The Correlation Between Expanded Career Goals and Internship Courses in BSDH Programs: An Assessment

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To prepare graduates for leadership roles in the profession of dental hygiene, baccalaureate education is integral. The degree program should not only broaden students' skill base, but importantly, expose them to a variety of career options.

Purpose. To determine if internship placement at alternate sites would impact skill development and future career goals of BSDH-educated dental hygienists.

Method. A longitudinal study was conducted of Bachelor of Science dental hygienists who completed the internship course in the years 2003-2005. Additional data will be collected from the 2006 cohort. A survey was administered to 48 students. There were 21(N=21) responses. Students were asked to assess the value of internship as a learning experience, a means to acquire new skills, and as an influence on their future career goals.

Results. One hundred percent rated Internship "definitely yes" and "yes" as a valuable learning experience. Students felt they acquired the following skills: Critical Thinking (61.9 %), Interpersonal (71.4 %), Management (61.9 %), Research (57.1 %), Public Speaking (52.3 %).

Sixty one percent stated that their Internship influenced their future goals: 57.1% plan to further their education in such areas as education, public health, nutrition, and dental school; thirty-eight percent of the student teachers indicated that they would pursue a career in dental hygiene education. When asked, they indicated "observation of student teachers" and "influence of a mentor and a possible career option" as having the most impact on this decision.

Conclusion. It is apparent to date that students benefit from exposure to mentorship in a variety of employment venues. It is anticipated that the additional data will support that the pursuit of alternate practice settings and additional education is directly correlated to the variety of internship experiences.

ADHA's Focus on Advancing the Profession: Minnesota's Dental Hygiene Response

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The number of dental hygiene schools offering a bachelor degree is decreasing, while the number of schools offering an associate degree is increasing. Of the 10 dental hygiene schools in Minnesota, 2 offer baccalaureate degrees and 8 offer associate degrees. The objectives were: 1) to assess current associate degree dental hygiene students' interest in baccalaureate degree completion and 2) to determine if current interest in curriculum topics supports the ADHA's Focus on Advancing the Profession. A fifty-five-item survey and cover letter were provided to 304 first and second year dental hygiene students enrolled in associate degree programs in Minnesota during Fall 2004, with 204 participating (67% response rate). Survey results were analyzed using descriptive statistical methods.

Results revealed that 66.0% of dental hygiene students were interested in completing their baccalaureate degree. Of those interested, 70.4% would consider, or were strongly interested in, complete online class format, with 5.2% of no opinion and 24.4% uninterested. Only 45.9% indicated interest in classes on campus during traditional day time hours, with 8.9% of no opinion and 45.2% uninterested. Interest levels in 5 of the ADHA focus areas for advancing the profession (research, education, practice & technology, licensure & regulation, and public health) were solicited through 29 items. About 85% of participants ranked advanced practice skills and technology with moderate or high interest, while 30.3% were moderately or highly interested in research.

Existing baccalaureate dental hygiene programs need to support ADHA's Focus Area of Education through leadership in developing models of degree completion to advance the discipline of dental hygiene. Results of this survey demonstrate positive interest in completing the baccalaureate degree, supporting an online format. Incorporating research skills within dental hygiene education is essential to develop one of ADHA's 6 focus areas to increase both confidence and interest levels.

Efficacy of Chlorhexidine-Coated Toothbrush Filaments in Controlling Bacterial Contamination

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Objective. The purpose of this study was to determine if a significant difference exists in the efficacy of chlorhexidine-coated brush filaments as compared to uncoated filaments in reducing bacterial numbers.

Methods. The IRB-approved, 2-group, double-blind, randomized posttest-only design was conducted with 63 participating adults. After using the control or experimental brush for 30 days, the participants returned the brushes to the researchers in sealed autoclave bags. In the laboratory, microorganisms were detached from the filaments by sonification and vortexing, and then plated on selective media at various dilutions (10-1, 10-3, 10-4, and 10-5). The plates were incubated aerobically for 24 hours at 37° C. After incubation, bacterial colony forming units (CFU) were determined for each sample from 2 different media, one selective (Mitis Salivarius) and the other not (TSA Sheep Blood). Data were analyzed using Wilcoxon and Kruskal-Wallis tests. Fifty-nine samples were returned and processed.

Results. A final sample of 59 toothbrushes were returned and processed. Data from the blood agar indicated the mean number of CFU for the control toothbrush was $3.73 \times 10-5$ compared to the treatment brush of $3.23 \times 10-5$. For the Mitis Salivarius agar, the control mean was $2.34 \times 10-5$ CFU as compared to the treatment mean of $3.07 \times 10-5$.

Conclusion. Results revealed there was no statistically significant difference in the quantity of bacteria surviving on the toothbrush filaments between the 2 groups after the 30-day trial period; however, findings only reflect the number of aerobic bacterial colony forming units on blood agar or Mitis Salivarius agar. Study results cannot be generalized to include anaerobes or other bacteria, which may react differently to the presence of the antimicrobial agents.

The Adolescent Dental Health Project: Access to Oral Health Care for Low-Income Adolescents

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The Adolescent Dental Health Project was collaboratively developed with Dentistry and Adolescent and Young Adult Medicine at Children's National Medical Center (CNMC) in Washington, DC to address Healthy People 2010, Objective 12-21: "to increase the proportion of low-income children and adolescents who receive any preventive dental services." This was a pilot project, incorporating descriptive analysis because little information was available about general dentists' office policies and access to care for adolescents. Healthy adolescents cannot access CNMC pediatric dental department services because of age restriction and limitations of size and staff. The purpose of the research was to determine general dentists' office policies for provision of dental services for low-income adolescents in Washington, DC, and any barriers existing for accessing care. Dental professionals' perception of adolescents was also examined.

IRB approval was granted. The stakeholders, adolescents, conducted phone surveys to 100 randomly selected general dental offices in Washington, DC. Data regarding participation with Medicaid, various insurances, sliding scale, and free care were collected. Professionals' perception of adolescents was a subjective assessment by the teens. Data were primary categorical (binary or dichotomous and multicategorical) and analyses including frequencies and bivariate tests of Fisher's Exact Test were conducted using STATA SE Version 8.0 (2003). Initial interpretation of data revealed 83% of all dental offices were located in the Northwest (NW) quadrant of Washington DC, leading researchers to investigate if there was a bivariate association between financing of care and location. No statistically significant difference was found regarding financial options between NW and other city quadrants. However, one variable, office location, may be the strongest barrier for adolescents to access care. No conclusive evidence regarding professionals' perceptions of adolescents was determined. This research project was funded through an Aetna Foundation community grant.

Assessment of Full-Time Dental Hygiene Faculty Participation in Clinical Practice

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The purpose of this research project was to determine how many U.S. dental hygiene (DH) programs had full-time (FT) faculty members who provided direct patient care in addition to clinical supervision duties. Questions in this project also assessed attitudes and opinions of directors regarding faculty clinical practice and opportunities for salary supplementation. A questionnaire of 20 open and close ended questions was designed on Survey Monkey, an online survey engine. After IRB approval and pilot testing, 278 U.S. DH program directors received two emails requesting their participation in the project, along with a direct link to the questionnaire. A response rate of 69.1% was achieved with 192 program directors responding. Results revealed that 14.2% of the programs required FT DH faculty members to provide direct patient care while 67.0% of the programs had faculties who participated. The primary clinical setting was a private dental practice (90.3%). 83.3 % of the programs indicated FT faculty members were compensated for providing direct patient care, and in 95.1% of these programs FT faculties received compensation in addition to their university base salary. 95.4% of directors indicated maintaining clinical skills is an advantage of faculty participation in direct patient care, and 48% of directors indicated participation in direct patient care takes time away from the primary role of an educator. Bivariate analyses were performed in order to acquire correlations using the Chi-square test when both variables being compared were nominal. The Mantel-Haenszel row mean score test was used when a nominal and ordinal variable were being compared. Statistically significant data revealed that respondents from a college / university with a dental school (28%) were more likely to require FT faculties to participate in direct patient care (p-value=0.016). Compared to two-year college respondents (69.3%), respondents from a college / university with a dental school (95.5%) were more likely to agree that faculties should be given the opportunity to provide direct patient care while teaching in DH education (p-value=0.0069). In conclusion, DH faculties are fulfilling their professional development requirement as mandated by the Accreditation Standards for DH Education Programs by participating in direct patient care.

Survey of Oral Health Practices Among Adults in a North Carolina Hispanic Population

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From 1990 to 2000, the North Carolina Hispanic population increased 394%. This new growth brought challenging health care issues, especially to rural areas areas of North Carolina. The North Carolina Institute of Medicine reported oral health as a major problem for this population. The purpose of this study was to examine oral health, as well as perceived needs, of Hispanics residing in Siler City, NC, a microcosm of the flourishing Latino growth found especially in the southeastern United States. A convenience sample of 158 Hispanic adults was recruited from the largest Siler City Hispanic church. A 41-item Spanish language survey was utilized. Multiple choice questions and Likert-type scales addressed preventive oral health practices, oral health knowledge and beliefs, perceived needs, and demographic information. Frequencies and bivariate analyses were obtained using SAS 9. After excluding 5 surveys, a total of 153 were analyzed. The mean age was 33.8 years, females comprised 54% of the sample, 84% of respondents were of Mexican origin, and the mean time residing in the United States was 8.9 years. The following associations were found statistically significant (p < .05): (1) brushing frequency and belief that healthy gums bleed; (2) dental insurance and frequency of dental visits; (3) individualy teaching the participant to brush or floss, participant's reported brushing or flossing, and dental visit frequency. This pilot study provided important baseline information to begin addressing issues related to oral health, and is being used to aid local providers in the implementation of culturally-sensitive public health oral hygiene programs, thereby helping in the elimination of oral health disparities. Findings from this study call attention to the importance of educating the Hispanic population about oral health practices and compliance. Further studies including a random survey and larger sample size may be necessary.

Assessing the Outcomes of Tobacco Cessation Practices by Maryland Dental Hygienists

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Tobacco use is a significant risk factor for many preventable oral and systemic conditions and diseases. Tobacco cessation intervention has been successful in increasing patient quit rates, thereby improving overall health status. Dental hygienists are the primary providers of preventive oral health care education and services. However, little is known about the tobacco cessation services that hygienists provide and how efficacious their efforts are in reducing tobacco use in the patient population.

This study was designed to assess the outcomes of tobacco cessation services provided by dental hygienists. A systematic random sample of 600 Maryland hygienists was mailed a self-administered 65-item questionnaire that addressed dental Hygienists' knowledge, attitudes, practice behaviors, and perceived barriers that influence their provision of tobacco cessation services. Sixty surveys were returned as undeliverable and 32 respondents did not fulfill employment criteria, producing a response rate of 63% (N = 320). Statistical analyses of the aggregated data included frequencies, t tests, and Pearson's r (p<.001), and were conducted using SPSS software. Significant differences were revealed in both the tobacco cessation services provided and subsequent patient quit rates by hygienists who have received formal education in tobacco cessation as compared to those without formal education. Although the majority of respondents were adequately knowledgeable about the risk factors and current statistics associated with tobacco use, there was no significant relationship between the level of knowledge and the provision of services. A positive relationship, however, was demonstrated between a higher level attitude score and tobacco cessation services provided. Perceived barriers do exist that affect the dental Hygienists' provision of tobacco cessation services. Overcoming perceived barriers to providing tobacco cessation services will enable hygienists to contribute a valuable service for society. Funding for this project was provided through the ADHA Institute for Oral Health.

Student and Faculty Perceptions of Dental Hygiene Clinical Evaluations

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The dental hygiene program implemented a new clinical evaluation system using formative feedback with periodic summative grading. Formative feedback is provided in narrative form, fostering more open communication while maintaining the same high standard of care. Historically, clinical evaluation was accessed by assigning numeric grades for each patient treated. Faculty believed potential learning experiences were lost when students refrained from asking for feedback fearing points would be deducted from their grade. Currently, students receive formative feedback for the majority of cases and a numeric grade for every second or third case, depending upon patient classification.

Objectives. The objective of the study was to assess student and faculty perceptions regarding the change in the clinical evaluation system.

Methods. A 12-item, 5-point Likert scale questionnaire was administered to dental hygiene seniors (n = 23) and clinical faculty (n = 13). (Response rate was 88.5% and 100%, respectively.)

Results. One hundred percent of students and faculty consider learning to be more effective in clinic when feedback was provided between graded cases, while fostering a more comfortable learning environment. Ninety-one percent of the students report they were more willing to ask questions when they were receiving formative feedback. Ninety-six percent of the students and 73% of the faculty preferred the new grading system over the previous system, while 100% of both groups feel the change increased communication between faculty and students. Ninety-six percent of the students and 46% of the faculty believe they perform equally on both evaluation types. Only 19% of the students value self reflection while 100% of the faculty believe this helps the student assess the learning experience.

Conclusion. Faculty and students feel equally satisfied with the format, stating that formative cases allow for improved communication and feedback with an increase in cognitive learning opportunities.

The Significance of Dental Hygiene Education in a Dental School Setting

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The American Dental Hygienists' Association (ADHA) recently approved the creation of the ADHP and is currently addressing the curriculum. Therefore, it is imperative to maintain dental hygiene program (DHP) affiliations with dental institutions offering advanced degrees in dental hygiene. The trend in dental hygiene education has been the opening of independent programs and the closure of baccalaureate degree programs within colleges of dentistry. Recently, 4DHPs in dental schools have closed. Some closures claimed financial difficulties in maintaining a DHP. There are numerous educational advantages for having a DHP within a dental school for dental and dental hygiene students and the patient. The financial value a DHP generates for a college of dentistry cannot be overlooked as well. Revenues include more than those generated by dental hygiene students, including referrals to pre-doctoral students for other treatment.

Objectives. The objective of this study was to evaluate the financial benefits of a DHP within a dental school.

Methods. An analysis of all dental hygiene procedures completed and fees assessed from June 2003 through December 2004 were obtained and entered into an Excel program. Additional data included completed procedures and fees from referrals to the pre-doctoral students. Data were entered by CDT-4 insurance codes and total revenue was calculated using the Ohio State University College of Dentistry fees during the 2003-2004 fiscal year.

Results. Dental hygiene students produced \$184,986 for procedures completed. Six hundred and sixteen patients were referred, producing \$142,939. The total income to the College of Dentistry from dental hygiene was \$327,925. Dental hygiene clinical expenses during the time period were approximately \$158,400.

Conclusions. The DHP at The Ohio State University not only generates income for the college but also provides educational experiences for all students, and will increase the opportunity to accommodate the ADHP curriculum. DHP affiliations with dental institutions facilitate teamwork among aspiring dentists and dental hygienists, while promoting continuity of care for the patient population.

Accurate Calculus Detection: Is it Possible?

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An important goal of dental hygiene education is graduating clinically competent practitioners. Much of the clinical curriculum includes process and product evaluations that monitor and assess dental hygiene students' clinical abilities, especially related to the detection and removal of subgingival calculus. The purpose of this study was to determine if dental hygiene faculty were consistent in detecting "clickable" subgingival calculus that remained after the administration of a mock clinical board (MCB). A MCB was administered to 24 dental hygiene students during their last semester before graduation. The patient criteria for the MCB matched that of the regional board, including: a quadrant with at least 6 natural teeth, including one permanent molar with a proximal contact; a minimum of 12 surfaces with heavy, subgingival calculus; a maximum of 6 deposits on anterior teeth; and no gross decay, probing depths greater than 6 mm, or other dental conditions that would interfere with calculus detection or removal. Five dental hygiene faculty members were assigned with 3 faculty in the morning MCB and three in the afternoon. The faculty members were required to attend an orientation to calibrate the procedures used during the MCB. One faculty member was assigned as a "chief examiner" for each of the 3 sections of the clinic, with 4 dental hygiene students taking the MCB. The "chief examiner" recorded the 12 areas that were evaluated for calculus upon completion of the MCB. Students were not privy to the areas being examined. Upon completion of the procedures, each patient was examined by 3 examiners. The faculty members did not have access to the other instructors' evaluations. The 12 specified areas were examined with an 11/12 ODU explorer, and any surface that exhibited "clickable" calculus was recorded. The results were tallied to track the surfaces marked by each examiner. Two hundred eighty-eight surfaces were examined. There was total agreement of the 3 examiners on 69.8% (n=201) of areas where no calculus remained and 4.6% (n=4) where calculus remained. There were 30.2% (n=87) surfaces that were marked by 1, 2, or 3 for having "clickable" calculus. Two examiners agreed on 33.3% (n=29) surfaces with remaining calculus, while 62.2% (n=54) surfaces were marked by only one examiner. In conclusion, there seems to be more agreement on areas with no detectable deposits. Total agreement was less likely on surfaces that were evaluated as having calculus remaining. More research needs to be done to determine accurate calibration methods for clinical dental hygiene faculty. The findings presented here suggest that subgingival calculus detection may be more subjective than dental hygiene educators realize and calibration is essential.

Preliminary Findings pf Consumer-Patients' Perception of Dental Hygienists' Scope of Practice/Qualifications and the Level of Care Being Rendered

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Dental hygienists perform a wide variety of procedures and there are various levels of care being rendered within the dental hygiene profession, ranging from assembly line prophylaxes to highly technical, nonsurgical periodontal and cosmetic procedures. Consequently, consumer-patients' perception of the scope of practice of dental hygienists, dental Hygienists' qualifications, and their level of education may be misunderstood and/or underestimated. There may also be a variance in the kinds of procedures and levels of care delivered by dental hygienists. The purpose of this preliminary, descriptive study was to determine whether 1) there is a significant discrepancy in the majority of consumer-patients' perception of the dental hygienist's scope of practice and educational qualifications; 2) consumer-patients are being screened for oral cancer; 3) incidence of diagnosed periodontal disease approximates well supported epidemiologic trends; and 4) there is a discrepancy in the level of care consumer-patients are currently receiving and the level of care they most value. Three hundred seventy-eight students from 13 schools of dental hygiene utilized a 16-item questionnaire to survey a random sample of 1505 adult consumer-patients in Florida, Illinois, Massachusetts, North Carolina, Nebraska, New York, Ohio, Pennsylvania, South Carolina, and Wisconsin. A preliminary summary of the data indicated there was not a discrepancy in the majority of respondents' perception of dental Hygienists' scope of practice and educational qualifications; that over 50% of survey respondents do not recall being screened for oral cancer, periodontal disease was underdiagnosed; and there is preliminary evidence that there may be a discrepancy in the care these consumer-patients received and the level of care they most value. These findings are only preliminary in nature. However, it may be concluded that a larger scale, randomized survey, inclusive of culturally diverse samples throughout the entire United States, may provide valuable information on the quality of dental hygiene care, and perhaps yield evidence of treatment gaps.

New Allied Restorative Functions Training in Minnesota: A Case Study

B Cooper

Objectives. In 2004, the Minnesota Dental Practice Act was modified to allow dental hygienists and dental assistants to place amalgam, composite, glass ionomer, and stainless steel crowns. A continuing education course was offered to provide required certification for interested dental practitioners. The objectives were: 1) to examine confidence levels of participants and 2) to examine effectiveness of the continuing education program offered.

Methods. A 100-point multiple choice pre-test and post-test exam was used to measure restorative content knowledge. A descriptive survey consisting of 18 items was administered to participants (N=12) in a restorative functions course both prior to (day one) and upon completion of the course (8 days later). Using a 5-point Likert scale, participants indicated their perceived level of confidence in 6 restorative knowledge categories and 9 technical skill categories. Additionally, participants were questioned in their ability to learn these techniques and implement them into private practice.

Results. Exam scores analyzed with a matched pairs t-test found a significant increase in participants' restorative content knowledge (p<.01). Wilcoxen signed rank tests revealed an increase in confidence in all content knowledge categories (p<.01) and technical skill categories (p<.05). Participants did not significantly increase in confidence regarding the ability to implement restorative functions skills into practice (p<.7). Interview data revealed participants remain unclear about ways to incorporate these new duties into the practice schedule.

Conclusion. As anticipated, findings in this case study suggest content knowledge and confidence levels of participants increase following completion of a restorative functions course. Research is needed to identify why participants did not increase in confidence related to implementing restorative skills into their daily schedule. Education regarding concepts of how to incorporate restorative functions by allied professionals into practice may improve participant confidence and implementation.

College of Dentistry or Private Practice: A Patient Survey

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Colleges of Dentistry (COD) and Dental Hygiene Programs (DHP) rely on patients to help educate students and graduate competent dental professionals. In this era of competition for patients, consumer awareness, and customer satisfaction, COD/DHPs must understand and cater to the needs of consumers to attract more patients and retain its existing patient population. It is important to understand why consumers choose a COD/DHP versus private practice and capitalize on these features.

Objectives. The objectives of this study are to evaluate reasons why patients chose a COD/DHP and to assess patient satisfaction with their services.

Methods. Patients at The Ohio State University COD, scheduled with first and second year dental hygiene students, were randomly selected to complete a survey regarding why they chose the COD/DHP and to rate their experiences via a 5-point Likert scale.

Results. Forty-seven subjects completed the survey (24 male, 23 female; mean age 49.5 yrs.). Fifty-five percent of subjects chose the COD/DHP due to cost of dental treatment, and 21% thought their care would be more thorough and would receive better treatment than in private practice. Subjects stated they received good to excellent care, and 99% would recommend the COD/DHP for oral healthcare needs. One-way ANOVA showed no significant difference in the level of satisfaction between males and females and Spearman's Correlation showed moderate correlation (r=0.263) between age and satisfaction, but no correlation between educational level and satisfaction.

Conclusions. The majority of patients attended the COD/DHP for financial reasons and perception of better care. Subjects surveyed were very satisfied with their experience at the COD/DHP. Satisfied patients are more likely to be compliant with their oral health, use services of the COD/DHP on a regular basis, and are a source of referrals.

This project was supported by The Ohio State University COD Summer Student Research Program.

Changing Attitudes About Elementary School Dental Health Education: A Pilot Study

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The American Association of Dental Schools requires dental hygiene (DH) programs to graduate students who meet entry-level health competency in promotion and disease prevention and community involvement. Competencies include promotion of the values of oral health to the public and organizations within and outside the profession. Gaining a better understanding of the attitudes of first-year DH students toward oral health presentations in the community will aid DH educators in establish teaching strategies to formulate positive attitudes of students. Grounded in the theoretical framework of Bandura (1977), this research has been conducted to determine teaching strategies that strengthen self-efficacy in order to promote a perceived value of DH students in providing health education to the community. The purpose of this study was to measure changes in attitudes of DH students toward providing a dental health presentation to elementary school students after a 10-week undergraduate course in health education. The teaching strategies include lecture, online and class discussion, demonstration and activities, small group assignments, presentation to peers, and written and verbal reflection. An 8 question pre-survey and post-survey was distributed to a convenience sample of 30 female first-year DH students. The pre-survey indicated that 100% of the students felt that there was a need for dental professionals to provide oral health education in the schools, while 67% were somewhat likely to do a dental health presentation once working independently. In addition, this will be the first presentation in front of an elementary classroom for 77% of the students, and 73% were somewhat anxious about presenting. Comments obtained during online and class discussion indicated an increased self-efficacy toward providing oral health presentations.

Dental Hygiene Students Assisting in Workforce Issues

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The purpose of this program is to involve dental hygiene (DH) students in school-based oral health programs under the general supervision of a dentist. Third and fourth-year baccalaureate DH students have participated in the Dental Sealant Grant Program (DSGP). Presently, fourth-year students are assigned to the DSGP as part of a Rural Health course; thus, providing them with a practical service-learning opportunity, and filling a gap in the present workforce to meet the oral health needs within several rural communities. The program has had a history of providing preventive oral health services to the community; however, past problems encountered were restrictive supervision laws and difficulty obtaining dental personnel including licensed dental hygienists and dentists. DH students provide sealants and oral hygiene education to children eligible for free/reduced lunch and/or Medicaid. Previous to the signing of general supervision (GS) into law in August 2004, the DH students had been supervised by licensed DH faculty, including a supervising dentist, leading to an increase in manpower, hours of operation, and production. Prior to general supervision, the DSGP recorded 319 exams and 738 sealants within a 4-year timeframe (spring 2001 through summer 2004). Data represents 7, 16-week (N=112) semesters that averaged 40 exams and 92 sealants. However, after GS, the DSGP recorded 307 exams and 617 sealants in a shorter time period (fall 2004 to spring 2005) for 2, 16-week semesters (N=32) that averaged 153 exams and 309 sealants. Although the DSGP has been a part of the DH program's community outreach to school sites and church-sponsored summer lunch initiatives, it is only in its second year as a course rotation site. Further evaluation of the DH students' learning experiences and an analysis of caries experiences among grade school children will become integral components of this program.

Dental Hygiene Students' Perception of Children's Access to Dental Care

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According to a recent study, children lose more than 40 million hours of school each year because of dental pain and dental related illness. Children from lower socioeconomic backgrounds suffer 12 times more 'restricted activity days'' than children from wealthier families. The most common chronic childhood disease is dental caries, which is 5 times more common than hay fever. To determine the senior dental hygiene students' perception of access to dental care for children, a survey was administered at the end of the Community Health course, spring semester 2005 (n=27, 100% response rate). The survey of 33 quantitative questions (5-point Likert-type scale) was downloaded on the course's Blackboard site in the Assessment section. The mean for each question was automatically calculated by Blackboard. Ninety-four percent of the students expressed that access to dental care was a problem in the United States. Furthermore, even with 3 local dental schools, 94% of the students felt that access to dental care was a local problem. When students were asked their perception of the likelihood that a child would be taken to a dentist if s/he "broke a tooth," 49% reported that the child would "most probably" seek dental care. Forty-six percent responded that they thought the child would "probably" seek dental care. Conversely, 3% reported that they were "not certain" if the child would seek dental care. When asked their perception of the likelihood that a child would seek dental care for a toothache, only 29% indicated "most probably." However, 63% indicated the child would "probably" seek dental care. Seven percent of the students indicated that they were "not certain" if a child would seek dental care for a toothache.

The survey results suggest that the majority of the students perceived that access to dental care was a problem in the United States and locally. Additionally, the students were certain that children would receive palliative care for dental ailments. Future studies would be encouraged to determine the students' perceptions of the basis and solutions to the access to dental care dilemma.

ADHP and Access to Dental Care: The Dental Hygiene Students' Perspective

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One of the oral health goals of Healthy People 2010 is to improve access to services. The Surgeon General's Report on Oral Health (May 2000) charge to dental professionals is to "continue to seek solutions to questions of access and barriers to care." To that end, the Advanced Dental Hygiene Practitioner (ADHP) was proposed by the American Dental Hygienists' Association (ADHA) to provide diagnostic, therapeutic, preventive, and restorative services to the population that is not presently served. This study was developed to ascertain hygiene students' perceptions of the need for the ADHP. To determine the senior dental hygiene students' perception of the need for the ADHP, a survey was developed and administered at the end of the Community Health course spring semester 2005(n=27; 100% response rate). A field test of the survey was conducted by the faculty and their suggestions were incorporated into the survey. The researchers developed 10 quantitative questions (5-point Likert-type scale) and qualitative open-ended questions to help with interpretation of the quantitative results ("please explain your response"). The survey was downloaded on the course's Blackboard site in the Assessment section. The mean for each question was automatically calculated by Blackboard. The results indicate that senior hygiene students perceive, that to address the disparity of access to dental care, there is an "extreme demand" (47%) for an ADHP. Likewise, 47% of the students felt there was an "average need" for the ADHP. Only 5% of the students felt there was "no need" for an ADHP.

The results of this study indicate that senior dental hygiene students are in agreement with ADHA, and recently published reports, which indicate that access to dental care can be enhanced with the development of the ADHP. Future research is necessary to determine the number of dental hygiene students and practitioners who are interested in pursuing this career option, with the intent to address the disparity of access to dental care by the "un-served public."

The Role of Education in the Development of Cultural Competency in Dental Hygiene Students.

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The University of Tennessee

This study seeks to determine if students who completed the 2-year dental hygiene program at the University of Tennessee Health Science Center developed in the area of cultural competency, as measured by the Cross-Cultural Adaptability Inventory (CCAI). In addition, this study attempts to ascertain if certain socioeconomic factors influence the development of cross-cultural competency. The sample consisted of a cohort of 32 students enrolled from 2003-2005. Descriptive statistics, ANOVA procedures, dependent t-test, and independent t-test were calculated to determine results.

The CCAI is a 50-item instrument that determines one's cross-cultural adaptability based on 4 constructs: emotional resilience (ER), flexibility/openness (FO), perceptual acuity (PAC), and personal autonomy (PA). The overall CCAI score is computed from the sum of the 4 dimensional scores. The CCAI pre-test was administered to the dental hygiene cohort at the beginning of the 2-year program, followed by the post-test, which was administered prior to program completion. Results of this study revealed minimal evidence of increase in the overall CCAI post-test score (p = .085). The t tests revealed no significant change between pre-test and post-test scores for 3 of the 4 subscales (ER, PAC, and PA) at the .05 level. However, at the .05 level, the FO scale indicated significant change between the pre-test (M = 65.09, SD = 7.67) and post-test scores (M = 67.96, SD = 7.81). Lastly, this study found no significant changes in the CCAI pre-test and pos-test scores based on 2 socioeconomic factors, current family status, or parent's educational levels.

The study concluded that the integration of culture-related topics in the educational program is both appropriate and effective. Providing frequent clinical experiences that allow students to interface with diverse populations is an effective strategy for increasing flexibility and openness, one construct of cultural competency.

The Attitudes of Dental Hygiene Students Toward Unverserved populations

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Objectives. To evaluate the attitudes of dental hygiene (DH) students toward underserved populations, and to compare their attitudes to the attitudes of freshman dental students (DDS).

Methods. A validated questionnaire designed to measure dental students' attitudes toward providing care to underserved populations was used. Freshman dental and dental hygiene students at the University of Southern California, School of Dentistry were asked to complete this questionnaire. The study was restricted to female DH students.

Results. The response rate among DH students was 95%; mean age was 25 years; 22% were Asians, and 33% were Caucasians. The mean attitudes scores were not significantly different between the DDS and DH students. However, among Caucasians, DDS students scored more positively by 13% in the student responsibility component of the instrument than did DH students (p<0.01), and they were more likely to believe that acsess to medical care in America is influenced by type of residence (rural vs. urban) (42% higher; p=0.03). Six percent of the DDS students paid some of their tuition from scholarshps campared to 67% of the DH students. Total attitudes scores were 5% more positive among students with scholarship (p=0.04). Fifty-three percent of the DDS students were involved in providing care for the needy before enrolling in dental school compared to 43% of the DH students(p=0.36). Lastly, 82% of the DDS students believed that all population groups should receive free dental care compared to 60% of the DH students (p=0.03).

Conclusions. Significant differences were found between DDS and DH students in terms of their attitudes toward underserved populations, with students who paid some of their ttuition from scholarships having more favorable attitudes. Further analysis and studies are needed to determine whether the scholarships themselves, or their elilgibility criteria, are behind such an effect.

Keywords: Dental hygiene students, attitude, education, underserved population

New Technology in Dental Hygiene: Facilitating Faculty Acceptance and Adaptation

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Purpose. To detail the steps and obstacles encountered by one dental hygiene program at a 4-year, private, multi-disciplinary institution when transitioning to digital imaging and paperless record keeping. The lessons from this experience can be helpful to other programs contemplating the addition of similar technology.

Method. To determine problems and successes through experiential analysis in the 4 months since first implementing program changes. Dentrix Enterprise software, digital imaging sensors, digital pan, and computers were installed in July; training full-time faculty started August 11 and was to be completed by the start of the semester, August 26, 2006.

Problems. From the start several obstacles were encountered by faculty: resistance to change, anxiety and confusion, lack of familiarity with computer technology, individual learning curves, and diverse interests impeded progress. Faculty training was not completed by the deadline. Training everyone at one time was ineffective. Insufficient lead time was planned for training. As the semester commenced, no one individual had the overall picture of the software program. Uncertainty among faculty led to student error and disorganization as to appropriate record content, and random location of data made retrieval and reference of data by subsequent users difficult. After the first week, the paper record reemerged due to fear of inadequate documentation. This duplicated record entries and extended appointment times.

Solutions. Phase in changes gradually. Small groups and shorter training sessions are more productive. Assign 1 or 2 faculty as "Super Users" with decision-making authority. Allow adequate time for training, assimilation, and reflection. New goals for the program must be established and agreed upon by all participants. Align all revisions in curriculum with program goals. It is essential that the parent institution and its Information Technology Department commit funds and operational support on an on-going basis to the program.

Results. It is hoped that the preceding strategies will facilitate decision making, streamline instruction to faculty and students, and optimize progress toward paperless record keeping.

The Dental Hygiene Degree Completion Program: It's All About Access

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The state of Florida has 18 accredited, entry-level dental hygiene associate degree programs, but until now, there was no advanced dental hygiene degree available. As dental hygiene institutions began facing faculty shortages, it became clear that there was a need to provide an opportunity for dental hygienists to earn a bachelor's degree in dental hygiene. In January 2004, St. Petersburg College (SPC) began offering an online Bachelor of Applied Science in Dental Hygiene (BASDH) degree completion program. Since that time, approximately 70 students have graduated, and 150 students are currently enrolled or are ready to begin. The program seeks to address 3 main issues: ease the impending and current shortages in qualified faculty to staff associate degree programs; provide opportunity to expand career options of the registered dental hygienist outside of traditional clinical practice; aid in the professional development for those in clinical practice. The BASDH program is designed to be accessible to the majority of prospective students. The entire program is delivered online, requires no campus visits, and all web-based course activities are asynchronous. Students enter the program as a cohort and progress through the curriculum together. This fosters a virtual learning community that increases connectivity and team collaboration within the online courses. Courses are offered one at a time in a shortened time frame of 6-8 weeks. The Capstone course provides the opportunity for students to explore their individual area of interest and focus outside the traditional clinical dental hygiene setting, and to do so within their community. The outcomes indicate the mission was met and graduates are being placed in positions that utilize the advanced degree. The online structure of the program creates a stimulating environment that is highly interactive, learner centered, and results in excellent participation and collaboration with peers and instructors.

Development and Implementation of a Web-based BSDH Degree Completion Program

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The purpose of this program is to explore the strategic steps necessary to develop an online Bachelor of Science in Dental Hygiene Degree Completion Program within a 4-year private, multidisciplinary institution to increase the amount of dental hygiene educators in the Northeast region of the United States. The development of the program including benchmark marketing strategies for the target group will be discussed. The process web-based curriculum conversion utilized will be reviewed. The Massachusetts Dental Society and Delta Dental of Massachusetts have recognized a shortage of dental hygiene educators throughout the Northeast. As a result, the Massachusetts Dental Society (#594) and Delta Dental (#556-12) of Massachusetts have both partnered with the Massachusetts College of Pharmacy and Health Sciences to provide financial grant support for this project. As 2-year community college dental hygiene programs continue to offer and produce licensed dental hygienists quickly and inexpensively, the profession has a plethora of Registered Dental Hygienists lacking their bachelor's degree. The conversion of this program seeks to increase the number of baccalaureate-prepared dental hygienists; thus, increasing the amount of dental hygiene educators available to the Northeast states and post-secondary educational settings. Students enrolled in the program will be surveyed regarding their future intentions once they have achieved their bachelor's degree. Upon student completion of the program, students will be surveyed again regarding their employment intentions and opportunities currently available. It is expected that students enrolled in the program will pursue dental hygiene education. Thus, the program should alleviate the shortage of dental hygiene educators in the Northeast region and, as the program becomes more global, increase the amount of dental hygiene educators available throughout the United States.

Dental Hygiene Students' Perceptions of an Academic Service Learning Course on Special Needs Patients

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Academic Service Learning (ASL) is a teaching method used to cultivate a connection between course work and real life experiences. It allows students to contribute to their community while meeting explicit learning objectives. In response to the new American Dental Association (ADA) accreditation standard for dental hygiene programs to better prepare professionals to care for people with special health care needs, the didactic portion of a special needs course was revised to include ASL. The purpose of this project was to examine dental hygiene students' perceptions of an ASL course on special needs patients. A retrospective pre-test post-test open response questionnaire, given to a convenience sample of 23 (n=23) female students, was used to determine what students hoped to gain, what they liked best, and what they liked least about the experience. Using the Constant Comparative Method, responses were categorized into recurring themes. Results indicated that students hoped to gain knowledge, understanding, and experience with patients with special needs. After the experience, students generally reported that their expectations were met. Students reported they liked working with people best. Almost half of the students reported a change between their initial thought and what they liked best at the conclusion of the course. Students initially reported the ASL course would be time consuming and felt uncomfortable around patients with special needs. At the conclusion of the course, their main concern was organization at the ASL sites. Most students reported a different concern at the end than they initially reported. The varied list indicated that students were able to observe multiple influences on ASL. In conclusion, course goals were achieved as students reported gaining knowledge and experience in working with patients with special needs.

Head Start Collaboration Program

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The Dental Hygiene Department at Farmingdale State University of New York, in collaboration with the Economic Opportunity Commission of Nassau County, developed an innovative oral health education, screening, and service program. The purposes of this program were to increase oral health awareness through education, to identify the need for dental treatment, and to provide access to dental hygiene preventive services for the children in Head Start Programs through out Nassau County. This unique program utilized existing facilities, faculty, and dental hygiene students to provide a point-of-entry into the oral health care delievery system.

The children arrived at the Dental Hygiene Care Center by bus and were chaperoned by Head Start Staff. A completed health history form and consent form were presented to the faculty. Each child was paired with a dental hygiene student who reviewed the health history, completed an intra oral and extra oral exam, provided oral health education, and performed an oral prophylaxis. Dental hygiene faculty reviewed student findings and the supervising dentist cosigned the screening form. The completed screening forms were returned to the Head Start project coordinator.

This program resulted in the provision of preventive services to 127 Head Start children. The results of the dental screening identified 42 children in need of nonurgent dental treatment and 28 children in need of immediate dental care. Referrals for treatment and follow-up of actual treatment was the responsibility of the Head Start Program.

This collaborative program was initiated in an effort to assess the need and meet the oral health challenge of Nassau County Head Start Children. The services provided helped reduce health disparities and improve oral health outcomes.

Increasing Access to Dental Care Through Primary Health Care Prodiver Education

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Recent research has identified that the historical approach to Early Childhood Caries (ECC) has changed. It is now imperative to screen and treat infants, toddlers, and their mothers to identify those at risk and begin an intervention program during pregnancy and throughout infancy. It is often the primary health care provider, such as physicians, physician's assistants (PA's), nurses, and pediatric specialists who see these young people before they see a dental health care professional. Currently, caries education and prevention is not included in any of these program curricula within the University of South Dakota (USD) other than the dental hygiene program. Like most other states, South Dakota has an access to dental care crisis. The percentages of third graders in South Dakota with a decay history (67%) and untreated decay (30%) are both much higher than the national goals of 42% and 21%, respectively, of Healthy People 2010. The purpose of this educational pilot project is to supply basic knowledge of ECC, fluoride varnish application, and the preventive role of xylitol and chlorhexidine to PA students. Evaluation mechanisms include a pretest and posttest measuring a change in students' knowledge base. An increase in knowledge has been shown. Expansion of the project includes educating USD medical and nursing students, and mentoring and observing these health care providers as they implement these prevention strategies during clinical rotations. It is the goal of this project to increase access to dental care through primary health care providers who will perform oral screenings and implement prevention strategies during well-baby checks, immunization appointments, and prenatal care.

A New Course to Enhance Pre-Clinical Dental Hygiene Learning Experience

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As a result of feedback from students and faculty, a few areas of clinical preparation needing more proficiency were identified. A new program was developed to enhance the preclinical dental hygiene (DH) learning experiences. Traditionally, all preclinical skills were taught in one academic quarter. The new program continued preclinical teaching to the first half of the following quarter. In addition to didactic teaching, individual skill assessments were added so that students could have one-on-one instruction in instrument sharpening, removing calculus, and the use of the ultrasonic scaler. Since the skill assessments were evaluated, students were well prepared, thus allowing the instructors to take the skills to a level of practical application. Senior DH practicum students assigned in the course were responsible for creating dental charting scenarios and helped guide beginning students in completing appropriate paper work. A 4-point Likert survey was given to the 30 DH students, 9 clinical faculty, and 5 practicum students to identify their perception of preparedness for aspects of clinical care. While the majority of students felt prepared in most aspects of clinical care, some interesting information emerged. The majority of practicum students felt the class they helped teach was more prepared than they had been in the areas of instrument sharpening (80%), use of the ultrasonic scalers (80%), and completion of paper work (60%), while the majority of the beginning students did not feel prepared in the use of the ultrasonic scaler (97%) or completion of paper work (87%). Faculty (86%) felt the students were more prepared in these areas than in previous years. It appears that both faculty and practicum students feel that students are more prepared than in the past, but the beginning students still do not feel adequately prepared in all aspects of patient care.

A Program to Help Identify Victims of Domestic Violence

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Domestic violence has been coined an "unacknowledged epidemic." Nearly 5.3 million women, 18 years and older, are victimized by intimate partners each year. It is estimated that 33% of female emergency room visits are due to domestic violence (DV), yet only 10% are identified as victims. Data indicates that lack of information and unwillingness to question patients has contributed to the deficit of identifying DV victims in the health care setting. Although it may be uncomfortable questioning potential victims, it is a professional responsibility of the dental professional (DP). Being trained, having experience, and feeling comfortable while asking questions may support DP to accept this responsibility. The purpose of these presentations was to inform DP and students about the signs and symptoms of DV so they can comfortably and effectively interact with possible victims. Two programs were presented with the same basic information and pre-assessment and post-assessment questions. The SAFE Question strategy was introduced and opportunities for participants to discuss appropriate questions and discuss referral was provided. A presentation to third year dental students (n=76) in a patient management course and a continuing education course for DP (n=21) was conducted. The pre-assessment to dental students revealed that more than 60% did not feel comfortable identifying signs and symptoms, documenting/referring, and conversing with possible victims while the post-assessment indicated that 90% felt they would be comfortable questioning the potential DV victim. The pre-assessment to the DP revealed that more than 47% did not feel comfortable and the post assessment revealed that more than 71% would feel comfortable questioning potential DV victims. Although there were positive results from the respondents, it is a goal to include more experience in actually asking questions by role playing or utilizing a standardized patient. Working with a pre-recorded audiotape as the interviewer is also a method being investigated.

Adult Tobacco Use by AASU Dental Hygiene Clinic Patients

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The purpose of this study was to determine the frequency of tobacco use and interest in cessation by patients utilizing the Armstrong Atlantic State University (AASU) dental hygiene clinic. The study's aim was to contribute to the Southeast Georgia Cancer Coalition goals in its mission to educate the public about tobacco use health risks and to provide cessation education. Subjects were of diverse age, socioeconomic status, and ethnicity groups, including those who were medically compromised and may have limited access to care. A medical history, oral assessment, and tobacco use survey were conducted. Utilizing a National Cancer Institute survey for tobacco use and interest in cessation assessment form, data were analyzed to determine age, race, gender, and quantifiable tobacco use and cessation factors by tobacco users. Of the sample (N=202), there was a greater number of nonusers and a total of 37 tobacco users. Pearson's r Linear Association and Spearman Correlation indicated that in the user subgroup, inhalation was the most frequent mode of use; tobacco use by women was significant (p<.03), while use by men was not; whites (12:1) used more than nonwhites; younger individuals (18-33 years) used tobacco at a greater rate; and, the trend to smoke decreased with age. The data further suggested that the younger age group, both males and females, demonstrated higher levels of interest in cessation. Additionally, the younger age group indicated participation in cessation consultation with a physician (p<.05). It was concluded that tobacco use assessment provides the dental hygiene student with an awareness of their integral role as educator, advocate, and clinician, thereby contributing to the patient's overall health, most specifically young white females. It further serves society by assisting in the reduction of a major health risk.