

Attitude Toward Pedodontic Specialty Education: A Survey of Pedodontists

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Abstract

The attitude of pedodontists toward their specialty education was surveyed and correlated by program setting: hospital certificate, university certificate, and university degree. The 183 respondents indicated the degree of satisfaction perceived toward multiple pedodontic topics. Positive satisfaction levels were indicated for the composite questionnaire analysis and in topics related to behavior management, restorative dentistry, pulp therapy, traumatic injury, and interceptive orthodontics. Reduced satisfaction levels were indicated for each program type in prevention/patient education and sedation. University degree pedodontists indicated satisfaction levels significantly below ($p \leq .001$) both certificate groups in hospital dentistry, dentistry for the special child, and sedation. Hospital certificate group satisfaction levels were significantly lower ($p \leq .001$) than university degree respondents in the area of academic dentistry.

Introduction

Pedodontic specialty education programs are based in hospital certificate, university certificate, and university degree settings.¹ A basic curriculum and instruction level broadly representative of the specialty is required in each setting.^{1,2} In a 1967 survey by Bennett and coworkers,³ pedodontists indicated "too little" instruction during their training in orthodontics, dentistry for the handicapped, general anesthesia, premedication, research experience, treatment planning and patient education. The study concentrated on

conceptions of an ideal graduate program and provided no comparisons between program settings. The purpose of this study was to establish a data-based analysis of pedodontists' attitudes toward their specialty education and to determine how those perceptions differ by program setting.

Data-based attitudinal surveys provide quantitative and qualitative information of performance by the determination of correlation magnitudes between variables.^{4,5} Attitudinal surveys account for a substantial portion of educational research,⁶ and have been frequently used in dental education.^{3,7-14} While not useful as a direct measure of cause and effect, the data can be used as a comparative basis for self-analysis and future planning.¹⁵

Methods and Materials

A questionnaire (Figure 1) was mailed to 296 pedodontists who completed specialty training between 1972 and 1977. An introductory letter, survey instructions, and self-addressed return envelope were enclosed. Requested biographical information consisted of program type attended, year completed, and career orientation after training.

A 5-point Likert-type attitude scale with bipolar descriptors^{4,16} was used to indicate the degree of satisfaction perceived toward inquiry areas developed from guidelines for specialty education prepared by the American Academy of Pedodontics.¹ Major topic areas were prevention/patient education, behavior management, restorative dentistry, pulp therapy, traumatic injury, interceptive orthodontics, dentistry for

Questionnaire

Directions: For each of the following statements, the respondent indicated the degree of satisfaction felt toward his experiences during pedodontic specialty education.

Key: Highly satisfied	5	
Mildly satisfied	4	2. Techniques of guidance of eruption
Neutral	3	3. Cephalometric analysis
Mildly dissatisfied	2	4. Correction of ectopic eruptions
Highly dissatisfied	1	5. Minor tooth movement with fixed appliances
		6. Crossbite diagnosis and correction

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| <p>I. Ability to educate and counsel the child and parent to accept and maintain optimum oral health care through:</p> <ol style="list-style-type: none"> 1. Use of audiovisual aids 2. Treatment plan presentation 3. Rationale of plaque control 4. Design of a preventive program 5. Fluoride supplementation <p>II. Ability to guide the behavior of the child to accept oral health care utilizing the following skills or knowledge:</p> <ol style="list-style-type: none"> 1. Voice control 2. Hand-over-mouth exercise 3. Restraints 4. Positive reinforcement 5. Basic child psychology <p>III. Mastery of restorative procedures required during the growth period from birth to adolescence:</p> <ol style="list-style-type: none"> 1. Stainless steel crowns 2. Polycarbonate crowns 3. Class II alloys on deciduous teeth 4. Acid-etch resin techniques 5. Properties of resin materials 6. Radiographic diagnosis <p>IV. Skill in the diagnosis and treatment of primary and young permanent teeth whose pulpal vitality is in jeopardy:</p> <ol style="list-style-type: none"> 1. Indirect pulp therapy 2. Formocresol pulpotomy 3. Complete pulpectomy 4. Sargenti technique 5. Apexification techniques <p>V. Skill and knowledge in the care of traumatic injuries:</p> <ol style="list-style-type: none"> 1. Techniques and rationale of splinting 2. Timing and care in replantation of avulsed teeth 3. Treatment approach to middle-third root fractures <p>VI. Ability to diagnose and treat developing occlusion utilizing interceptive procedures until final development of the permanent dentition:</p> <ol style="list-style-type: none"> 1. Removable appliances | <p>VII. Knowledge and ability to render competent oral care for the special child with pediatric or medical considerations:</p> <ol style="list-style-type: none"> 1. Diagnosis and treatment of herpetic and aphthous ulcerations 2. Diagnosis of communicable childhood diseases 3. Precautions in positive cardiovascular histories 4. Hemophilia—dental approach to treatment 5. Juvenile diabetes—dental approach to treatment 6. Epilepsy and dental treatment 7. Deaf and/or blind patients 8. Cerebral palsy patients 9. Mentally retarded patients 10. Down's syndrome patients <p>VIII. Knowledge and competency in the utilization of pharmacologic methods of patient management in pediatric dentistry:</p> <ol style="list-style-type: none"> 1. Oral sedation 2. Biomedical aspects of narcotics 3. Intramuscular sedation techniques 4. Intravenous sedation techniques 5. Emergency drugs and techniques <p>IX. Ability and knowledge in hospital oral health care:</p> <ol style="list-style-type: none"> 1. Biomedical aspects of general anesthetics 2. Knowledge of hospital protocol 3. Experience in administering general anesthesia 4. Operating room experience as dental operator <p>X. Knowledge and experience in academic pedodontics:</p> <ol style="list-style-type: none"> 1. Ability to evaluate literature 2. Teaching experience in didactic and clinical environment 3. Developing and conducting experimental and/or clinical research 4. Working knowledge of basic pedodontic literature |
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TABLE 1. Population data according to program setting, year completed, career orientation, and response rate of surveyed pedodontists.

	<i>Educational Setting</i>			
	Hospital Certificate N = 59	University Certificate N = 60	University Degree N = 64	Total N = 183
A. Year Completed				
1972	4	1	4	9 (4.9%)
1973	2	5	4	11 (6.0%)
1974	17	17	17	51 (27.9%)
1975	12	12	12	36 (19.7%)
1976	19	20	26	65 (35.5%)
1977	5	5	1	11 (6.0%)
B. Career Orientation				
Private practice	30	25	21	76 (41.5%)
Fulltime academics	0	6	7	13 (7.1%)
Practice/academics	24	22	23	69 (37.7%)
Military	3	6	11	20 (10.9%)
Other	2	1	2	5 (2.7%)
C. Response Rate				
Questionnaires mailed	296			
Questionnaires returned	226 (76.4%)			
Usable questionnaires*	183 (61.8%)			

* Automatically eliminated if not completed exactly to instructions.

the special child, sedation, hospital dentistry, and academic dentistry.

Statistical methods incorporated were analysis of variance, multiple range tests, and Pierson Correlation Coefficients. The 95% confidence interval for the composite mean was used as a measure of variability in the level of satisfaction.^{17,18} In assessing correlation magnitudes between variables, the $p \leq .001$ significance level was utilized to reduce the possibility of chance findings given the large number of correlations.^{4,17,18}

Results

Of 226 returned questionnaires, 43 not completed exactly to instructions were eliminated from analysis.^{4,5} The final population of 183 pedodontists (61.8% of original) were distributed in approximately equal thirds by program setting (Table 1). Career orientation found 79.2% choosing private practice either exclusively or in combination with academics. The remaining pedodontists chose military service (10.9%), fulltime academics (7.1%), or other career options (2.7%).

The pedodontists indicated an overall positive degree of satisfaction for the composite questionnaire analysis (Mean = $4.10 \pm .52$). No significant difference between program settings was found in the composite analysis (Table 2).

Topic analysis indicated a positive degree of satisfaction towards behavior management, restorative dentistry, pulp therapy, traumatic injury, and interceptive orthodontics for each group (Table 3). The program types exhibited no significant differences in these topics.

The pedodontists, regardless of program type, indicated a reduced satisfaction level in the prevention/patient education inquiry area (Mean = $3.72 \pm .86$). Items reflecting the reduced satisfaction were the use of audiovisual aids, treatment plan presentation, and design of a preventive program. No significant differences between program types were found concerning the topic.

In the area of sedation, a reduced level of satisfaction was indicated regardless of program type (Mean = 3.33 ± 1.04). Items concerning oral sedation, biomedical aspects of narcotics, intramuscular sedation, intravenous sedation, and emergency drugs exhibited the lower satisfaction levels. Within the sedation topic, university degree pedodontists indicated significantly lower satisfaction levels than either certificate group.

University degree respondents indicated significantly lower degrees of satisfaction than both certificate groups in topics related to hospital dentistry and treatment of the special child. Inquiry items pertaining to hospital protocol, general anesthesia and operating room experience, and management of hemo-

TABLE 2. Composite analysis of the degree of satisfaction perceived by pedodontists toward specialty education experiences. By analysis of variance and multiple range tests, fifty-three inquiry items were evaluated to assess measures of variability and correlation magnitudes between program types.

Program Setting	Degree of Satisfaction*				
	N	M	SD	95% CI	F Prob.
Hospital Certificate	59	4.16	.44	.11	—
University Certificate	60	4.17	.46	.12	—
University Degree	64	3.97	.62	.15	—
Composite Population	183	4.10	.52	.08	.053

* KEY: Degree of Satisfaction
 5 = Highly satisfied
 4 = Mildly satisfied
 3 = Neutral
 2 = Mildly dissatisfied
 1 = Highly dissatisfied

philiac and diabetic patients illustrated the significant differences.

The area of academic dentistry found hospital certificate group satisfaction levels significantly below university degree respondents. The specific area of research experience found hospital and university certificate groups indicating significantly lower satisfaction levels than university degree pedodontists.

Discussion

The indicated differences in degree of satisfaction may not reflect differences between the programs, but may be due to the varied aims and expectations of the respondents choosing the different programs. Attitudinal surveys are affected by respondents' feelings, beliefs, knowledge, and predisposition towards a

TABLE 3. Statistical analysis of the degree of satisfaction perceived by pedodontists toward specialty education experiences related to specific major topic areas within the scope of pedodontic training. Topics of inquiry were developed by reviewing "Guidelines for Advanced Specialty Education Programs in Pedodontics," American Academy of Pedodontics. Asterisks indicate on multiple range tests: *Group III differs from both I and II, **All groups differ, *Group I differs from Group III at or below .001 level.**

Major Topic Area	Educational Setting									F Prob.
	I. Hospital Certificate N = 59			II. University Certificate N = 60			III. University Degree N = 64			
	M	SD	CI	M	SD	CI	M	SD	CI	
Prevention/Patient Education	3.47	.89	.23	3.91	.79	.20	3.78	.86	.22	.016
Behavior Management	4.18	.62	.16	4.12	.78	.20	4.17	.77	.19	.880
Restorative Dentistry	4.47	.49	.13	4.56	.54	.14	4.37	.71	.18	.211
Pulp Therapy	4.15	.55	.14	4.05	.56	.14	4.13	.67	.17	.614
Traumatic Injury	4.51	.73	.19	4.34	.78	.20	4.14	.95	.24	.041
Orthodontics	4.10	.73	.19	4.35	.53	.14	4.15	.76	.19	.103
Special Child	4.40	.59	.15	4.38	.69	.16	3.97	.81	.20	.001*
Sedation	3.69	.98	.25	3.45	.99	.25	2.88	.99	.25	.000*
Hospital Dentistry	4.81	.44	.11	4.39	.92	.24	3.75	1.22	.30	.000**
Academic Dentistry	3.81	.80	.21	4.13	.74	.19	4.36	.78	.20	.001***

subject. In a similar manner, the non-respondents may represent a population different in attitude towards their specialty education. In consideration of these facts, survey methodology incorporates various design measures to minimize bias and increase the usefulness of the obtained data. Specific measures incorporated in this study were multiple inquiry items, Likert-type attitudinal scale, population control, response anonymity, transmittal letter, and $p \leq .001$ significance levels.^{4,5,16,17}

The emphasis on private practice supports the findings of Walker and coworkers¹¹ in a survey of pedodontic graduate student interest. The percentage electing full-time academic careers represents a substantially lower figure than indicated in the student interest survey. Further investigation to determine the need, availability, distribution and recruitment procedures of academic candidates may be necessary.

The survey indicates pedodontists are generally satisfied with their educational experiences related to behavior management, restorative dentistry, pulp therapy, traumatic injury and interceptive orthodontics. The reduced satisfaction level in prevention/patient education suggests a general desire for increased experience in these areas during specialty education. A survey by Cafferata and coworkers¹⁰ supports this concept, as a positive correlation between specialists, and an interest in practice management continuing education courses was reported.

The reduced satisfaction levels related to sedation indicate pedodontists in general desire increased experience in child sedation during their training. University degree programs may require particular improvement in providing such experiences due to significantly lower satisfaction levels than other groups. Combined with similar reduced satisfaction levels concerning treatment of the special child and hospital dentistry, particular consideration by university degree programs may be warranted towards treatment of the more unusual or difficult-to-manage child.

Academically related topics such as literature review and teaching experience appear to receive satisfactory emphasis in the various program types. However, the perceived attitudes of the pedodontists indicate hospital and university certificate programs might benefit from increased research experience.

Summary

A survey was designed to evaluate the degree of satisfaction perceived by pedodontists towards their specialty education. The data-based inquiry items were correlated to the various program settings. The respondents indicated:

1. Positive satisfaction levels in relation to behavior management, restorative dentistry, pulp therapy, traumatic injury, and interceptive orthodontics.
2. Reduced satisfaction levels in the areas of prevention/patient education and child sedation.
3. Significantly lower satisfaction levels for university degree pedodontists in treatment of the special child, hospital dentistry, and child sedation.
4. Significantly reduced satisfaction levels for hospital certificate pedodontists in the area of academic dentistry, primarily research experience.

Although no definitive and specific recommendations can be derived from the data, the findings may serve as a reference base for future studies and individual program self-analysis. Prospective students of pedodontics may find the information useful in evaluating and matching pedodontic programs with individual aims.

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