Funding sources for research for advanced education students in pediatric dentistry

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The requirement for research experiences which programs must provide for their students is defined in Section 11 of the Accreditation Standards for Advanced Specialty Education Programs in Pediatric Dentistry set forth by the American Dental Association (ADA). Section 11.1 specifically states that "all advanced education programs in pediatric dentistry must include a research requirement."[1] How these research projects are funded is up to the creative resources of the program director and is probably a function of the setting in which the program is situated. Sponsoring institutions are different and represent a wide variety of situations ranging from programs based in dental schools and hospitals located in large health science centers to hospital based programs with no health science center affiliation or proximity. Therefore funding opportunities for research may vary greatly among programs. It could be beneficial to programs to share their approaches to funding. The purpose of this survey was to identify mechanisms used to fund the required research for advanced education programs in pediatric dentistry.

Materials and methods

A ten question survey was sent to the directors of all 54 accredited pediatric dentistry advanced education programs by the Central Office of the American Academy of Pediatric Dentistry (AAPD). Survey questions asked about the location of the program (dental school or hospital), whether the program offered a certificate only or a combination of certificate and other degree, and whether a funding source was required for the program's research requirement. Those directors who affirmed that funding sources were necessary for their programs' research requirement were asked to identify and rank funding sources. Information was also requested concerning the levels of funding per student, competition among students for funding, and whether the funding had changed over the past five years.

Results

Fifty program directors returned the survey form, 33 from dental schools and 17 from hospital based programs, for a response rate of 93% (Fig 1). Twenty-two

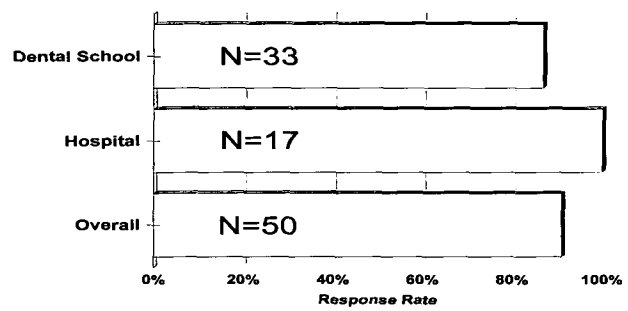

Fig 1. Response rate by program type.

programs reported that they offered the certificate only, 28 the certificate and/or the certificate with MS, 10 the certificate with PhD or MD, and 1 the certificate with MS and certificate with dentist scientist (Fig 2). Fifteen programs (five dental school and ten hospital) reported that their students' research did not require a funding source and returned the survey. These were eliminated from the study. The following results were obtained from the 35 programs (28 dental school and 7 hospital) who do require funding for projects.

Funding sources for graduate student research are summarized in Fig 3. Not all respondents ranked the funding sources; some checked sources without ranking them. The source identified most often (N = 28) and

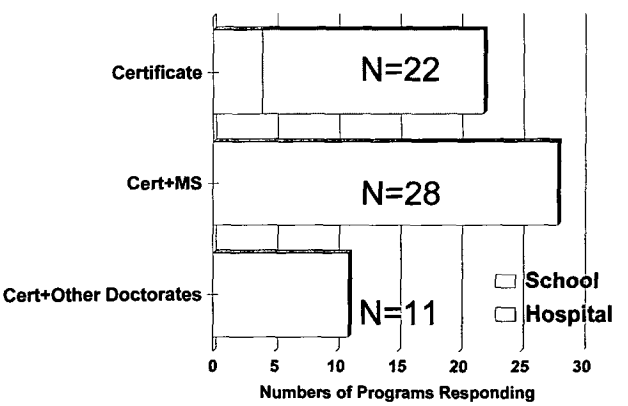

Fig 2. Certificates and degrees offered by programs.

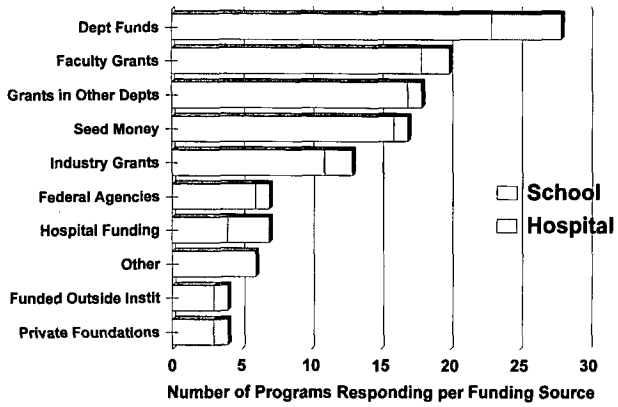

Fig 3. Funding sources for research by program type.

ranked number 1 most often (N = 16) was departmental funds. Four of the five hospital based programs which identified departmental funds as a main source of research money also ranked it number 1. The hospital directors indicated that these departmental funds are derived from clinic revenue, either faculty generated or from patient care in the program.

The next three sources identified most often imply a funding agency within the institution and were identified mainly by school based programs. Funded researchers, both within the department (N = 20) or in other departments in the institution (N = 18), were the second and third most frequently cited as funding sources and were ranked number two most often. Institutional seed money accounted for a funding source for 17 departments and was a distant second to departmental funds as number one (N = 5). Industry grants (N = 13), federal agencies (N = 7) and hospital funding (N = 7) were also identified. Answers provided for the category "other" (N = 6) included state pediatric dentistry organizations, training grants such as the dentist scientist award, special school funds such as fellowships, student's own funds, and school foundations. There were 124 total sources identified.

Average and maximum funding levels available for graduate student research projects are summarized in Figs 4 and 5. Twenty-four respondents (21 dental school and three hospital) provided information about the average level of funding available for each student, and it ranged from $100 to $3,500, with an average of $1,250. The amount reported most often (N = 5) was $750. Responses about maximum level of funding available for each student from 18 program directors revealed a range of $250 to $5,000, with an average of $1,905. Four program directors reported that they guaranteed their graduate students a certain level of funding, ranging from $250 to $3,500. All four of these programs were dental school based and offered a certificate and master's degree. Twenty-seven programs reported that they did not guarantee their students' funding. When asked if students competed for funding, 12 programs answered yes and 17 answered no. This competition was reported in the school based programs for institutional funding, not for departmental funding.

Program directors were asked the status of research funding over the past five years. Five programs reported their funding had increased, nine reported a decrease, and 14 said it had remained unchanged.

Discussion

There was some confusion among the directors of combined hospital/school programs about where their programs were based, in the school or in the hospital. The clinical component of many of these programs is in the hospital and funding for student stipends comes from the hospital; however, the didactic portion is offered by the school and the certificate or degree is issued from the school. To add to the confusion, several programs are truly hospital based in all respects, but offer a masters in a third year through an affiliated university.

It was most interesting to note that nearly one-third of the program directors responding reported that they did not need funding for the research endeavors of their students. Telephone calls to respondents who had indicated a willingness to be contacted revealed some confusion about the question on funding requirement. Some

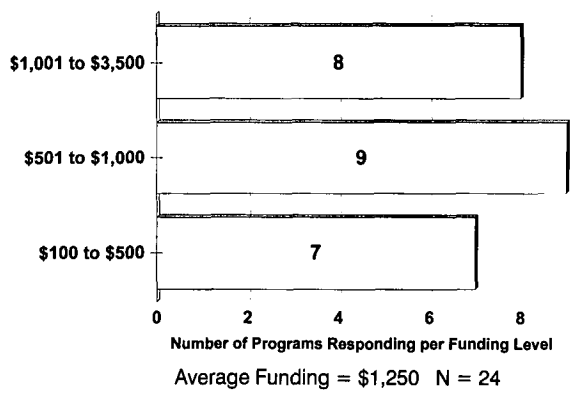

Fig 4. Average research funding per student.

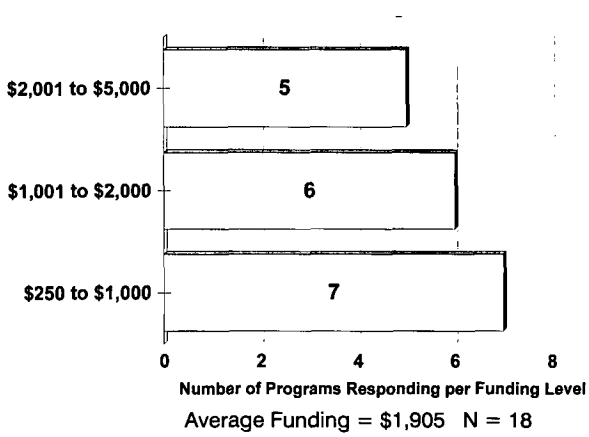

Fig 5. Maximum funding per student.

thought it meant formal funding sources such as independent grants rather than projects which required no money. These individuals indicated that their students required minimal funding and it was generally available through their departmental accounts. However, several, including one program offering a master's degree, indicated that they carefully chose research projects for students which did not need funding. There was a difference between hospital based and school based programs in those reporting no funding requirement. Of the hospital programs, 10 of 17 (41%) reported no funding requirement while only five of 33 (15%) school based programs reported no funding requirement. The findings of this survey indicate that funding sources are not as plentiful in hospital based programs as in dental schools, perhaps leading hospital based programs to be more creative in finding research projects for their students which need no funding.

Many respondents marked and ranked numerous sources for funding, indicating rich resources from which to draw financial support for student research. However, the majority of resources seem to be concentrated in the dental school based programs. The ability to pair students with funded researchers either from within the department (N = 19) or from other departments (N = 17) was reported more often by programs associated with dental schools. In addition, the opportunity to use institutional seed money for research grants written by graduate students was reported more often by dental school affiliated programs (N = 16). Collaborative efforts between the school based and hospital based programs could share the riches of both. Hospital based programs often have large clinic populations from which much outcome data could be collected and analyzed. School based programs have more financial resources.

Several hospital program directors reported that they used money generated from patient care for their students and did not have money budgeted by the hospital for that purpose. Two programs reported that though the money was available, no student had needed it. Departmental funds were the most often identified funding source for both school based and hospital based programs. It would be helpful to know more about how the school based departments generate those funds.

It was encouraging to learn from the survey results that funding has remained fairly stable with one-half of the programs reporting no change in their funding levels over the past five years.

The ADA accreditation statement provided in the introduction has been revised in the standards currently under consideration. It now reads as follows: "Students must initiate and complete a research paper including data collection and analysis using the elements of scientific method, including research design, accurate reporting, critical thinking and the formulation of conclusions based upon data rather than opinion."[2] Much discussion has ensued about the revision. It is felt to be more stringent than the previous standards which were ambiguous about exactly what the student had to do to satisfy the research requirement. The previous standard referred to specific types of experiences such as literature reviews, case reports, clinical research and laboratory research, all of which carried a "should" statement. The new standard carries a "must" statement for the research paper and is more measurable and outcome based. Much of the concern expressed has been about time required to fulfill this new requirement and has come from programs where patient care and clinic income are major sources of program funding. Those program directors are accountable to hospital administrators, clinic directors, and budget officers who are justifiably preoccupied with the impending changes in health care delivery associated with managed care. Time away from clinics to conduct more sophisticated research projects may be difficult to explain to budget officers who are becoming increasingly concerned with generated income as the bottom line in justifying the program's existence. Again, the answers to some of these concerns may lie in collaborative efforts between programs where the resources of time and money are more plentiful. Additional information about the impact of time and program constraints as well as funding sources on the research requirement would be beneficial to all program directors.

Summary

1. Of the hospital programs, 10 of 17 (41%) reported no funding requirement while only 5 of 33 (15%) school based programs reported no funding requirement.
2. Departmental funds were identified most often (N=28) and ranked number one most often (N=16) as the funding source for graduate student research.
3. The average level of research funding available for each student ranged from $100 to $3,500, with an average of $1,250.
4. One-half of the programs reported no change in their funding levels over the past five years.
5. Programs associated with dental schools reported more funding opportunities available to their students than programs associated with hospitals.

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1. Commission on Dental Accreditation, American Dental Association, Standards for Advanced Specialty Education Programs in Pediatric Dentistry, Approved May 1984, revised May 1988.
2. Commission on Dental Accreditation, American Dental Association, Proposed Revision of the Accreditation Standards for Advanced Specialty Education Programs in Pediatric Dentistry, Approved for Circulation Jan, 1996.