight items, the trend is clear: pediatric dentists who are not board certified generally hold less favorable views of the process than those who are. Of this group of issues, the one which produced the highest degree of agreement from both groups was the statement, “The criteria for certification are stated clearly.” On the other hand, the most heavily criticized item was number 9: “I believe the membership has adequate input into the certification process.”

Table 2A (next page) includes the numbers of responses tallied by boarded

and nonboarded respondents for each column of the five-point scale. It is included to provide a more detailed description of the sentiments expressed than can be determined by mere inspection of means. While the means — because they measure central tendency — tend to hover around 3.0 (or neutral), data in Table 2A show that the neutral category was not the one most frequently selected (i.e., the responses tended more often to reflect favor or disfavor rather than apathy).

### Evaluations of Individual Components

Following the general issues described above, the survey requested evaluative comments about each of the five components of the certification process. For each one, respondents were asked to rate three attributes of the section, reliability (accuracy), validity, and practicality/fairness. The five-point Likert scale was used in each of the resulting 15 items. To facilitate comparisons among these components, the ratings on each of the three attributes are presented together. Tables 3–5 (pages 79–80) summarize the ratings of each component of the certification process with regard to its perceived reliability, validity, and practicality/fairness, respectively. As in the previous table, the scores given by boarded and nonboarded respondents are presented separately along with the overall average score. Tables 3A–5A present frequency tallies which again reveal the range of opinions expressed by each group.

**Table 2. Mean ratings of general board certification issues by boarded and nonboarded respondents (1 = Strongly agree; 5 = Strongly disagree)**

	Average Scores		
	Boarded	Combined Average	Nonboarded
1. The process produces reliable (accurate) test results.	2.32	2.96	3.40
2. The tests are valid (measure ability).	2.46	3.03	3.43
3. The criteria for certification are clearly stated.	1.57	2.09	2.45
4. The process is equitable for every member of the academy.	2.52	2.97	3.30
5. The underlying purpose of the certification process is clear to me.	1.85	2.60	3.14
6. I understand the relationship between the academy and the board.	1.92	2.38	2.71
7. I believe the current academy/board relationship works well	2.14	2.61	2.96
8. I believe the membership has adequate access to the board.	2.19	2.75	3.15
9. I believe the membership has adequate input into the certification process.	2.79	3.42	3.88

**Table 2A. Frequency counts of responses to items 1–9 by boarded and nonboarded respondents (1 = Strongly agree; 5 = Strongly disagree)**

		<i>S. Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>S. Disagree</i>
1. The process produces reliable (accurate) test results. BD 53 + NB 76 = 129	BD	5	31	13	3	1
	NB	1	15	25	23	12
2. The tests are valid (measure ability). BD 52 + NB 75 = 127	BD	4	28	13	6	1
	NB	3	16	18	22	16
3. The criteria for certification are clearly stated. BD 53 + NB 76 = 129	BD	27	23	2	1	0
	NB	10	38	14	12	2
4. The process is equitable for every member of the academy. BD 52 + NB 74 = 126	BD	7	26	5	13	1
	NB	4	18	16	24	12
5. The underlying purpose of the certification process is clear to me. BD 53 + NB 75 = 128	BD	18	28	4	3	0
	NB	1	25	21	18	10
6. I understand the relationship between the academy and the board. BD 52 + NB 73 = 125	BD	20	21	6	5	0
	NB	11	24	17	17	4
7. I believe the current academy/board relationship works well. BD 52 + NB 70 = 122	BD	9	29	12	2	0
	NB	4	16	34	11	5
8. I believe the membership has adequate access to the board. BD 52 + NB 73 = 125	BD	9	29	9	5	0
	NB	3	18	28	13	11
9. I believe the membership has adequate input into the certification process. BD 52 + NB 72 = 124	BD	3	19	18	10	2
	NB	1	5	15	32	19

BD = Boarded respondents, NB = Nonboarded respondents

### Reliability Ratings

Table 3 summarizes the extent to which each component was judged to be a reliable, i.e., an accurate measure. Inspection of the table reveals that, here again, the boarded respondents produced more favorable evaluations than did their nonboarded colleagues. A *t*-test computed for the smallest difference between their scores — the rating of the Written Section — was 3.82, significant beyond the 0.01 level. Therefore, here again, every difference between the two groups was statistically reliable well beyond the chance level.

Table 3 also reveals a clear trend toward less confidence in reliability as one looks down the list from Written Section to Simulation. Both Written and Oral Sections clearly enjoyed better reliability ratings than the other three components. The lowest rating of all was given by the nonboarded respondents to the Site Visit.

### Validity Ratings

Ratings of the validity of each component, i.e., the extent to which it truly measures ability, are summa-

rized in Table 4. The patterns of ratings of validity are similar to those of the ratings of reliability: boarded members' ratings are consistently more favorable, and the Written and Oral Sections are rated more favorably overall than the other three components. Here again, the nonboarded members appeared most critical of the Site Visit, rating its validity far below that of the boarded group. A *t*-test computed for the smallest difference between the scores of the two groups — the rating of the simulation process — was 3.50, significant beyond the 0.01 level. Therefore again, every difference between the two groups was statistically reliable well beyond the chance level.

### Ratings of Practicality, Usefulness, and Fairness

Table 5 contains the results of the third attribute on which each component was rated: practicality, usefulness, and fairness. The pattern of ratings here is quite consistent with that shown in Tables 3 and 4. Here again, the Written and Oral sections received better ratings than the other components. Interestingly, the Oral Section seemed slightly preferred, in this regard,

over the Written. The least favorable rating of the entire set was given to the Site Visit by the nonboarded group. A *t*-test computed for the smallest difference between the scores for the two groups — the rating of the Written Section — was 2.85, significant beyond the 0.01 level.

### Comments

Throughout the questionnaire, respondents were encouraged to explain their views with written comments. In all, our respondents wrote 321 comments; some were brief, many quite detailed. Forty-six comments were specific to the Written Section, 30 were directed toward the Oral Section, 53 toward the Case History Process, 72 toward the Site Visit, and 38 toward the Simulation Process. Most of the comments could be described as constructively critical. The Case History and Site Visit procedures stimulated the largest number of criticisms. The numbers and detail of comments written by our respondents suggested great interest in these issues.

**Table 3. Reliability ratings for each component of the certification process (1 = Highest reliability; 5 = Lowest reliability)**

Component	Average Scores		
	Boarded Samples	Overall Sample	Nonboarded Sample
Written examination	1.79	2.17	2.44
Oral examination	1.80	2.26	2.61
Case History process	2.45	2.94	3.33
Site Visit process	2.27	3.04	3.66
Simulation process	2.68	3.13	3.41

**Table 3A. Frequency counts of responses to reliability ratings for each component of the certification process**

I believe it is reliable (accurate).		Frequency Counts				
		S. Agree	Agree	Neutral	Disagree	S. Disagree
Written examination BD 53 + NB 73 = 126	BD	18	30	3	2	0
	NB	12	34	15	7	5
Oral examination BD 53 + NB 68 = 121	BD	19	29	1	4	0
	NB	9	24	23	9	3
Case History process BD 53 + NB 67 = 120	BD	11	23	8	6	5
	NB	3	13	20	21	10
Site Visit process BD 51 + NB 64 = 115	BD	16	18	8	5	4
	NB	3	6	19	18	18
Simulation Process BD 38 + NB 61 = 99	BD	3	11	21	1	2
	NB	3	4	33	7	14

BD = Boarded respondents, NB = Nonboarded respondents

### Discussion

The mix of respondents relative to their board certification status deserves discussion. While only 17.4% of pediatric dentists are board certified, the percentage of individuals comprising the board certified respondent group was more than twice that, at 39%. This obviously results in a population of respondents skewed toward the opinions of those who have completed the process of certification. One might expect then that the results of the survey would be skewed toward a response more favorable to the certification process. While boarded respondents were indeed more favorable in their ratings, they were by no means uncritical as a group.

The experiences of the nonboarded respondents in this survey with the certification process do not appear to be representative of all nonboarded persons. According to the available data, most of those who begin the examination and drop out before completion do so following the Written Section.<sup>3</sup> Here again, responses tended to come from those dentists who had had more experience with the examination process. Moreover, they tended to reply in greater numbers to those parts with which they had had experience (see Tables 3A-5A). Of the 61 individuals who reported having taken the written portion, 12 had been out of their training programs three years or less, and thus were ineligible or had just become eligible to go further with the process. Thus, of the 49 remaining individuals eligible to complete the process, 30 (61%) had gone on to take the oral exam. It appears that even the population of nonboarded respondents is skewed toward individuals who have had greater experience with the certification process. The real drop-off in this group appeared to occur following the Oral Exam and before the Case Histories,

where only nine individuals (30%) reported having attempted the third portion. The survey data about individual sections supports this trend in that the Written and Oral Sections were viewed consistently to be more reliable, valid, practical, useful, and fair by both boarded and nonboarded respondents. The Case History section was viewed the least valid by even the boarded respondents and certainly deserves a close evaluation to determine if and why it may be perceived as a roadblock to completing the certification process.

**Table 4. Validity ratings for each component of the certification process (1 = High; 5 = Low)**

Component	Average Scores		
	Boarded Samples	Overall Sample	Nonboarded Sample
Written examination	2.30	2.72	3.03
Oral examination	1.94	2.81	2.94
Case History process	2.53	3.11	3.58
Site Visit process	2.31	3.08	3.69
Simulation process	2.84	3.25	3.50

**Table 4A. Frequency counts of responses to validity ratings for each component of the certification process**

I believe it is valid (measures ability).		Frequency Counts				
		S. Agree	Agree	Neutral	Disagree	S. Disagree
Written examination BD 53 + NB 72 = 125	BD	11	27	6	6	3
	NB	8	20	16	18	10
Oral examination BD 53 + NB 68 = 121	BD	16	31	0	5	1
	NB	9	21	20	10	8
Case History process BD 53 + NB 66 = 119	BD	11	20	9	9	4
	NB	3	7	20	21	15
Site Visit process BD 51 + NB 64 = 115	BD	18	14	7	9	3
	NB	3	7	16	19	19
Simulation process BD 37 + NB 62 = 99	BD	1	10	22	2	2
	NB	3	4	28	13	14

BD = Boarded respondents, NB = Nonboarded respondents

Many pediatric dentists take the Written Section at the completion of their training programs because of encouragement by the program directors. However, they may not have developed an agenda for completion of the remaining sections. Perhaps program directors should assist candidates in developing a plan for completing the exam following graduation.

The nonboarded respondents were generally more negative about all areas of the certification process than the boarded members. One hears the advice, "...take the exam and get on the other side so people will take your criticisms seriously." That is, there appears to be a tendency to disallow the comments of the nonboarded pediatric dentists, since they have not completed the process. However, it is important to recognize that some pediatric dentists who may not have begun or completed the process may not have done so because of the issues raised. Since they are the very group to be reached — the ones who have dropped out — their opinions should be considered if increased numbers of board certified pediatric dentists is the goal.

As for the individual sections of the examination, clearly the Written and Oral sections were viewed more positively by all respondents for all areas evaluated. Perhaps these sections seem to be less subjectively evaluated than the Case History or Site Visit sections. The newest section of the board, the Simulation Process, received the lowest ratings for all attributes by the boarded respondents. Additionally, the comments section indicated that many people are not familiar with this new section. The number of responses was the smallest for this section, suggesting that people are not willing to comment on a section with which they have not had experience and may not be familiar.

One area of disagreement among respondents concerned the perceived purpose of the certification process. When the survey document was developed, the terms "excellence" and "competence" were identified as choices. Competence was chosen because it is the term used in the brochure published by the American Board of Pediatric Dentistry.<sup>4</sup> The term excellence, though not defined, was chosen because it appears to represent a level beyond competency. The investigators sought to determine whether differences existed

between the individual's perceptions about what the board actually measured and what the individuals believed the board *should* measure, as well as to determine whether there was unanimity among individuals concerning the purpose of the process.

Interestingly, nearly one-third of the respondents either did not answer the question or did not think

**Table 5. Ratings of each component of the certification process on practicality, usefulness, and fairness (1 = High; 5 = Low)**

Component	Average Scores		
	Boarded Samples	Overall Sample	Nonboarded Sample
Written examination	2.28	2.61	2.85
Oral examination	1.74	2.33	2.79
Case History process	2.42	3.04	3.55
Site Visit process	2.49	3.29	3.90
Simulation process	2.76	3.29	3.61

**Table 5A. Frequency counts of responses to practicality, usefulness, and fairness ratings for each component of the certification process**

<i>I believe it is practical, useful, and fair.</i>		Frequency Counts				
		<i>S. Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>S. Disagree</i>
Written examination BD 53 + NB 74 = 127	BD	11	27	6	7	2
	NB	7	25	21	14	7
Oral examination BD 53 + NB 68 = 121	BD	19	30	3	1	0
	NB	10	19	22	9	8
Case History process BD 53 + NB 66 = 119	BD	13	22	6	7	5
	NB	3	7	22	19	15
Site Visit process BD 51 + NB 67 = 118	BD	15	15	8	7	6
	NB	3	3	15	23	23
Simulation process BD 37 + NB 62 = 99	BD	2	11	20	2	2
	NB	1	3	31	11	16

BD = Boarded respondents, NB = Nonboarded respondents

either choice appropriate. Those who chose to answer that section were approximately evenly divided between competence and excellence as purposes, appearing to validate the concern perceived by the investigators that there is a lack of understanding and consensus concerning the purpose of the examination process. This is an important issue because the two purposes hold very different connotations. Excellence may imply that not all educationally qualified persons would be expected to attain board certification. Only those who were deemed to have achieved a level of excellence would be boarded. This approach would require the development of a ceiling on the number of board-certified individuals one could expect, and it sounds elitist. Another problem created by this difference in view of the purpose of the exam is that it could lead to pass-fail disagreement among examiners.

The other purpose, to measure competence, implies that all educationally qualified individuals would be expected to be able to achieve board certification. Currently, hospital credentialing committees use board certification status to determine eligibility for hospital staff privileges. In addition, some state specialty boards use it as a requirement for specialty licensure. Licensure

exams, by law, must measure competency. A licensure exam that excluded the merely competent would be considered in restraint of free trade. The fact that opinion shifted toward "competence" when respondents were asked what the purpose should be was taken to imply that they were opposed to the more restrictive view of the purpose of the certification process.

The board was undergoing major revisions which had not been released at the time this report was being

prepared. These planned revisions may answer many of the areas of concern identified in this survey. The results of this survey may serve as useful background information for the changes currently underway.

## Conclusions

1. Nonboarded respondents were significantly more critical of the process on every item, without exception. All differences exceeded the 0.01 level.
2. The Written and Oral sections were viewed more favorably than the Case History, Site Visit, and Simulation sections.

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# Attitudes of program directors toward women in pediatric dentistry training programs

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## Abstract

*The number of women entering pediatric dentistry graduate programs is increasing. A formal survey was conducted in the fall of 1990 to determine what impact, if any, this increase is having on the programs. The survey sample consisted of the 57 pediatric dentistry graduate program directors from the United States and Canada. The survey form included program data about gender distribution in the current and previous classes, and female faculty distribution within the programs. The survey requested information about the attitudes of various groups of individuals who interacted with the residents relative to the gender of the resident and again, relative to whether the resident was pregnant. Inquiry was made concerning maternity leave policies and selected treatment scenarios involving pregnant residents. Finally, questions were asked about motivational factors, personal priorities, and policy change for female vs. male residents. Fifty forms were returned for a return rate of 88%. The 48 forms analyzed revealed that 52% of current classes are female and 51% of applicants for 1991 were female. Women comprise 23% of full-time and 26% of part-time faculty. There was no single issue perceived by program directors as a group to be a significant concern or problem relating to gender. Program directors would consider removing pregnant females from contact with combative patients (83%) and environmental hazards (85%), but fewer would consider removing them from contact with for HIV+ or Hb+ patients. (Pediatr Dent 14:105-9, 1992)*

## Introduction

Pediatric dentistry is attracting increasing numbers of women. Recent data indicate that 51% of the entering classes in advanced training pediatric dentistry programs for 1991 are female, compared to about 25% in 1981.<sup>1</sup> There are approximately 4500 pediatric dentists in the United States, of whom nearly 550 are female. On average, for all dental specialties, one fourth of the positions in 1990-91 were filled by women. Women accounted for 51% of the positions in pediatric dentistry, 43% in oral pathology, and 37% in dental public health. Oral and maxillofacial surgery programs had the least women (5%). Periodontics, prosthodontics, endodontics, and orthodontics all had approximately 21% of positions filled by women.<sup>2</sup>

The large number of women entering pediatric specialties is not unique to dentistry. In medicine, pediatrics also has seen a dramatic increase in the number of women. According to DeAngelis, 65% of pediatric residents are women, compared to only 4% of surgical residents.<sup>3</sup> Numerous articles address women in pediatric medicine and many discuss pediatric residency programs. These articles include topics such as pregnancy during residency, lack of female academic role models, child care concerns, salary inequities, and participation in medical specialty societies.<sup>4-10</sup>

More women are becoming pediatric dentists, but little information describes them as a group or identifies areas of specific interest or concern. Some information is available concerning female nonspecialists. Sur-

veys in the 1980s by Niessen et al., Price, Dolan and Lewis, and Waldman examined the practice characteristics of women dentists, their job satisfaction, and other related issues, and suggest differences in career and practice patterns between men and women.<sup>11-14</sup>

Pediatric dentistry training programs historically have been predominantly male, so increases in women entering programs have the potential effect of changing the programs. These changes may be related directly to the program, its requirements, and environment, or they may be related to plans for future career opportunities. A survey was mailed to all pediatric dentistry program directors to solicit their opinions regarding the effects on programs, if any, of increasing numbers of women entering the specialty.

## Materials and Methods

The program directors of 57 graduate programs in pediatric dentistry in the United States and Canada were mailed a questionnaire designed to collect their opinions about the impact of increasing numbers of women residents on their advanced training programs. The instrument was divided into two main sections. The first section was designed to determine the history of the program with respect to female residents and faculty, and included questions about the total number of current residents, the number of current female residents, the percentage of residents completing the program in the past five years who were female, and the



date of acceptance of the program's first female. Inquiries about gender distribution of full- and part-time faculty also were included. The second section requested perceptions of program directors about attitudes of various groups who interacted with the residents relative first to the gender of the resident, and second, to whether the resident was pregnant. Also included were questions concerning maternity leave policies, patient treatment scenarios involving pregnant residents, availability of child care, and any program modifications available or planned to accommodate residents with children. Program directors were asked their perceptions of general issues, such as motivational factors and personal priorities of male and female residents, and the need to create policy changes for female residents. The questionnaires, along with return-address envelopes, were mailed to all directors.

The results were tabulated and reported as frequency of responses using a computer utility program which scans frequencies.

## Results

Fifty forms were returned for a return rate of 88%. Forty-eight forms were completed sufficiently to be analyzed.

### Program Data

The program data provided by the respondents indicated that most program directors (43 of 48) are male. There are currently 291 residents attending the 48 programs, of whom 52% (152) are female. Only three programs reported no women in the current classes. The total number of residents completing programs in the past five years, for the 48 programs which reported, was 635, of whom 42% (265) were female. Only three programs reported no women completing within the past five years. The 42 programs which responded to the question regarding total number of applicants for 1990 reported a total of 1249 applications, of whom 51% (636) were female. Eighty-three per cent of program directors reported that applications from women have been increasing for the past five years, while the remainder felt the number was the same.

Full-time faculty composition by gender is 23% female (46 of 200), with 48% (23 of 48) of programs reporting no full-time female faculty. Fifteen programs had one female full-time faculty member, four had two, and six had three or more. Part-time faculty composition was 26% female (79 of 309), and 14 programs reported no part-time female faculty. Ten reported one part-time female faculty member, 15 reported two, and nine reported three or more. Fifteen per cent (7) of programs reported no female faculty members, either full- or part-time.

The year of acceptance of the first woman into the graduate program ranged from 1950, when the first woman was accepted, to 1991 when one program accepted its first woman resident, with a cluster from 1970 to 1981, when 26 programs accepted their first women residents.

### Survey Information

When asked to rate their perceptions of the attitudes of various groups of individuals who interact with the residents, most program directors felt that there were no differences in attitudes of parents, patients, faculty, or other departments toward male or female residents. However, the attitudes of staff were slightly less clear, with a smaller majority (73%) of the respondents reporting no difference. The staff favoritism perceived to be shown by gender was directed evenly toward males and females (14%). These results are summarized in Fig 1.

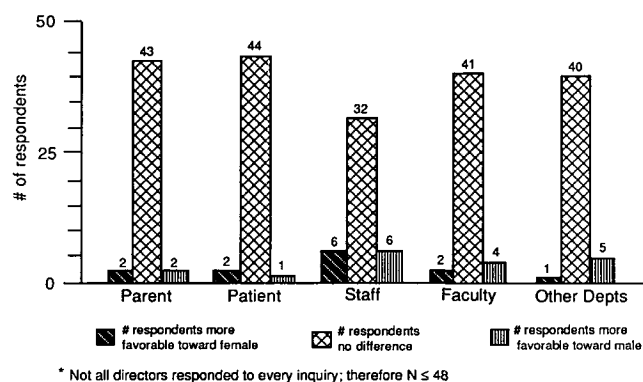
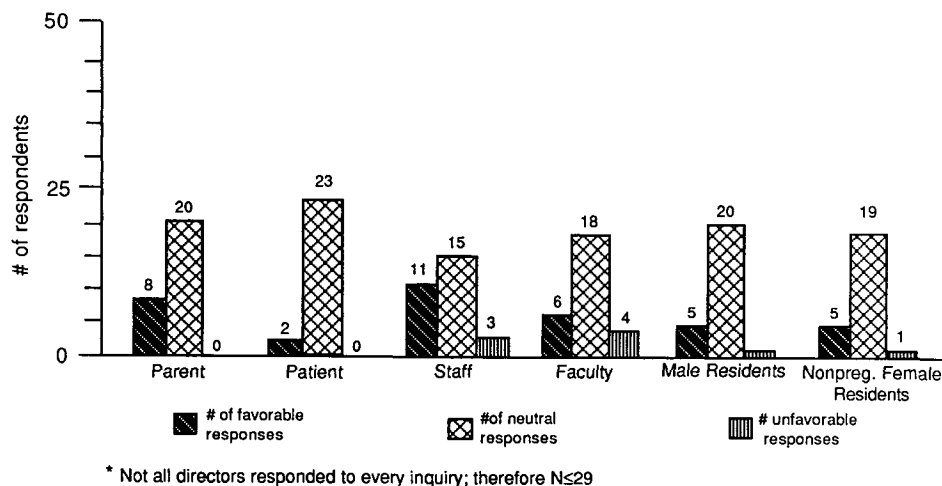


Fig 1. Attitudes of groups of individuals who interact with residents (N ≤ 48).

In the next section of the survey form, respondents expressed their opinions about a number of issues associated with pregnant residents. Sixty-two per cent (29) of the program directors reported having had a pregnant resident attend their program. These 29 respondents were asked to rate their perceptions of the attitudes of others toward the pregnant resident as favorable, neutral, and unfavorable. Parent and patient attitudes were viewed to be either favorable (29%) or neutral (71%) while staff and faculty attitudes were viewed to be neutral considerably less often (52 and 64%, respectively). Staff were more likely to be favorable and faculty were divided evenly between favorable and negative when they were not neutral. These results are summarized in Fig 2 (next page).

Program directors' responses revealed that 22 programs have formal written maternity leave policies, 14 have an informal (spoken) policy, and 12 have none. Twenty-four program directors reported that the policy is explained routinely to all students. The manner of presentation most often cited was an orientation, while



\* Not all directors responded to every inquiry; therefore N ≤ 29

Fig 2. Attitudes of groups of individuals who interact with pregnant residents (N ≤ 29).

Table. Maternity leave policy

	Number of Programs N = 48
Written policy	22 (46%)
Informal spoken policy	14 (29)
No maternity leave policy	12 (25)
It is routinely explained to all students	24 (50)
Applied equally to men and women	7 (15%)

others explained the policy as the need arose. The policies were applied equally to men and women in only seven of the programs (Table). Twenty-one programs had a specific amount of time designated strictly for maternity leave, and the time periods ranged from two to 24 weeks, with the most often offered being six weeks.

Fig 3 illustrates how program directors handled the issue of a pregnant resident asking not to be exposed to certain situations. Concerning the issue of contact with a combative patient, 24 said they would honor the resident's wishes, six said no allowances would be made, and 13 reported that they would consider the request depending on circumstances. When the issue of treatment of an HIV patient was discussed, 22 said they would not force the resident to see the patient, 19 said the resident would not be excused, and one said it would depend on the circumstance. The same question was asked for treatment of a hepatitis patient; 21 responded that they would honor the resident's request, while 22 said she would have to treat the patient using proper precautions.

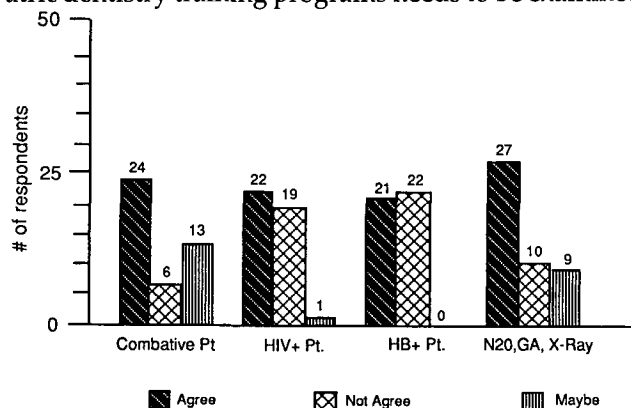
The issue of environmental hazards was presented, specifically with respect to nitrous oxide, general anes-

thesia, and X-ray exposure. Twenty-seven said they would honor the resident's request, 10 felt the hazards were controlled and they would not excuse the resident, and nine said it would depend on the trimester or health of the pregnancy. Three program directors cited additional issues of concern for the pregnant resident, specifically emergency call during the last trimester and "modifications recommended by the obstetrician." A number of directors stated that leave could be granted as

needed, but would have to be made up at the end of the program.

Directors were asked about program modifications in place or plans to accommodate residents with children. On-site child care was available in 13 programs, seven were considering it, and 24 were not considering it. Part-time positions were available in five programs, one was considering it and 41 were not considering it. Students enrolled on a part-time basis must be enrolled continuously and must complete the total curriculum in a period of time not to exceed twice the duration of the program for full-time students, to be in accordance with the guidelines for the American Dental Association Commission on Dental Accreditation.<sup>15</sup>

In the last section of the survey, program directors were asked to rate certain statements concerning gender issues in their programs on a five-point scale from strongly agree (1) to strongly disagree (5). When asked whether the increase in the number of women in pediatric dentistry training programs needs to be examined



\* Not all directors responded to every inquiry; therefore N ≤ 48

Fig 3. Program directors' response to pregnant resident's request not to be exposed (N ≤ 48).

for the impact, 25 strongly agreed or agreed, 10 were neutral, and nine disagreed or strongly disagreed. The question of safety, with respect to night calls, parking, etc. elicited the following responses: 19 strongly agreed or agreed, 10 were neutral, and 16 disagreed or strongly disagreed with the need for changes in or special policies for females. The question of the need for a change in dress codes produced the following: five strongly agreed or agreed, 18 were neutral, and 22 disagreed or strongly disagreed. Queries concerning whether male and female residents seem to have different personal priorities upon entering the program resulted in 14 directors who strongly agreed or agreed, 11 who were neutral, and 20 who disagreed or strongly disagreed. When the statement was made, "motivation factors between male and female residents appear to be different," the respondents replied as follows: 12 strongly agreed or agreed, 11 were neutral, and 23 disagreed or strongly disagreed. Respondents were asked whether female residents look to female faculty members as role models; 10 agreed that they do, 13 were neutral, and 16 said that they do not. Seven programs reported no female role models. When presented with the final statement in general terms, "the support staff treat the male and female residents the same," 27 felt they did, six did not have an opinion, and 12 felt they did not.

## Discussion

The results of this survey indicate increasing numbers of women in pediatric dentistry graduate programs. The data indicate a continuing increase in women entering the specialty, with 42% of graduates in the past five years, and 51% of the current class and applicant pool, being female.

It is interesting that 40% of the program directors do not believe that female residents look to female faculty as role models. This response may result from the lack of female role models, since most program directors (90%) are male, only 25% of the faculty are female, and fully 48% of the programs have no full-time female faculty. The lack of female role models is borne out in a survey of female pediatric dentists' experiences during their advanced training programs, in which a number of respondents replied that more female role models were needed.<sup>16</sup> These findings are also consistent with the medical literature.<sup>7, 8</sup>

A trend toward more differences in perceptions by staff and faculty of residents by gender agrees with the responses in the survey by Barr et al.<sup>16</sup> Their respondents reported that staff viewed them less favorably than they viewed male residents. Interestingly, the perception of the program directors in this study was that staff favoritism was divided evenly between male and female residents, while the female dentists in the Barr et al. study perceived more staff favoritism toward their

male colleagues.<sup>16</sup> Perceptions of the pregnant resident by the faculty and staff also were interesting. The faculty were the most likely to view the pregnant resident negatively, and they may have done so because the need to remove the pregnant resident from certain patient treatment situations caused a hardship for her fellow residents. The amount of concern voiced by the respondents in the survey by Barr et al. that their pregnancies not cause increased work for others would support the idea that this issue is certainly of concern to many of those involved.<sup>16</sup>

The number of programs without formal maternity leave policies is surprising, but in keeping with the findings of Barr et al.<sup>16</sup> One of the most frequently cited issues in their survey concerning pregnancy and maternity leave was a desire on the part of the respondents that policies be formal, announced in advance, and applied equally to men and women.

The patient treatment scenarios offered a variety of responses. Program directors are more likely to honor resident requests not to be exposed to combative patients than HIV and hepatitis patients. Several program directors commented that women should not be in pediatric dentistry if they request to be removed from any of these hazards while pregnant. Concern about hazards to the pregnant resident was mentioned in many of the survey comments from female pediatric dentists in Barr et al.<sup>16</sup> It appears that there is considerable concern from women in the profession for the program directors to determine the hazards relative to pregnancy, and to develop factual, sound policies concerning their potential risks if exposed during pregnancy.

The most disagreement between this study and that of Barr et al. was in the area of safety for the female resident.<sup>16</sup> According to Barr et al., women feel that safety issues need attention, yet 36% of the program directors disagreed that women's increased involvement in the programs had created a need for policies concerning safety, while another 22% were neutral on the issue.<sup>16</sup> Program directors and female residents appear to differ in their concern for safety.

In summary, it should be remembered that these results represent the perceptions of a predominantly male group of program directors. It is unclear if the perceptions reported accurately portray the actual situations. Collaborative survey or direct observation of programs would be beneficial to validate these perceptions.

## Conclusions

1. Women constitute slightly more than 50% of the current class and applicants in pediatric dentistry.

2. No single issue was perceived by program directors as a group to be a significant concern or problem relating to gender.

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## More research needed concerning women and AIDS

More research should be conducted on the course of AIDS in women, according to an article that appeared in the *Journal of the American Medical Association*. Currently, little is known about the natural course of HIV infection in women. Howard L. Minkoff and Jack A. DeHovitz, MD, MPH, both of the State University of New York Health Science Center at Brooklyn and the authors of this study, indicated that increasing numbers of HIV-infected women and the possible interaction of gender and infection have created a need for guidelines for the care of HIV-infected women.

The article summarized current knowledge about the relationship in women between HIV and contraception, obstetric care, nongynecologic opportunistic infections and drug therapy." The authors advocated an interactive, innovative approach to women's health care. "To provide women with the best possible care, clinicians must adhere rigorously to standards, researchers should facilitate women's entry into clinical trials, and public policy must reflect a societal belief in the equality of individuals independent of their childbearing capacity," they noted.