

# RESEARCH

## Perceptions of California Dental Hygienists Regarding Mandatory Continued Competence Requirements as a Condition of License Renewal

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### Abstract

**Purpose:** To determine the perceptions of California dental hygienists (DHs) regarding mandatory continued competence requirements (MCCRs) as a condition for license renewal.

**Methods:** A quantitative cross-sectional survey was distributed through email by the California Dental Hygienists' Association (CDHA). The CDHA agreed to send a link to the survey and informed consent information to DHs whose email addresses were in the CDHA database. The online survey consisted of 19 items. All survey responses were analyzed using frequency distributions for categorical variables and means for continuous variables. Chi-square tests assessed associations between variables and differences between groups. The Wilcoxon signed rank test assessed relationships between perceptions and support of MCCRs for license renewal.

**Results:** Almost all (93%) believed that they have remained competent to deliver care since licensure. Over half agreed that continued competence should be verified throughout ones' professional career (53%). Most (81%) agreed that continued competence is important for patient safety and well-being. Less than half (47%) supported MCCRs as a condition of license renewal; however, 51% of those who agreed that competence is important for patient safety and well-being and 67% of those who agreed with verification of competence were in support of MCCRs.

**Conclusion:** While California DHs agreed that continued competence is important for patient safety and well-being and verification of competence is important, less than half supported MCCRs. Prior to instituting mandate for license renewal in California, continued competence and methods to ensure continued competence throughout ones' career should be defined.

**Keywords:** continuing education; dental and dental hygiene workforce models; education concepts and theory; evidence based practice; survey research

This study supports the following NDHRA priority areas:

**Health Services Research:** Evaluate strategies dental hygienists use to effectively influence decision-makers involved in health care legislation and develop valid and reliable measures of quality dental hygiene care.

**Professional Education and Development:** Validate measures that assess continued clinical competency.

### INTRODUCTION

Dental hygienists enter the profession with a commitment to lifelong learning in order to maintain competence in an evolving health care system. This commitment is a key component of the American Dental Hygienists' Association's (ADHA) Standards of Dental Hygiene Practice<sup>1</sup> and the American Dental Education Association's (ADEA) Core Competencies for Entry into the Dental Hygiene Profession.<sup>2</sup> In addition, the core competencies proposed in the ADHA's Advanced Dental Hygiene Practitioner (ADHP) Model include self-assessment and the commitment to lifelong learning for professional development.

Each state licensing board has the legal authority to ensure that dental hygienists within their jurisdiction maintain these competencies and meet established criteria for dental hygiene education, licensure, and license renewal.<sup>3</sup>

Moreover, the 1998 PEW Foundation Report recommended that states in the United States require that their "regulated health care practitioners demonstrate their competence in the knowledge, judgment, technical skills and interpersonal skills relevant to their jobs throughout their careers."<sup>4</sup> Currently,

Table I. Demographic Data

Item	% (n)
ADHA/CDHA Member	76 (620)
<b>Gender</b>	
Male	3 (27)
Female	97 (786)
<b>Race</b>	
White	75 (595)
American Indian/Alaskan Native	1 (6)
African American	1 (6)
Asian	9 (71)
Hispanic	11 (84)
Hawaiian/Pacific Islander	2 (16)
Middle Eastern	2 (14)
Other	3 (20)
<b>Age</b>	
20–29	12 (99)
30–39	22 (178)
40–49	19 (159)
50–59	27 (225)
60–69	16 (133)
70+	3 (26)
<b>First Year Licensed to Practice</b>	
1950–1979	19 (154)
1980–1989	18 (149)
1990–1999	16 (136)
2000–2009	23 (191)
2010–2014	24 (199)
<b>Highest Degree Earned</b>	
AA/AS	43 (357)
BA/BS	44 (363)
MA/MBA/MS	13 (103)
EdD/PhD	0 (3)
<b>Practice Description</b>	
Part-time clinical practice	49 (404)
Full-time clinical practice	40 (328)
Part-time administrative or indirect patient care	3 (23)
Full-time administrative or indirect patient care	1 (8)
Part-time teaching faculty	8 (67)
Full-time teaching faculty	4 (37)
Retired	3 (25)
Other	8 (68)

however, continued competence of dental hygienists, as well as that of other health care professionals throughout the country, is being addressed indirectly and primarily through mandatory continuing education for licensure renewal.<sup>5</sup> Within the dental hygiene

profession, the ADHA recommends that dental hygienists be actively involved in the development and administration of continuing competence mechanisms as a critical aspect of self-regulation.<sup>6</sup>

**Table II. Definition of Continued Competence (n=1,015)**

Definition	Response % (n)
The ability to deliver evidence-based, safe and effective treatment throughout ones' professional career.	87 (884)
Meeting continuing education requirements throughout ones' professional career.	11 (108)
Practicing on a regular a basis throughout ones' professional career.	2 (23)

**Table III. Statements Regarding Continuing Competence**

	Strongly Disagree/ Disagree % (n)	Neither Agree or Disagree % (n)	Agree/Strongly Agree % (n)	Total Responses
Continued competence of a dental hygienist is important to the safety and well-being of patients/clients.	13 (120)	6 (61)	81 (769)	950
Continued competence increases with the number of years in practice.	18 (173)	32 (301)	50 (47)	946
In my opinion, since initial licensure I have remained competent to deliver dental hygiene care.	6 (53)	1 (11)	93 (882)	946
In my opinion, continued competence should be verified throughout ones' professional career.	22 (207)	26 (242)	53 (496)	945
The current continuing education requirement is adequate to assure continued competence to practice dental hygiene for the length of my professional career.	18 (171)	15 (142)	66 (633)	946

Percentages may not add up to 100% due to rounding; measured on a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree"; the 2 categories at the bottom and top of the scale were combined respectively to form two new categories of "Strongly Disagree/Disagree" and "Agree/Strongly Agree."

Because, to date, neither dentistry nor dental hygiene have formally defined continued competence, the authors have adapted nursing's definition as a baseline for the purpose of discussing continued competence in dental hygiene. The term "continued competence" has been defined by nursing as "The application of the knowledge and inter-personal, decision-making and psychomotor skills expected for the nurse's practice role, within the context of public health, welfare and safety" and as "The extent to which professionals can handle the various situations that arise in their area of practice."<sup>7</sup>

In 2014, during the legislative sunset process, the Dental Hygiene Committee of California (DHCC), the California dental hygiene licensing body, recommended mandating continued competence as a condition for license renewal to assure the public that dental hygienists practice safely throughout their professional careers.<sup>8</sup> The way in which mandatory continued competence would be evaluated for license renewal is currently unclear. Since this evaluation could involve additional requirements beyond current mandatory continuing education, it is criti-

cal to gain feedback about this issue from California dental hygienists (DHs) who will be directly affected by proposed changes.

To address this information gap, the following research questions were asked:

- How do California DHs define continued competence?
- What are the perceptions of California DHs regarding continued competence?
- Do California DHs believe that continued competence is important for patient safety and do they support evaluation as a condition for license renewal?

To answer these questions, the purpose of this study was to determine the perceptions of California DHs regarding mandatory continued competence requirements (MCCRs) as a condition for license renewal, using a web-based survey.

Table IV. Comparison of Continued Competence Being Important in Patient Safety and Well-being and Support of MCCR (n=818)\*

Continued competence of a dental hygienist is important to the safety and well-being of patients/clients.			
	Support MCCR % (n)	Would Not Support MCCR % (n)	Total Responses % (n)
Strongly Disagree/Disagree	37 (36)	63 (62)	12 (98)
Neither Disagree or Agree	15 (8)	85 (44)	6 (52)
Agree/Strongly Agree	51 (342)	49 (326)	82 (668)
Totals % (n)	47 (386)	53 (432)	100 (818)

\*Chi square test, P-value = <0.001

## METHODS

**Study Design.** This cross-sectional, web-based quantitative study was approved by the University of California San Francisco Human Research Protection Program (Institutional Review Board).

**Recruitment, Informed Consent, and Survey Administration.** The California Dental Hygienists' Association (CDHA) was contacted to explain the study and to help facilitate recruitment of all California registered DH's with email addresses in the CDHA database. CDHA administrators agreed to forward the link to the survey instrument, which included the informed consent document, to all California members and nonmember DH's with email addresses in their database (N=6,605). Email reminders were sent out 2 times approximately 2 weeks apart.

**The Survey.** The survey included 19 items: a multiple-choice item to assess how California DHs defined continued competence; four 5-point Likert scale items (ranging from "Strongly Agree" to "Strongly Disagree") to assess beliefs regarding competence as they relate to patient safety, years in practice, perceptions about their own competence, and the need to verify competence throughout ones' professional career; a 5-point Likert scale item (ranging from "Strongly Agree" to "Strongly Disagree") to determine if the current requirement for mandatory continuing education is adequate to assure continued competence; and one item (yes/no response options) to assess awareness of the DHCC's intent to pursue continued competence measures as a condition of licensure.

In addition, the survey included 7 demographic items (first year of dental hygiene licensure; first year of dental hygiene licensure in California; highest degree earned; practice description; age; race/ethnicity, and gender); an item to assess current sources of continuing education measured by percentages equaling 100%; and an item to determine

membership status in ADHA/CDHA.

Prior to finalizing survey items, feedback was requested and received from the DHCC and CDHA leadership regarding the content of the survey items. The survey instrument was revised twice based on this input. Subsequently, a formal pilot study was then conducted with a sample of 11 dental hygienists enrolled in a graduate MS-DH program, 3 dental hygiene members of the DHCC, and 5 CDHA leaders to assess clarity, feasibility, and acceptability of the survey instrument. The survey instrument was then revised and finalized based on the results of the pilot test.

Web-based data collection methodology was chosen because research has shown that participants prefer computer-based surveys to traditional paper-and-pencil surveys, feel more comfortable with issues around confidentiality (eg privacy and anonymity),<sup>9,10</sup> particularly for sensitive items, and tend to be more honest with their answers when using this methodology.<sup>11</sup> In addition, web-based administration of surveys improves data quality by reducing data entry error.<sup>12,13</sup> Qualtrics (www.qualtrics.com) was used as the web-hosting organization.<sup>14</sup>

**Data Analysis.** All survey responses were analyzed using frequency distributions for categorical variables and means for variables measured on a continuous scale. Frequencies for each item were calculated, including a multiple-choice item with 3 response options for defining continued competence. In analyzing 5-point Likert scale items ranging from "Strongly Disagree" to "Strongly Agree," the bottom 2 categories and the top two categories were combined respectively to form two new categories of "Strongly Disagree/Disagree" and "Agree/Strongly Agree."

Chi-square tests were performed to assess associations between those selecting "The ability to deliver evidence-based, safe and effective treatment

throughout ones' professional career" as their definition of continued competence and their support of mandatory continued competence evaluation as a condition for license renewal.

In addition, chi-square tests were performed to explore differences between CDHA members and nonmembers; differences based on how respondents define continued competence; and differences based on such factors as perceptions about patient safety, their own professional competence, and the need to verify competence throughout ones' professional career; and years in practice. A Wilcoxon signed rank test was utilized to assess relationships between perceptions regarding competence verification and support of MCCR as a condition of license renewal.

Finally, in analyzing the results for awareness of the DHCC's intentions regarding implementation of measures to assure continued competence, a chi-square test was utilized to determine if differences between ADHA/CDHA members and nonmembers were significant.

## RESULTS

Of 6,605 research survey notifications sent out, 384 bounced back due to invalid e-mail addresses, for a total of 6,221 valid surveys sent. Of these valid surveys sent, 1,212 were returned for a 19.5% response rate. Most of the respondents were ADHA members, female, White, between the ages of 40-59 years, received their dental hygiene license between the years 2000-2014, had either an associate degree or a bachelor's degree, and worked part-time in clinical practice (Table I).

**Defining Continued Competence.** Most respondents defined continued competence as "The ability to deliver evidence-based, safe and effective treatment throughout ones' professional career" (Table II).

**Perceptions Regarding Continued Competence.** As measured on a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree," most agreed that continued competence is important for patient safety and well-being, with half indicating that competence increases with years of practice. Nearly all respondents believed that they have remained competent to provide care since initial licensure. Over half agreed that continued competence should be verified throughout ones' professional career and that the current requirement of 25 hours of continuing education every 2 years for license renewal was adequate to assure continued competence (Table III).

**Patient Safety and Support of Mandatory Continued Competence Requirements.** An over-

whelming majority of participants agreed that continued competence is important for patient safety and well-being with more than half of those supporting MCCR as a condition of license renewal. Belief that continued competence was important for patient safety was associated with support of MCCR, although differences were primarily due to much greater neutrality among those who did not support MCCR (85% compared to 15%), and more disagreement about continued competence and patient safety (63% among those not supporting MCCR compared to 37% among those who supported MCCR). (Chi-square test, P-value = <0.001) (Table IV).

Slightly less than half of all respondents were in favor of MCCR as a condition of license renewal. There was a significant association of those agreeing/strongly agreeing that competence should be verified throughout ones' career and support of mandatory continuing competence as a condition for license renewal (67%) (Wilcoxon signed rank test P-value = <0.001) (Table V).

ADHA members were significantly more supportive of MCCR than nonmembers (chi-square test, P-value = <0.001/Table VI). There was no difference in support of MCCR based on years in practice (chi-square test, P-value = 0.07/data not shown).

Prior to taking the survey, 26% of the total respondents were aware of the DHCC's intent to pursue mandatory continued competence as a condition for license renewal with a significant difference be-

**Table V. Comparison of Verification of Continued Competence Attitudes and Support of MCCR (n=815)**

In my opinion, continued competence should be verified throughout ones' professional career.			
	Support MCCR % (n)	Would not support MCCR % (n)	P-value
Strongly Disagree/Disagree	12 (22)	88 (159)	
Neither Disagree or Agree	36 (74)	85 (44)	
Agree/Strongly Agree	67 (289)*	33 (142)	<0.001*
Totals % (n)	47 (385)	53 (430)	

\*Wilcoxon signed-rank test, nonparametric test of trend

**Table VI. Comparison of Support of MCCRs as a Condition for License Renewal and ADHA Membership (n=804)\***

	Member % (n)	Nonmember % (n)	Total Responses % (n)
Support MCCR (includes all support options)	50 (300)	39 (78)	47 (378)
Would not support MCCR	50 (306)	61 (120)	53 (426)
Total Members/ Nonmembers	75 (606)	25 (198)	100 (804)

\*Chi square test, P-value = <0.001

tween ADHA members (29%) being aware of this intent compared with nonmembers (14%) (chi-square test, P-value = <0.001/data not shown).

## DISCUSSION

To date, there is no formal definition of continued competence within the professions of dentistry and dental hygiene. This study shows that the majority of California DHs (87%) define continued competence as the ability to deliver evidence-based, safe and effective treatment throughout ones' professional career. The need to define continued competence was addressed by the 2014 ADHA House of Delegates when they referred a proposed resolution that defined continued competence to the Council on Education with a request to report back to the 2015 House of Delegates.<sup>15</sup> The 2015 House of Delegates will reconsider this resolution based upon the recommendation from the Council.<sup>16</sup> Within the health care professions a variety of definitions exist and include the concept of ongoing continued competence being essential to delivering safe and effective care.<sup>4</sup>

The DHCC has yet to define continued competence. While the ADHA is moving in this direction, its most recent proposed definition does not include reference to providing competent care throughout ones' professional career or on an ongoing basis. The California Dental Association defines competence in its Code of Ethics, which stipulates that maintenance of competence includes continual self-assessment and commitment to lifelong learning and that competence is a just expectation of the patient.<sup>17</sup> The Minnesota Board of Dentistry also defines continued competence as an ongoing, dynamic process of learning.<sup>18</sup>

The lack of research or formal definition of continued competence within dental hygiene as a whole presents a challenge for the profession. When considering mandates for continued competence verification, it is important to gain an understanding of the profession's perceptions regarding competence verification. It is interesting to note that in this study, an overwhelming majority (93%) believed that they have remained competent to deliver care since licensure, and yet only half indicated that they believed competence increases with years in practice (50%). This discrepancy mirrors other reports, including that of the DHCC 2013/14 Sunset Review Report,<sup>8</sup> that raised the question of competence from initial licensure and that of competence throughout ones' professional career.<sup>19,20</sup>

Over half of our respondents agreed continued competence should be verified throughout ones' professional career (53%), and that the current requirement of 25 hours of continuing education every 2 years for license renewal was adequate to assure continued competence (66%). In addition to the DHCC, support for verification of continued competence has been echoed by the American Association of Dental Boards<sup>21</sup> and the American Association of Retired Persons.<sup>22</sup> These groups also question the concept of mandatory continuing education as an effective method to assure competence. Additionally, the California Board of Podiatric Medicine has enacted regulations to ensure continued competence that includes a variety of mechanisms to verify continued competence in addition to 50 hours of continuing education every 2 years.<sup>23</sup> Finally, within the profession, the College of Registered Dental Hygienists of Alberta (Canada) have required demonstration of continued competence for the renewal of practice permits, which includes continuing education hours, documentation of practice hours and reporting requirements.<sup>24</sup>

On the other hand, the American Dental Association includes continuing education as a method for achieving professional competence and the public's protection<sup>25</sup> and further states that keeping knowledge and skills current is a primary obligation under their duty to refrain from harming patients.<sup>26</sup>

Evidence from this study shows that the vast majority (81%) of California DHs believed that continued competence is important to patient safety and well-being and that more than half of those (51%) significantly supported MCCRs as a condition for license renewal. This finding is consistent with reports in the literature that acknowledge the relationship between competence and patient safety and confirm the ongoing debate among practitioners and organized dentistry regarding the need and/or support for MCCRs as a condition of license renewal.<sup>21,27</sup>

While less than half of all respondents supported mandatory continuing competence requirements as a condition for license renewal, 67% of those who "agreed" or "strongly agreed" that competence should be verified throughout ones' career supported the concept of mandatory requirements as a condition for license renewal. These findings suggest that these respondents would support the efforts of the DHCC and its position regarding patient safety and competence; and that verification/evaluation of continued competence should be a part of license renewal.

Interestingly, findings demonstrated that a higher percentage of ADHA members support MCCRs than nonmembers (50% vs. 39%). A possible explanation for this difference could be a better understanding by ADHA members regarding the necessary steps to gain expansion of the scope of practice and the need to ensure patient safety and well-being.

Finally, study data showed that only a minority of respondents was aware of the DHCC's intent to pursue mandatory continuing competence as a condition of license renewal with a significantly higher percentage of ADHA members being aware over nonmembers. The DHCC stipulates it is the responsibility of the licensee to keep up to date on changes and the authors propose that members are more likely to keep up-to-date on DHCC actions through their professional organization.

Limitations of this study include a low response rate (19.5%). Additionally, the CDHA database (6,605) does not include all DHs licensed to practice in California (~19,000). These limitations prevent the generalizability of the results to all California DHs. The study results could also be affected by response bias, in that those who participated in the study may have had a greater interest in the topic than those who did not participate. Finally, despite a rigorous pilot testing process, the complexity and potential lack of understanding of continued competence and possible verification requirements might have led to misinterpretation of some of the survey items.

## CONCLUSION

Over half of the DHs in this study agreed that continued competence should be verified throughout ones' professional career; however, less than half supported MCCRs as a condition for license renewal. Nevertheless, the majority believed continued competence is important for patient safety and well-being, which suggests support of MCCRs in the future. Findings from this study provide support for the DHCC to formally define continued competence, as well as methods to ensure continued competence of California DHs throughout their careers.

**Continued Competence Definition Update.** After this research was conducted and submitted for publication, the 2015 American Dental Hygienists' Association House of Delegates formally defined continued competence as "the ongoing application of knowledge, judgment, attitudes, and abilities in a manner consistent with evidence-based standards of the profession."<sup>28</sup> This represents the first formal definition of continued competence for dental hygienists in the United States and is consistent with the definition found in this study.

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