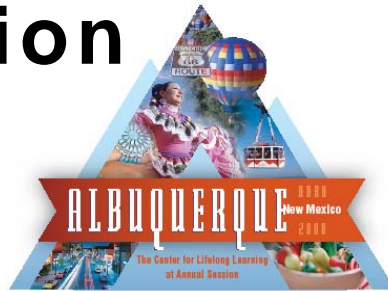
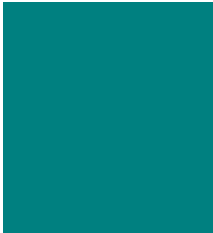
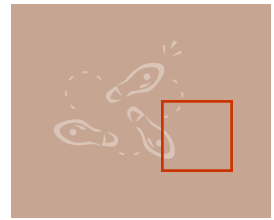
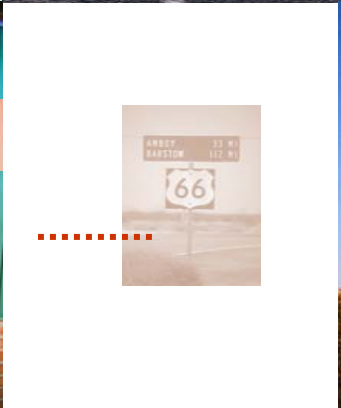
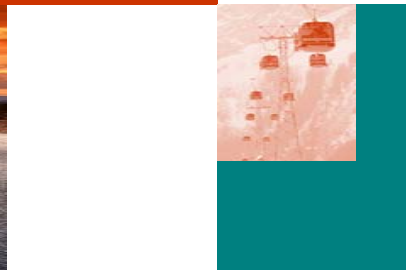


Abstract Research Poster Session



Empowering

ADHA Center for Lifelong Learning and
85th Annual Session
Albuquerque, New Mexico
June 18-25, 2008



Supporting



American Dental Hygienists' Association 2008 Center for Lifelong Learning and Annual Session Research Poster Session

The American Dental Hygienists' Association (ADHA) Annual Session Research Poster Session provides dental hygiene researchers and educators the opportunity to present their work, exchange ideas and share information and effective strategies for teaching and mentoring research with their colleagues and other oral health professionals. The posters presented pertain to ADHA's National Dental Hygiene Research Agenda (<http://www.adha.org/research/nra.htm>); evidence-based patient-centered dental hygiene practice; *Healthy People 2010: National Health Promotion and Diseases Prevention Objectives*; or an area of dental hygiene-related research significant to the participant.

National Dental Hygiene Research Agenda

Both inside and outside of the research arena, it is important for practitioners, who provide the greatest representation of the profession to the public, to make decisions that are firmly grounded in knowledge that is obtained from research and clinical experiences. The National Dental Hygiene Research Agenda provides direction to hygienists on priority research areas that can help advance the profession, enhance patient-centered care, improve the quality of services, and foster other professional efforts.

NDHRA Priority Areas

- A. Health promotion/Disease prevention
- B. Health services
- C. Professional education and development
- D. Clinical dental hygiene
- E. Occupational health and safety

Abstract Review Committee

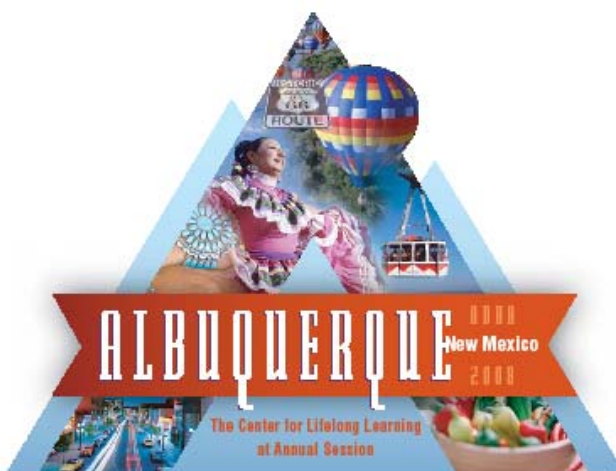
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Jacquelyn L. Fried, RDH, MS – Maryland
Mary G. Layher, RDH, BSDH - Michigan

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CALIBRATION OF CLINICAL DENTAL HYGIENE FACULTY.

Joan Gibson-Howell, RDH, BS, MEd, EdD;
Susan Bauchmoyer, BSDH, MS, EFDA; and
Beverly McClure, RDH, BSDH
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Dental Hygiene*)

The purpose of the study was to evaluate the outcome of a faculty workshop and to determine if faculty calibration has been enhanced. Calibration of faculty in the clinical setting is crucial to effective teaching and learning.

The Ohio State University Dental Hygiene Program conducted a clinical calibration session in December 2006. Three clinic scenarios faculty may encounter were developed for discussion. Turning Point technology was utilized to present the clinical situations. Throughout the discussions, it was evident that there were varied opinions on how to address each situation. Since part-time faculty are responsible for clinical teaching and do not always attend faculty meetings, we decided to record copious notes and distribute faculty meeting minutes to all faculty in a timely manner via e-mail. In addition, clinical directors meet with each dental hygiene class once a week in "clinical rounds". The information discussed at these events would also be emailed to all faculty in a timely manner by the clinical directors.

In August 2007, a 10 question, 4 point Likert scale survey was developed to assess faculties' beliefs on the value of the exercises and the communication modality implemented (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). Seventeen out of a possible 19 faculty responded to the anonymous electronic survey with a response rate of eighty-nine percent.

The results reveal that the majority of the faculty believe the information contained in faculty minutes help clinical calibration (52.9% agree; 29.4% strongly agree; mean = 3.12). The majority also reviewed the minutes circulated in a timely manner (58.8% strongly agree; 35.3% agree; mean = 3.53). Similarly, the faculty feel calibration exercises during faculty meetings would improve their clinical teaching (47.1% strongly agree; 52.9% agree; mean = 3.47), yet forty-seven point seven percent disagree (mean = 2.71) that monthly faculty meetings are sufficient to insure adequate calibration and communication among clinical faculty. Results of this survey suggest that faculty find value in clinical calibration exercises

and believe that current practices could be improved.

DEVELOPMENT, IMPLEMENTATION AND EVALUATION OF A "PAPER CHASE" EXPERIENCE TO HELP DENTAL HYGIENE STUDENTS TRANSITION FROM PRE-CLINICAL INTO CLINICAL ROTATIONS.

Beverly A. McClure, RDH, BSDH
(*The Ohio State University*)

The purpose of this new program was to assess Dental Hygiene (DH) students' perceptions regarding an experience to help with clinical process and form completion in patients charts as they proceed from pre-clinic to clinic. As students started clinical rotations, they reported that they did not understand the paper work and suggested more explanation for the next class.

The "paper chase" experience was created to prepare students for clinical process and completion of clinical forms. This was a three-hour time slot utilizing faculty and senior practicum students as tour guides and group leaders. The practicum students were in charge of showing and explaining the front desk, the cashier station, the insurance office, the location of forms and how to clean dentures. Faculty rotated to small groups of students to help them with clinic forms such as risk assessment, treatment plan, perio patient protocol, cashier slip, dental specialty consults, grade sheets, medical consults, broken appointments and needed signatures in the chart. Each faculty had enough forms so students could follow along as explanations were given.

A ten question Likert survey was given to the students (N=32) following the experience. One-hundred percent of students either strongly agreed (SA) or agreed (A) that the topics were appropriate and that they felt comfortable asking any question during the experience. Ninety-seven percent either SA or A that they liked the way faculty rotated to different groups, that the practicum students were helpful and that the paper chase should be given to next years class. A student commented, "Breaking up into small groups made it easier to ask questions. It was also a nice break from regular lecture and class." Another said, "I liked the way we got to look at forms while the instructors explained things to us."

The dental hygiene students reported they liked the paper chase and that it was helpful as they started clinical experiences. Some students

reported that it lasted too long but many had studied all night for two midterms held earlier the same day. We will continue to schedule the paper chase prior to the first clinical patient.

**EXPANDING DENTAL HYGIENE SERVICES
TO THE UNDERSERVED THROUGH
DISTANCE LEARNING EDUCATION:
SETTING YOUR SITES.**

Patricia R. Mulford, RDH, MS
*(University Of Maryland Dental School - Division
Of Dental Hygiene)*

It is a known fact that lower socioeconomic individuals in rural areas are without dental care on a regular basis. In order to meet the growing oral health needs in the outlying areas of the State, The University of Maryland, Division of Dental Hygiene has implemented a distance-learning site on Maryland's Eastern Shore. Local oral health professionals, regional feeder schools and consumers indicated that qualified applicants would pursue the profession of dental hygiene as a career choice, if a high quality program were made available in their region. Resultantly, a vision of distance learning combining an on-line didactic program with local clinical and laboratory applications evolved. The Eastern Shore satellite program, which renders a Baccalaureate Degree in Dental Hygiene, became a reality in August 2006.

The question to be addressed is: Can a distance learning dental hygiene program in a rural area impact the oral health needs of the community? This poster will provide baseline data describing the Eastern Shore's oral health care needs, address the start up plan for the distance-learning program, and demonstrate how the program is making a difference in providing oral health care to a cross section of the population. Evaluation of the program's ability in meeting area dental needs is currently in progress. Preliminary data reflecting student provision of dental hygiene services, obtained through chart review and tabulation of computer entered dental insurance codes, indicates a positive result. Student participation in community out reach programs, since the inception of the program, will also be described.

INTERNATIONAL SERVICE LEARNING.

Rebecca G. Tabor, RDH, MEd;
Daniel M. Carter, DMD;
Mary Kovar, MSN; and
Ron Ramsing PhD
(Western Kentucky University)

Students in health care professions, including dental hygiene, have been involved in service learning long before it became a new trend in education. However, due to rigorous class and clinical schedules, study abroad was a more difficult aspiration to obtain. Utilizing the University's Winter Term, faculty within the College of Health and Human Services at Western Kentucky University collaborated among departments (Allied Health, Nursing, Public Health and Recreation) and developed an International Service Learning Program that accomplishes both.

During Winter Term, students can take an International Health and Service Learning course and have the opportunity to travel to the country of Belize, CA. While staying in or near small villages, students are able to provide a variety of healthcare services, including preventive dental care. Students not only have the opportunity to see how healthcare is provided in other countries; they also gain interdisciplinary healthcare experience as they rotate through providing care with physicians, nurses, dentists, dental hygienists and pharmacists. In addition to providing care, students are involved in the assessment and planning for future programs. Students are able to gain first hand experience in cultural diversity, treating patients in both Mayan and Creole villages. While in Belize, students are immersed in the culture of the country and have opportunities to participate in community events and visit various regions of the country.

Reflection is an important part of the program. Students keep daily journals and meet nightly to discuss the experiences from each day. Upon their return the United States, the students provide presentations to campus and community groups. Program participants have noted that the experience greatly exceeds their initial expectations, increases their self-confidence and inspires them to be more involved in their own communities. Initial funding for this project was obtained through Western Kentucky University.

PRIMARY HEALTH CARE DENTAL HYGIENE MODEL.

Aditi Puri, MS, RDH
(*Massachusetts College Of Pharmacy And Health Sciences*)

The primary oral health care professional educational-curriculum model is an advanced dental hygiene curriculum model. This model integrates research, education, and public health components. The model proposed by the author would stimulate collaborative/interdisciplinary health care education. The goal of this model is to graduate an oral health professional prepared to participate in a more comprehensive and cost effective healthcare system. The concept of the model is supported by HMPP 139, Colorado State Practice Act, ADHP of ADHA, and other state practice models.

Epidemiologically established public health needs, workforce challenges, and current alternative practice settings provide the foundation to support the need for new oral health curriculum models. The significant difference between the PHCDH model and the ADHP model is the masters-prepared practitioner would have the educational, philosophical, and intellectual preparation to practice collaboratively as an educator, clinician, researcher, and policy maker in varied health and educational settings.

The successful execution of the model would involve professional, educational, and public advocacy for change in state licensure and practice acts. The objectives of the model are to:

1. Integrate oral health with systemic health;
2. Increase skills and awareness of oral health professionals regarding systemic health and in turn other health professionals' awareness of oral health; and
3. Increase access to oral health services including preventative and disease control services.

The achievement of program goals would be evaluated by education and practice outcomes including:

1. Acceptance of the model by professional organizations, legislature, policy makers, and board of registration;
2. Adoption and implementation of curriculum by varied health professions in higher education;
3. Increase in collaborative oral and overall health research and policy development; and
4. Integration of health and oral health services in private and public settings. Implementation of this

model is a method of meeting the challenges set forth in the Surgeon General's Report.

SURVEY OF DENTAL HYGIENISTS' DIABETES KNOWLEDGE AND PRACTICES.

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(*Idaho State University*)
Maryann Hartman, MA, RD, CDE; and
Jean Calomeni
(*Idaho Diabetes Prevention And Control Program*)

Given the increasing incidence of diabetes in the United States and the risk for more severe periodontal disease in individuals with poorly controlled diabetes, it is essential to provide access to professional education to prepare oral health providers to care for this population. The purpose of this survey was to assess the diabetes knowledge, beliefs, and practices of dental hygienists in order to identify professional continuing education needs.

A five-part survey was constructed using the American Diabetes Association 2007 Clinical Practice Guidelines for standards of care for diabetes mellitus along with an American Association of Periodontology Commissioned Review of diabetes and periodontal disease. An invitation to participate was disseminated electronically via mailing lists and a newsletter sent to American Dental Hygienists' Association (ADHA) members. A convenience sample of dental hygienists (n=392) with representation from 48 states participated. The majority of the respondents were female (99%), ages 41 to 60 (60.1%), and in practice > 16 years (58.3%). Seventy to eighty percent of participants responded correctly to the questions on general diabetes and oral health knowledge. The major deficit in knowledge was associated with the patient's hemoglobin A1c (HbA1c) value and implications for diabetes control (50%).

The survey responses indicated confusion about the current classifications of diabetes with approximately seventy percent of respondents using classifications which are no longer recognized. Seventy-five to ninety percent of participants were unfamiliar with the impact of various types of insulin and newer diabetes medications on dental care. The sample of dental hygienists in this survey demonstrated a need for enhancing knowledge about diabetes as it applies to clinical patient care. In particular, the areas of

greatest need included the American Diabetes Association Clinical Practice Guidelines for standards of care, diagnosis of diabetes mellitus, medications, and best practices for interacting with other health professionals caring for people with diabetes.

PREVALENCE OF ACADEMIC DISHONESTY IN TEXAS DENTAL HYGIENE PROGRAMS.

Kelly A. Muhney, RDH, MSDH;
Marylou E. Gutmann, RDH, MA;
Emet Schneiderman, PhD;
Janice P. Dewald, BSDH, DDS, MS;
Ann McCann, RDH, PhD; and
Patricia R. Campbell, RDH, MS
(*Texas A&M Health Science Center, Baylor College Of Dentistry*)

This study investigated cheating in Texas dental hygiene (DH) programs, the frequency of didactic and clinical cheating behaviors, justifications for cheating, and if ethics courses, honor codes, and faculty discussions on cheating affect prevalence. Reports of cheating in dentistry have highlighted the need for faculty to promote academic integrity. Because cheating may result in substandard patient care, it is important to determine if cheating occurs in DH schools, why it occurs, and what interventions may be undertaken to ensure that an environment of academic integrity prevails.

Surveys were mailed to 20 program directors to include 400 graduating students. Class presidents were instructed to administer the survey during class time without faculty present. Usable survey returns were 289 for a response rate of seventy-two percent. Data were analyzed using SPSS with frequencies, cross-tabulations, and chi-square tests. Eighty six percent of graduating students have cheated a minimum of one time while enrolled in DH school. Students have copied assignments from others (n=137), allowed others to copy from them (n=151), and collaborated on assignments meant to be done independently (n=131). Just over 25% of the students were able to obtain previous exams without the instructor's knowledge.

Respondents reported participating in violations of infection control protocol (n=153), recording false vital signs (n=128), and copying previous periodontal findings to use as current findings (n=69). Three reasons cited for

participating in academic dishonesty included demands at school, pressure to pass a course, and clinic requirements. Of the students who had an ethics course, whose school has an honor code, or whose instructor(s) discussed cheating, approximately 87% self-reported cheating.

Results show that cheating is widespread. Evidence suggests that if a student chooses to engage in academic dishonesty, it is likely to continue in the professional clinical setting; hence, the exigency in developing strategies to curtail the prevalence of academic dishonesty.

THE EFFECT OF USING A POWERED TOOTHBRUSH ON MCP-1 AND RANTES LEVELS IN PATIENTS WITH GINGIVITIS.

Linda L. Paquette, RDH, BS;
Rebecca S. Wilder, RDH, MS;
Silvana P. Barros, DDS, PhD; and
Heather L. Jared, RDH, MS
(*University of North Carolina at Chapel Hill*)

The purpose of this pilot study was to investigate if a powered toothbrush significantly reduced the concentration of MCP-1 and RANTES over time in a gingivitis group when compared to a manual toothbrush. MCP-1 and RANTES are pro-inflammatory cytokines that are expressed in gingival crevicular fluid of patients with gingival inflammation. This study looked at the levels of these cytokines as indicators for a reduction in the host inflammatory and immune response.

Twenty gingivitis patients, 18-65 years of age with pocket depths ≤ 6 mm and a minimum of 10% bleeding upon probing were enrolled in this IRB approved pilot study. Participants randomly assigned to one of two treatment arms, the powered toothbrush or the manual toothbrush, were seen for five study visits and gingival crevicular fluid samples were collected at baseline and 24 weeks post therapy.

No statistically significant differences were found between groups at baseline in clinical measurements, GCF levels of MCP-1 and RANTES and demographics, with the exception of race (p=0.01). When comparing the treatment group to the control group, no statistical differences were found between the GCF levels for MCP-1 and RANTES at baseline and 24 weeks post treatment (p=0.20 and p=0.19, respectively).

Within the limitations of this study, a trend in the reduction of the local indicators of inflammatory response was seen; however, the

differences were not statistically significant. Further investigation needs to be conducted, with a larger sample size, to evaluate the effect of a powered toothbrush on the inflammatory mediators, MCP-1 and RANTES. This pilot study was nested within a larger, ongoing study of 84 participants.

PREDICTING STUDENT SUCCESS IN A THREE YEAR ASSOCIATE DEGREE DENTAL HYGIENE PROGRAM USING A PRACTICAL PROGRAMMATIC MODEL.

Bernice A. Mills, RDH, MS and
Marji Harmer-Beem, RDH, MS
(*University Of New England*)

Purpose: The purpose of this study is to identify early and practical programmatic variables to predict success or failure in a three-year dental hygiene program. Using the National Board Dental Hygiene Examination (NBDHE) as an outcome measure of success, this study focuses on final grades in first year basic science and dental hygiene courses as variables to help identify at risk students for early remedial intervention.

Problem: Existing literature suggests that entering GPA may hold promise as a predictor of success on NBDHE for specific programs, other literature identifies a multitude of courses throughout the dental hygiene curricula as variables to predict success, biology being one. A more practical and evidence based indicator may be students' first semester final grades.

Methodology: Academic aggregate data was collected on 132 students (n=132) over 3 years (2005-2007). Final grades in first year Anatomy and Physiology I and II, Dental Anatomy and Head and Neck Anatomy courses were chosen because they typically challenge students. These courses were mapped with NBDHE scores using Venn diagramming to plot variable sets of three in a universal set. Multiple set combinations were tested.

Results: The set of Dental Anatomy, Head and Neck Anatomy and NBDHE scores showed the strongest relationship for identifying at-risk students. Final grades were plotted and it was established that not only were failures in the courses indicators, but final grades below 75% plot as at-risk.

Conclusion: The Venn diagram was a practical tool in identifying variables to predict success and inform remediation for at-risk

students, as well as, consideration for raising the program's grade requirement from 70% to 75%. Venn diagramming may be a practical tool for other programs to use to identify their unique variables for success.

IS THERE VALUE FOR ADMINISTERING A MOCK CORROBORATIVE CLINICAL PRACTICUM PRIOR TO THE FINAL EXAM? A TWO YEAR PERSPECTIVE OF 1ST YEAR CLINICAL DENTAL HYGIENE STUDENTS.

Susan J. Jenkins, MS, RDH
(*Massachusetts College of Pharmacy & Health Sciences-Forsyth School of Dental Hygiene*)

Purpose: To assess the value of administering a mock corroborative clinical exam to the beginner learner in reducing anxiety and increasing performance on the final corroborative clinical exam.

Hypothesis: A mock corroborative clinical exam administered prior to the final exam will reduce anxiety and therefore increase the comfort level and skill performance of the 1st year dental hygiene student.

Method: During the fall 2006 and 2007 a mock corroborative clinical practicum was administered to ninety-three 1st year pre-clinical dental hygiene students at week eleven of the fourteen week semester and re-administered as a final practicum. During the previous ten weeks of the semester students were introduced to the area-specific curets, universal curet, anterior and posterior sickles. Practice sessions with each instrument were followed with skill evaluations. To prepare for the practicum exam students were given exam guidelines and a sample grade sheet. Students were randomly assigned to two exam groups. Twenty minutes was allotted for each student to demonstrate the correct use of the Gracey 5/6, 13/14, 15/16, and the SH5/33. For the mock exam two faculty evaluated each student; three faculty evaluated the final exam. The grade for the mock exam was not calculated into the grade for the course. Two faculty group leaders and time keepers were designated. The survey instrument consisting of sixteen dichotomous (yes/no) and open-ended (essay) questions was submitted for IRB approval. The survey was administered through the Assessment section of the College's Blackboard Program(2006) and Zoomerang (2007).

Questions to be answered: Do you feel the mock corroborative clinical practicum prepared you for your final corroborative clinical practicum exam? Do you feel that the twenty minutes you were given for the exam was sufficient for the tasks you were asked to perform? Did the grade you received on the final corroborative clinical practicum change significantly from the grade you received for the mock practicum?

Results: 93 surveys were administered to 1st year dental hygiene students 46 were completed (48%). Eighty-four percent of the respondents felt adequately prepared/less anxious. Eighty-four percent of the respondents felt that week eleven was appropriate place in the curriculum based on the timing of the final exam.

Conclusion: Students felt that it was beneficial to have a mock corroborative clinical exam week eleven of the semester to better prepare them for the final exam. The students experienced a decrease in anxiety in knowing what to expect. The results indicated that there was no definitive change in the final grade.

THE EFFECT OF DENTAL HYGIENE STUDENT LEARNING STYLES ON ACHIEVEMENT IN THE ONLINE LEARNING SETTING.

Kathryn E. Spears, RDH, BS;

Jacquelyn L. Fried, RDH, MS;

Nezhat Olia, PhD;

Marion Manski, RDH, MS;

James Craig, EdD; and

Barbara Covington, PhD

(University Of Maryland, Baltimore)

Distance education is growing at an incredibly fast pace in colleges and universities throughout the world. Within this area of education, online learning specifically has begun to replace the traditional face-to-face classroom. Dental and dental hygiene education is quickly adopting the online educational methodology. Technological advances have made the computer an invaluable tool for educating students, and through its use, an increased number of students are being reached online.

Distance education is capable of opening doors to various educational teaching methods through the use of communication techniques, visuals, multi-media video and audio. As online learning continues to spread throughout dental and dental hygiene programs in the United States, significant

thought and research should explore the learning styles of individuals and how they relate to success in the online classroom.

This study was designed to determine the relationship between dental hygiene students' learning styles as measured by the Kolb Learning Style Inventory (Kolb LSI) and the Witkin's Group Embedded Figures Test (Witkin's GEFT) and academic achievement as measured by final course scores in the online learning setting. The Kolb LSI and the Witkin's GEFT were administered to a convenience sample of 27 junior-level dental hygiene students at the University of Maryland Dental School.

Analysis of variance (ANOVA) and bivariate correlational analysis (Pearson's r) were used to determine the possible relationship between dental hygiene student learning styles and online course achievement. No statistically significant relationships ($p > .05$) were found between learning style and achievement; however, interesting learning styles and characteristics were identified. This study supports prior research that: (1) a student's preferred learning style does not affect their achievement in an online learning course, and (2) learners are able to adjust their learning style to succeed in the online learning environment.

URBAN SMILES: PROVIDING A DENTAL NEED TO THE MEMPHIS AREA.

April V. Williams, RDH, BHSA, MDH
(University Of Tennessee Health Science Center)

Dental caries continue to be the most prevalent chronic childhood disease in the United States according to Chu et al in the January 2007 JADA article, "The Dental Care of U.S. Children." Urban Smiles, The University of Tennessee Health Science Center (UTHSC) dental hygiene faculty practice, has treated over 4,000 children between August 2004 and August 2007 in an effort to improve this trend. The purpose of this study was to compare the percentage of annually treated Urban Smiles children to the Healthy People 2010 Dental Goals for untreated dental decay and sealants.

The 2010 dental goals are for less than 21% of children aged 6-8 years old to have dental decay in addition to a minimum of 50% of children aged 8 years old and adolescents aged 14 years old to have existing molar sealants. By manually

going through the August 2004–August 2007 Urban Smiles's patient charts and calculating the children by age, dental decay and sealants; it was determined that 18.2% (N=1,573) of the Urban Smiles children aged 6–8 years old had dental caries, 29.5% (N=828) of Urban Smiles children aged 8 years old had molar sealants and 31.6% (N=196) of adolescents aged 14 years old had molar sealants prior to having sealants placed by Urban Smiles.

It could be concluded from this study that 1) The Urban Smiles children have reached the Healthy People 2010 Dental goals for untreated dental decay and 2) The Urban Smiles children and adolescents have not reached the Healthy People 2010 Dental Goals for molar sealants. However, once sealants were placed by Urban Smiles, the percentage of 8 year olds with molar sealants increased to 76.6% (N=828) and the percentage of 14 year olds with molar sealants increased to 53.6% (N=196) and the dental sealant goals were subsequently met.

MUSCLE ACTIVITY COMPARISONS IN DENTAL HYGIENE STUDENTS WHEN USING DIFFERENT FULCRUMS WHILE SCALING.

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The high incidence rate of cumulative trauma disorders in dental hygienists attests to the musculoskeletal problems experienced by dental hygienists. Research is ongoing to investigate ergonomic practices that will minimize muscle trauma when providing scaling and root debridement. The purpose of this study was to determine differences in the activity of four forearm muscles, (extensor carpi radialis longus, flexor carpi ulnaris, biceps brachii and pronator teres) when using five different finger fulcrums while scaling in dental hygiene students.

A convenience sample of 29 consenting senior dental hygiene students participated in the study. Using a 4 x 5 counterbalanced research design, participants used a Gracey 11/12 curet to scale artificial calculus from each permanent first molar tooth on a typodont. While scaling, each participant had sEMG sensors attached to each

muscle under investigation to measure muscle activity via electromyography. Participants scaled using one of 5 finger fulcrums (opposite arch, standard intra-oral, basic extra-oral, cross arch and finger on finger) on 5 different typodonts resulting in a total of 20 sEMG readings per participant. The highest amount of muscle activity was observed in the pronator teres (X=28.73) and the least in the biceps brachii (X=13.39).

Data analysis with two-way ANOVA revealed a statistically significant difference only in the activity of the biceps brachii muscle when a change in fulcrum occurred. ($p=0.0002$). Using an average of all four muscles ANOVA revealed no statistically significant differences when comparing scaling with different fulcrums and the amount of muscle activity generated ($p=0.0776$) In this clinical study that measured the activity of four forearm muscles when scaling, only the biceps brachii was affected by a change in fulcruming technique.

Results suggest that similar muscle activity is produced when scaling regardless of the muscles measured and the type of fulcrum used. More research is needed to clarify the role of fulcrums and individual muscle activity in the ergonomic practice of dental hygiene.

ADMISSION INDICATORS OF FAILURE ON THE NATIONAL BOARD DENTAL HYGIENE EXAMINATION.

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Dental hygiene licensure requires a score of 75 or higher on the National Board Dental Hygiene Exam (NBDHE). During admissions, academically motivated candidates are sought for success in the dental hygiene program at The Ohio State University. Although the failure rate has historically been low, the admissions committee continually strives to improve admission criteria to ensure academic success and passage of the NBDHE. The objective of this retrospective study was to determine which identifiers for admissions and occurrences within the program are indicators of potential failure on the NBDHE.

Fifteen academic and demographic categories were reviewed from transcripts of students who failed the NBDHE from 1996–2007, to identify any significant trends. Results: A total of

11 students failed the NBDHE during the specified time period, for a failure rate of 4%. Three academic categories of the fifteen correlated with failing scores. Of the ACT scores, 55% were below the current national and state averages of 21.1 and 21.5, respectively. Transcripts revealed that 73% of the students repeated a prerequisite science course and 45% of the students failed a dental hygiene course, which had to be repeated. In addition, 100% of the students received a C or lower in a dental hygiene course.

In conclusion, this study showed that low ACT scores, combined with difficulty in pre-dental hygiene science courses, correlated to failure of dental hygiene courses and ultimately failure on the NBDHE. It is recommended that admission committees require the submission of ACT scores on the admission application and be more critical if repetition of a prerequisite science course is noted. Since licensure is a goal of dental hygiene programs, it is imperative that admissions committees be able to admit the best candidates for success within the program and our profession through selective admissions.

WHAT VICTIMS OF DOMESTIC VIOLENCE NEED FROM THE DENTAL PROFESSION.

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Purpose of the study was to determine whether 1) victims of domestic violence present in dental offices with signs of abuse; 2) are asked about their injuries by the oral health care provider; 3) are given referral and/or assistance; and 4) if they would like their injuries to be recognized by the dental professional.

Although numerous studies report that the majority of domestic violence (DV) victims sustain head and neck injuries, few dentists recognize that DV is a problem that their patients may encounter. A 14-question survey was developed and mailed to 15 domestic violence shelters in the North Texas area. Eleven of 15 shelters participated in the study, for an institutional response rate of 73.3%. Each shelter was mailed 15 surveys and of the total number of surveys mailed (N= 165), 112 were returned for an overall response rate of 67.8%.

Descriptive statistics were analyzed and a one-way Analysis of Variance (ANOVA) was used to determine whether the participants' age, race, or sex was statistically significant in determining the likelihood of abuse. The majority (76%) of participants had suffered from a head, neck, or mouth injury as a result of abuse. Over half of participants had seen a dentist when signs of abuse were present, yet 88.6% were not asked about their injuries. In addition, 69.2% responded that they would have liked to have been asked about their injuries. Of the total 112 participants, 76% have experienced an abusive head, neck, or mouth injury due to domestic violence. A one-way Analysis of Variance (ANOVA) found statistically significant differences in abuse rates for different ethnic groups. African Americans and Native Americans had significantly higher abuse rates ($p < .05$).

UTILIZING PUBLIC HEALTH CLINICS FOR SERVICE-LEARNING ROTATIONS IN DENTAL HYGIENE: A FOUR-YEAR RETROSPECTIVE STUDY.

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National reports outlining major disparities in oral healthcare in the United States have focused attention on ways to encourage healthcare providers to become more involved in public health. Service-learning in professional health education programs is one method being explored. The purpose of this study was to conduct a descriptive, retrospective review of the effectiveness of a service-learning rotation within a dental hygiene public health course. Areas of particular interest included student awareness of the underserved, cultural diversity, ethical patient care and interest in public health as a career choice.

Data sources were generated by students as part of course evaluation and included student journals (qualitative/quantitative), Likert-scaled (quantitative) and open-ended (qualitative) student satisfaction survey items. Data was collected from four classes of baccalaureate dental hygiene students over a four year period (n=104).

A mixed methodology was employed, utilizing both qualitative and quantitative data

analysis techniques. The constant comparative approach provided qualitative analysis of student journals and open-ended response items on student satisfaction surveys. In addition, percentage calculation of theme occurrence yielded a quantitative method of analysis for qualitative data. Median analysis was conducted for Likert-scaled survey items allowing for triangulation of results between the multiple data sets.

Results suggested that the service-learning rotation was an effective teaching strategy for increasing student awareness of underserved populations, cultural diversity and ethical patient care. The study also suggests that the service-learning experience helped students determine their level of interest in public health as a career choice by giving them a real-world experience in a public health setting.

DENTAL HYGIENE STUDENT'S PERSONAL STYLE AND PREFERENCE TO ON-LINE VS. CLASSROOM/LECTURE COURSES.

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A Survey of Personal Styles and a questionnaire on attitudes to on-line vs. classroom/lecture courses were administered to 57 recent graduates of a dental hygiene program to assess if there is a correlation between personal style, and preference to on-line vs. classroom lecture courses. The I-Speak Your Language, ® questionnaire was used, it is based on the theory developed by Carl Jung that identifies four major personal styles individuals use in varied situations: Intuitor (I), Thinker (T), Feeler (F), and Senser (S). There are main functions of behavior associated with each style, which may indicate a preference for on-line vs. classroom courses. In conjunction, a self-developed questionnaire on attitudes to on-line vs. classroom lecture courses was administered. The results of the survey of the primary style under non-stress conditions were 37% had personal style of F, 28% S, 25% T, and 10% I. One half of all I and T groups stated that they liked taking on-line courses, compared to 31% of S and 28% of F styles. Preference for classroom/lecture courses were 37% by S, 33% I and 28% for each of the T and F groups. The I

group preferred to have the curriculum equally divided between lecture and on-line at 33%, to 9% by F. Taking re-licensure C.E. courses on-line was planned by 100% of I, 80% by F, and 64% and 62% by T, S respectively. Future enrollment in a baccalaureate degree on-line program results ranged from 57% by F to low of 42% by T.

The results of the survey and questionnaire indicated that the I personal style students whose associated characteristics are described as original, imaginative, creative, broad-gauged, and idealistic were more in favor of on-line courses. With the ever increasing on-line courses offered in DH and higher education curriculums, knowledge of a student's individual personal style may be used by faculty to recognize the associated personal style characteristics to mentor, and develop educational strategies to meet students' needs in on-line or classroom/lecture courses.

PERSONALITY STYLES OF GRADUATES OF A DENTAL HYGIENE PROGRAM.

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I-Speak Your Language, ® A Survey of Personal Styles was administered to 57 recent graduates of a dental hygiene program to determine each student's favored primary personal style, and group profile based on 4 major personal styles. The Survey is based on the theory developed by Carl Jung, and is designed to measure individual primary personal style, and associated styles of behavior in favorable and stressful conditions.

The 4 major personal styles are: Intuitor(I), Thinker(T), Feeler(F), and Senser(S). The results of the survey indicate that under favorable conditions 37% of the graduates were F, who relate to and understand experiences through emotional reactions and responds to feeling. There were 28% S, who experience mainly on the basis of their own sensory perceptions. There were 25% T who analyze and order in logical fashion, and 10% I, who conceive, project, and are creative. In unfavorable conditions or stress, 39% of all the graduates were F, 33% S, 16% I, and 12% T. The changes in styles are the following: Under stress 43% of the graduates whose style that of an F, remained the same, while 48%

reverted equally to I or S, and 9% T. Under stress, 38% of the S personal style remained the same, 44% reverted to F, 12% I, 6% T. Under stress, 21% of the T personal style remained the same, 36% became F, and 36% S, and 7% I. The I style became 50% S, with the remaining equally divided among the other 3 personality styles.

The results of the Survey identified the personal styles of graduates of one dental hygiene program in favorable and unfavorable conditions, and the main functions associated with each style. Knowledge of individual primary personal styles and associated characteristics by educators and students could assist each to self-analyze behavioral observations to help each individual to determine the extent to which his/her style applications are working constructively or not. It gives a clear understanding of how over reliance on some styles or under-use of other styles may be contributing to success or difficulties in school and life. Approaches to life are different for the various personal styles.

RAISING ORAL HEALTH AWARENESS AMONG NEPHROLOGY NURSES.

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According to The National Kidney Foundation, 20 million Americans have Chronic Kidney Disease (CKD). Given the prevalence of conditions such as diabetes and hypertension, it is estimated that an additional 20 million people are at an increased risk for developing CKD. Research suggests chronic renal failure can give rise to a wide spectrum of oral manifestations affecting the hard or soft tissues of the mouth. Likewise, periodontitis may contribute to the burden of systemic inflammation in these patients. Unfortunately, CKD patients and their health care providers are often unaware of the oral complications of the disease as well as the multiple systems that can be affected. The complexity of care for patients with CKD reinforces the need for collaboration between healthcare providers. The purpose of this study was to raise oral health

awareness by providing educational seminars to healthcare providers, specifically nephrology nurses. By doing so they should be able to recognize early oral manifestations, provide basic patient education, and when necessary, make referrals to address these concerns.

Educational seminars entitled Oral Health and Chronic Kidney Disease were delivered by calibrated dental hygiene educators to renal nurses in three different regions in the United States. The nurse participants (n=106) were given randomly assigned pre- and post-tests, assessing their knowledge of oral health (OH) and its relation to CKD. These tests consisted of six multiple choice and four true/false questions.

Pre-tests revealed that nurses had little knowledge of oral health and its relation to CKD. Regardless of questionnaire order, a significant increase of knowledge was observed for both groups (p-value ≤ 0.015), increasing from 61% to 76% on average. Incorporating interdisciplinary education, such as the educational seminar, benefits nurses' knowledge and can potentially lead to greater quality of life outcomes and improved overall health in patients with Chronic Kidney Disease.

ASSESSMENT OF A SERVICE-LEARNING COMPONENT AT THE ARMSTRONG ATLANTIC STATE UNIVERSITY DENTAL HYGIENE DEPARTMENT.

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With the development of the Americans with Disabilities Act (ADA) of 1990 and the move toward deinstitutionalization, there has been an increased awareness of the health needs of persons with disabilities. However, it has been reported that only 10 percent of general dentists surveyed treat children with special needs on a regular basis, citing patient behavior as the greatest barrier to care. Educational research has shown that by integrating service-learning into dental and dental hygiene curricula, graduates are better prepared to provide dental care for diverse populations and more likely to treat individuals with developmental disabilities in the future. The purpose of this non-experimental study is to measure the comfort and confidence levels of senior dental hygiene students in the dental management of individuals with disabilities.

The sample population consisted of 19 senior dental hygiene students at Armstrong Atlantic State University in Savannah, GA. Elements of the Service-Learning component were incorporated into existing didactic dental hygiene courses and included didactic instruction related to service-learning pedagogy, issues surrounding ethics and civil responsibility of health professionals, and the dental management of individuals with disabilities. Each student was required to provide dental hygiene services to a minimum of two patients with special needs in the onsite clinic, as well as participate in a clinical rotation at Georgia Regional State Hospital's Dental Clinic.

In the form of a survey, each student indicated on a five-point Likert scale, the level of confidence and comfort she feels with respect to treating patients with nine possible disabilities (dementia, mental illness, cerebral palsy, mental retardation, severely medically compromised, limited dexterity, visually impaired, hearing impaired, and wheelchair-bound). In addition, each student will complete three "reflection" exercises during the course, and at the end, of the semester. Results are being analyzed utilizing quantitative and qualitative methods.

TOBACCO CESSATION EDUCATION IN NORTH CAROLINA DENTAL HYGIENE PROGRAMS.

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Inadequate training in tobacco cessation counseling is a recognized, but mutable, barrier to implementation of tobacco cessation education (TCE) and intervention strategies in dental practice. Without adequate instruction or opportunity to develop competence, dental hygienists are less likely to provide regular tobacco cessation counseling and education to patients.

OBJECTIVES: To identify the practices and perceptions of senior dental hygiene students (SDHS) in North Carolina (NC) regarding their didactic training in TCE and integration of TCE into their clinical dental hygiene curricula.

METHODS: A 26-item questionnaire was developed, pre-tested, and administered to a non-

random, convenience sample of 241 graduating SDHS enrolled in all 12 NC dental hygiene programs (DHPs) via mail (n=180) or email via Survey Monkey (n=61). Data analyses including frequency distributions and tests of chi-square were conducted using JMP 6.0.2.

RESULTS: Response rate was 65% (n=156). Of respondents, 99% agreed that hygienists should be trained to provide TCE. Most SDHS reported receiving classroom instruction about the American Dental Hygienists' Association's smoking cessation initiative (Ask.Advise.Refer.) (73%) and/or the 5 A's of tobacco cessation (68%). Sixty-nine percent stated their classroom instruction was reinforced by clinical instructors. Nearly all SDHS (99%) had one or more patients who smoked and 81% had one or more patients who used spit tobacco. Eighty-nine percent had one or more patients that expressed a desire to quit. Most SDHS were comfortable providing TCE to both smokers (92%) and spit tobacco users (93%); however, 26% reported that they were not comfortable providing quit messages to patients unwilling to quit. SDHS who are non-tobacco users were 2.9 times more likely to discuss the potential benefits of quitting than SDHS who are current tobacco users.

CONCLUSIONS: Deficiencies in TCE exist in NC DHPs. Enhancements to TCE in dental hygiene curricula may increase incorporation of TCE by hygienists' in future practice.

MOTIVATIONAL INTERVIEWING (MI) AS AN INTERVENTION FOR EARLY CHILDHOOD CARIES RISK-RELATED BEHAVIORS.

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The purpose of this pilot study was to assess whether an individualized motivational interviewing (MI) approach to oral health education affected early childhood caries (ECC) risk-related behaviors of mothers enrolled in a WIC Program. ECC risk is higher in select populations, and conventional educational practices are ineffective in addressing universal behavior change.

After human subjects' approval, seventy-two mothers were recruited and randomly assigned to one of two groups. Pretest questionnaires were completed followed by posttests one month later. The Readiness Assessment of Parent's Concerning Infant Dental

Decay (RAPIDD) is a valid and reliable instrument developed to assess a parent's stage of change. The Parental Care of Child's Teeth (PCCT) instrument was developed and pretested prior to this study to assess differences in parental ECC risk-related behaviors. Between pretests and posttests, the researcher provided an MI counseling type session and individualized follow-up telephone calls promoting positive oral health behaviors for mothers in the intervention group.

No statistically significant differences were found between groups' demographics. Repeated measures ANOVA, Kolmogorov-Smirnov Test and Wilcoxon Signed Ranks Test were used to analyze collected data. No clinically significant change was found in the four constructs measured with RAPIDD: valuing dental health, permissiveness, convenience and change difficulty, or openness to health information. Results of the PCCT questionnaire found statistically significant positive changes in the number of times the children's teeth were cleaned or brushed and the use of shared eating utensils. The nonparametric McNemar Test analyzed differences in the use of shared utensils. MI is a promising approach that may guide parents to adopt preventive oral health measures and decrease their children's risk of ECC. Extending the length of time for the intervention and studying motivation of parents' from diverse population groups to adopt oral health behaviors might impact future results. Further study is needed.

THE EXPLANATORY MODEL OF MEXICAN AMERICAN MOTHERS' PERCEPTION OF DENTAL DECAY.

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The purpose of this study was to describe the explanatory model of Mexican American mothers' perceptions of dental decay and to determine the decay rate of their children. A mixed methods research design was used to understand mothers' perception of dental decay. The sample was derived from volunteers in a community in Southeast Idaho, who responded to flyers posted at Hispanic organizations' locations. Mexican American mothers who had children between the ages of 3-14 and could read or write

in Spanish or English scheduled appointments for an interview and their children's dental screening.

Interviews were conducted using Kleinman's explanatory model to illicit the mothers' perceptions of dental decay related to: etiology; onset of symptoms; pathophysiology; course of decay; and treatment. Interviews were conducted by three Hispanic health promoters, who used scripted open-ended questions. To assess the current decay rates of the children, a DMFT/deft and an active decay score were collected. One researcher conducted the dental assessments while another research recorded the data.

Thirty mothers and 54 children participated in the study. The qualitative data revealed that mothers were familiar with dental decay through personal experience and family members' experiences. Mothers were unaware of the cause of dental decay and recognized the onset of disease through pain. Pain was experienced on many levels and severe pain influenced daily functioning. Mothers believed cavities could progress and used home remedies to decrease pain. Professional dental treatment for decay was sought when pain was no longer manageable at home. Barriers such as a lack of money, lack of insurance, and problems related to language and transportation inhibited the participants' access to care.

The children's dental assessment data reported an average deft/DMFT score of 5.06 teeth and an active decay score of 2.11 teeth per child. These scores are consistent with past research on Mexican American children's high rate of decay. Mothers believed that decay was a serious condition; however, they faced many barriers in accessing oral health care.



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