PEDIATRIC DENTISTRY Copyright © 1983 by
The American Academy of Pedodontics Vol. 5 No. 2

Patient availability in undergraduate pedodontic programs

Dennis J. McTigue, DDS, MS
Mickey M. Lee, PhD

Abstract

The purpose of this study was to determine whether undergraduate pedodontic programs currently have enough patients to meet adequately the training needs of their dental students. Indications are that many schools are experiencing declines in patient availability but information on the extent of the problem, why the problem exists, methods to alleviate it, or how it is affecting the training of dental students is lacking. Ninety-five per cent of the chairmen of all undergraduate pedodontic programs in the United States responded to a questionnaire addressing these problems. Sixty-six per cent of the 55 responding schools reported some degree of a patient procedure shortage problem. Chairmen indicated that third-party payments, fluoridation, and problems associated with treatment in dental schools contribute most to these shortages. Methods suggested to alleviate the problems included utilizing satellite clinics, sharing patients, increasing nonclinical experiences, and increasing education/public relations efforts. Fifty-two per cent of the respondents felt that the patient/procedure shortage is having a moderately to severely negative impact on students' abilities to treat children after graduation. Suggested changes in pedodontic curricula included expanding coursework in interceptive orthodontics and growth and development.

Over the past 15 years, dental educators have become increasingly concerned about difficulties in obtaining adequate dental school patient populations.[1-7] In 1979 a committee of the Pedodontic Section of the American Association of Dental Schools, in cooperation with the American Academy of Pedodontics, surveyed 59 U.S. dental schools regarding the availability of child patients. More than half of these schools (53%) reported problems securing patients generally or children requiring particular treatment procedures needed for teaching students.[8]

New information regarding decreased restorative needs in American children underscores the problem of child patient availability. Findings from the recent National Dental Caries Prevalence Survey indicate that the prevalence of dental caries among school children in the United States had decreased substantially in the last decade.[9] This study concluded that in 1979-1980, 37% of American children were caries-free compared with 28% reported by the National Center for Health Statistics in 1971-73. Increased use of fluoride in drinking water, dentifrices, professional applications, and school mouthrinse programs were cited as the most probable reasons for the decrease in caries prevalence. This decrease in restorative needs also has been reported by pedodontists in private practice.[10]

This information points to decreasing availability of children with significant dental needs. Little attention, however, has been paid to the exact nature of the shortages. Hence, it is the purpose of this study to determine:

1. The extent to which dental schools were having problems securing child patients
2. Why patient shortages exist
3. Methods to alleviate such problems
4. How these problems are influencing the education of dental students
5. Recommendations for changes in pedodontic education

Method

A 14-item questionnaire was developed based on an *a priori* assumption that patient shortages existed.[1-10] The questionnaire addressed the five categories listed above and was pretested on the pedodontic faculty at Louisiana State University School of Dentistry. It was mailed to the chairmen of the 58 predoctoral pedodontic programs in the United States during April and May, 1982. The initial mailing consisted of a letter of introduction that explained the nature of the study and the questionnaire. Follow-up letters were sent to nonrespondents after approximately four weeks.

Responses to all questions were coded and keypunched. The descriptive statistics program of the *Statistical Package for the Social Sciences* was used.[11]

Results

Fifty-five of the 58 pedodontic chairmen returned the survey. This accounted for 95% of all undergraduate pedodontic programs in the United States.

The first group of survey questions asked department chairmen the extent to which they were having problems securing enough child patients to provide students with the types of clinical experiences they felt were necessary. Of the 55 responding schools, 36 (66%) stated that they were experiencing some degree of patient shortage. The reported severity of the problem ranged from "inconvenience to clinical directors and students" to "severe patient shortage preventing completion of many procedures."

To gain a different perspective on the same problem, chairmen were asked if they were able to provide the type of clinical experiences that they would like with their existing patient pool. Twelve schools (22%) responded "yes" and 26 schools (47%) responded "no". The remaining 17 schools (31%) stated that they were able to provide adequate clinical experiences at this time but they qualified their responses with comments such as "we're just getting by," "cancellations and failures are a major problem," and "we just became fluoridated and we expect future declines."

Twelve of the 55 department chairmen reported that the problem was not primarily inadequate numbers of patients, but rather inadequate numbers of procedures. Multiple-surface amalgam restorations, stainless steel crowns, pulpotomies, interceptive orthodontics, and traumatic injuries, in that order, were most frequently mentioned as deficient.

The second group of survey questions allowed respondents to speculate on the reasons for patient shortages. Table 1 identifies a rank ordering of perceived reasons given by chairmen at those schools reporting patient shortage problems.

A third group of questions dealt with the manner in which schools coped with existent patient shortage problems. Table 2 presents a rank ordering of methods used to teach clinical pedodontics in schools with patient/procedure shortages. Chairmen also were asked to describe special measures initiated to help assure adequate child patient levels. Table 3 summarizes these in rank order.

A fourth group of questions asked respondents to speculate on the impact on their graduating students if more child patients were not found. Nine of the 55 schools (16%) stated that the impact would be very great, and that students would not be trained adequately in the performance of many clinical procedures. Twenty respondents (36%) felt the lack of patients would have a moderately negative impact in that some pedodontic procedures would not have been taught adequately. Seven respondents (13%) stated that it would have a minimum impact in that it would not affect their graduates' abilities to perform most pedodontic procedures. Nineteen programs (35%) reported that there

Table 1. Rank Ordering of Perceived Reasons for Patient Shortages

Rank	Reason
1	Availability of third-party payment programs allows parents to send children to local dentists
2	Local water is fluoridated
3	Logistical problems in dealing with the dental school procedures (such as delays in being treated, many appointments, can only be seen on certain days, etc.)
4	Patients lack money to pay clinic fees
5.5	Patients lack transportation to get to clinic
5.5	Lack of public programs to provide funds for needy patients
7	Poor economic conditions in general
8	Low social, economic, and educational levels, thus low priority by patients seeking dental care
9	High social, economic, and educational levels of location, thus low level of dental disease
10	Increase in clinic fee schedules
11	Other problems
12	Increased clinical requirements for students

Table 2. Rank Ordering of Methods Used to Teach Clinical Pedodontics

Rank	Methods
1	Share patients
2	Increase laboratory experience (including techniques done on mannequin)
3	Self-teaching modules, review of previously treated cases to teach diagnosis
5	Assign more difficult cases (premeds, handicapped)
5	Clinical case presentation
5	Encourage students to participate in pedodontics on elective time

Table 3. Rank Ordering of Different Types of Programs to Help Assure Adequate Patient Numbers

Rank	Programs
1	Extramural/satellite clinics
2	Education/public relations
3	Utilize public/private programs for needy
4	Expedite administrative clinical procedures
5.5	Aggressive recall system
5.5	Reduce or eliminate fees for the needy
7	Nontraditional clinical hours
8	Expand scope of care
9	Students recruit own patients

would be no negative impact on their graduates if present patient levels were maintained.

The final category of questions asked pedodontic program chairmen to recommend changes in predoctoral teaching of pedodontics based on their experiences with patient availability. Table 4 presents a rank ordering of their responses.

Discussion

The results indicate that a patient procedure shortage continues to be a problem in pedodontic education and probably is worsening. In 1969, Meskin reported that only 23% of U.S.dental schools experienced difficulties securing pedodontic patients.[1] Speicher's survey in 1979[8] indicated that 53% of the schools experienced difficulties securing child patients or particular treatment procedures, while 66% report that today. Furthermore, while only 36% of the schools stated in 1979 that they could not provide the types of pedodontic clinical exeriences they desired, 47% state that they cannot today. (Chairmen were not asked to define their criteria for an optimal pedodontic clinical experience.)

It is clear that the problem is not simply inadequate patient numbers. Twenty-two per cent of the respondents stated that their shortage was in specific pedodontic procedures — most notably restorative and interceptive orthodontic experiences. Program chairmen considered these shortages serious; 52% felt that the shortage could have at least a moderately negative impact on their students' abilities to provide dental care to children after graduation.

Respondents were allowed to check more than one reason for a perceived patient/procedure shortage (Table 1). Sixty-four per cent felt that third-party payments were allowing parents to send their children to private dentists. This finding and the high rank (#3) of "logistical problems in dealing with dental schools" agrees with Jungbluth and Messer who report these as the two predominant factors adversely affecting patient flow in the pedodontic clinic at the University of Minnesota.[7] Fifty-five per cent attributed the problem to fluoridation of local water supplies.

Another prominent reason for shortages concerned the lack of public resources to transport and pay for treatment rendered to needy patients. Many programs, such as Medicaid, are threatened by governmental change, reduction, or elimination.[12] Also, dental schools are depending more on income from clinics to finance educational programs as federal capitation funds are discontinued.[13] These facts indicate that the problem of patient availability likely will become even more severe.

As can be seen from Table 2, sharing patients is the most commonly reported method to prepare students in programs experiencing patient/procedure shortages. The respondents reported that they were using "block" or "rotation" systems as the usual sharing mechanism. Some reported that students rarely completed all treatment on any one patient. Other programs reported that they used a comprehensive care philosophy and that self-teaching modules were prepared from previously completed cases to teach diagnosis and treatment planning.

Table 4. Rank Ordering of Recommended Changes in Undergraduate Pedodontic Curricula

Rank	Recommendations
1	Teach more interceptive orthodontics, growth and development
2.5	Utilize extramural/satellite clinics
2.5	Utilize more self-instruction programs, videotapes and lab procedures to teach clinical pedodontics
4	Expand scope of care to include more handicapped patients
5.5	Expand emphasis on prevention — fluorides and sealants
5.5	Expand instruction in pedodontic periodontology
8	Teach more marketing and communication skills
8	Intensify educational value of the few available patients by increasing scrutiny and quality of instruction
8	Expand teaching scope to include infants and/or adolescents
10.5	Share patients
10.5	Teach total patient care, not techniques
12	Teach pedodontics as an undergraduate elective and train more pedodontists

Twelve of the 36 schools with shortages reported increasing the use of laboratory techniques, such as restorations on mannequins, to bolster clinical experience. Students in several schools are permitted to earn clinical credit by completing pedodontic procedures on a typodont if they have no patient. Resorting to these methods to teach "clinical" pedodontics underscores the seriousness of the shortage problem. The unique psychological, physiological, and social reactions of children to dental care mandate that direct student/patient contact occur to prepare students adequately.

The methods used by pedodontic programs listed in Table 3 to increase patient levels merit close scrutiny as they not only highlight the problem in some cases but also provide ideas for possible solutions.

The most commonly reported method is to utilize extramural or satellite clinics. Twenty-one schools (38%) used such clinics and reported them to be very important in providing adequate patients. The majority of departments using these facilities reported that they would be unable to provide enough patients/procedures without them. One department chairman noted that he must send students to five different clinics to obtain adequate numbers of procedures. Another who reported severe patient shortages in spite of the use of extramural clinics complained that these are being eliminated due to cutbacks in governmental funding.

The second most common method of assuring adequate

patient levels generally can be termed education/public relations. Several things were mentioned including:

1. Screenings and consumer education programs at school, PTA meetings, and health fairs
2. Feature articles and programs about the dental clinic carried by local print and broadcast media
3. Contacts with local pediatricians, dentists, hospitals, and armed forces bases — one school sends letters to local dentists asking them to refer low-income patients
4. "Mouthguard Day" where young local athletes come to the school for the fabrication of mouthguards at low cost.

Many major professional dental organizations are developing complex and expensive marketing programs to increase the "busyness" of private practitioners. It is apparent that dental schools will have to join the marketing "bandwagon" if they wish to compete effectively for patients.

The next most frequently reported measure to increase patients was utilizing public and private programs for the needy. Several schools have developed captition contracts with agencies such as Headstart and United Way. The importance of these programs in providing patients underscores the severe consequences of proposed governmental cutbacks.

Several clinic administrative changes are reported to increase or maintain patient levels. These include expediting admission, treatment appointments via a direct phone line to the department, and increased screening sessions. Two schools report expansion of admission criteria to include infants, adolescents, and the handicapped. Strict attention to the recall system reportedly prevents patients from becoming lost and provides more opportunity to teach preventive and interceptive orthodontics (which requires longer term care). Three schools report that they are considering or are currently utilizing nontraditional hours such as evenings and Saturdays. Clinic fees have been reduced or eliminated in five schools but, obviously, this can occur only if departmental budgets do not depend heavily on clinic income. The seriousness of the problem is pointed up by one chairman who states that his students must recruit their own patients to meet their requirements.

Recommendations made by pedodontic chairmen for changes in future teaching of pedodontics were made in light of their particular circumstances. No changes were recommended by schools reporting no shortages.

As can be seen in Table 4 most recommendations involved expanding the scope of the pedodontic curriculum. Twenty-nine per cent of the schools recommended that pedodontics teach more in the areas of interceptive orthodontics and growth and development. Other areas identified for expansion include treatment of the handicapped, prevention, periodontology, and care of adolescents and infants. Expanding the scope of these subjects, particularly orthodontics, has the potential of aggravating "territorial" problems. Successful implementation of such changes in the pedodontic curriculum likely will depend on the cooperation of the other disciplines affected.

In light of their reported value in supplying patients it is not surprising that the use of extramural programs and satellite clinics is recommended strongly by chairmen. The increased use of nonclinical excercises to augment clinical instruction indicates a potentially serious problem. Nine departments recommended more technique projects on typodonts, more self-instruction programs, and more videotapes to teach behavior management. These and other departments which substitute nonclinical experiences for patient contact may have to question seriously the adequacy of their pedodontic instruction.

Seven chairmen recommended that programs capitalize on patients who are available, intensifying the educational value of every procedure. They recommend teaching total patient care, not stressing individual techniques. Thus, they theorize that students can learn their limitations and refer when necessary. One chairman even recommended teaching pedodontics as an undergraduate elective and training more pedodontists.

It is obvious from the diversity of recommendations that no consensus exists regarding the future of pedodontic undergraduate education. The problem of patient/procedure shortages in pedodontics is real, but it varies greatly in severity among dental schools. Those schools experiencing shortages tend to recommend dramatic changes in undergraduate pedodontic clinical curricula, while those with adequate patients are content to stay with traditional teaching programs.

If the current patient/procedure shortage in pedodontics persists or worsens, which appears likely, the result could be that a significant number of schools would not be able to teach undergraduate dental students basic pedodontic techniques. It remains to be seen what impact this will have on dental care for children in the areas where graduates of these programs practice.

The challenge to pedodontic educators is obvious. More schools than ever are reporting child patient shortages, and the traditional restorative needs of pedodontic patients are changing. Using satellite clinics and working harder to obtain patients will ease the problem in some cases. It is clear, however, that traditional pedodontic education must change to reflect the changing dental needs of children.

Dr. McTigue is associate professor, Department of Pedodontics; and Dr. Lee is associate professor, Office of Instructional Services, Louisiana State University School of Dentistry, 1100 Florida Ave., New Orleans, La. 70119.

1. Meskin, L.H. Current and future problems in obtaining teaching patients. J Dent Ed 33:112, 1969.

2. Calisti, L.J. Potential sources of teaching patients. J Dent Ed 34:39, 1970.
3. Ingle, J.I. Survival: improving the patient pool and clinic revenue J Dent Ed 36:24, 1972.
4. Soule, D.J., Horton, P.S., Steinhauser, A.D. Why patients select dental schools for treatment: effects of fee structure and student appearance. J Dent Ed 38:368, 1974.
5. Colman, H.L., Gates, R.L. Solving patient admitting problems in dental school clinics. J Dent Ed 40:613, 1976.
6. Doxsee,F.R., Lorencki, S.F. Attracting and retaining dental school clinic patients. J Dent Ed 42:257, 1978.
7. Jungbluth, M., Messer, L.B. Influence of dental insurance on pedodontic teaching patient supply. J Dent Res 61:296 (Abstract 1062), 1982.
8. Speicher, K.A. Survey of undergraduate dental school pediatric populations. Report presented to the Pedodontic Section, American Association of Dental Schools, March 19, 1979.
9. National Institute of Dental Research. Prevalence of Dental Caries in United States Children 1979-1980. National Dental Caries Prevalence Survey. NIDR, 1981.
10. Eichenbaum, I.W., Dunn, N.A., Tinanoff, N. Impact of fluoridation in a pedodontic practice: 30 years later. J Dent Child 48:211, 1981.
11. Nie, N., Hull, J., Jenkins, K., Steinbrenner, K., Bent, D. Statistical Package for the Social Sciences. New York: McGraw-Hill, 1975, pp 181-201.
12. Palmer, C. New "New Federalism" spells dental benefits cuts. JADA 105-587, 1982.
13. ADA Council on Dental Education. Annual Report: Dental Education. 1980-81.

Athens, 1975 Dr. Theodore P. Croll