RESEARCH ARTICLE

Oral Health Competencies for Physician Assistants and Nurse Practitioners

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Research that exclusively focuses on oral health competencies for physician assistant (PA) and nurse practitioner (NP) education is scarce. **Purpose:** A study was conducted to determine PAs' and NPs' perspectives and self-perceived levels of skill in performing a set of oral health competencies. **Method:** Following e-mail notifications of professional and educational associations and an announcement placed in *Clinician Reviews*, an online survey of PAs and NPs was conducted between December 2005 and February 2006. The survey listed a number of oral health competencies and asked respondents (1) whether PAs and NPs should have the competencies and (2) to rate their own competency in each area. **Results:** A sample of 106 PAs (46%) and 127 NPs (54%) self-selected to participate in this survey. The largest percentage of respondents (37%) had been in clinical practice 1-5 years, 24% had been in practice greater than 15 years, and 23% had been in practice 6-10 years. Thirty-five percent of the respondents listed family medicine as the area most closely resembling their practice, 12% were in education, 10% in internal medicine (specialty), 8% in internal medicine (general), and 8% in obstetrics/gynecology/women's health. Eighty-two percent of respondents, on average, agreed that PAs and NPs should have the competencies listed (ranging from 45% for "apply fluoride varnish" to 96% for "recognize common diseases"). For the eight competencies as a whole, 40.3% of the respondents, when asked if they felt competent in these areas, listed "competent" as their choice, while 59.7% felt "somewhat competent" or "not competent." **Conclusions:** Overall, respondents agreed that the defined oral competencies were important skills for practicing PAs and NPs. On the other hand, fewer than half of the respondents felt competent in their skills in these areas. This small survey demonstrates a need for additional training of PAs and NPs in oral health care.

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INTRODUCTION

The first-ever Surgeon General's report on oral health, *Oral Health in America: A Report of the Surgeon General*, released in 2000, identified a "silent epidemic" of dental and oral diseases that burden some population groups. The report called for a national effort to improve oral health among all Americans. It also focused on the relationship between oral health and overall health throughout life, describing the mouth as a "mirror for general health and well-being and the association between oral heath problems and other health problems."[1]

The Surgeon General's report on oral health provides important reminders that oral health means more than sound teeth. Oral health is integral to overall health, Donna Shalala, former United States Secretary of Health and Human Services writes in the report's introduction. She adds: "Furthermore, safe and effective disease prevention measures exist that everyone can adopt to improve oral health and prevent disease."[1]

The report's author, then-Surgeon General David Satcher, MD, called for a national partnership to provide opportunities for individuals, communities, and the health professions to work together to maintain and improve the nation's oral health. He also urged a broadened awareness and use of common preventive measures, including personal daily oral hygiene habits, such as brushing with fluoride toothpaste and flossing daily; community programs, such as water fluoridation and tobacco cessation campaigns; and health care provider-based interventions, such as the use of dental sealants and examinations for oral

and pharyngeal cancers. Physician assistants (PAs) and nurse practitioners (NPs) can and should be partners in this national call. The questions are, "Do they receive appropriate training in oral health?" and "Do they feel competent in providing these services?"

To answer those questions, a study was conducted at A.T. Still University through a partnership between the Arizona School of Health Sciences and the Arizona School of Dentistry and Oral Health to determine PAs' and NPs' opinions and perceived skills regarding a set of oral health competencies.

According to Berg and Coniglio, educating primary health care providers to screen for oral health conditions is extremely important because (1) health care providers (often PAs or NPs) typically conduct well-child visits starting in infancy and through the first 2 years of life, and (2) due to a shortage of dental professionals, lack of access to dental care may put the burden of oral preventive care on PAs and NPs.[6]

At the very heart of the mission of an accredited PA or NP program is student proficiency in a body of knowledge linked to the acquisition of a range of relevant clinical skills. Recent standards developed by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) clearly spell out the range of scientific and clinical instructional objectives needed to achieve this. Nowhere in the ARC-PA Standards, however, are there specific competencies for oral health.[2] The Criteria for Evaluation of Nurse Practitioner Programs[3] is similarly uninformative in regards to oral health.

METHODS

A list of oral competencies for PAs and NPs was created by an expert panel comprising faculty from the Arizona School of Health Sciences and the Arizona School of Dentistry and Oral Health. The list was generated based on a review of the literature and discussion among panel members concerning oral health knowledge and skills that dentists believe primary care providers should possess. Following approval from the A.T. Still University's School of Health Sciences Institutional Review Board, the "Oral Competencies for PAs and NPs Survey" was created using online survey software and opened between December 15, 2005, and February 17, 2006. E-mails were sent to the American Academy of Physician Assistants, the Association of Physician Assistant Programs (now the Physician Assistant Education Association), the American College of Nurse Practitioners, and the American Academy of Nurse Practitioners inviting them to post the Web site for the survey through their communications vehicles. The survey was also announced on the *Advance for PAs* blog and published in *Clinician News* (a publication targeting both PAs and NPs).

The survey consisted of two main sections. The first section listed eight predefined oral health competencies (see Table 1) and asked respondents if they thought PAs and NPs should have these competencies. Possible responses were "agree," "disagree," and "not sure."

The second section of the survey asked respondents to rate their competency in each of these eight areas, using essentially the same verbiage as noted in Table 1. The possible responses were, "competent," "somewhat competent" and "not competent-need additional training/education."

Additionally, respondents were asked about the use of xylitol gum, fluoride varnish, and chlorhexidine mouth rinse. The first question was prefaced with following explanation: "Research identifies dental caries as an infectious disease that is spread from mother/caregiver to child during the first 30 months of life through the *Streptococcus mutans*. This can be completely prevented through the use of xylitol gum, fluoride varnish or chlorhexidene mouth rinse. It is conceivable that the PA or NP would see children and mothers before any dentist would."

Respondents were asked if the PA

Table 1. General Oral Health Competencies for Physician Assistants and Nurse Practitioners

1. Have the ability to do a thorough and competent oral examination
2. Be able to discern between normal and abnormal structures
3. Be able to discern obvious pathology and conditions of the oral cavity (eg, oral cancers, fungal infections, traumatic conditions, dental diseases, and congenital conditions)
4. Be able to inform adults and parents of young children what to expect in eruption patterns of primary and permanent teeth
5. Be able to recognize symptoms and manifestations of common diseases of the oral cavity
6. Be able to recognize oral symptoms of systemic diseases (eg, anemia, syphilis, TB, thyroid dysfunction, Sjogren's disease, xerostomia)
7. Understand what various dental specialties can do for your patient
8. Improve PA/NP–dental interface and referrals

or NP should feel comfortable in counseling patients on the use of xylitol gum and/or chlorhexidine mouth rinse. In parallel with this question, another question asked how competent respondents felt in their ability to counsel patients on the use of xylitol gum and/or chlorhexidine mouth rinse.

Finally, respondents were asked whether they thought that in the future PAs and NPs should be taught to apply fluoride varnish because of their early access to young children. They were also asked to rate their competence in their ability to apply fluoride varnish to young children.

Data Analysis

Following entry and cleaning of the data, SPSS version 14.0 (SPSS, Inc., Chicago, Ill) was used for analysis. Mann-Whitney U tests were selected for comparison of ordinal data across groups (PAs and NPs). Spearman rank correlations were used to assess the degree of association across questions, within respondents. A criterion level of p = .05, two-tailed, was chosen. Adjustments were not made for multiple tests.

RESULTS

Respondents

A total of 233 complete responses were received (28 partially completed surveys were excluded and were not counted in the 233). Fifty-four percent of the respondents (n = 127) were NPs; 46% (106) were PAs. The largest number of respondents had been in clinical practice 1-5 years (40%). Table 2 provides a breakdown of respondents by years in practice.

The breakdown of respondents by practice area is shown in Table 3. The area of medicine reported by the largest number of respondents was family medicine (36%).

Table 2. Number of Years in Clinical Practice

Number of Years in Practice	Number (%) of Respondents
1-5 years	93 (40)
6-10 years	58 (25)
11-15 years	22 (9)
› 15 years	60 (26)
Total	233 (100)

Suggested Oral Health Competencies

For all eight competencies, an average of 81.6% of respondents agreed that PAs and NPs should have the competencies listed (see Figure 1). The most frequently endorsed competencies were "recognize symptoms and manifestations of common diseases" and "be able to discern between normal and abnormal structures" (96.1% of respondents agreed to both); the least frequently endorsed was "apply fluoride varnish" (45.1%).

When PAs and NPs were asked about their own perceived competence in these areas, the percentages were significantly lower. An average of 40.3% of respondents, when asked if they felt competent in these areas, noted "competent" as their choice (see Figure 2), while 59.7% felt either somewhat competent or not competent and in need of further training.

More than half of the respondents selected "competent" in response to the questions of whether they could "discern between normal and abnormal structures" (62.9%), "recognize symptoms and manifestations of common diseases" (53.5%), and "discern obvious pathology and conditions of the oral cavity" (50.4%). However, in all other areas, fewer than half claimed competency. Given their limited exposure to prophylactic oral health care, perhaps it is not surprising that few respondents reported confidence either counseling the use xylitol gum/chlorhexidine mouth rinse (16.6%) or applying fluoride varnish (11.4%).

Table 3. Practice Area of Respondents

Practice Area	Number (%) of Respondents
Family practice	83 (35.6)
Education	29 (12.4)
Internal medicine specialty	25 (10.7)
Internal medicine general	20 (8.6)
OB/GYN/women's health	20 (8.6)
Other	21 (9.0)
ED/urgent care	13 (5.6)
Pediatrics	12 (5.2)
Orthopedics	5 (2.1)
Surgery	5 (2.1)
Total	233 (100)

Interestingly, but not unexpectedly, responses to each pair of questions were correlated (all $p < 0.01$). That is, those who agreed that PAs and NPs should have a specific competency also tended to indicate that they were competent in that area. Conversely, those who indicated that PAs and NPs should not have a specific competency also graded themselves poorly on that skill.

PAs Compared to NPs

For the most part, response patterns did not vary across the two groups. A single exception occurred among the questions concerning the skills that PAs and NPs should have. PAs were more likely (10.4%) than NPs (2.4%) to disagree with the statement that PAs and NPs should "understand what various dental specialties can do for your patient." Among questions concerning their own competency in the various tasks, a higher percentage of PAs (52.9%) than NPs (42.5%) indicated that they were competent at

Figure 1. Breakdown of Responses to the Question, "Should PAs and NPs have these competencies?"

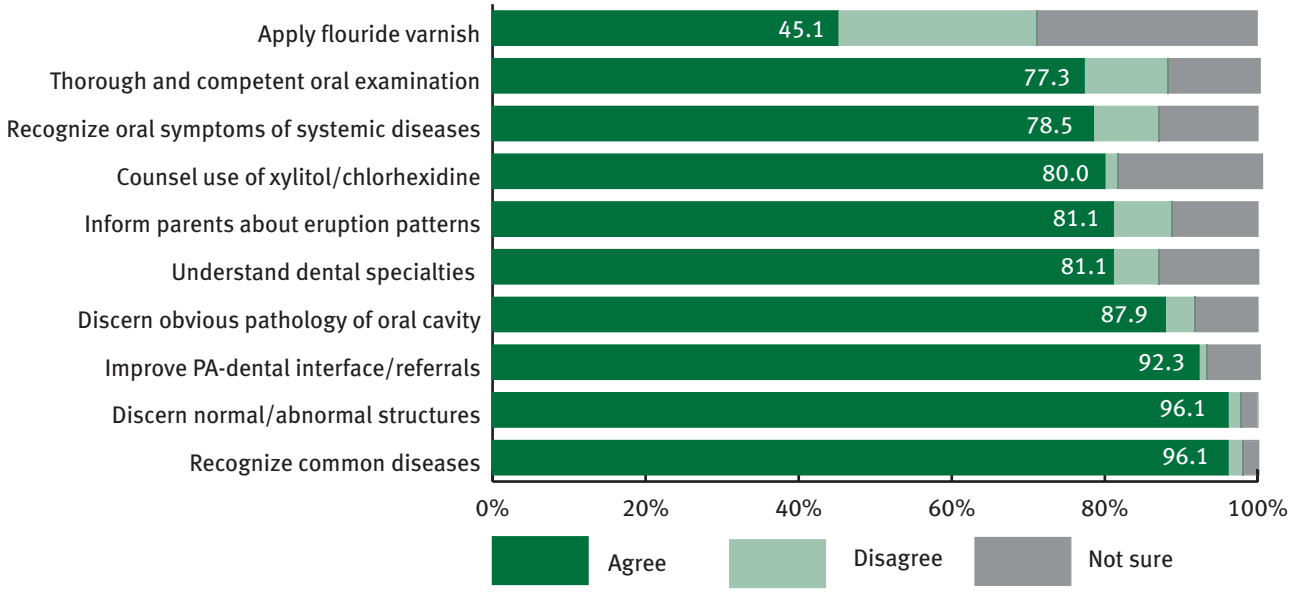
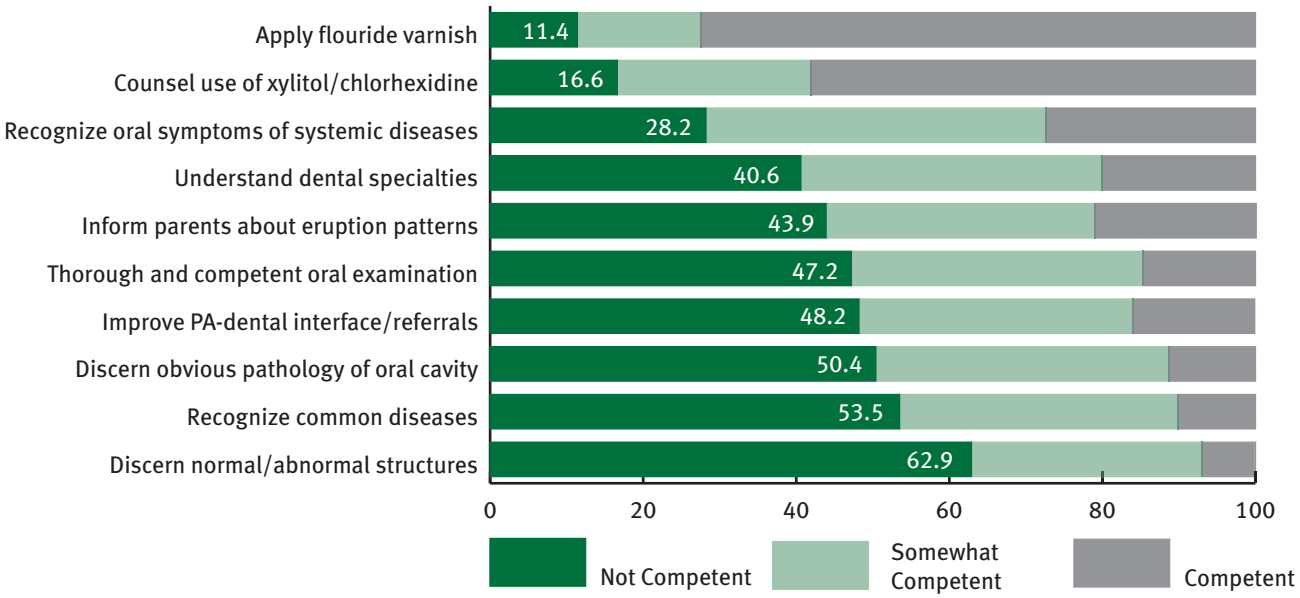


Figure 2. Breakdown of Responses to the Question, "How competent do you feel in your knowledge of or your ability to perform the competency?"



performing an oral exam. A higher percentage of PAs (63.1%) than NPs (40.2%) indicated that they were able to "discern obvious pathology and conditions of the oral cavity," ($p < 0.001$). Finally, a higher percentage of PAs (34.3%) than NPs (22.0%) indicated that they were able to "recognize oral symptoms of systemic diseases," ($p < 0.05$).

DISCUSSION

The results of this study suggest the majority of respondents feel that PAs and NPs should be competent in the areas addressed in the eight oral health competencies. Advances in science and technology mean that lifelong learning for PAs and NPs is essential, as are open lines of communication among dentists, clinicians, and the academic faculty who design curricula, write textbooks and professional articles, and teach future

generations of PAs and NPs.

PAs and NPs play an important role in improving and promoting oral health. Together these health care professionals can work to broaden public understanding of the importance of oral health and its relevance to general health and well-being. In addition, these professionals have the opportunity to make an impact on the public's access to preventive, diagnostic, and treatment measures for oral diseases and disorders.

Recent studies indicate that dental caries is an infectious and communicable disease that is spread from the mother or caregiver to the child during the first 30 months of life through bacteria (*Streptococcus mutans*) that adheres to the surface of the tooth.[4] This can be completely prevented through the use of xylitol gum, fluoride varnish, or chlorhexidene mouth rinse.[5] Oral health competencies should be part of the entry-level curriculum for PAs and NPs. Furthermore, the Department of Health and Human Services recommends including an oral examination as part of a general medical examination, including advising patients in matters of diet and tobacco cessation, and referring patients to oral health practitioners for care prior to medical or surgical treatments that can damage oral tissues, such as cancer chemotherapy or radiation to the head and neck.[1]

PAs and NPs should be ready, willing, and able to work in collaboration to provide optimal oral health care for their patients. The authors challenge the readers of this article to expand their personal knowledge and skills in oral health. This may best be achieved through inclusion of oral health competencies in continuing medical education offerings.

In addition, the authors encourage PA and NP educational programs to expand their curricula to include the oral health competencies mentioned in this article, and to have these competencies taught by dental professionals—along with the development of common strategies to improve the oral health of those who suffer from oral diseases.

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