Training Status and Interest in Certification of Nondiplomate Faculty Teaching Predoctoral Dental Public Health

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Abstract

Objectives: *A survey was conducted to better understand the training needs of faculty members without dental public health (DPH) specialty board certification who teach DPH to dental students.* ***Methods:*** *An 11-item questionnaire was sent to 193 non-DPH diplomate faculty members at US dental schools who were dentists and at least one of the following: a member of the American Association of Dental Schools Community and Preventive Dentistry Section, a referral from an academic American Board of Dental Public Health diplomate, a DPH faculty listed on the school's Web pages, a DPH contact from the AADS Institutional Directory, or the school's dean if no other contact.* ***Results:*** *A 70 percent response rate was obtained. Seventy-nine percent of the respondents taught at least one national board-related DPH topic. Among these faculty members, 67 percent have or are in training for the master of public health, 26 percent have completed or are in a DPH residency, and 63 percent desire training in one or more of the DPH topics. The majority (64%) does not plan to take the specialty exam, while 28 percent plan to take the exam within five years. About half reported no personal incentives to take the exam and 39 percent perceived no institutional incentives.* ***Conclusions:*** *These nondiplomate teachers of predoctoral DPH desire training, but appear to have barriers and perceive few benefits to achieving DPH board certification. [J Public Health Dent 2001;61(2):114-19]*

Key Words: dental public health, dental education, graduate dental education, continuing dental education, dental faculty members, survey, dental specialty, curriculum, dentistry, dental schools.

The specialty of dental public health (DPH) is defined as "the science and art of preventing and controlling dental diseases and promoting dental health through organized community efforts. It is that form of dental practice which serves the community as a patient rather than the individual. It is concerned with the dental health education of the public, with applied dental research, and with the administration of group dental care programs as well as the prevention and control of dental diseases on a community basis" (1,2). Specialists in this field are expected to have "broad knowledge and skills in public health administration, research methods, the prevention and control of oral diseases, the provision and financing of oral health care, and the study and development of resources" (1,3).

Several predoctoral dental education activities concerning DPH occurred during the 1990s. In December 1992, a section on DPH and Occupational Safety was added to Part 2 of the National Boards Dental Examination (4). Many of the recommendations from the 1995 Institute of Medicine (IOM) report (5) fall within the discipline of DPH. These recommendations include diverse topics related to assessments, outcomes, access to care, funding, management, research, efficiency, care systems, community, and outreach. The number of dentists who have become DPH specialists, as measured by being certified as diplomates by the American Board of Dental Public Health (ABDPH), and who are employed at dental schools may be inadequate to meet the challenges put forward in the IOM report.

In 1997, there were 127 active ABDPH diplomates. On average, nine dentists have taken the board examination each year for the past five years. Of the 25 dentists who were board eligible, 11 served as faculty members in schools of dentistry, public health, or other university settings (personal communication, 1997, Dr. Stanley Lotzkar, executive director, ABDPH). Of the 127 active ABDPH diplomates, 48 were identified as being associated with academic institutions (6). By the summer of 1999, the number of active diplomates had grown to 134 (http://www.pitt.edu/ ~aaphd/

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abdph.html).

With few dental public health personnel seeking academic positions, there is concern within the public health community that future generations of dentists will not be prepared to meet the oral health needs of the public. The discrepancy between increasing DPH needs at the community level and the pool of DPH specialists (diplomates) available to meet those needs led the Health Resources and Services Administration (HRSA) to steadily increase support for DPH throughout the mid- to late 1990s. For example, HRSA's Bureau of Health Professions (BHPr) supported a series of workshops designed to delineate the academic and workforce needs of the specialty. In 1997, the BHPr conducted the first competitive grant cycle in 20 years for support of DPH residency programs (7). HRSA's recent activities include the development and implementation of an agencywide Oral Health Initiative designed to rebuild the nation's DPH infrastructure. In May 1997, the American Association of Public Health Dentistry (AAPHD) and HRSA jointly sponsored a workshop to update and define the competencies needed for DPH specialists (8).

The IOM report on dental education and the inclusion of DPH on the national board exam indicate that there is an expectation that dental schools will graduate students possessing the DPH knowledge and skills needed to serve as competent dentists. To do this, there must be faculty members with expertise in DPH teaching at the predoctoral level. Previous work showed a weak representation of board-certified specialists in DPH at US dental schools (6). Fewer than half (n=20) of the US dental schools had a diplomate, with a mean of 1.8 diplomates per school with a diplomate.

Given an increasing focus on DPH in dental education and a limited number of diplomates in the academic setting, who teaches DPH to predoctoral dental students and what type of training do these faculty members have? The purpose of this study was twofold: to learn the educational status of nondiplomate faculty who teach dental public health content areas to predoctoral students, and to determine their interest in achieving diplomate status. The underlying assumption for this analysis is that faculty members with training and certification in DPH would be better prepared than faculty without such training to teach DPH to dental students.

Methods

Identification of Surveyed Sample. Non-DPH diplomate faculty members who teach DPH to predoctoral dental students are difficult to identify. Many dental schools have reorganized, decreasing the number of academic departments, which resulted in larger organizational components with less specific departmental names. Additionally, there is no consistency among schools for which department houses the DPH curriculum or the name of this department, even if DPH is identifiable in a division name within the department. Using the 1996–97 AADS Institutional Members Directory (9), the investigators were unable to determine from the department titles where DPH faculty members might be located in approximately half of the dental schools.

The investigators identified faculty members who were thought to be dentists and associated with the DPH predoctoral curriculum by one of these methods: (1) the list of members of the AADS section on Community and Preventive Dentistry; (2) referral via a survey of university-based ABDPH diplomates (6); (3) from the dental school's Web page (faculty with dental and master of public health [MPH] degree); or (4) if methods 1–3 had identified no contacts for a school, the best guess contact for DPH listed in the AADS institutional directory was used. The cover letter for each mailing stated that the questionnaire was to be completed by a dentist.

Questionnaire and Mailings. A one-page, 11-item questionnaire was designed by the authors. Nine of the items were multiple choice. The questionnaire was mailed in February 1998 to the faculty members as identified above. A second mailing was sent to nonrespondents in March 1998. In July 1998, a third mailing was sent to two groups: (1) additional dental faculty

TABLE 1
Dental Public Health Areas Taught by Faculty Members Who Teach at Least One National Board DPH Topic, and Areas for Which They Perceive Need for More Training

National Board Part 2—Dental Public Health Topic	% Respondents Who Teach Topic Area (n=107)	% Respondents Desiring More Training in Topic Area (n=99)	% Teachers of Topic Desiring More Training in Topic*
Infection control	15	11	20 (n*=15, p†=.17)
Prevention of oral diseases	66	17	23 (n=66, p=.05)
Evaluation of dental literature	43	14	17 (n=41, p=.40)
Radiation safety	6	7	0.0 (n=5, p=1.00)
Epidemiology	49	34	33 (n=49, p=.85)
Materials & equipment safety	12	8	9 (n=11, p=.59)
Professional responsibility/liability	38	17	24 (n=38, p=.59)
Other areas as indicated by respondent	32	12	15 (n=40, p=.21)

*Number of teachers of topic who responded to the training question.
†p-value for two-tailed Fisher's exact test for desiring training in topic by teach topic versus not.

who were identified via the school's Web page after the first mailing, and (2) deans of the dental schools whose Web pages lacked information on the appropriate departmental DPH affiliate at their respective institutions. Follow-up was not provided to the third mailing. Self-addressed stamped envelopes were provided for the return of the questionnaire. Financial incentives or gifts were not provided. The Medical University of South Carolina Office of Research Integrity exempted this project from institutional research board review.

Defining Dental Public Health Curriculum. While identifying faculty in dental public health proved to be somewhat challenging, identification of dental public health predoctoral curriculum presented another type of challenge. Because of the variability of the departments in which these faculty members are located, their predoctoral course responsibilities may also vary. To decrease this variability, the authors used the National Boards Part II DPH topic list to identify faculty teaching predoctoral DPH course work (Table 1).

Analysis. This study was observational and cross-sectional. Data entry was performed using EpiInfo (Centers for Disease Control and Prevention. http://www.cdc.gov/epiinfo/). Data analysis was performed using SAS (10). The data were summarized and characterized quantitatively or qualitatively. Differences between groups were tested by using the chi-square test or Fisher's exact test for proportions and the Student *t*-test for means.

Results

Nearly all of the 55 US dental schools were represented by at least one respondent. For two schools, the respondents from a previous study (6) had stated that their school had no predoctoral DPH faculty members who were dentists. The methods used in this study subsequently did not locate any eligible faculty for those two schools. Only one school had no respondent for both studies. Hence, 98 percent of the schools had contact with the investigators. Three schools were dropped from further analyses as each of their respondents for the current survey were ineligible to be DPH diplomates. Usable responses were received from 51 dental schools (93%). This study focuses on information from individual faculty members.

The number of usable respondents was 136 out of 193 contacts, a response rate of 70 percent. Of the 136 respondents, 107 (79%) in 49 dental schools identified themselves as teachers of at least one topic that falls within the section covering DPH of the National Boards Part 2 (Table 1). The number of individuals per school teaching at least one board topic ranged between one and six.

Table 1 lists the areas taught by the teachers of dental public health (TDPH) and the areas for which they perceive a need for more training. On average, the respondents taught 2.3 (SD=1.4) board topics and perceived a need for training in 1.3 (SD=1.0) topics. The most frequently taught topic was preventive dentistry, which was taught by about two-thirds of the TDPH. The other topics were taught by fewer than half of the TDPH, although about one-half taught epidemiology. About one-third (36%) taught only one board topic, 25 (23%) taught two topics, and 42 (39%) taught three or more topics. Only one TDPH reported teaching all the topics contained in the DPH section of the National Board Part 2. The TDPH taught other areas that they thought should be included in the National Board Part 2. Topics that were listed by at least two of these respondents included: access to care, ethics, finance, health policy, managed care, and quality assurance.

The largest response for more training in a DPH board topic was for epidemiology, which was requested by one-third of the respondents (34%). Of the 63 percent of the TDPH who wanted training in an area of the board topics, 58 percent wanted training in just one area, 22 percent wanted training in two areas, and 20 percent wanted training in three or more areas. Biostatistics was the only topic listed by two or more respondents as an additional area desired for more training.

About two-thirds (67%) of respondents had or were currently pursuing the MPH or equivalent degree (Table 2). Of those who reported the year in which they obtained their degree (n=73), 69 percent received the degree before 1990, with a range from 1963 to 1998. The faculty members with an MPH or equivalent degree on average taught 2.5 (SD=1.4) board topics, while those without that degree taught 2.1 (SD=1.2, *t*-test, P=.07). Only 26 percent of the total respondents completed or were currently doing a DPH residency. Among those reporting a date of residency (n=26), 50 percent were completed before 1990, with a range from 1966 to 1996. Those with residency training taught an average of 2.8 (SD=1.5) topics and those without taught an average of 2.2 (SD=1.3, *t*-test, P=.03). Similar training needs were perceived by respondents with the MPH degree and those without (1.4 vs 1.3 board topics, *t*-test, P=.43), and by those who had completed the DPH residency and those who did not (1.4 vs 1.3, *t*-test, P=.84).

Just over half (53%) of the TDPH reported that they were knowledgeable about the requirements for board certification in DPH. The individuals who were further along in the process of their specialty education were more knowledgeable about the requirements for board certification. Among those with an MPH degree, 67 percent indicated they knew the requirements, compared to 19 percent of those without an MPH degree (chi-square, P=.001). Among respondents who

TABLE 2
Dental Public Health Training among Faculty Members Who Teach at Least One National Board Dental Public Health Topic

	Master of Public Health or Equivalent (n=107)	Dental Public Health Residency (n=106)
Yes I have	62%	21%
Currently doing	5%	5%*
No, but interested	5%	10%
No, not interested	29%	64%

*Includes a respondent who began but did not complete a residency.

completed or were enrolled in a residency program, 93 percent indicated they knew the requirements, compared to only 27 percent of those who did not have residency experience (chi-square, P=.001).

Faculty members who completed the educational requirements for board certification in DPH were more likely than those who had not to plan to take the specialty board examination. However, almost two-thirds of respondents did not plan to take the exam. Just over one-half (51%) of the faculty members who had an MPH or equivalent degree planned to pursue the specialty board certification. Of those with residency experience, 71 percent plan to take the specialty examination. Five of those who completed a DPH residency stated that they never plan to take the specialty board; those faculty members completed their residency between 1967 and 1983.

Table 3 lists the perceived incentives for board certification by TDPH (respondents could respond to all that apply and hence incentives can total more than 100%). The most frequently cited incentive was personal satisfaction, reported by 44 percent of all respondents and 92 percent of those who reported at least one incentive for becoming board certified. Professional status was the most frequently listed institutional incentive (34% of all respondents and 56% of those listing any incentive). Fifty-two percent of respondents reported that they had no personal incentives and 39 percent reported that they had no institutional incentives for achieving board certification.

Table 4 lists responses indicating perceived barriers to DPH board certification. Time was listed as a major barrier from both professional and personal perspectives. Other professional interests with higher priority and little or no perceived professional benefit were also barriers perceived by many of the respondents.

Comments provided by the respondents may add insight into training and certification issues. These include: "near retirement," "if at a different stage in my professional practice I might pursue board certification," "I am pursuing specialization" in another area of dentistry such as periodontics or pediatric dentistry, "I am currently in a PhD or DrPH program,"

TABLE 3
Incentives for Dental Public Health Board Certification Identified by Faculty Members Who Teach at Least One National Board Dental Public Health Topic

Incentives for Dental Public Health Board Certification	Personal (n=107)	Institutional (n=99)
Yes, there are incentives	48%	61%
Perceived incentives		
Pay increase	20%	20%
Increased promotional/tenure potential	40%	51%
Professional status	58%	56%
Research, administrative, or policy opportunities	42%	39%
Personal satisfaction	92%	46%
Serve as director of DPH graduate/residency program	12%	27%
Other	14%	20%
No, there are no incentives	52%	39%

TABLE 4
Barriers to Dental Public Health Board Certification for Faculty Who Teach at Least One National Board DPH Topic

Barrier	Percent* (n=104)
Not enough time at work to pursue these activities	45
Other professional interests have priority	40
Not enough personal time to pursue these activities, or family obligations	36
Little or no perceived professional benefit	33
Expenses associated with training costs	17
Cannot take leave of absence or leave current job for additional training	14
Too much work to become certified	11
Expenses associated with board certification	10
Other	32

Respondents could report more than one barrier.

"my master's or my residency is in an area which will not be accepted as public health training," and "too many competing professional responsibilities."

Discussion

All US dental schools except one had at least one respondent to this survey. Response rates for previous studies using similar populations have varied. A study of community dentistry curricula achieved an adjusted response rate of 75 percent (11). A study on departments of community dentistry based on individual faculty members conducted by Jenny and Frazier (12) yielded only 30 percent, whereas an earlier study (13) on social dentistry departments by dental school achieved 96 percent return.

The lack of a consistently identifiable departmental location was documented in the 1960s when "of the 21 schools with departments responsible for the teaching of the social aspects of dentistry, four called them departments of social dentistry, and three identified them as departments of community dentistry. Each of the remaining 14 schools had a different term: e.g., ecologic dentistry, public health and preventive dentistry, science and literature, social relations, and professional horizons" (13). The diversity of departmental location

continues to present challenges 30 years later, as demonstrated in this study. The low number of diplomates of the ABDPH based in dental schools (6) was another challenge in identifying teachers of predoctoral DPH. While the methods used in this study for identifying such faculty members are reproducible, there are difficulties in capturing the entire population of nondiplomate teachers of predoctoral dental public health. Due to resource limitations, this study did not attempt to set a criterion standard for identification of the entire universe of predoctoral teachers of DPH. The membership roles of DPH organizations such as the AAPHD and the Oral Health Section of the American Public Health Association were not used because of the inability to identify members who are academically based. Cunningham (11) faced the same challenge and used "all faculty members with a primary discipline of community dentistry, as listed in the American Association of Dental Schools' *Directory of Dental Educators, 1984-1985.*" This directory has not been published since the early 1990s (personal communication, Richard Weaver, AADS, 1998), and therefore was not useful for this study.

The national board topics provided a current and convenient, but limited, basis for the definition of a DPH topic. The national board topics do not represent all the topics that comprise DPH. For instance, subjects taught by social dentistry departments in the 1960s, from most frequently reported to least, included practice administration, ethics, jurisprudence, public health, history of dentistry, economics of dentistry, health care plans, preventive dentistry, philosophy of dentistry, epidemiology, utilization of auxiliaries, psychology, biostatistics, chronic disease and rehabilitation, gerontology, civil defense, radiological health, sociology, and hospital relations (13). Given the advent of newer concerns related to infection control, occupational health and safety, managed care and other dental care delivery and finance issues, and new competencies for DPH residents (8), this list has expanded greatly.

The board topics may be taught by experts in particular disciplines, such as psychology or economics, who are not dentists. This analysis does not address whether non-DPH specialists, who may or may not be dentists, are better able to teach these topics than DPH specialists. Similar questions about specialization could be raised about other dental specialty areas. For example, do laboratory technicians have a role in teaching prosthodontics? Should orthodontics be taught by orthodontists or general dentists? Do dental hygienists have a role in teaching periodontics to dental students?

The prevalence of faculty members with the MPH degree appears similar to that found among DPH faculty members in the 1960s and 1980s. In 1966, Sanders (13) reported that all the social dentistry departments that had department chairs (18 out of 21), had dentists as chairs; six of these chairs had an additional degree in public health. Cunningham (11) found 12 percent of the "community dentistry" faculty respondents to be board certified in dental public health and 22 percent currently board eligible. She also found that 35 percent of faculty members and 58 percent of chairpersons had the MPH. About one-third of the diplomates of the ABDPH have been located at schools of dentistry or public health since the late 1960s (6,14). Furthermore, only about one-half of the academically based diplomates reported teaching as their primary activity (14).

Personal satisfaction was the most frequently reported personal incentive for board certification, but more than one-half perceived no personal incentives. While more faculty report incentives from the institutional perspective, there does not appear to be a consistent motivational factor. More than one-half of those who perceive institutional incentives reported those incentives to be enhanced professional status and increased promotional or tenure potential.

This study did not include institutional administrators; nevertheless, it would be interesting to know if the administrators would report similar perceptions. Some nonacademic institutions have specialization incentives. For example, the branches of the federal uniformed services (i.e., Army, Air Force, Navy, and US Public Health Service) provide increased promotion potential and specialty pay for dentists who achieve specialty board certification.

Not surprisingly, barriers to obtaining board certification include lack of time and other priorities. However, many indications show that increasing expectations are being placed on the DPH faculty. A recent survey of the academic deans of the US dental schools revealed their perception of the need for increased emphasis on curriculum topics (15). Many of these topics pertain to DPH, including health promotion/disease prevention, clinical practice guidelines, understanding and utilizing research findings, patients as partners in health care, accountability for cost effectiveness and patient outcomes, epidemiology, communities as partners in health care, managed care, health care economics/financing, and health care organization and administration.

More in-depth study is needed to determine the best mix of faculty members to teach this variety of topics. Many dental schools have no DPH diplomates; thus the DPH curriculum, by necessity, is often taught by nonspecialists. Longitudinal studies are needed to determine how the quality and quantity of DPH teaching changes as a result of postdoctoral training and specialty certification.

Faculty members who can demonstrate through their activities the excitement and enthusiasm of public service are effective role models for such activities. Two potential recommendations emerge from this analysis. First, career development opportunities should be made available for faculty members who teach DPH topics and desire more training. Second, the national board examination DPH questions should be refined so the results may better assess predoctoral curriculum coverage of DPH topics.

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