



The Internet Journal of Allied Health Sciences and Practice

<http://ijahsp.nova.edu>

A Peer Reviewed Publication of the College of Allied Health & Nursing at Nova Southeastern University

Dedicated to allied health professional practice and education

<http://ijahsp.nova.edu> Vol. 7 No. 1 ISSN 1540-580X

Design of Introductory Course to Improve Career Decision Making in Dental Hygiene

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CITATION: Monson, AL., Cooper, BR. Design of Introductory Course to Improve Career Decision Making in Dental Hygiene. *The Internet Journal of Allied Health Sciences and Practice*. Jan 2009, Volume 7 Number 1.

ABSTRACT

Dental Hygiene programs have a responsibility to help potential applicants determine if dental hygiene is the best career choice for them. Good fit of career promotes a satisfied workforce, along with program retention. The purpose of this study was to evaluate students' satisfaction with an introductory course on career choice in dental hygiene and to assess the influence of the course on their perceptions of a career in this profession. Pre- and post-course surveys were distributed to 186 students enrolled in "Perspectives in Dental Hygiene" at a state university. An overall response rate of 97% (N=181) was achieved. The average participant was 18 to 19 years old, female, Caucasian, worked 0 to 10 hours/week, and self-reported a GPA of 3.5 to 4.0. A Wilcoxon signed rank test revealed a significant decrease ($p < .001$) in desire to pursue dental hygiene after course completion. Strong support for the value of the course was demonstrated; the course was recommended by 99% of participants who indicated a desire to pursue dental hygiene and 94% of participants who did not want to pursue dental hygiene. All participants who were unsure or did not want to pursue dental hygiene agreed they are more knowledgeable about the profession as a result of the course. The findings indicate that dental hygiene programs can utilize a pre-requisite introductory course on dental hygiene career choice to help applicants assess career fit.

INTRODUCTION

Dental hygiene is one of the fastest growing occupations in the United States, with faster growth predicted through 2014.¹ Reasons for this predicted job growth include 1) an increase in the age of baby boomers who have kept their teeth and have increased dental needs, 2) an increase in job responsibilities of dental hygienists, including an expanded scope of practice, and 3) a decrease in the number of dentists, particularly in rural areas. The predicted job growth within the dental hygiene profession emphasizes the need to attract more qualified applicants and identify ways to improve career counseling as it relates to dental hygiene.

Despite the high demand for dental hygiene graduates, the public, including many high school students, are unaware of the dental hygiene profession and job responsibilities. Gauden examined the career awareness of 109 high school seniors who approached a dental hygiene display table during a career day event.² A lack of knowledge about the profession of dental hygiene was identified, with 53 percent unaware of the difference between a dental hygienist, dental assistant, or dental lab technician. Functions of a licensed dental hygienist were also misunderstood, with many unaware of the different roles dental hygienists can pursue, including opportunities in corporations, primary schools, and higher education. This research suggests that high school students do not fully understand the job responsibilities and capabilities of the dental hygiene profession, and may not recognize dental hygiene as an option when they are pondering careers. Recognizing the lack of public awareness, the

American Dental Hygienists' Association has launched a national marketing campaign designed to increase awareness of the profession and oral health, including televised programming about the profession in twenty-five of the top broadcast markets.³

Students who are interested in clinical dental hygiene can apply to any of the 296 entry-level schools listed on the American Dental Hygienists' Association website.⁴ Only 20 percent of those schools offer the baccalaureate degree required to pursue alternative dental hygiene career tracks such as serving as faculty in academic programs. According to the ADHA, there are 60 baccalaureate/degree completion programs and 17 Master's degree programs in the United States geared towards dental hygienics.⁴ A baccalaureate degree is required prior to the completion of the Advanced Dental Hygiene Practitioner (ADHP) curriculum, a Master's degree, which is the general academic standard for mid-level providers. In addition to the full range of dental hygiene clinical services, ADHPs will administer minimally invasive restorative services and will also have limited prescriptive authority.⁴ The remaining dental hygiene programs offer an associate degree or certificate. New programs created in the last decade have primarily been established in community and technical college settings which offer only an associate degree or certificate.

The increase in the number of programs has afforded students with opportunities to apply to multiple programs, with the most qualified students dispersed across technical college, community college, and university settings. Despite the 26 percent increase in applications to two and four-year dental hygiene programs from 1994-1995 to 1998-1999, aggregate capacity for first-year students exceeded enrollment by 6.5 percent.⁵ To advance the dental hygiene profession, baccalaureate programs need to identify ways to attract highly qualified students who can progress to become faculty or complete the ADHP curriculum. The American Dental Hygienists' Association has published a report indicating intent to implement the baccalaureate degree as the entry-level degree within the next five years to advance the profession.⁶

Deterrants to entering the dental hygiene profession include 1) interest in other health care professions, 2) lack of awareness of the profession, and 3) lack of foreknowledge of the rigor of dental hygiene education. Students accepted to dental hygiene programs without adequate knowledge about the profession, or inability to withstand the rigor of the coursework, either fail or drop out from the program. Attracting knowledgeable, qualified applicants is essential to sustain dental hygiene programs and address the oral health needs of the nation.

Dental hygiene programs have a responsibility to help potential applicants determine if dental hygiene is the best career choice for them. Good fit of career promotes a satisfied workforce, along with retention of students in the academic program. The purpose of this study was to evaluate students' satisfaction with a required introductory course on career choice in dental hygiene and assess the influence of this course on students' perceptions of career fit.

LITERATURE REVIEW

Career Development Courses

Over 50% of institutions offer either credit or non-credit courses to aid in career development or decision-making.⁷ Reese and Miller found that a course-based career intervention was successful in improving career decision-making self-efficacy, and it also helped students gather information, set goals and make future plans.⁸ Folsom and Reardon examined 46 articles published from 1976 to 2001 that reported the effects of career courses.⁹ The authors found that 90% of the papers described positive gains in students' vocational identity, career decision making, and other output variables.⁹ While general career development courses are more prevalent in postsecondary institutions, college or discipline specific career courses also exist.

Thomas and McDaniel examined the effectiveness of a required course in career planning for 165 psychology majors.¹⁰ Post-course scores of participants were significantly higher than the pre-course scores on the Psychology Majors Career Information Survey and Career Decision Making Self-Efficacy Scale, and were less likely to hold common misconceptions about a psychology career.¹⁰ Green, McCord and Westbrook examined 60 participants in upper division courses and found that students who completed a careers course in psychology had a more accurate perception of the education required to achieve their desired job.¹¹

Retention in Dental Hygiene Programs

Holt surveyed a random sample of 25 associate-degree dental hygiene schools to determine student retention strategies and practices.¹² In this study, 83 percent of students graduated from the dental hygiene program, compared to 46 percent from overall two-year associate degree programs. Attrition issues identified by program directors included academic underachievement (88%), dissatisfaction with career choice (76%), family and personal responsibilities (72%), and non-developing clinical skills (56%). Retention strategies included academic remediation (96%), clinical skill remediation (84%), academic advising (84%), financial aid assistance (84%), and tutoring (80%).¹² This study suggests that dissatisfaction with

career choice is a significant factor in attrition rates, and emphasizes the need to help students identify career goals and realistic expectations of the profession prior to application. Since the populations of baccalaureate and associate programs may differ, results cannot be generalized to all dental hygiene programs.

Examining the within-college effects reported by Pascarella and Terenzini can provide further insight into student persistence and attainment.¹³ The importance of academic achievement noted by Holt is supported by Pascarella and Terenzini, who found that grade performance was a statistically significant predictor of persistence and graduation, a finding that is consistent with numerous other studies conducted in various disciplines and types of academic institutions. Other predictors of persistence include access to financial aid, particularly in the form of grants and scholarships rather than loans that have to be paid back with interest thus contributing to students' debt, and positive interactions with peers and faculty. Pascarella and Terenzini also described the research support for academic advising as a key factor in student persistence and graduation. While not specifically mentioned in the study by Holt, peer mentoring also enhances student persistence and may be another retention strategy.

Tinto's Theory of Departure can also be utilized to help explain retention within dental hygiene.¹⁴ Tinto's theory suggests that individual background characteristics such as family background, personal attributes, and pre-college schooling collectively impact individual expectations and motivations as they relate to commitment to achieve educational goals and commitment to the academic institution itself. Durkheim theorized that departure from an institution is more likely when the individual has insufficiently integrated within the academic and/or social arenas.¹⁴ Both internal and external forces play a role in the individual's commitment to personal educational goals and to the institution. Attrition issues identified by Holt include internal forces such as inadequate academic achievement and underdevelopment of clinical skills, and external forces such as family and personal responsibilities.¹²

Foley utilized an open-ended questionnaire with 169 first and second-year Indiana dental hygiene students from five Indiana programs and a convenience sample of 70 Indiana dental hygiene graduates attending an alumni luncheon to determine influential factors in career choice.¹⁵ When asked what they wished they knew prior to career selection, 23 percent stated the amount of pressure/stress involved in education and the profession, 20 percent mentioned the difficulty of the program, 18 percent discussed how time consuming it was, and 18 percent mentioned the difficulty of finding patients.

METHODS AND MATERIALS

Recognizing the need for informed career decision making, a required introductory course for students desiring to enter the dental hygiene program was implemented at a state university located in a Midwestern state in the U.S. This one-credit course was titled "Perspectives in Dental Hygiene." The students enrolled in this course were freshmen or sophomores at the university who were also taking the prerequisite courses for admittance into the dental hygiene program. Students paid tuition and received a grade and academic credit for this course. The course had thirteen learning outcomes: 1) identify a peer group interested in the field of dental hygiene, 2) understand the goals of the dental hygiene profession, 3) identify career opportunities with a Bachelor of Science in dental hygiene, 4) identify workplace fit according to Holland's theory, 5) analyze basic career interest scores using LiveCareer assessment online, 6) develop a relationship with study partner interested in the field of dental hygiene, 7) analyze learning style (Felder & Silverman) using an online questionnaire, 8) understand what curriculum is offered by the Dental Hygiene program, 9) understand the general education requirements of the University, 10) develop a plan of study to achieve the required general education and electives with intention of application to the dental hygiene program, 11) experience a dental appointment in the University dental clinic, 12) develop a mentor relationship with a licensed dental hygienist through job shadow experience, and 13) evaluate individual capability and desire to enter the field of dental hygiene. A combination of discussions, PowerPoint presentations, peer interactions, group activities, and assigned readings and writing assignments were used to achieve the learning outcomes.

Pre- and post-course surveys were distributed to 186 students enrolled in the Perspectives in Dental Hygiene course. The survey was developed by the investigators of this study. No validity or reliability testing of the survey was conducted. Human subject approval was obtained from the Institutional Review Board. Informed consent was obtained from all participants. The survey data were collected and analyzed by SPSS Version 10.0, with 10% of entries rechecked for accurate data entry. Given the nature of the data, descriptive statistical methods were used, including percentages and frequencies.

RESULTS

An overall response rate of 97% (N=181) was achieved. The average participant was 18 to 19 years old, female, Caucasian, worked 0 to 10 hours/week, and self-reported a GPA of 3.5 to 4.0.

Participants were asked to rank the influence of factors (1 = low influence, 5 = high influence) within the course on career choice (Table A). While the participants who remained interested in dental hygiene after the course had higher mean influence levels, a similar pattern emerged, with the job shadow experience, the Perspectives in Dental Hygiene course overall, and the University Dental Clinic visit ranked the highest by all students.

Table A. Mean Influence Levels ^a of Course Factors on Career Choice

Course Factor	Participants who want to pursue DHYG	Participants who are unsure or do not want DHYG
Job Shadow Experience	4.74	3.94
DHYG 100 Course Overall	4.45	3.91
University Dental Clinic Visit	4.43	3.52
Guest Speakers (Student Panel)	4.38	3.45
Learning about the Responsibilities and 6 Roles of Dental Hygiene	4.04	3.42
Poster Presentations Experience	3.28	2.70
Online Career Assessment Report	3.00	2.67
Learning Styles Assessment Report	2.97	2.70

^a1=Low Influence, 5=High Influence

Participants were asked to indicate their satisfaction level (1=very unsatisfied, 5=very satisfied) with various topics presented within the career course (Table B). Participants who remained interested in dental hygiene indicated the highest satisfaction levels for the dental hygiene curriculum, followed by University General Education, and developing a plan of study. Participants who were unsure or uninterested in dental hygiene after the course indicated highest satisfaction levels with the background/responsibilities of dental hygienists and developing a plan of study.

Table B. Mean Satisfaction Levels ^a with Course Topics

Course Factor	Participants who want to pursue DHYG	Participants unsure or do not want DHYG
Background/Responsibilities of DHYG	4.51	4.27
Dental Hygiene Curriculum	4.70	4.03
MSU General Education	4.60	4.09
Developing a Plan of Study	4.60	4.21
Review of DHYG Application	4.57	4.06

^a1=Very Unsatisfied, 5=Very Satisfied

Participants were asked to indicate their confidence level regarding their desire to pursue dental hygiene in both the pre- and post-course surveys (Table C). A Wilcoxon signed rank test revealed a significant decrease ($p < .001$) in confidence to pursue dental hygiene after completion of the course.

Table C. I am confident that I want to pursue Dental Hygiene

	N	%
Pre-Course		
Strongly Agree	133	76.4
Agree	32	18.4
Unsure	8	4.6
Disagree	-	-
Strongly Disagree	1	0.6
Post-Course		
Strongly Agree	110	63.2
Agree	31	17.8
Unsure	17	9.8
Disagree	12	6.9
Strongly Disagree	4	2.3

Each participant indicated their agreement using a 5-point Likert scale with four summary statements regarding the career course (Table D). The level of passion for dental hygiene and preparedness for the dental hygiene program increased as a result of the course for 97.8% of students who remained interested in dental hygiene. Over 99% of all students enrolled agreed that as a result of the course, they were more knowledgeable about the dental hygiene profession. The majority of all students enrolled (94 to 99.3%) agreed they would recommend this course to students interested in a dental hygiene career.

Table D. Course Evaluation by Participants Who Want to Pursue Dental Hygiene^a

Item	N	SA	Percentages ^b			SD
			A	U	D	
As a result of this class, my level of passion for Dental Hygiene has increased.						
Want to Pursue DHYG	141	54.6	43.3	2.1	-	-
Unsure/Do not want DHYG	33	-	9.1	36.4	42.4	12.1
As a result of this class, I feel I am better prepared for the Dental Hygiene Program.						
Want to Pursue DHYG	140	64.3	33.6	2.1	-	-
Unsure/Do not want DHYG	33	9.1	39.4	30.3	21.2	-
As a result of this class, I feel I am more knowledgeable about the Dental Hygiene profession.						
Want to Pursue DHYG	140	74.3	25.0	0.7	-	-
Unsure/Do not want DHYG	33	51.5	48.5	-	-	-
I would recommend this course to students interested in a Dental Hygiene career.						
Want to Pursue DHYG	140	88.6	10.7	0.7	-	-
Unsure/Do not want DHYG	33	72.7	21.2	3.0	3.0	-

^a Valid percentages reported

^b SA=Strongly Agree, A=Agree, U=Unsure, D=Disagree, SD=Strongly Disagree

DISCUSSION

Previous research has demonstrated that career courses can improve career decision making, while helping students obtain an accurate perception about their intended career.⁸⁻¹¹ This study indicates that course activities which were most influential on career choice were the job shadow experience, the course overall, the University dental clinic visit, and the student panel of senior dental hygiene students. These course components were the most influential for students who remained interested in dental hygiene after course completion, and those who did not. The job shadow experience provides an opportunity for students to meet and develop a mentor relationship with a dental hygienist. This experience clarifies the responsibilities of a dental hygienist, and provides an opportunity for the student to ask questions about the profession, supporting realistic expectations of the profession prior to application. Peer mentoring is also suggested by Pascarella and Terenzini as a method to support persistence and retention.¹³ The career course, University dental clinic visit, and student panel are all focused on peer interactions which support the identification of clear career and educational goals, along with realistic expectations of both dental hygiene school and the profession. The course instructor developed small groups within the class to foster development of these peer relationships.

Since not all students enrolled in the dental hygiene career course are expected to remain interested in dental hygiene, it is critical to ensure that those students remain satisfied with the course content. This study demonstrated that all enrolled students were satisfied with the course content; their course satisfaction ratings ranged from 4.03 to 4.7 on a 5-point Likert scale. Those who were unsure or did not want to pursue dental hygiene after course completion were the most satisfied with the section of the course that described the background and responsibilities of dental hygiene, followed by the activity where they developed a plan of study to explore dental hygiene as a career option. It is important to note that the instructor of the course encouraged students who were no longer interested in dental hygiene to meet with an advisor in their new major and develop a plan of study. Throughout the course, the instructor emphasized that the purpose of this course was not to simply promote dental hygiene, but rather help students discover if their interests and abilities would align with those of satisfied dental hygienists. Changing majors was not discouraged when students identified a lack of interest or perceived capacity to pursue dental hygiene.

Benefits to Students

Since students self-select to enroll in this 100-level undergraduate course in dental hygiene, it is not surprising that only 5.2% of the students at the beginning of the course were unsure or disagreed about their confidence to pursue dental hygiene. After the course, 19% of students were either unsure or disagreed that they wanted to pursue dental hygiene. At this institution, approximately 100 students enroll in the course for dental hygiene each academic year. Since only 24 dental hygiene students matriculate into the dental hygiene program each fall, it is beneficial for students to ensure they are both interested in and have realistic expectations of the program and career prior to application.

All of the students who were unsure or did not want to pursue dental hygiene after course completion agreed that as a result of the course, they were more knowledgeable about the dental hygiene profession. Gaulden's research suggests that high school students do not fully understand the job responsibilities of capabilities of the dental hygienist.² This study supports utilizing a career course as one way to address misconceptions of students, promoting more informed career decision making.

Benefits to Program

Increased understanding of the value of dental hygienists can also increase desire or passion for the profession. For students who remained interested in dental hygiene after course completion, 97.8% agreed their level of passion for dental hygiene increased as a result of the course. While long term follow-up was not included in this study, one could speculate that increased passion may result in less attrition for the dental hygiene program.

Foley's research indicated that dental hygiene graduates wish they would have known about the pressure and stress of the program and profession, rigor and time commitment of the program, and difficulty to recruit patients prior to application. The career course for dental hygiene discussed these critical issues, other concerns that face dental hygiene today and issues that may challenge dental hygienists in the future. For students who remained interested in dental hygiene after course completion, 97.8% agreed they were better prepared for the dental hygiene program as a result of this course. This better preparation may result in increased retention both in the dental hygiene program and profession after graduation.

While not the primary goal of this course, programs that implement a career course for students interested in dental hygiene will also increase tuition income for their department. Traditionally, dental hygiene departments only obtain tuition income from students after they are accepted into the program, and this number is restricted by size of the clinic and faculty-student ratios. A career course intended for college freshman or sophomores, prior to entering the dental hygiene program, generates tuition for the department, while also supporting retention within the program. The students' value of this course is evidenced by the high percentage of students (94 to 99.3%) who would recommend the course to students interested in dental hygiene.

CONCLUSION

Prior research suggests that students accepted into dental hygiene programs without adequate knowledge about the profession, or inability to withstand the rigor of the coursework are more likely to either experience academic failure leading to dismissal or drop out of the program for other non-academic reasons. Attracting academically qualified applicants is essential to sustain dental hygiene programs and address the oral health needs of the nation. A number of studies have demonstrated that career courses are an effective strategy to improve decision making about jobs and professions and help students obtain an accurate perception about their intended career. This research supports including a job shadow experience, University Dental Clinic visit, and panel of senior dental hygiene students as part of a career course for students interested in dental hygiene. Learning about the background and responsibilities of dental hygiene increases knowledge about the dental hygiene profession. A career course has the potential to increase passion for dental hygiene and preparedness for the program, while also helping students identify if dental hygiene is the best career choice for them. Further longitudinal research is needed to investigate the influence of a dental hygiene career course on actual student retention and attrition in dental hygiene curricula, and student satisfaction during the academic program and after graduation. Researchers could also develop a Dental Hygiene Careers Information Survey, patterned after the Psychology Majors Career Information Survey, to help determine and assess knowledge about the profession. In addition, researchers need to investigate other ways to promote increased knowledge about the dental hygiene profession among high school students and the public.

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