Examining Clinical Assessment Practices in U.S. Dental Hygiene Programs

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Abstract: Competency-based education (CBE) in dental hygiene education is intended to measure learned skills that prepare students to independently provide services for the public. A variety of standardized clinical assessment techniques (SCATs) are available to substantiate the competence of health care professionals, including, but not limited to, objective structured clinical examinations (OSCEs), triple jump exams, standardized patients, and simulations. Standardized clinical examinations test students' abilities to treat diverse patients in a consistent, controlled setting. SCATs help prepare clinicians to safely treat patients of various complexities. The objectives of this study were to examine the variety of techniques used to assess clinical competence in U.S. accredited dental hygiene programs and to obtain program directors' attitudes regarding clinic assessment, with a focus on how SCATs are used. An online survey collected data from 125 directors (48 percent response rate). Approximately 97 percent of the responding programs used observation-type assessments followed by case studies (90 percent), self-assessment (85 percent), and mock boards (75 percent), with SCATs being the least used. The majority of responding directors (74 percent) indicated an interest in learning more about these SCATs. A chi-square test identified no significant difference between the use of SCATs by associate and baccalaureate degree programs, with program location also being irrelevant.

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Competency-based education (CBE) permeates all levels of education from grade school to college. CBE may also be called authentic, skill-based performance assessment or practice-based assessment.[1-3] CBE is unique because it measures a learner's ability to perform professional tasks similar to real-life work situations.[2-4] CBE measures student performance against a standard as defined by written criteria called competencies.[3,5]

Competency is determined by identifying behavioral outcomes as a way to evaluate human performance.[6] Competency can also be defined as the ability to safely perform skills independently.[7,8] CBE is appropriate for health professions such as nursing and dental hygiene, which require practicing in a clinical setting.[9-12]

In 1998, the American Dental Association (ADA)'s Commission on Dental Accreditation (CODA) began requiring dental hygiene programs to develop specific goals and competencies that must be fulfilled by students before graduation.[13,14] The CODA accreditation standards for dental hygiene education programs clearly state that a variety of evaluation methods should be used to measure the curricular and patient care competencies. Furthermore, Standard 2-6 states that these evaluation methods of student performance should include objective testing measures along with process and product assessment methods.[13] It is noteworthy that assessment methods are not specified, allowing dental hygiene programs latitude in how competencies are assessed.

Educational programs that include a clinical component may test for clinical competence by using clinical assessment techniques in the form of observation, checklists, rating scales, case studies, and self-assessment, as well as standardized clinical assessment techniques (SCATs) including standardized patients (SPs), simulations, triple-jump exams (TJEs), senior-exit exams (SEEs), mock board exams, and objective structured clinical examinations (OSCEs).[14-18] Table 1 summarizes the various types of clinical assessment techniques that have been used in dental hygiene clinical education.

Studies have found that standardized exams are an effective, objective, and consistent means of assessment and are becoming more prevalent in

Table 1. Clinical assessment technique definitions

Type	Characteristics
Competency Exam	A test to determine a student's competence (i.e., does the student meet a minimum skill level?). Types of clinical assessment competency exams: observation, case studies, self-assessment, OSCEs, standardized patients, TJEs, simulations, senior exit exams, or mock boards.
Observation	Examiner observes student performing skill/behavior in actual setting with real patient. Student is compared to standard list of skills/behavior to determine competence.[1-7] Examples: critical incident reports, rubrics, checklists, and rating scales.
Case Study	Written communication of clinical competence. Students must apply previously learned knowledge to potential clinical scenarios. Utilizes higher learning skills.[4,8,9]
Self-Assessment	Professional skill that must be learned. Specific criteria are necessary to identify student expectations. Potential to guide student to independent decision making. Example: journaling that allows student to reflect on clinical skills, periodic narrative, or self-use of checklists.[10-20]
	Standardized Clinical Assessment Techniques
Objective Structured Clinical Exam (OSCE)	Timed stations. Standardized patient (SP). Interactive; similar to real-life experiences. Allows students to have similar experiences.[21-30]
Standardized Patient (SP)	Patient may be a student, instructor, or real patient. The SP uses a script to respond to student's questions. Students must be able to solve potential problems in treatment (problem-based learning).[31] Allows students to have similar patient experiences.
Simulation	Mannequin that presents with conditions that can be experienced in practice without bringing harm to an individual. Allows students to have similar patient experiences.[31-37]
Triple-Jump Exercise (TJE)	Three-part oral examination: Part 1. Problem Definition—student receives problem. Part 2. Information Search—student researches possible solutions to problem. Part 3. Synthesis—student conveys answer to problem. Allows students to have similar patient experiences.[10,23,38]
Senior Exit Exam (SEE)/Mock Boards	Can include one or more clinical assessment techniques listed above. Allows students to have similar patient experiences.[23,39-42]

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dental and dental hygiene education.[4,15-16,19-24] The results of the annual ADA surveys of allied dental education have reported that the use of standardized methods of assessment, such as OSCEs, in dental hygiene programs has almost doubled since 2003. In addition, the use of virtual simulation and case-based learning has increased slightly.[24] However, results of this survey provide only limited and superficial information on how dental hygiene programs assess clinical competence.

The purpose of this exploratory study was to examine clinical assessment techniques used in dental hygiene programs across the United States and to assess their directors' attitudes toward clinical assessment techniques. An additional objective was to determine the correlation between the types of standardized clinical assessment techniques (SCATs) used with program demographics (degrees offered and locations by regions).

Materials and Methods

Two hundred and ninety-seven dental hygiene program directors were selected to receive a twenty-one-item electronic survey instrument (see Appendix). The survey was developed by the lead author in consultation with faculty members experienced in survey development and clinical assessment.

The survey consisted of a combination of forced choice, open-ended, and Likert scale items organized

Table 1. Clinical assessment technique definitions
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into five distinct sections: profile of respondents/program demographics; clinical assessment techniques (CATs) used; sequencing of CATs throughout the dental hygiene curriculum; administration of CATs; and directors' attitudes towards CATs. Lastly, the survey consisted of several five-point Likert scales that allowed directors to express their attitudes about CATs, in order to help ascertain their attitudes about clinical evaluation of competence.

The survey was pilot-tested on a convenience sample of six directors representing associate and baccalaureate degree programs in each of the four regions of the United States; these were from Missouri (Midwest), Texas (South), Nebraska (Midwest), New York (Northeast), California (West), and Illinois (Midwest). We determined via the pilot-test that some directors use the term "competency exam" as a separate assessment technique; therefore, we included a table defining each clinical assessment technique with the final survey.

In addition, we used the pilot-test to determine content validity and reliability. Content validity of the survey was achieved through the expertise of faculty members with experience in survey development and a review of the clinical assessment literature prior to development of the survey instrument. Reliability for the survey was obtained by examining internal consistency estimates (Cronbach's alpha) for the entire survey (α=0.83), and separately for the technique (α=0.92; questions 1–6, 13, and 15–19) and attitudes sections (α=0.89; questions 7–12 and 14; see Figure 1). Overall, the survey for this sample was reliable with estimates over 0.75.

Responding to the survey was voluntary, and those who received it could elect not to participate. All responses were confidential, and anonymity was maintained via an Internet survey software program (SurveyMonkey). The University of Missouri–Kansas City Social and Behavioral Sciences Institutional Review Board approved the study. In order to standardize respondent understanding of competency testing terminology, we chose to include a definition of "competency exam" in the legend of the survey.

In an attempt to increase the response rate, the online survey software was programmed to send a reminder to nonresponders without identifying e-mail addresses. A two-week deadline was set for completion of the survey. A follow-up e-mail to nonresponders one week after the initial survey increased the useable sample and reduced nonresponder bias. The principal investigator was not privy to either the e-mail responders or nonresponders in order to secure confidentiality and prevent bias.

Descriptive statistics were calculated to determine the types of competency-based clinical assessment techniques used in assessing clinical competence in U.S. dental hygiene programs. Correlations were made among program demographics, reported assessment techniques, and director-expressed attitudes and beliefs regarding clinical evaluation. A

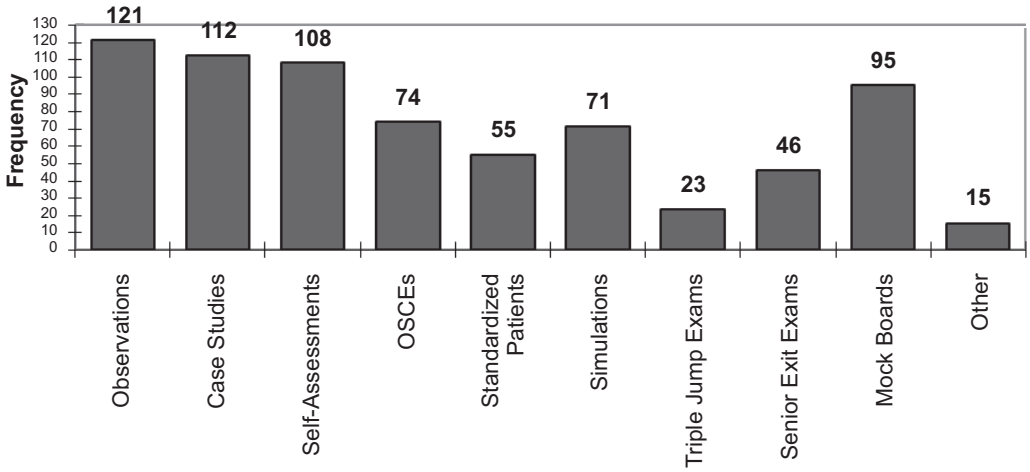

Figure 1. Types of clinical assessment techniques said to be used in U.S. dental hygiene programs, by frequency of response

Note: Multiple responses were allowed.

Pearson's chi-square test was used to compare differences in standardized clinical assessment techniques used by associate and baccalaureate degree programs and to determine if there was a significant difference between SCATs used by programs in various regions. To examine college differences between respondents' attitudes, a multivariate analysis of variance (MANOVA) was performed.

Results

Of the 297 U.S. dental hygiene programs identified for the study, forty-eight were unreachable due to inaccurate e-mail addresses, changes in administration, or directors' opting out of accepting surveys from our survey program. The final number of surveys sent to program directors was 261. The response rate was 48 percent (n=125). Not all of the questions were answered by the respondents.

The majority of respondents were registered dental hygienists (91 percent), with master's degrees (80 percent). Twenty-three directors (18 percent) said they held academic appointments as full-time tenured faculty. Out of 125 programs, two offer certificates, eighty-four offer associate degrees, twenty-eight offer baccalaureate degrees, nine offer master's degrees, and one offers another type of degree. The majority of dental hygiene programs are located in community colleges (59 percent). Only 7 percent of respondents were from technical/vocational schools. The respondents mirrored the distribution of program type and location found nationally (Midwest 31 percent; South 33 percent; West 25 percent; Northeast 11 percent). Fifteen respondents did not give demographic information.

Use of CATs in Dental Hygiene Programs

Observation type assessments (97 percent) were the most commonly used type of clinical competency testing, followed by case studies (90 percent), self-assessment (85 percent), and mock boards (76 percent). Standardized clinical assessment techniques, which include OSCEs (59 percent), SPs (44 percent), simulations (57 percent), and TJEs (18 percent), were not used as often. Portfolios and capstone projects were identified as other forms of assessment techniques currently used by some programs. The survey allowed respondents to choose multiple CATs they use to assess student clinical competence in the dental hygiene clinical courses, which resulted in similar percentages for some categories.

Even though CATs can be used throughout the curriculum, some were administered more often during certain years of education. Tables 2 and 3 portray the sequencing of CATs throughout the curriculum, with the following patterns emerging. Associate degree programs tended to administer observation, OSCE, and simulation CATs during the first year of the clinical curriculum (Table 2). Case studies, self-assessment, SPs, SEEs, and mock board exams were identified as utilized during the second year of the associate degree clinical curriculum (Table 2). Baccalaureate degree programs used observation, self-assessment, and simulation assessment techniques more often during the third year of the clinical curriculum (Table 3), while case studies, OSCEs, SPs, SEEs, and mock board exams were administered during the fourth year of the clinical curriculum (Table 3). Also, when asked to identify how CATs were scheduled throughout the clinic curriculum, the responding directors reported that the majority of the clinical instructors made the determination of when a competency exam was administered, instead of allowing the student to choose when testing occurs.

In addition, letter grading and pass/fail grading are fairly equally used with all methods of assessment, with the exception of simulations and self-assessment techniques. Simulations had an equal distribution of grading and pass/fail grading methods, while self-assessment was the only technique that had a slightly higher percentage of programs using a pass/fail grading system (Table 4).

Observation techniques used live patients (97 percent) and peer student partners (84 percent) the majority of the time. Case studies were most often written (76 percent) or with live patients (48 percent). Self-assessment consisted of a variety of conditions such as using live patients, peer student partners, and a written component. The majority of OSCEs used timed stations (57 percent) and live patients (37 percent) for administration. Live patients (50 percent) and peer student partners (30 percent) were usually used as standardized patients during clinical assessment. Simulations often used peer student partners as patients (46 percent) as well as timed stations (31 percent). Written formats (25 percent) and live patients (20 percent) were the choice for TJEs. Live patients (30 percent) or written formats (40 percent) were used for senior exit exams. Finally, the majority of programs used live patients for mock boards (80 percent).

Table 2. Associate degree dental hygiene programs' sequencing of CATs throughout the clinical curriculum, by frequency of occurrence

	Observations	Case Studies	Self-Assessments	OSCEs	SPs	Simulations	TJEs	SEEs	Mock Boards
First-Year Clinical Curriculum	85	55	69	47	30	49	12	3	6
Second-Year Clinical Curriculum	78	76	76	37	32	36	14	36	58

OSCE=objective structured clinical exam; SP=standardized patient; TJE=triple jump exam; SEE=senior exit exam

Table 3. Bachelor degree dental hygiene programs' sequencing of CATs throughout the clinical curriculum, by frequency of occurrence

	Observations	Case Studies	Self-Assessments	OSCEs	SPs	Simulations	TJEs	SEEs	Mock Boards
First-Year Clinical Curriculum	12	9	11	5	3	5	0	0	1
Second-Year Clinical Curriculum	15	13	15	7	5	7	1	5	7
Third-Year Clinical Curriculum	22	16	19	13	9	11	5	1	3
Fourth-Year Clinical Curriculum	19	17	16	14	11	6	7	11	14

OSCE=objective structured clinical exam; SP=standardized patient; TJE=triple jump exam; SEE=senior exit exam

Table 4. Grading of clinical assessments in which respondents agreed or strongly agreed with the survey question, by program type

	Numeric	Pass/Fail	Combination Numeric and Pass/Fail
Associate	90%	21%	56%
Baccalaureate	92%	39%	64%

Note: In the associate program category, 37% of the respondents were neutral; in the baccalaureate program category, 36% of the respondents were neutral.

Directors' Attitudes Towards CATs

The majority of respondents from both associate (75 percent) and baccalaureate (71 percent) degree programs were satisfied or very satisfied with their current clinical assessment techniques. However, they were also interested or very interested in learning more about clinical assessment techniques not currently used in their curriculum (91 percent and 83 percent, respectively).

An overwhelming percentage (91 percent) of respondents from both associate and baccalaureate degree programs thought that clinical assessments should include a numeric score as opposed to a pass/fail grade (Table 4). Nevertheless, more than half of associate (56 percent) and baccalaureate (64 percent) directors agreed or strongly agreed that clinical assessment techniques should be a combination of grading and pass/fail.

Directors thought that observation (58 percent), case studies (53 percent), self-assessment (69 percent), simulation (39 percent), and mock board exams (37 percent) tend to have fewer challenges for implementation. OSCEs (37 percent) were identified as taking too much time to develop. TJEs (58 percent) and senior exit exams (43 percent) had more responses in the "No Opinion" category (Table 5).

Directors thought that all CATs were most effective for verifying clinical competence (observation 48 percent; case studies 63 percent; self-assessment 43 percent; OSCEs 46 percent; SPs 40 percent; simulations 43 percent; senior exit exams 34 percent; and mock boards 34 percent). The majority of directors chose the "N/A" category for TJEs (46 percent).

Directors were split on their perceptions of whether clinical assessment techniques prepare students for a dental hygiene career. Forty-seven percent thought the techniques prepared students, while 43 percent thought these techniques did not prepare students for a career in dental hygiene. Overall, no significant differences between directors' attitudes towards CATs were observed between those colleges offering an associate or bachelor's degree (Wilks λ=0.96, p=0.65).

Differences Between Associate and Baccalaureate Degree Programs

Respondents indicated that associate and baccalaureate degree programs use newer standardized clinical assessment techniques. Eighty-four respondents indicated that newer SCATs were used in associate degree programs to identify clinical competence, while twenty-eight respondents in baccalaureate degree programs said they used newer SCATs. Due to an unequal sample size, a random sample of twenty-eight cases of the associate degree responses were used as a comparison with the baccalaureate degree programs. Then, a chi-square test was completed that identified no significant differences (p>.05) between the four types of assessment methods used by those institutions offering an associate or bachelor's degree: OSCE, $\chi^2(1, N=59)=0.83$, p=0.36; SP, $\chi^2(1, N=59)=0.15$, p=0.70; simulations, $\chi^2(1, N=59)=0.16$, p=0.69; TJEs, $\chi^2(1, N=58)=0.58$, p=0.45.

In addition, no significant differences were found for the four types of assessment methods used between regions in which the program was located: OSCE, $\chi^2(4, N=127)=2.17$, p=0.70; SP, $\chi^2(4, N=127)=3.80$, p=0.43; simulations, $\chi^2(4, N=127)=1.33$, p=0.85; TJEs, $\chi^2(4, N=127)=7.13$, p=0.13.

Discussion

The data collected from this survey met the objectives of the study, which were to examine the use of CATs and directors' attitudes towards CATs. A large portion of the survey data regarding the use of CATs is consistent with the current literature.[4,9-11,15-25] However, some data are worthy of discussing further.

The survey responses appear to be representative of the population when compared to the ADA's 2007–08 annual survey of allied dental education, which found that six programs offer certificates, 241 programs offer associate degrees, thirty-six programs offer baccalaureate degrees, and nine offer other types of degrees.[24] The majority of the survey respondents were directors of associate degree programs, consistent with national data.

Our study went beyond the 2007–08 ADA survey in that it separated clinical assessment and didactic assessment. The ADA survey reported that dental hygiene programs use case-based learning (90 percent), service-learning (80 percent), and problem-based learning (66 percent) as instruction methods

Table 5. Challenges to implementing clinical assessment techniques

	Observations	Case Studies	Self-Assessments	OSCEs	SPs	Simulations	TJEs	Senior Exit Exams	Mock Boards
Takes too much time to develop.	4%	23%	1%	37%	20%	20%	17%	15%	13%
Not enough patients are available.	6%	3%	0%	9%	29%	5%	1%	6%	1%
There are no challenges to implementing this technique.	58%	53%	69%	27%	28%	39%	18%	33%	37%
No opinion	14%	15%	19%	20%	23%	30%	58%	43%	19%

Note: Percentages may not total 100% due to rounding.

most of the time; however, that survey report did not specify if these evaluation methods were conducted in a classroom or a clinical setting.[24] We found similar results in our survey, with 91 percent of the programs using case studies to assess student competence. On the other hand, the ADA survey found that simulations were used 10 percent of the time. In contrast, our survey identified 57 percent of the schools using simulation. However, it should be noted that virtual hypermedia instruction and virtual field learning/research were separated from virtual simulation in the ADA survey and, if combined, would account for 23 percent of instruction methods used by dental hygiene programs.

The 2007–08 ADA survey found that OSCEs were used 56 percent of the time, which is similar to the 59 percent of programs that reporting using OSCEs in our survey. Standardized patients, SEEs, mock board exams, and TJEs were not addressed in the ADA survey.[24] Research identifying how many dental hygiene programs use SPs, SEEs, TJEs, and mock boards appears to be lacking, with few studies evaluating their effectiveness at assessing competence.[9-12,25-42]

Looking at the challenges when implementing CATs may help explain why some CATs were found in our study to be used more often than others (Table 6). The majority of the respondents stated that there were no challenges when implementing observation, case studies, self-assessment, and mock boards, which may be why they were used more often (Figure 1).

It is important to note that TJEs (58 percent) and SEEs (43 percent) had a high number of respondents who had no opinion regarding challenges in implementing these assessments. The fact that there are fewer studies on TJEs and SEEs may be why so few programs use these assessments.[9,25,36,41,42] Clinical faculty members may choose not to implement these CATs if they are not familiar with them.

It is noteworthy that the majority (60 percent) of responding directors said they felt that clinical assessments should be in the form of graded and nongraded feedback. In a study by Sanchez and Elaine that collected data regarding student attitudes about clinical assessment grading systems, students reported thinking that nongraded feedback led to less stress during client care and an increase in instructor feedback. Students in that study also thought they had more control over their clinical education when they were allowed to choose when a patient was graded.[43] Ultimately, competency-based education is meant to distinguish between students who are competent or clinically acceptable and students who do not meet the minimum standards. Even though a pass/fail system would be an appropriate choice for competency-based education, many institutions require numerical grades, preventing the widespread use of pass/fail systems.[3,34,44] In order for this paradigm shift to take place, dental hygiene educators need to be make institutions aware of research validating the effectiveness of pass/fail systems to identify competent clinicians.

It was surprising to note that only 47 percent of the directors in our study felt that CATs prepared students for clinical practice. This is consistent with a study by McCann and Schneiderman that found directors were unhappy with program assessment methods that encompassed both didactic and clinical components.[41] More studies in validating the effectiveness of standardized clinical assessment techniques may be helpful for programs unhappy with current assessment methods in identifying clinical competence.

The data obtained in our study asking directors to identify the sequencing of CATs were limited in its usability (Appendix, question 2). Four-year institutions may start clinical assessment during the second or third years, making it difficult to separate directors' responses. Future studies could focus specifically on sequencing of CATs and allowing directors to identify when CATs are administered.

Conclusion

It is evident that U.S. dental hygiene programs are using standardized assessment techniques (OSCEs, SPs, simulations, and TJEs); however, more programs use observation, case studies, and self-assessment techniques, which may be more difficult to standardize. There were no significant differences in our study in the location of a dental hygiene program and the types of competency assessment methods used. Further, directors from associate and baccalaureate degree programs had similar attitudinal responses.

Even though SCATs have been incorporated to a greater degree by other professions (aviation, nursing, etc.), their use in dental hygiene is more limited. Dental hygiene program directors responding to our survey thought there were barriers to administering SCATs, minimizing their incorporation into dental hygiene curricula, such as too much time to develop,

administer, and train instructors and not enough patients available. More studies are needed to evaluate programs that use standardized CATs to address how these barriers can be overcome or removed. In addition, future validity studies could be developed to refine this survey instrument. Finally, it would be beneficial to know what directors thought were the best ways to measure clinical competence.

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APPENDIX

Survey Instrument

Clinical assessment techniques (CATs) used

1. Check all the types of clinical assessment techniques that are used to identify student clinical competence in the dental hygiene clinical courses in your program.
   - ☐ Observation (ex: checklists, rating scales, rubrics, live patient experiences)
   - ☐ Case Studies
   - ☐ Objective Structured Clinical Exam (OSCE)
   - ☐ Simulations
   - ☐ Senior Exit Exams
   - ☐ Other (please specify)_____
   - ☐ Self-Assessment (ex: journaling, videotaping)
   - ☐ Standardized Patient (SP)
   - ☐ Triple Jump Exams (TJEs)
   - ☐ Mock Boards

Sequencing of CATs throughout the dental hygiene curriculum

2. Check when the following clinical assessment techniques are administered during your program of study. Check all that apply. (Use "1st and 2nd Year Clinical" categories for associate degree programs.)

	1st Year Clinicals	2nd Year Clinicals	3rd Year Clinicals	4th Year Clinicals
Observation				
Case Studies				
Self-Assessment				
Objective Structured Clinical Exam (OSCE)				
Standardized Patient (SP)				
Simulations				
Triple Jump Exams (TJEs)				
Senior Exit Exams				
Mock Boards				
Other (please specify) _____				

Administration of CATs

3. Identify how the following clinical assessment techniques are scheduled throughout the clinic curriculum.

	Scheduled by Clinical Instructor	Student Chooses When to Complete	Not Sure	Not Used
Observation				
Case Studies				
Self-Assessment				
Objective Structured Clinical Exam (OSCE)				
Standardized Patient (SP)				
Simulations				
Triple Jump Exams (TJEs)				
Senior Exit Exams				
Mock Boards				
Other (please specify) _____				

4. Please check which clinical assessment techniques are administered during the clinic courses (formative feedback) and those that are administered at the end of the clinic course (summative feedback). If both apply, check both columns.

	Given During Clinical Courses	Given at End of the Clinic Course	Not Sure	Not Used
Observation				
Case Studies				
Self-Assessment				
Objective Structured Clinical Exam (OSCE)				
Standardized Patient (SP)				
Simulations				
Triple Jump Exams (TJEs)				
Senior Exit Exams				
Mock Boards				
Other (please specify) _____				

5. Check the box that best describes the scoring of clinical assessments in your clinical curriculum.

	Graded (Letter of Numeric)	Pass/Fail	Nongraded	Not Sure	Not Used
Observation					
Case Studies					
Self-Assessment					
Objective Structured Clinical Exam (OSCE)					
Standardized Patient (SP)					
Simulations					
Triple Jump Exams (TJEs)					
Senior Exit Exams					
Mock Boards					
Other (please specify) _____					

6. Check the box that describes the condition under which the clinical assessments are administered. (Check all that apply.)

	Live Patients	Student as Patient	Faculty as Patient	Timed Stations	Written Format	Not Sure	Not Used
Observation							
Case Studies							
Self-Assessment							
Objective Structured Clinical Exam (OSCE)							
Standardized Patient (SP)							
Simulations							
Triple Jump Exams (TJEs)							
Senior Exit Exams							
Mock Boards							
Other (please specify) _____							

Directors' attitudes towards CATs

For Questions #7-#12, please choose the response that most closely matches your opinion regarding the statements. (Choices range from Strongly Disagree to Strongly Agree.)

7. I am satisfied with the clinical assessment techniques currently used in our clinical courses. If disagree, then explain why.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
☐	☐	☐	☐	☐	☐

8. I would be interested in learning more about clinical assessment techniques that are not currently used in our clinical courses if research has demonstrated that they are effective assessments. If disagree, then explain why.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
☐	☐	☐	☐	☐	☐

9. Our clinical assessment techniques are not effective at assessing student learning. If agree, then explain why.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
☐	☐	☐	☐	☐	☐

10. Clinical assessment results should be included in the calculations of the students' clinical grades. If disagree, then explain why.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
☐	☐	☐	☐	☐	☐

11. Grades from clinical assessments should be pass/fail. If disagree, then explain why.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
☐	☐	☐	☐	☐	☐

12. Grades from clinical assessments should be a combination of pass/fail and numeric. If disagree, then explain why.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
☐	☐	☐	☐	☐	☐

13. Clinical assessment techniques may be challenging to implement in many ways. Please check all the statements that would discourage you from using a technique.

	Takes too much time to develop	Takes too much time to administer	Takes too much time to train instructors	Takes too much time to explain to students	Not enough patients are available	There are no challenges to implementing this technique	No opinion
Observation							
Case Studies							
Self-Assessment							
Objective Structured Clinical Exam (OSCE)							
Standardized Patient (SP)							
Simulations							
Triple Jump Exams (TJEs)							
Senior Exit Exams							
Mock Boards							
Other (please specify) _____							

14. Give your opinion on the effectiveness of the following clinical assessment techniques for verifying clinical competence. If you are not familiar with a technique, then check N/A.

	Least Effective	Somewhat Effective	Effective	Most Effective	Not Sure	N/A
Observation						
Case Studies						
Self-Assessment						
Objective Structured Clinical Exam (OSCE)						
Standardized Patient (SP)						
Simulations						
Triple Jump Exams (TJEs)						
Senior Exit Exams						
Mock Boards						
Other (please specify) _____						

15. Do you think that your dental hygiene program prepares students for entry into a dental hygiene career?
☐ Yes ☐ Not sure
☐ No ☐ No opinion

Profile of respondents/program demographics

16. Which dental hygiene degree(s) is/are granted by your institution? Check all that apply.
☐ Certificate ☐ Master's
☐ Associate ☐ Other (Please specify_____)
☐ Baccalaureate

17. Which of the following best describes the setting of your dental hygiene program? Check all that apply.
☐ Vocational School or Institute ☐ University or College NOT affiliated with a Dental School
☐ Academic Medical Center ☐ University or College affiliated with a Dental School
☐ Technical School or Institute ☐ Other (Please specify_____)
☐ Community or Junior College

18. Which of the following best describes your position? Check all that apply.
☐ Chair/Director ☐ Full-time faculty, nontenured
☐ Full-time faculty, tenured ☐ Part-time faculty, nontenured
☐ Part-time faculty, tenured ☐ Other (Please specify_____)

19. Identify your credentials. Check all that apply.
☐ Dentist ☐ Master's Degree
☐ Registered Dental Hygienist ☐ Ed.D.
☐ Bachelor's Degree ☐ Ph.D.
☐ Other (Please specify_____)

20. What is your highest level of education?
☐ Associate Degree ☐ Ph.D.
☐ Bachelor's Degree ☐ Professional Degree (ex: D.D.S.)
☐ Master's Degree ☐ Other (Please specify_____)

21. Use the map to determine in which region your program is located.
☐ South ☐ Northeast
☐ West ☐ Midwest