

# 2015 DENTSPLY POSTERS

## Differences in Social, Teaching, and Cognitive Presence: A Comparison of Two Discussion Formats in an Online Dental Hygiene Course

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Online education, and its development as an “anytime, anywhere” option for obtaining higher education, has become an attractive alternative to traditional face-to-face learning. Professional academic programs, such as dental hygiene, are not immune to growing utilization of online education. According to the American Dental Hygienists’ Association, 34 (62%) of dental hygiene degree completion programs and 14 (64%) of dental hygiene master’s programs offer most or all of their courses online. Online discussion is considered the central place for constructing knowledge in an online course, and it can occur utilizing synchronous and asynchronous tools. The purpose of this study was to observe and compare the development of social, teaching, and cognitive presence while utilizing two different tools of online discussion, asynchronous discussion boards and synchronous video web-conferencing. Students in an online dental hygiene course were instructed to discuss topics using either asynchronous discussion boards or in a synchronous video web-conference. Content analysis was completed on transcripts of 8 discussions that occurred during the 16-week course. The synchronous discussions indicated the highest level of cognitive presence more frequently than the asynchronous discussion. Social and teaching presences were indicated more often in the synchronous groups as well. This study suggests that synchronous communication in online discussions may create higher levels of presence in an online course. Research to explore casual relationships between the presences is indicated for future studies.

## Critical Thinking in Dental Hygiene and Practitioners Based on Education and Experience

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**Introduction:** The complexity of the dental hygiene field, including advancements, disease prevention, and patients individual needs demand dental hygienists who have competent critical thinking skills. Expanding roles in dental hygiene are crucial to the development of critical thinking skills.

**Purpose:** The purpose of this study was two-fold. First, to investigate if critical thinking changes during a dental hygienist’s education and career. Second, to determine if critical thinking abilities of dental hygienists

are related to level of education, bachelors of science (BS) and associate of applied science (AAS).

**Methods:** A cross sectional sample of dental hygiene students and dental hygiene professionals who graduated from AAS and BS (N= 54) programs was utilized. Critical thinking abilities of dental hygiene students were compared to practicing dental hygienists using the California Critical Thinking Skills Test (CCTST). The relationship between critical thinking skills and level of education was also investigated.

**Results:** Practicing dental hygienists had higher critical thinking scores than students, but not at a statistically significant level. When comparing level of education, BS degree dental hygienists had a statistically significant difference in evaluation and explanation categories, but not in overall critical thinking scores.

## Professional Caregivers’ Oral Care Practices and Beliefs for Elderly Clients Aging in Place

\*Ashley Delgado, RDH

**Purpose:** As of the 1990’s long term care facilities (LTCFs) were the main housing option for semi or fully dependent elders. Today, 90% of those 65 and older want to “age in place.” The growth of the elderly population that want to “age in place” will require increasing numbers of professional caregivers to assist in oral health practices. The purpose of this study was to address the gap in the knowledge about the oral health practices and beliefs of professional caregivers who work for non-medical in-home care companies (NMHCs) charged in the care of “aging in place” elders.

**Methods:** The nursing Dental Coping Belief Scale was used in a descriptive cross-sectional study. N=67 professional caregivers employed by 3 NMHCs in South Texas completed the survey. The survey gathered demographic information, oral care practice questions and oral health belief questions.

**Results:** NMHCs are not mandated by law to provide training. Yet, professional caregivers wanted more training in oral health. A majority (60%) reported being trained. Most (85%) looked inside their client’s mouth yet nearly 18% did not floss their client’s teeth and only 31% new if their clients wore dentures.

**Conclusion:** While this was a small study, it provides preliminary information that professional caregivers, serving those aging in place, want more oral health training.

Professional caregivers would be better served if

there were more thorough and frequent training provided with managerial oversight. This oversight could be provided by the addition of an Oral Health Care Director (OHCD).

### The Perception and Employability of Dental Hygienist with Visible Tattoos

\*Christina L. Cox, RDH, BSDH, MSDH(c)

**Purpose:** The aim of this study was to determine if the presence of visible tattoos hinders employment opportunities of dental hygienists.

**Methods:** 1,800 electronic surveys were distributed to licensed dentists in the state of Virginia. Surveys were randomized according to respondent's birth month. Participants viewed one of three photographs, a dental hygienist with: 1) no tattoo, 2) small tattoo, or 3) large "sleeve" tattoo. Subjects were asked to score the image based on following categories: ethical, responsible, competent, hygienic and professional on a 5-point Likert scale. Subjects also responded to three questions related to how well the image shown "fit" with their practice.

**Results:** A response rate of 14% (n=226) was attained after two email distributions and 183 (11%) completed the survey. Eighty percent (n=147) of the respondents indicated that tattoos should be covered in the workplace; 18% were indifferent; and 2% indicated that tattoos should not be covered. Results revealed that the dental hygienist with the large visible sleeve tattoo ranked the lowest in all categories. There was no statistically significant difference among the three tattoo conditions with regard to the model appearing ethical, responsible or competent. However, the models with the large and small tattoos scored significantly lower than the model with no visible tattoos in appearing hygienic and professional.

**Conclusion:** Visible tattoos may have a negative effect on perception and employability of dental hygienists in the state of Virginia.

### Visualization of the Oropharynx During Head and Neck Cancer Examinations

\*Courtney Perrachione, RDH, MS(c), CHES

**Purpose:** The purposes of this study were twofold: 1) to determine differences in visibility of the oropharynx during OPC screenings using five methods of tissue retraction; and 2) to identify clinician perceptions of visibility levels and preferences when using those visualization techniques.

**Methods:** A nonprobability convenience sample of senior dental hygiene students (N=25) was asked to partici-

pate. Clinicians visualized the oropharynx of two patients using each of five conventional methods. Patients who were anesthetized or could not be supine/semi-supine were excluded. Following visualization, participants completed a survey related to their perceptions of the best visibility and preference of method. Visibility using each of the five methods was documented with an intraoral photograph and scored using an anatomical checklist. Data were analyzed using descriptive statistics, Chi-square goodness of fit test and Analysis of Variance (ANOVA).

**Results:** The combination of mirror/"ahh" was perceived as providing the best visibility (52.5%), followed by the combination of tongue depressor/"ahh" (37.5%). The combination of mirror/"ahh" was most preferred (55%) followed by the combination of tongue depressor/"ahh" (32.5%). Forty-two intraoral photographs for each of the five visualization methods were evaluated based on the visibility of nine anatomical structures. Mean visibility scores were best for the combined methods and had significantly lower visibility for single-step methods.

**Conclusions:** Dental hygienists should request their patients say "ahh" in conjunction with a dental mirror or tongue depressor for adequate tissue retraction and visualization. For high-risk individuals, mirror laryngoscopy should be considered. Consistent guidelines for OPC screenings should be developed and implemented across disciplines.

### Cultural Competency in Dental Hygiene Curricula

\*Danette Ocegueda, RDH, MS

**Purpose:** The purpose of this study was to determine the degree to which U.S. dental hygiene programs are incorporating cultural competency education into the dental hygiene curriculum and to identify associated program characteristics.

**Methods:** A nineteen item survey was electronically administered to all 334 U.S. dental hygiene program directors. The questionnaire solicited information on teaching and evaluation methodologies relative to cultural competency education (CCE), as well as the director's perceptions and program demographic information.

**Results:** The majority (92%) of participating programs reported incorporating CCE into the curriculum in some form. Most responding directors indicated that CCE has been effectively integrated into the curriculum utilizing a variety of curricular methods. Results of this study suggest that an overwhelming number of responding programs (98%) participate in community outreach/service learning projects. However, nearly half (42%) indicated that their students are not evaluated for culture competency knowledge, skills, and attitudes.

**Conclusions:** These findings imply that responding programs are incorporating CCE into the curriculum using a variety of teaching methodologies with an emphasis on community outreach/service learning projects. It is important to consider whether or not community outreach/service learning projects improve dental hygiene students' cultural competency skills, attitudes, and knowledge. Future research efforts should aim to describe the value and effectiveness of such programs at achieving cultural competence.

### **The Effectiveness of a Self-Instructional Radiographic Anatomy Module on the Improvement of Test Performance for Dental Hygiene Faculty**

\*Demah AlGheithy, BSDH, MS(c)

**Problem:** Research evaluating the effectiveness of instructional methods to calibrate dental hygiene (DH) faculty in radiographic anatomy is limited.

**Hypothesis:** Use of a self-instructional radiographic anatomy module (SIRA) will improve DH faculty test performance in identification of normal radiographic anatomy. DH educators with more years of teaching experience will perform better than those with less experience.

**Methods:** This pilot study used a repeated measures design that was exempt from IRB review. A convenience sample of DH clinical faculty (N=23) were invited to participate. Participants completed a pre-test, SIRA module, an immediate post-test, and a four-month follow-up post-test. All components were online. Descriptive analyses, the Friedman's ANOVA, and the exact form of the Wilcoxon-Signed-Rank test were used to analyze the data.

**Results:** Pre-test response rate was 73.9% (N=17); 88.2% (N=15) of initial participants completed the immediate and follow-up post-tests. Participants included: 5 full-time faculty, 5 part-time faculty, and 5 graduate teaching assistants. The Friedman's ANOVA indicated no statistically significant difference (P=0.179) in the percentage of correct responses between the three tests (pre, immediate post and follow-up post). The exact form of the Wilcoxon-Signed-Rank test indicated marginal significance when comparing percent of correct responses at pre-test and immediate post-test (P=0.054), and no statistically significant difference when comparing percent of correct responses at pre-test and follow-up post-test (P=0.665).

**Conclusions:** Use of a SIRA module did not significantly affect DH faculty test performance. Future research should include a larger sample size when evaluating the effectiveness of possible calibration methods.

### **Knowledge, Attitudes and Practices among Healthcare Professionals Regarding Oral Health Assessments and Early Childhood Caries Prevention for Infants and Toddlers**

\*Diana Apresov, RDH, MS

Current research indicates that while most non-dental healthcare professionals believe pediatric oral assessments are important, most lack education and training. This study investigated San Diego's healthcare professionals' knowledge in pediatric oral health, opinions on anticipatory guidance, and oral assessments. Results indicate a high incidence of incorrect dental knowledge. Common barriers were lack of knowledge and time. Early intervention and timely dental referrals among non-dental healthcare providers can play a significant role in promoting oral health.

### **Attitudes, Behaviors and Needs of Team Dentists**

\*Lesley McGovern, RDH, MS

**Problem:** Elite athletes strive to attain superior levels of health and fitness; however, many have high levels of oral disease. Dental pain and dysfunction could alter level of performance during practice and competition. Many dentists work with sports organizations, but knowledge about their scope of practice and needs were unknown.

#### **Research Questions:**

1. What are the services currently provided by team dentists to athletes across leagues?
2. What are the barriers that prevent team dentists from performing screenings?
3. Are there barriers to providing oral health education and disease prevention measures?

**Methods:** An online survey was developed and pilot-tested, and IRB approval obtained. Dentist members of the Academy for Sports Dentistry (n=491) were invited to participate. Data collected included league affiliation, services provided, and type of oral screenings performed. Dentists' attitudes regarding athletes' treatment and preventive needs, practice behaviors, and self-identified needs were assessed. Descriptive statistics were used to analyze data.

**Results:** Results revealed 79.5% (n=116) of respondents had a league affiliation. The most frequently provided services were emergency treatment and mouthguards (95.5%), restorative treatment (78.5%), oral hygiene instruction (63%), and prophylaxis (61%). Of the 80% (n=90) of dentists who perform some sort of oral screenings, 41% (n=36) screen all athletes prior to the season with individualized follow-up examinations.

The most commonly cited barrier to screenings was lack of awareness of the importance of oral health.

**Conclusions:** Although the majority of team dentists do perform oral screenings, a lack of awareness about oral health importance supports the need for improved educational strategies.

### **The Role of Dental Hygienists: Sleep Disorder Identification**

\*Rachel Hamilton, BS, RDH

The purpose of this study is twofold:

1. To determine if a convenience sample of undergraduate B.S. DH students (N=56) are adequately educated in sleep medicine in order to identify patients with potential sleep disorders.
2. A systematic review of the related literature towards evidence base.

**Methods:** A pre/post-test design will be used to determine if a one hour face-to-face lecture will increase knowledge as measured by comparing pre and posttest scores by use of t-tests. Qualtrix will be used for data collection and statistical analysis of the outcome.

Findings of the systematic literature review revealed that no relevant previously published studies exist focusing on this specific topic. The study will determine the knowledge and attitudes of dental hygiene students related to screening and providing patient education related to sleep disorders. Testing of N=56 BSDH students is in progress and will be concluded by April 30, 2015.

**Conclusion:** Based on the limited amount of published studies, further study findings will indicate if a one hour lecture added to the DH curriculum is warranted in order to increase knowledge of this new topic in dental hygiene practice and education.

### **Using a Virtual Community of Practice for Knowledge Sharing Among Dental Hygienists with Community Practices: A Case Study**

\*Robin R. Roderick, RDH, MSDH

**Purpose:** As more direct access dental hygienists expand oral hygiene services into diverse settings, often geographically dispersed, opportunity to network and knowledge share can be limited. Communities of Practice (CoP) have been widely used in the medical health-care sector as a social learning platform for sharing knowledge. Internet access has brought Virtual Communities of Practice (VCoP).

**Methods:** A 3-phase single in-depth ethnographic

case study used mixed methods to gather group characteristics, explore a VCoP and an online Discussion Board (DB) as a tool for knowledge sharing, and assess perceived value of VCoP membership.

**Results:** In sum, 13 members participated. The typical direct access provider was an English-speaking female, approximately 55 years old, American Dental Hygienists' Association member having an Associate of Science in Dental Hygiene with approximately 23 years of experience. Content analysis found the three most common activities were Information Sharing, Appreciation, Information Seeking. Most common topics of discussion were Events, Professional Development, and Resources. Top five reasons for participation in the DB were: (a) access to information, (b) social, (c) self-improvement, (d) providing mentorship, and (e) professional development. Member benefits were ranked as: (a) privacy, (b) networking, (c) problem solving, (d) information, and (e) sense of community. Overall, the VCoP and online DB met member expectations.

**Conclusion:** Findings suggest value in an online DB as a tool for communication and knowledge sharing in dental hygiene practice. The results provide direction for design of a VCoP, which may reduce isolation of geographically dispersed dental hygienists practicing in other states.

### **Hand Function Evaluation for Dental Hygiene Students**

\*Sara Taft, RDH, MSAH

Dental hygiene students may struggle in dental hygiene curricula with hand function performance. Currently, there is not a universal aspect of dental hygiene programs that screen for hand function issues or protocol in place to help students who lack needed hand function skills.

The research in the study was completed in 2013 at WCTC and 1) examined whether hand function could improve with hand function exercises and 2) whether any improvement would be evident in higher instrumentation scores as a result of hand function exercises.

The study population consisted of 20 students accepted a Dental Hygiene program for the fall of 2013. The response rate was 85 percent, (n= 17).

Across a 6-week pilot study, an occupational therapist tested hand function of the cohort of the students using four occupational therapy evaluations. The evaluations tested students' dexterity, motor skills, and pinch and grip strength. The results were recorded, and the students began a focused, 6-week hand function exercise regimen. After 6 weeks the same four evaluations were performed and the pre- and post-test data were compared.

Statistical tests using a t-Test for dependent samples and simple ANOVA showed significant improvement in assessed hand function following exercises. Scores measuring periodontal probe and 11/12 explorer use of the cohort were then compared to students in the previous 5 cohorts. No significant difference was apparent.

The research concluded that six weeks of hand function exercises improves students' hand function. However, this raised level of hand function did carry over to increased instrumentation proficiency.

### **Gingival Bleeding and Oral Hygiene in Women with Von Willebrand Disease**

\*Stefanie Marx, RDH, MSDH

**Problem:** Von Willebrand disease (VWD) is the most common hereditary coagulation abnormality, presenting in roughly 1% of the population. Individuals with VWD experience mucosal bleeding as well as gingival bleeding. Some evidence suggests gingival bleeding is due to poor oral hygiene. No studies have shown a correlation between VWD and gingival bleeding when adjusting for possible confounding factors such as plaque, dental care utilization, and oral hygiene habits.

#### **Hypothesis:**

1. The amount of gingival bleeding will not be dependent on the severity of VWD, and possible confounding variables will have a greater effect on gingival bleeding.
2. Dental care utilization and oral hygiene habits will significantly influence the amount of supragingival plaque and gingival bleeding.

**Methods:** This multi-site study included 44 women with VWD who completed a questionnaire to evaluate demographics, oral hygiene habits, and dental care utilization. Clinical dental examinations were conducted to determine the presence of plaque and gingival bleeding on the 6 Ramfjord teeth. VWD type and severity was determined through a medical chart review. IRB approval was obtained prior to data collection.

**Results:** Paired samples t-tests revealed that severity of VWD did not significantly affect the amount of gingival bleeding noted ( $p > 0.05$ ). Multiple linear regression models revealed that other factors such as age and last dental visit ( $p = 0.044$ ) had a larger effect on the amount of gingival bleeding.

**Conclusion:** In women with VWD, when gingival bleeding is noted, it is more related to the presence of plaque or dental care utilization than the severity of VWD.

### **The Conceptualization of the Connecticut Dental Hygienists' Experiences with Care Trends for the Medicaid Patient**

\*Susan Miklos, EFDA, RDH, BSDH, MSDH

**Problem:** Obtaining oral health is often a challenge for the Medicaid population. Published research studies confirm access challenges for dental care to this population. Research examined Connecticut dental hygienists' observations and experiences with dental treatment trends for the adult Medicaid population. Investigation explored the association between form of payment and dental services offered. Inquiring if the form of payment dictates the dental services offered to the adult Medicaid patient, identifying limitations to oral health care.

**Null Hypothesis 1:** Dental payment type is unrelated to care options presented to the adult patient in Connecticut.

**Null Hypothesis 2:** Dental payment type is unrelated to access to care for the adult Medicaid patient in Connecticut.

**Methods:** A survey was electronically mailed to 1,300 dental hygienists in Connecticut. Data collected was analyzed using chi-square testing.

**Results:** Statistical analysis demonstrated a significant difference ( $p = 0.0002 < 0.05$ ) in services accepted and treatment options provided to adult Medicaid patients versus privately insured dental patients and demonstrated a significant difference ( $p = 0.0002 < 0.05$ ) with the association between services offered to patients with Medicaid insurance versus patients with insurance other than Medicaid. Hygienists' report the implementation of a midlevel provider can improve access to oral care for the adult Medicaid population.

**Conclusion:** Reject the null hypotheses, Dental hygienists in Connecticut report dental payment type is related to care options presented and related to access to care challenges for the adult Medicaid patient.

### **Perceptions of Dental Hygiene Master's Degree Students about Dental Hygiene Doctoral Education**

\*Ursula Tumath, MS, RDH

**Problem:** Although other health professions (e.g., physical therapy and audiology) have doctoral programs to promote discipline-specific research and practice, there are no U.S. dental hygiene (DH) doctoral programs. DH master's degree students' perceptions about the need for, and interest in, a doctoral degree in DH are unknown.

**Hypothesis:** More students in DH master's degree programs would be interested in pursuing a doctoral degree in DH than those interested in pursuing a doctoral degree in another discipline.

**Methods:** In this 2014 cross-sectional national study, all DH Master Degree Program Directors were e-mailed a request to forward a consent form and online-survey-link to their graduate students. The 29-item survey assessed perceptions about proposed DH doctoral degree programs. A second request was sent 1 month later. Frequencies and cross-tabulations were analyzed using Qualtrics™ software.

**Results:** Of the eligible 255 graduate students, 159 completed the survey (62% response rate). Most re-

spondents (77%) indicated that DH doctoral education is needed for the advancement of the DH discipline; is important to the DH profession (89%) to increase to enhance interprofessional research opportunities (89%);, and supported both the PhD in DH and the Doctor of DH Practice (DDHP) degrees. Fifty-two percent (n=79) preferred a doctoral degree in DH compared to 22% (n=32) who preferred a doctoral degree in another discipline; 43% wished to enroll in a doctoral program in the next 1-5 years. Reasons were to: become a better teacher, expand clinical practice opportunities, become a researcher, and increase salary.

**Conclusion:** Most respondents believed doctoral DH education is needed and were interested in applying to such programs to enhance interprofessional research and clinical collaboration.