Critical Issues in Dental Education

The Ethics of Live Patient Use in Dental Hygiene Clinical Licensure Examinations: A National Survey


Abstract: A national survey of dental hygienists was conducted to explore ethical issues arising from the use of live patients for dental hygiene clinical licensure examinations. Data were collected regarding respondents’ demographics, additional costs they incurred associated with their examination beyond the examination fees, delays in patients’ treatment resulting from the examination, unethical candidate and/or patient behaviors they experienced, and provisions they made for patients’ follow-up care related to the examination. Five hundred surveys were mailed to dental hygienists from two states in each of the five licensure examination regions. The response rate was 40.6 percent (n=203). Descriptive statistics were used to analyze the data. The results showed that the majority of the respondents spent additional money on examination-related expenses (69.2 percent). Sixty-one percent of the respondents reported paying their patients; however, only 50.5 percent felt such a practice was acceptable. More than half (53.1 percent) reported believing it was appropriate to delay treatment in order to have a patient participate in the examination, although only 16.4 percent reported actually delaying treatment. Informed consent was said to be obtained by 94.9 percent of the respondents. The majority (86.6 percent) said they referred patients for follow-up dental hygiene care. When asked if they felt the examination was an accurate assessment of their clinical skills, 78.7 percent of the respondents agreed that it was.

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The use of live patients for accepted clinical dental and dental hygiene licensure examinations has generated a decades-long debate concerning equitable examinations and ethical dilemmas. The purpose of including a clinical examination as a requirement for licensure is to ensure that only qualified individuals receive a license, thus protecting the public from substandard care. The licensure process has evolved over time so that dentistry is now exploring alternative testing methods. Currently, dental and dental hygiene licensure candidates must graduate from an accredited program and successfully complete both a written national board and a regional- or state-administered clinical licensure examination. However, some states have independent education and licensure requirements. Five regional organizations administer the licensure examinations: the Council of Interstate Testing Agencies (CITA), Central Regional Dental Testing Service (CRDTS), North East Regional Board of Dental Examiners (NERB), Southern Regional Testing Agency (SRTA), and Western Regional Examining Board (WREB). The cost of the examination varies depending on the state or region.

Patient-based clinical licensure exams are a subject of ongoing discussion in the dental community. Jenson1 summarized issues regarding the ethics of live patient use for clinical licensure examinations.

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Because states require that candidates take clinical examinations, the situation necessitates the use of live patients. However, Jenson raised questions about the ethics of this situation: who is responsible for the patient’s welfare, are the patients actually volunteering if the process is mandatory for licensure, do prospective patients complete the full informed consent process, and is there provision of follow-up care for patients?

Major organizations involved in dental education and licensure hold differing positions on this topic and have presented logical and reasonable arguments for both the continuation and elimination of using live patients. The American Association of Dental Boards (AADB), formerly the American Association of Dental Examiners, for example, published a 2001 position paper on the elimination of dental clinical licensure examinations. That paper defended clinical examinations as a vital third-party tool that helps states protect against “the improper, unprofessional, incompetent, and unlawful practice of dentistry and dental hygiene.” From this perspective, licensure examinations provide a check and balance system to ensure that accredited educational institutions do produce competent practitioners. The AADB believes that patients agree to participate for many reasons ranging from altruistic to financial gain and that the majority of these patients receive high-quality care and are fully aware that treatment given during the examination is not comprehensive. The AADB insists that the licensure examinations are constantly evolving and improving and points out that the major regional examinations have a database of historical information that supports the reliability and stability of examination outcomes.

On the other hand, arguments opposed to live patient use, although more numerous in the literature, share many points of concern. Both Buchanan and Dugoni explored such problems as lack of standardized test conditions, a limited supply of patients, potential mistreatment of patients, use of patients with inappropriate oral conditions for the examination, delays in provision of treatment and follow-up care, patient discomfort, legal liability, costs to candidates, and lack of interaction among state dental boards, dental schools, and examining agencies. Both also identified risks associated with the examination including extra radiographs and a length of time for each procedure that is not reflective of private practice and can place undue stress on both the patient and the candidate. Due to the demands of the examination, there is also a risk of substandard or inappropriate care. Both Hasegawa and Matthews and Formicola et al. have pointed out a conflict of interest between the candidate’s best interest of passing the examination and the patient’s best interest of receiving appropriate treatment, which could mean the pressure of the examination could compromise the candidate’s ethical standards.

In addition, Hasegawa and Matthews have emphasized that dentistry is unique in being “the only health profession that requires the performance of irreversible patient treatment as a part of a clinical examination,” while Dugoni has pointed out that only dental boards, barbers, and cosmetologists are required to perform procedures on live patients for initial licensure. Nurses, chiropractors, and veterinarians are among the health professionals who do not treat live patients for initial licensure. Licensure examinations for many medical professions utilize standardized patients who assess the candidates’ abilities to interact with the patient in order to diagnose and treatment plan rather than perform therapeutic or irreversible treatment. The Institute of Medicine’s Committee on the Future of Dental Education argued that live patient examinations in dentistry should be replaced with other assessment methods and standardized patients.

The American Dental Association (ADA) has said it shares concerns expressed by dental educators regarding the use of live patients for clinical licensure examinations and supports eliminating live patient use in its 2008 policy statement. Likewise, the American Dental Hygienists’ Association (ADHA) Policy Manual urges “regional testing agencies [to] adopt policies that ensure the highest ethical standards to protect the safety and welfare of patients who participate in clinical dental hygiene examinations” and advocates an alternative to the use of human subjects for dental hygiene clinical licensure exams. Educators agree: a resolution passed by the 2011 American Dental Education Association (ADEA) House of Delegates calls for the elimination of live patient examinations for dental licensure by 2015. This resolution stipulated that “all states should offer methods of licensure in dentistry that include advanced education of at least one year, portfolio assessment, and/or other non-live patient-based methods and include independent third-party assessment.”

The purpose of our study was to gather information from U.S. dental hygienists who graduated between 2007 and 2009 in order to investigate ethical issues that may have occurred during their clinical
licensure examinations. Specific questions asked of the survey respondents sought to determine whether they as licensure candidates 1) incurred additional costs that were above and beyond the exam fees; 2) ensured their patients received timely dental hygiene treatment; 3) experienced unethical candidate and/or patient behaviors before or during the licensure examination; and 4) made provision for appropriate follow-up care for their licensure patients.

**Review of the Literature**

Numerous studies over the last thirty years have examined the reliability and/or validity of dental licensure examinations.\(^\text{12-21}\) Studies of dental licensure candidates’ clinical competence have compared the clinical and academic performance of students to their performance on clinical licensure examinations.\(^\text{12-14}\) Hangorsky concluded that there was no significant relationship between the NERB candidates’ clinical competence based on class rank and clinical licensure examination scores.\(^\text{12}\) Ranney et al. suggested that the live patient portion of NERB may not be a valid assessment of clinical competence due to the variation in pass rates between years and the lack of correlation between class rank and examination performance.\(^\text{13}\) Stewart et al. compared students’ academic performance to their scores on Florida’s dental licensure examination and found a significant relationship for candidates in the highest quartile of the class earning higher mean examination scores and those in the lowest quartile earning lower mean scores.\(^\text{14}\) These researchers concluded that this correlation indicates the Florida licensure examination is a valid testing instrument. In a 2006 article, Ranney argued that since state and regional testing agencies had not published data on the reliability and validity of their clinical examinations, there was no direct evidence that clinical licensure exams protect the public.\(^\text{15}\)

In a study of dentists’ knowledge of “ethical lapses” and experiences during their clinical licensure examinations, Feil et al. sent a twenty-one-item survey to 1,000 randomly selected general dentists across the United States who had graduated from an accredited dental school between 1980 and 1994.\(^\text{16}\) The survey focused on problems previously reported in the literature: students’ delaying treatment, paying individuals to be patients, carrying out unnecessary procedures to fit the examination, not providing for follow-up care, experiencing increased stress and inconvenience, and having ethical lapses due to the pressure of the examination. With a 42.9 percent (n=429) response rate, these authors reported the following: 59.1 percent (n=253) of the respondents said they knew with certainty of at least one ethical lapse; 41 percent (n=170) said they had hired a backup patient; 24 percent (n=99) reported that no follow-up care was sought even though it was needed; 32.5 percent (n=135) reported taking unnecessary radiographs; 19.3 percent (n=80) reported knowing of a patient who was treated prematurely or aggressively; and 6.3 percent (n=26) reported knowing of colleagues’ providing treatment that was not in the patient’s best interest. Of the respondents who commented on their experiences (n=156), 16 percent were positive and 63 percent were negative. Feil et al. concluded that using live patients for dental clinical licensure examinations may be unethical.

In the last decade, individual states have introduced new state-specific requirements regarding licensure. In 2003, New York State passed legislation to replace dental clinical licensure examinations with the Post-Graduate Year (PGY-1) program. New graduates must spend their first year of practice in a supervised residency program to broaden their experience before practicing independently. New York’s main objective in implementing the PGY-1 program was to improve the quality of dentistry, raise the standards of licensure, and thus better protect the public.\(^\text{17}\) In 2009, the Minnesota Board of Dentistry voted to give candidates for dental licensure the option of taking a non-patient-based examination, and in 2010 Minnesota began to accept results of the Canadian National Dental Examining Board (NDEB) examination in place of a clinical licensure examination for graduates of the University of Minnesota.\(^\text{18}\) (Candidates from Minnesota who seek licensure in other states are required to pass the clinical licensure examination recognized in that state, however, as the NDEB will not be accepted in those jurisdictions.) California recently approved legislation that eliminates the state dental licensure examination and provides California dental students an alternative to licensure through WREB.\(^\text{19}\) The state’s portfolio examination process requires dental students to satisfactorily complete a series of seven clinical experiences over the course of the final year of dental school. A portfolio of their work must then be submitted to the state’s Dental Board for final approval and licensure. Effective January 1, 2011, this model will take one to two years to become available to students due to the need for calibration between the Dental Board and the dental schools.
In contrast to the United States, Canada has established a uniform national dental licensure model that does not include performing treatment on live patients. Graduates from accredited Canadian dental schools are required to pass an objective structured clinical examination (OSCE) and the NDEB written examination to be granted a dental license. The validity of the OSCE and the written examination in Canada has been studied extensively. Although candidates for Canadian dental licensure are not required to complete licensure examinations with human subjects, dental hygiene candidates still have this requirement.

Research regarding the ethical use of live patients for dental hygiene licensure examinations in the United States has been limited. A 2001 Delphi study of dental hygiene program directors conducted by Patrick concluded that competence for initial licensure is best determined through ongoing assessment over time rather than a “one-shot” examination and that accreditation is important to standardizing the determination of competence. Gadbury-Amyot et al. examined the predictive validity of traditional and non-traditional dental hygiene competency assessments, using grade point average (GPA), clinic GPA, National Board Dental Hygiene Examination (NBDHE) scores, and student portfolios as predictors of CRDTS scores. The results indicated a moderate positive correlation among overall GPA, NBDHE scores, and portfolios as predictors of clinical competence, but the correlation between CRDTS scores and these variables was low. These researchers concluded that there was no relationship between one-shot dental hygiene clinical licensure examinations and previously validated measures of student competence.

The arguments for and against the use of live patients involve several common ethical questions that need to be examined. Based on the ADA Principles of Ethics and Code of Professional Conduct, some of the major ethical issues involve the selection and solicitation of patients, informed consent, patient care, and follow-up treatment. These issues also apply to dental hygiene and are addressed in the research aims of our study.

Materials and Methods

The thirty-six-question survey contained multiple-choice and yes/no questions with an area for open-ended comments at the end. This original survey instrument, built on previously published dental research, was designed to focus on the following areas as they apply to dental hygiene: demographics, cost, patient selection and pre-examination procedures, ethical behaviors during the examination, and patient follow-up care. Specific questions addressed patient payment, additional costs, informed consent, voluntary participation, delaying treatment, radiographic retakes, instrument misuse, pre-scaling, and follow-up care. Finally, the respondents were asked whether they felt that their clinical licensure examination was an accurate/reflective assessment of their clinical skills.

Experts in the fields of survey research and dental hygiene education reviewed the survey for content validity. A pilot test was administered to increase survey clarity, and modifications were made based on the results. Although this survey was based on a previous study, reliability of our survey could not be based on that study because the sample populations were different: since dentists and dental hygienists take different types of clinical examinations, the results cannot be compared. The research proposal was submitted to the Institutional Review Board (IRB) at Texas A&M Health Science Center Baylor College of Dentistry, which granted an exemption status (IRB 09-49 Exempt) on July 29, 2009.

The sample population consisted of registered dental hygienists who had earned initial licensure between 2007 and 2009 and had taken one of the five regional clinical licensure exams. The population was limited to dental hygienists who were licensed in forty-five of the fifty states. Five states (Alabama, California, Delaware, Florida, and Nevada) use separate independent testing agencies for initial licensure and were excluded from the study.

The sample population was selected by dividing the states into five groups based on the regional exam that the majority of dental hygienists take for initial licensure: Council of Interstate Testing Agencies (CITA), Central Regional Dental Testing Service (CRDTS), North East Regional Board of Dental Examiners (NERB), Southern Regional Testing Agency (SRTA), and Western Regional Examining Board (WREB) (Figure 1). For the participants, we contacted the state dental boards and requested electronic lists of their current licensees. Each list was sorted to determine eligible subjects. A proportional sample was considered but not used due to budget constraints. In order to have equal representation from each state and testing region, fifty respondents per state were randomly selected; based on that, the states were selected (Table 1).
Figure 1. Regional dental hygiene clinical licensure examinations
To maintain the anonymity of the subjects, each survey was assigned an identification number, which was coded to an examination region. In September 2009, the 500 randomly selected subjects were mailed the survey with a cover letter and a stamped return envelope addressed to the principal investigator. After four weeks, 265 non-respondents were sent a follow-up survey package.

Data were collected and entered into the statistical software package SPSS v. 16.0 (Chicago, IL). SPSS was used for descriptive data analysis and frequency distributions. The survey questions were separated into groups based on the research question and then categorized into ethical practices or ethical attitudes for reporting purposes.

Results

Of the 500 surveys mailed, sixteen were undeliverable. Respondents who took a clinical licensure examination in a year other than 2007 to 2009 or who reported taking an independent clinical licensure examination were excluded (7.5 percent; n=41). From the total sample population of 500, the response rate was 40.6 percent (n=203; Table 2). Since not all respondents answered every question, the number of responses to each question varies. Demographic information was calculated (Table 3). The majority of the respondents, 40.9 percent (n=83), took their licensure examination in 2008. The NERB was the most frequently taken regional exam; however, the range between regional exam frequencies was 5.4 percent.

Ethical Practices

The majority of survey questions and response data dealt with the ethical practices of the respondent and the patient before, during, and after the clinical licensure examination. The results showed that 61.6 percent (n=125) of the respondents paid their accepted clinical licensure examination patient. Although not all regional clinical licensure examinations allow the use of back-up patients, the respondents were asked whether they had paid a back-up patient to be available and if so, how much; 14.3 percent (n=27) reported paying a back-up patient. Of the respondents who paid their accepted patients, the majority (n=55) spent more than $100 (Figure 2). Forty-five paid their accepted patients $76–$100, twelve paid $51–$75, ten paid $21–$50, and two paid up to $20. Of the respondents who reported paying back-up patients,
three paid up to $20, nine paid $21–$50, eight paid $51–$75, five paid $76–$100, and four paid more than $100.

Additional exam-related expenses were incurred by 69.8 percent (n=141) of the respondents. Approximately 28 percent (n=56) of this group of respondents said they spent $100–$299, 16.8 percent (n=34) spent less than $100, 15.8 percent (n=32) spent $300–$499, and 9.4 percent (n=19) spent $500 or more. Approximately 30 percent (n=61) of the total respondents said they did not incur any additional exam expenses (Figure 3). Travel by the respondent and the patient was reported as the most frequent additional expense by 54.5 percent (n=110) of the respondents, followed by lodging (40.1 percent; n=81) (Table 4). Other reported expenses (27.7 percent; n=56), as determined by written anecdotal comments, included food for the candidate and patient, gifts for the patient, new instruments, and dental hygiene treatment at the candidate’s school.

The survey respondents were also asked about patient behavior before and during the exam. Of the respondents who indicated that they had paid their patients, there were no reports of patients demanding more money than the originally agreed upon fee. When asked if they thought their patient had falsified information to ensure that he or she became an examination patient, 98.5 percent (n=199) answered “no.” When asked how the candidates selected their patients, the majority of the respondents (51.7 percent; n=105) reported selecting the patient by themselves; 33.0 percent (n=67) reported having faculty members help in patient selection; and 26.6 percent (n=54) reported selecting patients with the help of classmates. Only 1 percent (n=2) reported that someone other than themselves selected their patient. The respondents were instructed to check all that applied, which accounts for the percentages totaling greater than 100 percent and the number being greater than 203. When the respondents were asked about other pre-examination behaviors, 26.5 percent (n=53) reported completing official examination paperwork (which was supposed to be completed during the examination) ahead of time. Twenty-nine percent (n=59) of the respondents reported using multiple radiograph retakes to get “the perfect” film.

Figure 2. Amount dental hygiene licensure candidates in study paid their accepted and back-up patients, by percentage of respondents in each category

### Table 2

<table>
<thead>
<tr>
<th>Payment Amount</th>
<th>Accepted</th>
<th>Back-Up</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0-$20</td>
<td>1.0%</td>
<td>1.5%</td>
<td>2.5%</td>
</tr>
<tr>
<td>$21-$50</td>
<td>4.9%</td>
<td>4.4%</td>
<td>9.3%</td>
</tr>
<tr>
<td>$51-$75</td>
<td>5.9%</td>
<td>3.9%</td>
<td>9.8%</td>
</tr>
<tr>
<td>$76-$100</td>
<td>22.2%</td>
<td>2.5%</td>
<td>24.7%</td>
</tr>
<tr>
<td>More than $100</td>
<td>27.1%</td>
<td>1.0%</td>
<td>28.1%</td>
</tr>
<tr>
<td>Do Not Recall</td>
<td>1.5%</td>
<td>4.4%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Did Not Pay</td>
<td>37.9%</td>
<td>0.0%</td>
<td>37.9%</td>
</tr>
</tbody>
</table>
The respondents were also asked about their informed consent practices (Table 5). When asked if the patient was given an explanation of the dental hygiene treatment plan before, during, and after the clinical licensure examination and an explanation of alternative treatment options, 94.0 percent (n=189) responded “yes” and 6.0 percent (n=12) said “no.” When asked if they had obtained informed consent prior to the examination, 94.9 percent (n=188) reported “yes” and 5.1 percent (n=10) said “no.” The respondents were asked if they had explained the risks and benefits of becoming a clinical licensure examination patient, and 90.6 percent (n=183) said “yes” and 9.4 percent (n=19) said “no.” When the respondents were asked if they had explained to their patient that participating in the examination was voluntary, 96.5 percent (n=195) responded “yes” and 3.5 percent (n=7) said “no.” The respondents were also asked if, after the examination, the patient was given a contact name and phone number in case of pain, discomfort, or a dental emergency, and 83.2 percent (n=168) said “yes” and 16.8 percent (n=34) said “no.” An additional question asked if the candidates had explained the possible consequences of delaying treatment until the exam, to which 28.5 percent (n=57) answered “yes,” 11.0 percent (n=22) answered “no,” and 60.5 percent (n=121) answered “did not delay treatment.” The respondents were then asked if they had delayed dental hygiene treatment for more than four months in order to “save” patients for a clinical licensure examination; 16.4 percent (n=33) said “yes” and 83.6 percent (n=168) said “no.”

The next group of survey questions asked the respondents if they had pre-scaled their examination patient. For this study, pre-scaling was defined as scaling any tooth surface(s) that were selected for the examination before the examination took place. Only 2 percent (n=4) answered “yes” to pre-scaling at least one tooth surface. The respondents who answered “yes” to pre-scaling were asked to identify the specific surfaces that were pre-scaled. The areas identified were the straight facial, lingual,
mesial, and distal; no line angles were selected. The respondents were then asked about instrumentation practices during the examination. When asked if they had used a hand instrument or power scaler in an inappropriate manner due to the pressure and/or time constraints of the examination, 12.3 percent (n=25) reported doing so.

Multiple survey questions addressed follow-up arrangements for dental and dental hygiene care. The respondents were asked if they had made arrangements for follow-up dental hygiene care if the mouth had not been scaled to completion. Almost 54 percent (n=109) reported making arrangements for follow-up dental hygiene care. 35 percent (n=71) reported that the mouth had been scaled to completion, and 11.3 percent (n=23) said that arrangements were not made. A separate survey question asked if the mouth had not been scaled to completion or additional dental work was needed, what type of arrangements were made for follow-up dental and dental hygiene care, and 41.5 percent (n=83) reported scaling the mouth to completion (Table 6). Of the respondents who reported referring patients for completion of dental hygiene treatment, 49.0 percent (n=99) said they referred patients to their school, 21.3 percent (n=43) to private practice, and 16.3 percent (n=33) selected “other.” Anecdotal comments identified “other” referral sources as the respondent’s workplace after licensure. When asked if dental follow-up care arrangements were made, 46.5 percent (n=94) answered “yes,” 34.7 percent (n=70) answered “no, but care was not needed,” and 18.8 percent (n=38)

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Table 4. Additional examination-related expenses identified by respondents

<table>
<thead>
<tr>
<th>Exam-Related Expenses</th>
<th>Number</th>
<th>Percentage</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment rentals</td>
<td>46</td>
<td>22.8%</td>
<td>1</td>
</tr>
<tr>
<td>Anesthesia fees</td>
<td>21</td>
<td>10.4%</td>
<td></td>
</tr>
<tr>
<td>Travel for you and/or your patient</td>
<td>110</td>
<td>54.5%</td>
<td></td>
</tr>
<tr>
<td>Lodging for you and/or your patient</td>
<td>81</td>
<td>40.1%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>56</td>
<td>27.7%</td>
<td></td>
</tr>
<tr>
<td>Did not spend additional money</td>
<td>60</td>
<td>29.7%</td>
<td></td>
</tr>
</tbody>
</table>

Note: Number total is greater than 203 and total percentage is greater than 100 percent because respondents were directed to check all responses that applied.

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Table 5. Respondents’ answers on questions regarding informed consent

<table>
<thead>
<tr>
<th>Question</th>
<th>Number</th>
<th>Percentage</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment plan explanation before, during, and after the examination, including alternative treatment choices available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>189</td>
<td>94.0%</td>
<td>2</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>6.0%</td>
<td></td>
</tr>
<tr>
<td>Obtain informed consent prior to patient participating in examination.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>188</td>
<td>94.9%</td>
<td>5</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>5.1%</td>
<td></td>
</tr>
<tr>
<td>Explanation of the risks and benefits of participating as a patient for the clinical licensure examination.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>183</td>
<td>90.6%</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>19</td>
<td>9.4%</td>
<td></td>
</tr>
<tr>
<td>Explanation that participation in clinical licensure examination is voluntary.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>195</td>
<td>96.5%</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>3.5%</td>
<td></td>
</tr>
<tr>
<td>Patient given contact name and information in case of postoperative pain, discomfort, or dental emergency.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>168</td>
<td>83.2%</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>34</td>
<td>16.8%</td>
<td></td>
</tr>
</tbody>
</table>
answered “no, but care was needed.” Approximately 29 percent (n=58) said they referred patients to their school, 27.3 percent (n=55) to private practice, and 2.0 percent (n=4) to a specialist.

**Ethical Attitudes**

Survey questions also addressed the respondents’ ethical attitudes that reflect the same concepts as the ethical practice questions. When the respondents were asked if they believe patients should be paid to participate in the exam, 50.5 percent (n=101) said “yes” and 49.5 percent (n=99) said “no.” Almost half of the respondents said they believe that patients should not be paid to participate in the examination; however, 61.6 percent (n=125) reported paying their patients. The reasons for paying patients were evenly divided among the three options offered: 46.8 percent (n=95) paid patients to compensate them for their time, 46.3 percent (n=94) did so to ensure the patient showed up for the examination, 42.9 percent (n=87) used payment as an incentive to the patient, while 9.9 percent (n=20) reported other. Anecdotal written comments revealed the reasons for patient payment included paying the patient to guarantee that he or she would show up for the examination and as compensation for lost wages. The total percentage of responses for why patients were paid is greater than 100 percent because respondents were instructed to check all that applied. When asked if they believe that paying a patient removes their autonomy, the majority of the respondents (87.4 percent; n=173) answered “no.”

When asked about delaying dental hygiene treatment to have a patient for the clinical licensure examination, 53.1 percent (n=103) of the respondents felt that delaying treatment was appropriate, while 46.9 percent (n=91) said “no.” Four percent (n=9) did not answer this question or stated that they could not decide on a yes or no answer. In the anecdotal written comments, several said a delay in treatment would depend on the length of time and that finding a qualified patient is difficult so sometimes delaying treatment is necessary if a qualified patient is identified.

The next group of survey questions dealt with the respondents’ attitudes regarding pre-scaling. First, the respondents were asked if examination candidates should have the option of pre-scaling; 14.9 percent (n=30) said “yes,” while 85.1 percent (n=172) said “no.” Later in the survey, the respondents were asked if they believed that pre-scaling teeth made the examination a valid assessment of their skills. The majority of the respondents (83.7 percent; n=169) said “no,” that the examination is unfair. The remaining 16.3 percent (n=33) answered “yes,” that the examination is a fair assessment of
a candidate’s skills when there is pre-scaling. The reasons identified for pre-scaling included removing supra-gingival deposits but leaving sub-gingival calculus (1.5 percent, n=3) and “other” (1.5 percent, n=3). Written anecdotal comments identified “other” as checking the tenacity of the calculus and that there were too many calculus deposits to remove during the time frame of the exam.

Finally, the respondents were asked, “Was your clinical licensure examination an accurate/reflective assessment of your clinical skills?” Overall, 78.7 percent (n=155) of the respondents responded that the examination was an accurate assessment of their clinical skills. When the data were broken down by year and by regional examination, the majority of the respondents answered “yes” (Table 7).

Discussion

According to our research, this is the first national study that has examined licensed dental hygienists’ opinions about the ethics of live patient use in clinical licensure examinations. Although the response rate for this study appears to be low (40.6 percent), it is comparable to the previous research conducted by Feil et al., which had a response rate of 42.9 percent. Each area examined in our survey included questions that investigated the respondents’ ethical practices and attitudes. The practice and attitudinal questions mirrored one another so that the data from corresponding areas could be compared. The intent of this survey was to explore an issue that has not been studied and provide a basis for further discussion and research.

Our study identified financial burdens on dental hygiene candidates similar to those for dental candidates described by Buchanan and Dugoni. The issue of additional costs to examinees (beyond the examination fees) can be divided into payments to patients and additional exam-related expenses. When asked about payments to patients, 50.5 percent (n=101) of our respondents reported believing that patients should be paid for participating in the examination, while 49.5 percent (n=99) did not. Also, 61.6 percent (n=125) of the respondents said they paid their clinical licensure examination patient, though the amount varied. The number of respondents who paid their patients was greater than the number who said it was appropriate. These results suggest that some respondents paid their patients even though they did not believe in the practice. Based on anecdotal comments, one point of contention regarding the regional examinations was the proximity of the testing site location to the candidate’s dental hygiene program. The majority of the respondents (n=56) reported spending an additional $100 to $299 on travel expenses for themselves and their patients. The difference in travel costs is relevant to the ethics of the examination because every respondent incurs a different financial burden.

The ADA Principles of Ethics and Code of Professional Conduct define autonomy as “self-governance” and the patient’s right to make his or her own decisions about dental treatment. The respondents in our study were asked whether they felt that paying

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Note: Wording of question was “The clinical licensure examination was an accurate/reflective assessment of your clinical skills.”

Table 7. Respondents’ attitudes regarding examination’s accuracy/reflection of clinical skills by year in which they took clinical licensure examination and regional examination they took

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a patient removed the patient’s autonomy. This question was intended to further explore the motivations for patient payment: did the respondents feel that patients’ decisions to participate in the examination were influenced by financial gain? The results of this study indicate that dental hygienists do not feel that money influences patient autonomy. Reasons given for paying the patient (from less than $20 to more than $100) included compensation for their time, an incentive to participate in the examination, and making sure that the patient would show up. Anecdotal written comments also cited compensation for the patient’s lost wages. Dugoni stated that ideal patients are difficult to find and licensure candidates pay them in order to secure a patient. Buchanan pointed out that candidates are relying on “professional patients,” persons who are financially compensated to participate in the examination, in addition to paying for other related expenses. The ADA’s position on payments to patients states that candidates should refrain from the following: excessive reimbursement to patients in addition to expenses such as travel, lodging, and meals; and payment between candidates in order to secure patients. In our study, the reasons given by the respondents for paying their patients are inconsistent with the ADA’s position of reasonable reimbursement.

The ethical behaviors of examination patients were also explored in this study. Patients who were compensated for the exam did not display any unethical behavior. There were no reports of patients demanding more money than the originally agreed upon fee. Less than 2 percent (n=3) of the respondents reported that they felt their patient had falsified information in order to become an examination patient. The results of this study vary from the findings of Feil et al., who reported that 2.4 percent (n=10) of dental candidates’ patients demanded more money than the originally agreed upon fee. These results indicate that the majority of dental hygiene licensure examination patients were altruistic and making autonomous treatment decisions that were not influenced by monetary incentives.

Patient selection is a large component of examination scoring for all five regional exams and is a main reason patients are not accepted. Thirty-three percent (n=67) of our respondents reported being helped by faculty members to select an examination patient, and 26.6 percent (n=54) reported being helped by classmates. WREB guidelines state that it is the responsibility of the individual to select a patient without the assistance of faculty, while SRTA states “it is at the candidate’s discretion whether to seek the assistance of faculty or colleagues.” This demonstrates a discrepancy among the testing agencies. Is it ethical for candidates to receive help from other students and/or faculty in one region and not in another? The data in this study did not compare the selection methods to the regional examination taken by the candidate; all respondent answers were calculated as a whole.

When asked about completing official examination paperwork in advance, 26.5 percent (n=53) of the respondents reported completing it before the examination. Almost 30.0 percent (n=59) of the respondents reported taking multiple radiographs in order to have “the perfect film” for the examination. Feil et al. reported similar results and found that 32.5 percent (n=135) of dental respondents knew with certainty of a classmate who had taken extra radiographs for the examination that would have otherwise not been needed. These results could indicate that the pressure of the examination caused some respondents to diverge from the accepted protocols. The standard of care for radiographs that would normally be accepted as “necessary” to diagnose and treat a condition may have been violated in order to increase the respondent’s chances of successfully completing the examination.

The ADA Council on Ethics, Bylaws, and Judicial Affairs states that patients should be selected because the planned dental treatment will benefit them. Ninety-four percent of the respondents (n=189) in our study reported explaining the treatment plan to the patient and giving the patient alternative treatment options. The majority of the respondents (n=188) reported obtaining informed consent (Table 5). Based on the ADA Principles of Ethics and Code of Professional Conduct, the patient should understand and sign a written consent form that states he or she is being treated as part of a licensure exam by a candidate for licensure, not a licensed dentist or dental hygienist. It should also contain the risks, benefits, and alternatives to the planned treatment, an explanation of whom to contact with questions about care, and a statement that participation is voluntary. Our study found that the respondents complied with the ADA guidelines, adhered to the standard of care, and demonstrated concern for the welfare of their patients.

When comparing the respondents’ attitudes regarding delaying treatment and their reported practices, our study found that over half of the respondents (53.1 percent; n=103) believe it is appropriate
to delay treatment in order to have a patient participate in the examination. The respondents’ attitudes may be interpreted as unethical according to the ADA Council on Ethics, Bylaws, and Judicial Affairs, which states that treatment should be provided based on the needs of the patient in a timely manner that is within the “clinical circumstances presented by the patient.” However, the willingness to delay treatment may be seen as a necessity by candidates due to limited patient supply, costs, importance, and pressures of the examination. Interestingly, although over half of our respondents agreed with delaying treatment in order to have a patient, only 16.4 percent (n=33) answered that they did, in fact, “save” a patient for their examination. Several respondents wrote anecdotal comments stating that they had difficulty answering this question because it depended on the length of the delay, the condition of the patient, and the availability of qualified patients. These statements indicate that these candidates did consider ethical matters when making treatment decisions; however, the high stakes of the examination were a factor in the decision.

Attitudinal questions regarding pre-scaling revealed that 85.1 percent (n=172) of the respondents believe that pre-scaling teeth selected for the examination should not be an option. This matches very closely with the number of respondents (83.7 percent; n=169) who reported believing that pre-scaling makes the examination an unfair assessment of a candidate’s clinical skills. Only a very small percentage of the respondents reported pre-scaling (n=4). The anecdotal written comments identified as reasons for pre-scaling were to check for the tenacity of calculus and to create a manageable number of calculus deposits for the examination. Less than one-fourth of the respondents (n=25) reported misusing a hand instrument or power scaler to remove a deposit during the examination. The results of this study indicate that improper instrumentation did occur, but there were no questions that asked if patients were injured as a result or whether emergency dental treatment was needed. The data regarding pre-scaling and instrumentation practices indicate the majority of the respondents were following examination guidelines and demonstrating strong ethics.

Making appropriate referrals for completion of the dental hygiene treatment plan and identifying unmet dental needs are part of the dental hygiene process of care. These issues have been points of contention in the literature on both sides of the live patient use debate.\textsuperscript{1,4,7,9} The majority of the respondents in our study reported making arrangements for both dental and dental hygiene follow-up care. Less than one-quarter of the respondents reported they did not make arrangements for follow-up care. One-third reported not making arrangements for follow-up dental care although it was needed. However, the majority indicated that arrangements for follow-up dental care were made or were unnecessary because dental care was not needed. This demonstrates that the majority of the respondents followed the standard of care by identifying their patients’ dental status and making provisions for follow-up dental and dental hygiene care.

The final survey question asked the respondents if they felt that their clinical licensure examination was an accurate and/or a reflective assessment of their clinical skills. When the results were analyzed as a whole, the majority (78.7 percent, n=155) said “yes.” This study thus differs from the research of Feil et al., who reported that 44.1 percent (n=183) of candidates for dental licensure felt that their clinical licensure examination was not a valid assessment of their clinical abilities.\textsuperscript{16} When the response data in our study were broken down by year and then by regional examination, the response rates were very similar to that of the group as a whole. Although other researchers\textsuperscript{12-16} have questioned the validity of the current clinical licensure examination system, our survey found that dental hygienists who took a regional clinical licensure examination felt that it was an accurate assessment of their skills.

Even though this was a national study, it was limited to sampling only two states from each testing region due to budget constraints. A larger budget would have allowed for a more proportional sampling of dental hygienists from each state and/or more states from each region. Accuracy of the contact information, whether free or purchased, was hampered by being inaccurate or out of date. In addition, some states required up to $500 for the information, which became cost-prohibitive for this study.

Due to the sensitive nature of the subject, the respondents may have underreported their unethical behavior, which could have affected the results. The survey itself was also limiting due to the lack of clarity of some items. This can be attributed to creating an original survey instrument that had not been previously used and lack of research precedence in this specific area of the dental hygiene literature. If this survey were duplicated, some survey questions may need to be reworded for greater clarity.
Conclusions

The majority of the respondents in our study reported feeling that the clinical dental hygiene licensure examination was an accurate/reflective assessment of their clinical skills. Although the results indicate that the majority of the respondents maintained high ethical standards during the examination process and complied with the rules, ethical issues and discrepancies were identified. The costs of the regional exams, as well as varied travel and exam-related expenses, created a financial burden for the dental hygienists. Payments to patients occurred and may be considered beyond reasonable reimbursement, which is in conflict with ADA policy. Even though only 16.4 percent of the respondents delayed treatment to “save” a patient for their examination, 53 percent felt it was appropriate to delay dental hygiene treatment to have patients participate in the exam. The willingness to delay treatment may be seen by these candidates as a necessity due to the pressure and high stakes of the examination. The patient selection guidelines that candidates must follow for the five regional exams are not uniform. These points illustrate that there are discrepancies in the dental hygiene clinical licensure examination process on a national level.

The sample population for this study was limited to dental hygienists who had passed their clinical examinations and received a license from 2007 to 2009. Further research on this topic is needed, and we recommend that it be on a larger scale. The dental profession appears to be shifting towards more inclusive, alternative, non-patient-based licensure methods. New York, Minnesota, California, and recent ADEA resolutions all reflect this trend. Likewise, the results of our study may support the idea that the dental hygiene profession should follow ADEA’s recommendations for non-live patient-based licensure methods and explore alternative licensure models that are uniform, equitable, and ethically sound.

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REFERENCES


