Public Opinions Regarding Advanced Dental Hygiene Practitioners in a High-Need State

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Abstract

Purpose: The new Advanced Dental Hygiene Practitioner (ADHP) profession is expected to increase access to oral health care for the general population, particularly in rural and underserved areas. In order for this strategy to be successful, the public must feel comfortable with the care provided by ADHPs and seek out their services, yet consumer receptivity has been overlooked in the literature. The current study explores comfort with ADHPs for one high-need state: Kentucky.

Methods: Consumer receptivity to the ADHP was assessed using a large, random sample telephone survey. As a point of comparison, respondents were first asked about their comfort with care provided by two other advanced practice clinicians already licensed in the state: advanced practice registered nurses (APRN) and physician assistants (PA).

Results: After hearing a brief description of the profession, nearly 3 in 4 Kentucky adults said they would be somewhat (35.4%) or very (38.2%) comfortable seeing an ADHP for routine dental care. The total proportion of Kentucky adults who were comfortable seeking care from an ADHP (73.6%) was slightly less than the proportion indicating comfort seeing an APRN (79.7%) or PA (81.3%).

Conclusion: Overall, this study demonstrates that adults are receptive to new models of care delivery and report high levels of comfort with ADHPs. Consumer concerns are unlikely to be a barrier to expanded licensure for dental hygienists in high-need areas like Kentucky.

Keywords: advanced dental hygiene practitioner, public opinion poll, patient acceptance of health care, patient preference

This study supports the NDHRA priority area, **Health Services Research:** Investigate how alternative models of dental hygiene care delivery can reduce health care inequalities.

Introduction

In 2008, the American Dental Hygienists' Association approved a list of competencies for a new type of oral health professional: the Advanced Dental Hygiene Practitioner (ADHP).[1] The proposed master's degree curriculum for ADHPs would require 37 graduate credits including 16 credit hours of advanced practice clinical courses. Upon completion of this training, ADHPs will be qualified to provide primary oral health care, including certain preventive, diagnostic, therapeutic, and restorative services. ADHPs will establish partnerships with dentists to coordinate services outside their scope of practice and ensure continuity of care for their patients. A small handful of states have embraced the ADHP model and launched training programs,[2] but widespread implementation is lacking.

In the years since these competencies were approved, research has been conducted on ADHPs and other models of advanced practice oral health providers. Perhaps most critically, we have seen that advanced practice oral health providers can reduce the rate of untreated dental disease in a population.[3] Researchers have also investigated the impact of advanced practice oral health providers on the existing oral health workforce. It has been suggested that these new professional models have the potential to be a "disruptive innovation" in dentistry, fundamentally changing the market for oral health care services,[4] and may permit dentists to take on an expanded scope of practice.[5] More pragmatically, studies show the addition of new oral health providers will have a minimal adverse impact on earnings for dentists in private practice.[6,7] When used effectively, dental teams involving advanced practice clinicians increase revenues by serving more patients more efficiently.[8] Practicing dental hygienists[9] and dental hygiene program directors[10] support the ADHP model.

Driscoll and colleagues explored the demand for

Table I: Respondent Receptivity to Routine Care From an ADHP: Percent and (Count)

	Count	Percent Very Comfortable	Percent Somewhat Comfortable	Total Percent Comfortable
All Kentucky Adults	1669	38.2% (638)	35.4% (591)	73.6% (1229)
Sex				
Male	800	37.1% (297)	37.2% (298)	74.3% (595)
Female	869	39.2% (341)	33.8% (294)	73.0% (634)
Race				
African American	115	42.9% (49)	37.6% (43)	80.5% (93)
White	1475	38.3% (565)	35.4% (522)	73.7% (1087)
Age				
18-29 years	366	40.9% (150)	35.7% (131)	76.6% (280)
30-45 years	531	42.7% (227)	37.0% (196)	79.7% (423)
46-64 years	479	37.6% (180)	34.0% (163)	71.6% (343)
65 and older	264	29.2% (77)	36.3% (96)	65.5% (173)
Education				
Less than high school	407	32.0% (130)	34.6% (141)	66.6% (271)
High school graduate	567	41.0% (232)	36.4% (206)	77.4% (439)
Some college	421	39.4% (166)	37.1% (156)	76.5% (322)
College graduate	272	40.0% (109)	31.9% (87)	71.9% (196)
Federal Poverty Level Status				
< 100%	438	33.7% (148)	36.5% (160)	70.2% (307)
100-200%	284	38.4% (109)	38.1% (108)	76.5% (217)
> 200%	629	43.2% (272)	34.0% (214)	77.2% (486)
Insurance Status				
Health Insurance	1277	38.4% (490)	34.4% (439)	72.8% (930)
Uninsured/Don't Know	390	37.3% (145)	39.2% (153)	76.5% (298)
Self-rated Health Status				
Excellent/Very Good	696	39.7% (276)	36.6% (255)	76.3% (531)
Good	456	37.8% (172)	35.3% (161)	73.1% (333)
Fair/Poor	515	36.5% (188)	33.9% (175)	70.4% (363)

Notes: Counts and percentages are weighted: see text for details. For all findings except race and insurance status, the chi-square statistic is significant ($p < 0.05$).

ADHPs. For example, they noted that the United States has significant unmet oral health care needs that could benefit from the addition of ADHPs or other providers.[11] Further, they found that there is demand for advanced study among dental hygienists themselves.[12] These facets of demand—unmet health care needs and willing providers—are critical for the ADHP model to be successful in the United States, but this is not a complete picture.

It is hoped that the ADHP will increase access to oral health care for the general population, particularly in rural and underserved areas.[13] The ADHP model appears to be suited to medical settings,[14] which may expand access beyond traditional oral health settings. Additionally, advanced practice oral health professionals are likely to expand access for low-income children enrolled in Medicaid or Children's Health Insurance Program (CHIP).[15] In order for this strategy to be successful, the public must feel comfortable with the care provided by ADHPs and seek out their services. Despite the wealth of studies devoted to ADHPs, consumer receptivity has been a critical yet overlooked dimension. As dental hygienists pursue advanced credentialing and advocates work toward changing licensure regulations,[16] it is imperative to assess public opinion about the profession. Because the ADHP profession cannot succeed absent willing patients, the current study is an effort to answer this question for one high-need state: Kentucky.

Table II: Respondent Receptivity to Routine Care From Various Advanced Practice Clinicians: Percent and (Count)

Profession	Percent Very Comfortable	Percent Somewhat Comfortable	Total Percent Comfortable
ADHP	38.2% (638)	35.4% (591)	73.6% (1229)
APRN	50.4% (844)	29.3% (490)	79.7% (1334)
PA	42.4% (711)	38.9% (652)	81.3% (1363)

Note: Counts and percentages are weighted: see text for details.

Kentucky provides a useful model for national opinions about the ADHP profession for several reasons. First, many Kentucky residents across the age spectrum have poor oral health. One third of elementary school students (33.1%) were found to have untreated caries.[17] More than half of Kentucky adults have had at least one permanent tooth extracted.[18] Approximately 1 in 4 adults over age 65 (24.8%) have had all of their natural teeth extracted, and just 4 states have higher rates of edentulous seniors.[18] Second, Kentuckians lack access to oral health care. In 2012, just 60.3% of Kentucky adults had visited the dentist in the past year.[18] More than half lacked dental insurance of any kind,[19] a critical factor in utilization of oral health services.[20] The dental workforce in Kentucky is concentrated in urban and affluent areas, leaving many regions of the state with insufficient dentist-to-population ratios.[21] In these ways, Kentucky typifies the types of oral health needs that the ADHP profession was created to address. Despite these challenges, the capacity to train oral health professionals is one of Kentucky's strengths. Kentucky is home to 2 dental schools and several dental hygiene programs, including 2 four-year university programs. While there are no ADHP training programs at present, the state clearly has the potential to launch them in the future.

For these reasons, this study assessed consumer receptivity to the ADHP in Kentucky, using a large, random sample telephone survey. As a point of comparison, respondents were also asked about their comfort with care provided by two other advanced practice clinicians already licensed in the state: advanced practice register nurses (APRN) and physician assistants (PA).

Methods and Materials

The Kentucky Health Issues Poll (KHIP) is an annual, public opinion survey sponsored jointly by the Foundation for a Healthy Kentucky and Interact for Health and administered by the Institute for Policy Research at the University of Cincinnati. The broader purpose of KHIP is to produce timely information on a variety of health and health policy issues affecting Kentucky.[22] For the purposes of this study, a series of questions on advanced practice clinicians was included on the 2012 KHIP.

Face validity for KHIP questions was evaluated by the research team, and the completed instrument was pilot tested with randomly selected adult residents of the Commonwealth by telephone in advance of fielding the KHIP. These pretests are designed to test survey length, administration challenges related to the mode of the interview (cell or landline), administration challenges experienced by interviewers, and challenges experienced by respondents (for example, not understanding question wording or inability to answer questions) during the course of the interview. Depending on pretest outcome, initial KHIP instruments may be altered and retested prior to fielding of the survey. The specific phrasing included in this manuscript reflects the final instrument design. Following review and approval by the University of Cincinnati Institutional Review Board, a random sample of 1,680 adults from throughout Kentucky was interviewed by telephone for the 2012 KHIP. KHIP was administered by trained interviewers using a computer-assisted telephone interviewing (CATI) system. To increase representation among the growing number of Kentuckians living in wireless-only households with no landline telephone,[23] a portion of the interviews were conducted with cell phone users. Specifically, 1,360 landline interviews and 320 cell phone interviews were conducted between September 20 and October 14, 2012. Sample responses were also weighted based on American Community Survey estimates for gender, race, age, educational attainment, and region of Kentucky. As a result, KHIP responses are considered representative of the noninstitutionalized adult population in Kentucky.

Several questions about receptivity toward ADHPs were included in the 2012 KHIP survey instrument. Prior to the questions, the interviewers read a brief description of ADHPs as "a new type of dental hygienist who has a specific license and has completed additional education, typically such that he or she can provide diagnostic, preventive and therapeutic oral health services, such as filling ordinary cavities." Respondents were then asked to rate how comfort-

Table III: Respondent Receptivity to Routine Care From Various Advanced Practice Clinicians by Personal Experience: Percent and (Count)

	Count	Percent Very Comfortable	Percent Somewhat Comfortable	Total Percent Comfortable
APRN				
Care in Past Year	827	62.5% (517)	24.2% (200)	86.7% (717)
No Care in Past Year	830	39.4% (327)	34.9% (290)	74.3% (617)
PA				
Care in Past Year	673	53.2% (358)	34.8% (234)	87.8% (591)
No Care in Past Year	995	35.5% (353)	42.0% (417)	77.5% (771)

Notes: Counts and percentages are weighted: see text for details. For all findings, the chi-square statistic is significant ($p < 0.05$).

able they would be seeing an ADHP for routine dental care (very comfortable, somewhat comfortable, neither comfortable nor uncomfortable, somewhat uncomfortable, very uncomfortable). Before they were asked about ADHPs, respondents were first asked about their comfort with APRNs and PAs. These followed the same format as the questions about ADHPs: the interviewer would read a description of the profession and then ask about comfort seeking routine care. Respondents were also asked if they had received care from an APRN or PA in the past 12 months.

Upon completion of data collection, descriptive and inferential statistics were produced using SAS. The final KHIP data files are also available for review or analysis through the OASIS Data Archive system.[24]

Results

After hearing a brief description of the profession, nearly 3 in 4 Kentucky adults said they would be somewhat (35.4%) or very (38.2%) comfortable seeing an ADHP for routine dental care (Table 1). One in six said they would be somewhat (7.7%) or very (8.5%) uncomfortable seeing an ADHP. An additional 6.6% said they would be neither comfortable nor uncomfortable seeing an ADHP, and 3.6% did not have an opinion. Although there was some variation in responses among different subsets of participants, the majorities of all demographic groups reported they would be comfortable seeing an ADHP.

The total proportion of Kentucky adults who were comfortable seeking care from an ADHP (73.6%) was less than the proportion indicating comfort seeing an APRN (79.7%) or PA (81.3%) (Table II). For the two established professions, comfort with the advanced practice clinician was higher if the respondent had personal experience with that profession (respondent had received care from this type of professional within the past 12 months) (Table III). For both APRNs [$\chi^2(4, n=1657) = 94.06, p < 0.001$] and PAs [$\chi^2(4, n=1668) = 60.61, p < 0.001$], the relationship between personal experience and comfort was significant.

Discussion

For all demographic subgroups studied, the majority of Kentucky adults would be somewhat or very comfortable seeing an ADHP for routine dental care. As the availability of ADHPs increases, tailored outreach efforts may be needed to increase comfort with the profession, particularly among those with reduced access to oral health care. Further research is needed to identify best practices for marketing the ADHP profession.

Reported comfort with ADHPs may have been limited by the respondents' understanding of the profession. The study format necessitated that questions be brief, and the description of the ADHP profession that was read did not capture the full scope of practice that has been proposed for ADHPs. The questions about APRNs and PAs were deliberately asked first to allow respondents to draw parallels between ADHPs and these professions (previous research suggests that the majority of U.S. adults are familiar with APRNs and PAs).[25] Despite these efforts, respondent understanding is a potential limitation of the study.

A number of prior studies have looked at consumer receptivity to APRNs and PAs. When presented with a hypothetical care-seeking scenario, most people are willing to see an APRN or PA if it would mean a shorter wait time relative to seeing a physician.[25–28] Respondents with prior experience with APRNs and PAs were more likely to seek care from an APRN or PA in the future when presented with a time-tradeoff scenario.[25] Although the current study did not investigate this time tradeoff, the levels of self-rated comfort found align with the existing literature. Further research is needed to determine if potential decreased wait times would motivate care-seeking behaviors in a similar way in oral health settings, but this study shows that underlying consumer

comfort exists even without such incentives.

While Kentuckians reported less comfort with ADHPs than with other advanced practice clinicians, this may be related to a lack of direct experience with ADHPs. It is possible that individuals who have received health care from an APRN or PA in the past would be more comfortable seeking care from that profession in the future. Alternatively, it is possible that individuals who are inherently comfortable with a profession are more likely to seek care from that profession. A point-in-time survey like KHIP cannot determine the directionality of the relationship between comfort and personal experience. Although the predictive validity of self-reported comfort with ADHPs and care-seeking behavior is unknown, the association between comfort and care seeking for other advanced practice professions suggests that once ADHPs are licensed to practice, they will find willing patients in Kentucky. In addition to this ambiguity regarding temporal relationships, this study has several limitations typical of a telephone survey, including the potential for nonresponse bias. Further, the sample was limited to Kentucky adults and may not be generalizable to other regions of the country.

Perceived comfort is just one of many factors that are likely to influence care-seeking behavior for consumers, but expanding the scope of practice for dental hygienists has been met with high levels of patient satisfaction in the past: a Minnesota study found that 98% of patients were satisfied or very satisfied with the care they received at a restorative functions dental hygiene clinic.[29] It is reasonable to expect similar levels of satisfaction with the new ADHP profession as well.

Conclusion

In order for the ADHP model to be successful, the public must feel comfortable with the care provided by ADHPs and seek out their services. This study addressed the lack of available information on consumer receptivity using a representative sample of adults in Kentucky, a high-need state. Overall, this study demonstrates that adults are receptive to new models of care delivery and report high levels of comfort with ADHPs. Consumer concerns are unlikely to be a barrier to expanded licensure for dental hygienists in high-need areas like Kentucky.

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