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Course Selection Factors Deemed Important by Dental Hygienists Prior to and After the Initiation of Mandatory Continuing Education in the Commonwealth of Virginia

Melissa Lynn Sainsbury
Old Dominion University

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COURSE SELECTION FACTORS
DEEMED IMPORTANT BY DENTAL HYGIENISTS
PRIOR TO AND AFTER THE INITIATION OF
MANDATORY CONTINUING EDUCATION
IN THE COMMONWEALTH OF VIRGINIA

by

Melissa Lynn Sainsbury
B.S. May 1995, Old Dominion University

A Thesis submitted to the Faculty of
Old Dominion University in Partial Fulfillment of
Requirement for the Degree of

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Approved by:

Evelyn M. Thomson-Lakey (Director)

Michele L. Darby

Shirley P. Glover

Stacey B. Plichta

ABSTRACT

COURSE SELECTION FACTORS DEEMED IMPORTANT BY DENTAL HYGIENISTS PRIOR TO AND AFTER THE INITIATION OF MANDATORY CONTINUING EDUCATION IN THE COMMONWEALTH OF VIRGINIA.

Melissa Lynn Sainsbury
Old Dominion University, 1998
Director: Evelyn M. Thomson-Lakey

The purpose of this investigation was to assess the factors deemed important by dental hygienists in their selection of continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia. Under mandatory continuing education, dental hygiene educators must be able to plan continuing education courses that meet the needs of potential participants.

A sample of 215 licensed dental hygienists randomly selected from all licensed dental hygienists in the Commonwealth of Virginia participated in this study. A cover letter and questionnaire were mailed to each of the potential participants. The questionnaire consisted of five demographic items, six continuing education experience questions, and thirty continuing education course selection questions measured on a Likert scale. Data were examined using frequency distributions, percentages, and Wilcoxon matched-pairs signed-rank test. Pre and post mandatory continuing education differences in the factors deemed important by dental hygienists when choosing a continuing education course were examined using McNemar's test.

Results indicate that relative to each other, the 15 factors within this study, ranked in a hierarchy of importance in continuing education course selection by dental

hygienists. All of the factors within this study were ranked similar in importance, prior to and after the initiation of mandatory continuing education, except for the factors of mandatory requirement for relicensure, course presenter, cost, and course time. Mandatory requirement for relicensure and course time ranked higher and course presenter and cost ranked lower in importance following the initiation of mandatory continuing education. Following analysis with McNemar's test, there was statistically significant evidence ($p \leq .05$) that, after the initiation of mandatory continuing education, the factors of professional improvement and development, cost, course time, job security, requirement of employer, and location were deemed important by more dental hygienists in continuing education course selection. Dental hygienists were found to earn significantly more continuing education units annually and perceive that there are more continuing education course topic choices available to them now that continuing education is mandatory. Results also indicated that there has been no change in how dental hygienists feel toward continuing education now that it is mandatory; dental hygienists express positive feelings toward continuing education.

Co-Directors of Advisory Committee: Michele L. Darby
Shirley P. Glover
Stacey B. Plichta

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CHAPTER I

INTRODUCTION

The purpose of this study was to examine factors deemed important by dental hygienists in continuing education course selection prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia. This information will provide dental hygiene practitioners and educators with insight for planning continuing education courses which attract dental hygiene participants whether voluntary or under mandatory continuing education requirements. Course development which takes into consideration factors important by dental hygienists may lead to increased participation. Addressing factors identified as important in selecting a particular continuing education course also may lead to better acceptance of mandatory continuing education for dental hygienists.

The literature defines *continuing education* in numerous ways. According to the American Dental Hygienists' Association continuing education is "education of the individual beyond the basic preparation for the profession of dental hygiene"; and "education that promotes optimal health service to the public by fostering continued professional competence"(ADHA, 1986). Darby and Walsh (1995) define continuing education as the educational or informational renewal that takes place after the degree-earning education has been completed. In addition, continuing education has been viewed as an ongoing or advanced education necessary for individuals to keep abreast of advancements in any given profession. Underlying the varied definitions of continuing

education is the premise that continuing education means a lifelong commitment to learning.

Mandatory continuing education refers to a minimum number of course credits that must be completed in a specified time period, as required by state law, for dental hygiene relicensure. The American Dental Hygienists' Association continues to promote mandatory continuing education for dental hygienists who wish to maintain dental hygiene licensure (ADHA, 1991). Mandatory continuing education became a relicensure requirement in the Commonwealth of Virginia on April 1, 1995 (Virginia Board of Dentistry, 1995). The Commonwealth of Virginia requires dental hygienists to complete 15 continuing education credit hours in a one year period (Virginia Board of Dentistry, 1995).

Mandatory continuing education has and will continue to cause controversy among health professionals. In the Commonwealth of Virginia, mandatory continuing education has been in effect for three years, offering dental hygienists the opportunity to form attitudes toward mandatory continuing education which may be different from those formed initially. For some dental hygienists, mandatory continuing education means less free time and an increased financial burden. Some may perceive the mandate to acquire continuing education as a loss of freedom of choice. Prior to mandatory continuing education, a dental hygienist had the ability to personally choose how to stay abreast of technical advancements in the profession. Whereas, after the initiation of mandatory continuing education, dental hygienists may have found that certain continuing education did not qualify as an appropriate avenue for relicensure

requirements. Because mandatory continuing education imposes requirements and regulations on course type, length, and sponsors, dental hygienists may base their decision to attend a particular course under mandatory continuing education differently from those under voluntary participation.

Prior to mandatory continuing education, dental hygienists who took continuing education courses because of an interest in the topic may, under mandatory continuing education, select a course based on the number of continuing education units awarded regardless of topic interest. Additionally, for some dental hygienists, the perceived burdens of mandatory continuing education may overshadow the potential benefits of professional improvement and development, creating negative feelings toward continuing education in general.

STATEMENT OF THE PROBLEM

The purpose of this investigation was to answer the following questions:

1. Relative to each other, how important are the factors of cost, time, location, improvement of client care, subject, professional improvement and development, interaction with other professionals, personal benefit, job security, mandatory requirement for relicensure, employer requirement of provision, course presenter, and hands-on course format in continuing education course selection by dental hygienists in the Commonwealth of Virginia?

2. Did factors deemed important by dental hygienists in selecting continuing education courses change after the initiation of mandatory continuing education in the Commonwealth of Virginia?
3. Did dental hygienists perceive a change in how they selected a continuing education course following the initiation of mandatory continuing education in the Commonwealth of Virginia?
4. Do dental hygienists believe that their course topic selection options have changed as a result of mandatory continuing education?
5. Does the number of continuing education units earned by dental hygienists differ, prior to and after mandatory continuing education regulation in the Commonwealth of Virginia?
6. Has mandatory continuing education changed Virginia dental hygienists' feelings toward continuing education?

SIGNIFICANCE OF THE PROBLEM

Researchers have conducted numerous studies concerning the effectiveness and efficacy of continuing education in the health professions (Cervero and Umble, 1996; Abrahamson, 1984; Bader, 1987). However, there remains a need for further investigation of continuing education in dental hygiene. Dental hygiene researchers have recommended that studies be conducted to determine what characteristics contribute to favorable attitudes towards mandatory continuing education (Behroozī, Shuman, and Tolle-Watts, 1989) and what factors serve as motivations for course selection (Body,

1987). One of the goals of continuing education research should be to improve continuing education, making courses more effective and more successful in attracting participants. Identifying variables such as who will chose a particular course and why; what course topics are in demand; and whether or not cost and location of continuing education courses are contributing factors to course selection, will provide dental hygiene professionals and educators with the basis for planning continuing education courses.

Before continuing education became mandatory, dental hygienists in the Commonwealth of Virginia could seek out educational opportunities that fulfilled a need, whether that need was to gain knowledge about a new product or procedure or to continue to provide optimal oral healthcare for clients. Virginia dental hygienists were free to chose a formally structured course or self-study to gain knowledge. It would appear reasonable to assume that courses were chosen by participants according to need and areas of interest. Now that continuing education is mandatory, the Virginia Board of Dentistry regulates continuing education and publishes guidelines regarding approved providers, format, length of course, and topics, which dental hygienists may perceive as restrictive.

The external mandates that accompany mandatory continuing education in Virginia may have caused dental hygienists to react negatively toward continuing education due to a decrease in the freedom to choose which continuing education course to attend. Additionally, those factors which influenced dental hygienists' selection of a continuing education course prior to mandatory continuing education may be different

following the initiation of mandatory continuing education.

There are several reasons why a dental hygienist would voluntarily choose to participate in continuing education including to enhance personal growth, to facilitate changes in a dynamic society, to support and maintain good social order, and to promote productivity (Cunningham and Merriam, 1989). Practical concerns such as if a particular course is economical or offered in a convenient geographical local may also influence course selection and participation. Through research, educators can learn whether or not these factors also influence participation in mandatory continuing education. This valuable information can be used to achieve greater participation in continuing education where mandatory continuing education is not in place and to promote positive attitudes toward continuing education where mandatory. Educators will gain the information they need to design courses that suit the needs of dental hygienists. Ultimately, consumers can be confident in the fact that the dental hygiene profession keeps abreast of new information and technologies that may aid in maintaining or improving client oral health status. In addition, results of this study will provide baseline information for further research efforts related to continuing education in the dental hygiene profession.

DEFINITION OF TERMS

For the purpose of this survey, the following terms are defined:

1. Continuing Education (CE): Education of the individual beyond the basic preparation for the profession of dental hygiene...promote(s) optimal health service to the

public by fostering continued professional competence. Continuing education includes educational activities that update, refresh, and increase the knowledge and competence of the dental hygienist (ADHA, 1986).

2. Mandatory Continuing Education (MCE): A requirement by state law for dental hygienists to complete a minimum number of course hours in a given time period for the purpose of relicensure.

3. Continuing Education Unit (CEU): “noncredit unit...established by a national task force as a means of recording, accumulating, and transferring units of noncredit study”(Frandsen, 1980). Virginia dental hygienists are required by Commonwealth regulation to earn 1.5 CEUs (1 contact hour = 50-60 minutes = 0.1CEU) every year for license renewal.

4. Dental Hygienist: “ a licensed, professional member of the healthcare team who integrates the role of educator, consumer advocate, practitioner, manager, change agent, and researcher to support total health through the promotion of oral health and wellness” (Darby and Walsh, 1995).

5. Feelings: opinions regarding continuing education within the dental hygiene profession, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire* (1996).

6. American Dental Hygienists' Association (ADHA): a non-profit organization of licensed dental hygienists whose membership is voluntary and dues-paying.

7. Virginia Dental Hygienists' Association (VDHA): a constituent organization of the American Dental Hygienists' Association for licensed dental hygienists.

8. Virginia Board of Dentistry: the board which regulates and publishes guidelines concerning mandatory continuing education for dental hygienists within the Commonwealth of Virginia.

9. Factors: any condition used by an individual to make a decision when choosing a continuing education course, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire (1996)*.

ASSUMPTIONS

For the purpose of this study, the following assumptions were made:

1. The random sample sufficiently represents the dental hygiene population in the Commonwealth of Virginia.
2. The instrument, *Dental Hygiene Continuing Education Selection Questionnaire*, is an appropriate measurement of factors deemed important when selecting a continuing education course by geographically dispersed, licensed dental hygienists.
3. The subjects will answer the questionnaire completely and candidly.
4. The subjects understand and follow the standardized instructions provided to them for completion of the questionnaire.
5. Respondents can rank the importance of factors which influence their continuing education course decisions.

LIMITATIONS

1. The *Dental Hygiene Continuing Education Selection Questionnaire* has no established validity or reliability. Therefore, content validity was established by a panel of educational experts including: the Director of the Office of Continuing Education at the College of Health Sciences and educators at the School of Dental Hygiene and Dental Assisting, Old Dominion University. Recommendations were taken into consideration and changes were made accordingly. Additionally, a pilot study was completed using a convenience sample of 20 licensed dental hygienists from the target population who did not participate in the study.

2. The potential for a low response rate existed within this study. To help control for this factor, a second letter was sent to subjects who had not returned the completed survey within two weeks of the initial mailing date. To encourage responses, confidentiality was guaranteed to all respondents. As an incentive to return the survey, respondents were given the opportunity to win free admission (a \$115.00 value) to the College of Health Sciences, Office of Continuing Education, Dental Hygiene Winter CE Blitz weekend program held in February, 1998.

HYPOTHESES

The following hypotheses were tested:

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *professional improvement and development* when dental hygienists select continuing education courses prior to and after the initiation of

mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *interaction with other professionals* when dental hygienists select continuing education courses prior to and after the initiation mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *cost* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *course time* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *subject* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *personal benefit* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *job security* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *paid for by my employer* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *required by the employer* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *location* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *course/vacation combination* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *course presenter* when dental hygienist select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *hands-on course format* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the importance of the factor of *improvement of client care* when dental hygienists select continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in whether dental hygienists perceived a change in their selection of continuing education courses after the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in how dental hygienists think their course topic choices have been altered following the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in the number of CEUs earned annually by dental hygienists prior to and after the initiation of mandatory continuing education, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

There will be no statistically significant difference, at the $p \leq .05$ level, in how dental hygienists feel toward continuing education following the initiation of mandatory continuing education in the Commonwealth of Virginia, as measured by the *Dental Hygiene Continuing Education Selection Questionnaire*.

METHODS

A self-designed, mailed questionnaire entitled the *Dental Hygiene Continuing Education Selection Questionnaire* was used to survey dental hygienists in the Commonwealth of Virginia to determine what factors are deemed important in continuing education course selection prior to and after the initiation of mandatory continuing education. The questionnaire consisted of 5 demographic items and 36 items concerning continuing education. Five hundred eighty licensed dental hygienists in the Commonwealth of Virginia were invited to participate in this investigation. The sample size was chosen because it represents approximately 25% of the total population (2,317) of licensed dental hygienists in the Commonwealth of Virginia. Data analysis was computed through the use of the SPSS-6.1 computer program. Data were examined using frequency distributions and percentages. Pre and post mandatory continuing education differences were examined using McNemar's test and the Wilcoxon matched-pairs signed-rank test (Daniel, 1995).

CHAPTER II

REVIEW OF THE LITERATURE

While extensive research exists on continuing education and dental hygiene education, limited research exists on the continuing education preferences of dental hygienists. This review discusses the general topic of continuing education and continuing education in the health professions. Specific topics addressed include continuing education as a concept, continuing education in the dental hygiene profession, continuing education in the nursing profession, and continuing education for health professionals.

CONTINUING EDUCATION AS A CONCEPT

Continuing education has received recent widespread attention in many professions (Cervero & Umble, 1996) including dental hygiene. Today, constant job growth and technological change demands a continuous increase in knowledge and information. However, continuing education is not a constituent of modern technology. Adult education has been documented as early as the sixteenth and seventeenth centuries (Cunningham & Merriam, 1989). Interest in adult education and activities to promote its expansion greatly increased after World War II (Cunningham & Merriam, 1989). In 1951, the Adult Education Association (AEA) of the USA was established to provide a comprehensive approach to continuing education. This association attempted to serve the various segments of the adult education field by promoting the development of

professional competencies, institutional cooperation, and adult education as a social good (Cunningham & Merriam, 1989). As social conditions changed in the 1960's, adult education took on new labels, such as lifelong learning, lifelong education, and recurrent education (Cunningham & Merriam, 1989). In more recent years, formal continuing education has continued to grow in the health professions and has become an indispensable tool for keeping abreast of new technologies in the health sciences (Manning, 1990).

CONTINUING EDUCATION IN THE DENTAL HYGIENE PROFESSION

The American Dental Hygienists' Association has continually supported mandatory continuing education for all dental hygienists who seek to maintain or reinstate their dental hygiene licensure (ADHA, 1991). As of March 1997, there were 46 states requiring continuing education credit-hours for dental hygiene relicensure (ADHA, 1997). The Commonwealth of Virginia requires dental hygienists to complete 15 continuing education credit-hours (1.5 CEUs) annually for relicensure. Continuing education credits are earned through verifiable attendance at or participation in any course, including audio and video presentations, that is approved by the Virginia Board of Dentistry. The Commonwealth of Virginia verifies completion of continuing education requirements through random audits of dental hygiene relicensure applicants. In addition, Virginia dental hygienists must sign a statement attesting to completion of the required 1.5 CEUs needed for relicensure when submitting the relicensure

application. A licensee is exempt from Virginia's continuing education requirements only on the first renewal date following initial licensure. However, "The Board may grant an exemption for all or part of the continuing education requirements due to circumstances beyond the control of the licensee such as: temporary disability, mandatory military service, or officially declared disasters" (Virginia Board of Dentistry, 1995). When mandatory continuing education was initiated in the Commonwealth of Virginia, dental hygienists seeking relicensure were required to complete, and pass with 75% competency, a post-test for each continuing education course attended. Virginia was the only state, at this time, to require a post-test for relicensure. However, this requirement was dropped July 1, 1997 (Virginia House Bill 826, 1997).

Continuing education in the Commonwealth of Virginia has been studied prior to mandatory continuing education for relicensure. Behroozi, Shuman, and Tolle-Watts (1989) discussed the comparison of attitudes of licensed dental hygienists toward continuing education in two states: Virginia and Kentucky. In 1988, Virginia did not require continuing education for relicensure while mandatory continuing education was in place in Kentucky. Their sample consisted of 400 licensed dental hygienists within the two states. Each participant was mailed a 28 item, self-designed questionnaire called the *Continuing Education Attitudinal Questionnaire*. Based on the results, the majority of respondents from both states believe that dental hygienists should be professionally obligated to participate in continuing education, and that participation in continuing education contributes to a dental hygienists' confidence and self-esteem. "However, the behavior of Virginia respondents seems to be in conflict with their attitudes, since the

majority of Virginia respondents on the average had earned an extremely small number of CEU's. Generally, Kentucky dental hygienists responded with a more favorable attitude than Virginia respondents regarding CE, particularly in areas of mandatory continuing education and benefits of CE" (Behroozi, et.al., 1989). Results of the study also concluded that mandatory continuing education does not negatively influence the attitudes of dental hygienists toward continuing education. The authors suggest that an increased exposure to continuing education through mandatory continuing education may result in increasingly favorable attitudes. Dental hygienists were finding valuable information from continuing education that could be implemented into their daily practices. Dental hygienists also would have the ability to share new information with colleagues. Behroozi, et.al. (1989) recommended that future studies investigate continuing education course preferences of Virginia dental hygienists including course content, location, time, fees and modes of administration.

Begun and Swisher (1987) also surveyed dental hygienists' attitudes toward mandatory continuing education in the Commonwealth of Virginia. This study compared the attitudes of Virginia Dental Hygienists' Association (VDHA) members and non-members toward several policies concerning dental hygiene practice. The sample was drawn from licensed dental hygienists in the Commonwealth of Virginia and consisted of 145 VDHA members and 294 VDHA non-members. There were 361 (82%) responses, including 137 VDHA members and 224 VDHA non-members. While the survey measured dental hygienists' attitudes toward selected professional and regulatory policy issues such as general supervision, independent practice, mandatory continuing

education, self-regulation, and the number of dental hygienists that should be on the state board of dentistry, only the results concerning mandatory continuing education are discussed here.

Demographic results indicated that 77% of the sample work more than 20 hours per week and the majority work in private general practice. Association members were found to have a higher mean age (36 years) than non-members (32 years). In addition, association members were more experienced and more likely to hold a baccalaureate degree. Mandatory continuing education for relicensure was favored by 64% of dental hygienists. A statistically significant difference was found between VDHA members and non-members with a larger percentage of association members (72%) favoring mandatory continuing education than non-members (62%). The author suggests that association members are significantly more reform-oriented than non-members and show a strong support for mandatory continuing education.

Darby and Hull (1989) analyzed additional data regarding continuing education for dental hygienists. This landmark study was funded by the American Dental Hygienists' Association and conducted through a private research firm. The research firm collected baseline data on dental hygiene practice, demographics, aseptic techniques, medical and dental history utilization, office characteristics, practice and supervision behavior, and continuing education. While this study also reported on dental hygiene demographics, office characteristics, supervision and practice behavior, infection control practices, utilization of medical and dental histories, only the continuing education portion of the investigation is pertinent here. Continuing education

course attendance by dental hygienists, as well as the interest versus need factors involved in continuing education course attendance, were investigated. The sample population consisted of randomly selected, licensed dental hygienists from 50 U.S. legal jurisdictions. Following random selection, a total of 10,507 subjects were invited to participate in the investigation. A questionnaire consisting of 80 questions was designed to collect the necessary data. A total of 4,522 dental hygienists completed and returned the survey. Results indicated that the average dental hygienist who attends continuing education is under 25 years of age, works over 30 hours per week, and works in a specialty office that employs 7 or more staff members. Results indicated that continuing education courses on measurement of blood pressure, aseptic techniques, cardiopulmonary resuscitation, and AIDS were attended by more dental hygienists than dentists or assistants. Dental hygienists responded that they perceive a need for all dental professionals to attend continuing education courses. "Dental hygienists felt that dentists should attend continuing education courses on AIDS, oral pathology, pharmacology, and hepatitis, in addition to CPR" (Darby & Hull, 1989).

The study by Darby and Hull (1989) provides evidence that dental hygienists realize the need for continuing education and appear to show favorable attitudes toward lifelong learning. This investigation provided much needed baseline data related to continuing education and the dental hygiene profession by assessing dental hygiene course attendance and the desire of dental hygienists to attend selected courses.

Dental hygienists' perceptions of continuing education also have been studied to provide additional information concerning acceptance of continuing education in the

dental hygiene profession. Body (1987) investigated the state of continuing education as perceived by Ohio licensed dental hygienists, in order to emphasize factors that may influence their course attendance in a state where continuing education is not mandatory. The author reported a lack of data concerning continuing education attendance by dental hygienists and the factors which may affect their attendance (Body, 1987). Body (1987) investigated factors such as age, type of dental hygiene education, practice experience, educational needs, perceived effect of continuing education course attendance, and preferences in continuing education management. This pilot study, comprised of 195 subjects, was performed as a precursor to a future research effort. A 23-item questionnaire was mailed to potential participants in order to collect data concerning the following: factors which may influence attendance in continuing education, dental hygienists' attitudes towards mandatory continuing education, and perceived effects of continuing education on dental hygiene practice.

Body (1987) achieved random sampling by using a systematic sampling technique. Therefore, each respondent in the population had an equal chance of being selected to participate in the investigation. However, techniques for establishing validity and reliability of the instrument were not discussed.

Results suggested that the mean age of the sample was 31 years. Fifty percent of respondents were graduates of a two-year program; fifty-one percent were practicing clinical dental hygiene full-time (4-5 days a week). Additionally, 36% of the respondents were members of ADHA, with only 7% of these considering themselves to be active members. Annual continuing education course attendance was reported by 60.6% of the

respondents, with an average attendance of 9.2 hours annually. "Regardless of their continuing education course attendance, this sample considered three aspects as important or very important; these included course location, course subject matter, and distance from home. Although the course instructor's reputation was important to 64% of the dental hygienists, 82% also indicated that they did not perceive instructors with a national reputation as providing better courses than lesser-known individuals" (Body, 1987). Lastly, 49% of the sample responded that continuing education should be mandatory for all health professionals. Those who responded in favor of mandatory continuing education suggested an average requirement of 7.5 course hours yearly for relicensure.

As this study was only a preliminary investigation, several unanswered questions remain. Questions surrounding the average continuing education course attendance of dental hygienists and what other factors influence course attendance by dental hygienists remains to be investigated. "It is evident from this study and the existing literature that broader research is necessary to answer these questions. Further research also should be conducted to delineate factors affecting course attendance, investigate appropriate evaluation methods, and determine the effect of continuing education attendance on dental hygiene practice" (Body, 1987).

Continuing education preferences of Michigan dental hygienists was investigated by Cartwright and Keevil (1978). Michigan, at the time of the study, maintained voluntary continuing education for dental hygienists. The purpose of this study was to determine dental hygienists' preferences regarding topic, length, time and type of

continuing education courses. Data were gathered through the use of a questionnaire that was mailed to a random sample of 20% (278) of the licensed dental hygienists residing in Michigan. A total of 231 responses were returned for a response rate of 83%. Seventy-five percent of dental hygienists reported that they were currently employed with the majority working in private, general practice. To determine education needs, dental hygienists were asked to specify at least three subject areas in which they wished to have a continuing education course offered. The five most frequently identified topics were periodontics, oral pathology, dental health education, radiography, and prophylaxis technique. For each general subject area, dental hygienists were asked to identify a specific topic they would like covered in the chosen subject area. Topics most frequently cited in the area of periodontics were root planing, soft tissue curettage, and etiology and recognition of periodontal conditions. In the area of oral pathology, the most frequently cited topics were recognition of suspicious lesions and abnormalities, review of basic oral pathology, and oral examination and record-keeping. Under the general subject of dental health education, the most frequently cited topics were effective patient motivation and education, current studies on fluorides, sealants, plaque control and flossing, and current information in educational materials and techniques. The topics most frequently cited in the subject of radiography were interpretation of radiographs, basics radiographic techniques, and new techniques, machines and films. The most frequent topics in prophylaxis technique were review of basic techniques, new techniques and instrumentation, and prophylaxis techniques for handicapped individuals.

In addition to determining desired subjects and topics, dental hygienists were

asked to state how much time they wished to spend attending courses. The majority of dental hygienists reported that they prefer to attend short courses of one, two, or three days duration. Dental hygienists were also queried about the amount of time they would be willing to devote to continuing education yearly. The most frequent response was five days; three days ranked second; and four days ranked third. When asked which day or days they would prefer to attend continuing education courses, dental hygienists chose Saturday as their first choice and Wednesday as their second choice. Most dental hygienists stated that they did not have a preference as to the time of year (spring, fall, summer, or winter) they would like to attend continuing education courses. The majority of dental hygienists reported that they preferred a course format that combined lecture and laboratory experience. Finally, 79% of dental hygienists reported that they would use a home study course if it was available to them. The author noted that the main limitation of this study was that not every dental hygienist who returned the survey answered every item. In addition, many of the questions were open-ended and produced a problem during quantification and coding of data for analysis.

The Canadian Dental Hygienists' Association (CDHA), like the ADHA, perceives continuing education to be important in the improvement of patient care, the enrichment of basic dental hygiene education, and in the acquisition of the knowledge required to competently practice dental hygiene (Young, 1989). A Canadian study conducted by Young (1989) surveyed the perceived continuing education needs of Saskatchewan dental hygienists. The study consisted of a written questionnaire mailed to the entire population of Saskatchewan dental hygienists (n=104). The questionnaire collected

information on perceived continuing education needs, preferred time, location and course length, preferred learning methods, socio-demographic characteristics, and perceived problems in dental hygiene like patient motivation, occupational hazards, and office communication. A response rate of 79% was reported with 89% of the respondents having received a diploma, which is equivalent to a certificate in dental hygiene in the U.S., as their highest educational credential. Sixty-seven percent worked in a general practice with slightly more than half employed on a part-time basis.

Fifty-three topics were rated for interest in continuing education through the use of a Likert-scale. The most preferred topics were infection control, periodontal treatment, communicable disease, root planing and curettage, cardiopulmonary resuscitation, and emergency procedures. Periodontal treatment was the most preferred topic area when topics were grouped according to subject area. In addition, the lecture method was the preferred learning method. Respondents also preferred a one day (Saturday) course within the months of September or October. The months of July and August were the least preferred. The majority of the respondents preferred that the course be held at a school of dental hygiene within their community with only 8% of the respondents preferring the course to be at a resort or recreational location.

This study has direct implications on the planning of continuing education courses in the Canadian province of Saskatchewan. Determining continuing education needs allows planners to gain a thorough understanding of their clients' needs. This study revealed no significant differences between continuing education needs based on the socio-demographic factors investigated, thus eliminating the need of continuing

education planners to target specific continuing education needs according to the socio-demographic characteristics of specific groups (Young, 1989).

While an exhaustive survey of the literature reveals limited studies regarding dental hygienists' continuing education selection preferences, research in related areas may be used to gain insight into factors influencing continuing education course selection by dental hygienists. For example, Waring (1991) investigated factors affecting participation in external degree completion programs by dental hygienists. An external degree program is described as being an educational option that attempts to overcome the barriers of accessibility in higher education. External degree programs allow students to further their education without requiring them to attend courses within a traditional classroom. Distance education technologies like electronic or telecommunications media may be used to transmit courses to remote sites away from the traditional learning institute. "In order to determine the potential success of such programs, the following factors must be explored: the motivations or reasons for participating; program design factors which might encourage or deter participation; degree of employer support, and individual characteristics relevant to participation, such as personal commitment and demographic information" (Waring, 1991).

Warings' sample consisted of 213 dental hygienists in the state of Tennessee. Potential participants had either received a certificate or associate degree in dental hygiene and had expressed an interest in pursuing a baccalaureate degree. The data collection instrument was based on a previous questionnaire used to assess the level of interest in a external PharmD program by pharmacists in the state of Illinois. A total of

206 dental hygienists responded to the survey.

Respondents were found to be 33.9 years of age, married, and had at least one child living at home. Of the respondents, 50.5% reported that they would possibly enroll in an external dental hygiene program, while 30.9% reported that they would very likely enroll. The most frequent reasons for seeking an advanced degree were reported as personal satisfaction (80%) and increased knowledge and skill (78%). Program design factors also were scored, resulting in the following factors rated as more or very important: flexibility in scheduling (77%), geographic location (75%), accessibility to course work (75%), reputation of program (70%), flexibility in program design (67%), program requirements (63%), length of time to complete (59%), entrance requirements (36%), and availability of financial aid (28%). The results concluded that these external program design factors would be essential for dental hygienists to participate in a degree completion program.

The literature provides evidence that researchers must continue to explore issues in continuing education such as motives for course selection and the effects of course attendance on dental hygiene practice. Additional research can provide information to achieve greater participation in continuing education courses, benefitting dental hygienists as well as the healthcare consumer (Behroozi, et.al., 1989; Body, 1987; Waring, 1991). Dental hygienists may indeed be accepting continuing education not as a burden, but as a step toward professionalization of dental hygiene.

CONTINUING EDUCATION IN THE NURSING PROFESSION

Like dental hygienists, nurses practicing within the Commonwealth of Virginia are required to complete mandatory continuing education for relicensure. Both fields of healthcare demand lifelong education to promote continued competence and professionalism. Since limited research exists concerning the motivational factors for continuing education course selection in the dental hygiene profession, the following reviews continuing education participation and motivations within the nursing profession.

Waddell (1993) used meta-analysis to explain what motivates nurses to participate in continuing education. Based on the findings from the continuing nursing education (CNE) participation research to date, twenty-two studies conducted on nurses' participation in continuing education were analyzed. Findings suggest that the typical participant was a 38 year old female who is married with children. Analysis revealed that eight studies within this meta-analysis examined all of the motivational orientations in the Urbano and Jahns model (1988), while five studies examined at least one of the motivational orientations. Waddell (1993) concluded that *motivational orientation* explains 46% of the variance in continuing education participation. Motivational orientation refers to internal and external factors that influenced nurses to participate in continuing education courses, and includes: external expectations, professional advancement, social relationships, social welfare, escape/stimulation, and cognitive interest. External motivators such as employer expectation or relicensure requirements explained 11% of the variance in participation. Cognitive interest explained 12% of the

variance in participation. In addition, 23% of the variance was attributed to remaining orientations such as professional advancement, social welfare, social relationships, and stimulation. The additional variables of demographics and educational opportunity explained 25% and 19% of the variance respectively. Therefore, the theory put forth by Urbano and Jahns (1988) that motivational orientation represents the number one factor in a nurses decision to participate in continuing education was supported (Waddell, 1993). The results of this study revealed valuable information about learner motivations in the field of nursing. The instrument used in this study was the Urbano and Jahns Model (1988), an instrument with attained validity and reliability.

A study by DeSilets (1995) assessed registered nurses' reasons for participating in continuing education. A survey of registered nurses attending a national conference was used to identify what motivates nurses to participate in continuing education. Eight hundred sixty-six RNs completed the *Participation Reasons Scale (PRS)* and the *Respondent Information Form (RIF)* (DeSilets, 1995). Five items on the *PRS* survey were found to be statistically significant. They included statements such as: "to help me keep abreast of new developments in nursing," "to develop new professional knowledge and skill," "to help me be more productive in my professional role," "to further match my knowledge or skill with the demands of my nursing activities," and "to help me be more competent in my nursing work." The author feels that the high ranking of these statements appears to be consistent with professionals' needs to keep abreast of advances in healthcare. DeSilets (1995) achieved maximum reliability and validity for the data collection instrument through its critique by administrators and teachers of

continuing education. External validity of the findings were verified via a comparison study of physicians, nurses, and businesspeople.

Controversy has also surrounded continuing education for the health professions and its validity has become a major issue for nurses. Wichowski and Kubsch (1995) discussed the validity of continuing education through the observation of how nurses react to and cope with unfamiliar technology. Technological advancement in healthcare constantly assails nurses with new techniques and ideas. Nurses need to understand this new technology so that they can apply it to their everyday operations. "They must engage safely and competently with the mechanical technology and develop support networks to deal with unfamiliar mechanical aspects"(Allen & Hall, 1988). Wichowski and Kubsch (1995) surveyed the views of 45 practicing nurses concerning continuing education in their profession. Methodological triangulation was used to ensure sound data collection and interpretation. The authors concluded that lifelong education was considered by nurses to be the most effective method for dealing with new technology. Hospital in-service programs were found to be a major means of adapting to technological advancement.

Wichowski and Kubsch (1995) provided a good framework for answering many questions concerning the validation of continuing education. However, only a portion of the proposed questions were reported. The instrument used in this survey was basic and could have been expanded in the areas of continuing education participation and attitude towards continuing education in order to gain complete information.

Cannon and Waters (1993) assessed the interests of nurses in continuing education for the purposes of preparing for mandatory continuing education. The researchers intended to contact nurses and discuss their perceived continuing education needs. The sample consisted of 535 registered nurses with a median age of 44. Nurses were contacted by phone and asked to complete a short survey concerning their continuing education needs. "When presented with options for acquiring continuing education, the majority of respondents selected attendance at a conference as the preferred method" (Cannon & Waters, 1993). Respondents also were asked to rank their choices of four areas in which they had interest. Two-thirds of the subjects ranked clinical practice first, followed by nursing administration.

Reliability and validity for the instrument was established through a review by a panel of nurse educators and a pilot study on a small sample of licensed nurses outside the state in which data collection occurred. The researchers chose a phone survey as their data collection instrument. A limitation of this survey method may have been that most potential participants were female and did not have a phone number listed in their name making data collection time consuming. Although the cost of conducting a telephone survey is greater than the cost of using a mailed questionnaire the investigators noted that a majority of the subjects appreciated the direct communication.

Carpenito (1991) discussed the effects of continuing education on a nurse's competence to practice. Competence is defined using two different perspectives; one considers a nurses potential to perform and the other considers actual performance. Although the author discussed mandatory continuing education as a tool to ensure

continued competence of nurses in the United States as well as the United Kingdom, it was noted that mandatory continuing education should not be endorsed as the only means to ensure the competence of nurses. "Ensuring competence of nurses after initial licensure must be the responsibility of licensure boards, professional societies, educators, managers and individual nurses. These groups must all work together in order to promote a climate of lifelong learning if nurses are to face the challenges that lie ahead" (Carpenito, 1991).

Carpenito (1991) offered strategies that nursing educators can use to promote lifelong learning in nursing students, e.g., asking students to identify their learning needs, creating a learning environment where change and new ideas are expected, and implementation of discussion groups. The author appears to support only voluntary continuing education. However, she notes that mandatory continuing education is effective in motivating nurses whose ideas are fixed, and do little to update their practicing techniques.

CONTINUING EDUCATION FOR HEALTHCARE PROFESSIONALS

A study by Manning (1990) explored formal continuing education for health professionals. Manning noted that continuing education will continue to grow around the base of courses, conferences, and general reading. All of these forms function to keep healthcare professionals ahead in expanding fields. However, he notes that continuing education has been planned specifically for groups and not for the individual. This

approach fails to address the specific informational needs that arise in client care. For example, physicians often want additional knowledge when they are caring for patients, yet access to knowledge is often difficult and time consuming. Manning (1990) predicts that advancements in computers and technology may soon eliminate this problem. Physicians will be able to find short answers to specific questions that arise during their routine medical practices. The author suggests that the National Library of Medicine should expand its network to provide quick information to health professionals. Ultimately, this will allow for access to immediate answers for specific questions while healthcare professionals are caring for patients.

Manning (1990) gives many good arguments in support of continuing education for health professionals including the need to keep abreast of new developments in technology and patient care. Manning (1990) justifies the growing need for continuing education.

Cervero and Umble (1996) discussed the impact of studies in continuing education for the health professional. They described and critiqued 16 impact studies intended to generalize the effectiveness of continuing education. The researchers described the studies by separating them into two distinct categories or "waves". "A first wave of syntheses established a general causal connection between CE and impacts, but explained impact variability only in the dependent variable- i.e., knowledge, competence, performance, or outcome. A second wave added a search for causal explanation through analysis of variables including the nature of the program, practice setting, and people being educated that moderate impact" (Cervero & Umble, 1996).

From the first wave, the researchers concluded that continuing education can improve general knowledge, performance, attitudes, competence, and general health status among healthcare professionals. Knowledge and competence were found to have the most measurable changes, followed by performance and patient outcomes. "The first wave, however, only pointed out that performance and patient outcomes are more difficult to change, and did not try to examine or explain how and why such outcomes are obtained"(Cervero & Umble, 1996).

Analysis of the second wave concluded that competence, performance and patient health can be improved by continuing education participation. Therefore, findings in the second wave are consistent with those found in the first wave. The researchers recommended several directions for further research in the field of continuing education, i.e., completely reporting on the methodology used in experimental literature, including population, practice setting, content, evaluation design, and statistics, and performing more qualitative studies on continuing education.

SUMMARY

Continuing education has been defined as ongoing education necessary for individuals to keep abreast of advancements in any given profession. Underlying this definition of continuing education, is the premise that continuing education means a lifelong commitment to learning. Professional literature reveals that continuing education is a current issue impacting on health related professions like dental hygiene and nursing. Reviewed articles identified continuing education as a means to keep

abreast of advancements in dental hygiene practice and education. Research indicates the dental hygienists acknowledge the need to continue their education and feel continuing education should be a mandatory requirement for relicensure. (Behroozi et.al. 1989; Body, 1987; Begun & Swisher, 1987; Darby & Hull, 1989). Begun and Swisher (1987) found that members of professional organizations like state dental hygiene associations were significantly more reform-oriented and strongly favored mandatory continuing education for dental hygienists.

Several articles addressed the continuing education preferences of dental hygienists. Body (1987) found that location, subject, and travel distance are factors deemed important or very important by Ohio dental hygienists in their selection of continuing education courses. Cartwright and Keevil (1978) found that Michigan dental hygienists prefer courses of a one to three day duration with a format that combined lecture and laboratory. Dental hygienists were found to prefer courses held on Saturdays and Wednesdays and 79% said they would use home study courses if they were made available to them.

Researchers have indicated a need to explore additional topics in continuing education such as motives for course selection and the effects of course attendance on dental hygiene practice (Behroozi, et.al., 1989; Body, 1987; Waring, 1991; Young, 1989). Further research efforts may provide additional information that can be used to increase participation in continuing education courses, benefitting dental hygienists as well as the healthcare consumer.

This study examines factors which are deemed important in continuing education course selection by dental hygienists prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia. This information may help planners of continuing education develop courses which attract dental hygiene participants whether voluntary or under mandatory continuing education requirements. Course development which takes into consideration factors deemed important by dental hygienists may lead to increased participation. Addressing those factors which are identified as important in selecting a particular continuing education course may also lead to better acceptance of mandatory continuing education for dental hygienists.

CHAPTER III

METHODS AND MATERIALS

A descriptive research approach was selected because of the interest in describing the factors deemed important by dental hygienists prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia. To minimize threats to internal and external validity, random sampling, using a table of random numbers, assured that all subjects had an equal probability of being included in the study and, allowed for greater generalizability of the findings. Situation relevant variables were controlled by using standardized instructions for the *Dental Hygiene Continuing Education Selection Questionnaire*.

SAMPLE DESCRIPTION

The sample consisted of 580 licensed dental hygienists in the Commonwealth of Virginia. A sample of 580 dental hygienists was chosen so that the sample proportion would be within $\pm .05$ of the population proportion with a 95% level of confidence. To mail the questionnaire to potential respondents, a master list of licensed dental hygienists was obtained from the Virginia Board of Dentistry. Only subjects with Virginia addresses were included in the study. The initial mailing of 580 questionnaires resulted in 302 responses (52.1%). A second mailing to non-respondents yielded 102 (17.6%) additional responses, resulting in a total return rate of 69.7% (404). Respondents who graduated with a certificate or degree in dental hygiene in 1994 or later, who were

licensed in the Commonwealth of Virginia in 1994 or later, or who have always been under mandatory continuing education were eliminated from the sample due to their inability to have participated in voluntary continuing education. The results was a useable sample size of $n=215$ and a response rate of 55.0%.

METHODS

A self-designed, mailed questionnaire titled the *Dental Hygiene Continuing Education Selection Questionnaire* was used to assess the continuing education choices of licensed dental hygienists prior to and after mandatory continuing education in the Commonwealth of Virginia. Five-hundred eighty randomly selected, licensed dental hygienists residing in the Commonwealth of Virginia were invited to participate in this investigation.

A cover letter (See Appendix A) and the self-designed questionnaire, *Dental Hygiene Continuing Education Selection Questionnaire* (See Appendix B), were mailed to the 580 randomly selected, licensed dental hygienists in the Commonwealth of Virginia. The cover letter explained the purpose of this investigation, the time needed to complete the questionnaire, and a date for the return of the questionnaire. The respondents were asked to complete the survey candidly, to the best of their knowledge and to return the questionnaire in the addressed, stamped envelope provided. Respondents were assured of confidentiality through non-identifiable questionnaires. The return envelopes were coded only to identify those who did not respond. Approximately two weeks from the initial mailing date, a second letter (See Appendix C)

and an additional copy of the questionnaire were mailed to all non-respondents in order to increase return rates. Participation in the investigation was completely voluntary and consent was implied by participants who returned the completed questionnaire. Any survey received later than four weeks after the date of the second mailing was not included in the study. Potential respondents were given the incentive of possibly winning a free admission to the Old Dominion University, College of Health Sciences CE Blitz if their survey was returned within two weeks of the initial mailing. The CE Blitz is a weekend seminar designed to allow dental hygienists to accrue the 15 hours of continuing education required for relicensure.

The questionnaire consisted of 5 demographic items, 7 continuing education experience items, and 30 items concerning factor importance in continuing education selection prior to and after the initiation of mandatory continuing education. Data were examined using frequency distributions, percentages, Wilcoxon matched-pairs signed-rank test, and McNemar's test. Data analyses were conducted using the SPSS-6.1 computer program.

PROTECTION OF HUMAN SUBJECTS

The following information was submitted to the Old Dominion University Committee on the Protection of Human Subjects:

Subject Population: Potential participants for the study were chosen from the Virginia Board of Dentistry's master list of licensed dental hygienists residing in the Commonwealth of Virginia. It was assumed that dental hygienists registered with the

Virginia Board of Dentistry are licensed according to the statutes set forth by the state legislature and following the regulations as prescribed by the Board.

Consent Procedure: Subject participation was completely voluntary. By completion and return of the given questionnaire, respondents gave voluntary and informed consent.

Protection of Subject's Rights: A cover letter was sent to each potential participant inviting them to participate and explained that as a participant they would have the ability to withdraw from the study at any point without penalty. Addressed envelopes were coded only to identify subjects who did not return the questionnaire in order to allow a follow-up letter and questionnaire to be sent. Each participant had the right to determine how much personal information to share with the researcher. All data and information collected were stored in a locked file cabinet; access to the cabinet was obtained only by the researcher. Subjects were informed that the results will be reported in aggregate form only and will be available to them upon request.

Potential Risks: The descriptive procedure involved in this investigation posed no risk to the subjects. All responses remained confidential and data were reported in group form only.

Potential Benefits: The data collected in this investigation provides information about the continuing education choices of licensed dental hygienists in Virginia. The information may be beneficial to dental hygienists and educators looking for motivations in course selection. These course selection motivations can be utilized when developing effective courses or planning annual continuing education course offerings. Additionally, the benefit of winning free admission (a \$115.00 value) to Old Dominion University,

College of Health Sciences CE Blitz existed.

Risk/Benefit Ratio: This investigation involved only descriptive procedures that had no potential risks involved. Since no risk existed, the results can only be beneficial.

INSTRUMENTATION

The self-designed questionnaire, the *Dental Hygiene Continuing Education Course Selection Questionnaire*, consisted of 5 demographic items, 7 continuing education experience items, and 30 items concerning factor importance in continuing education selection prior to and after the initiation of mandatory continuing education. Demographic items included graduation date, highest degree earned, year of licensure in the Commonwealth of Virginia, and employment status. Questions concerning continuing education experiences included the approximate number of CEUs earned annually prior to and after the initiation of mandatory continuing education; perceived change in motivations for selecting a course; perceived change in course topic choices; perceived change in feelings toward continuing education; and course location preferences. Questions concerning the importance of factors in selecting continuing education courses were measured on a Likert scale. Factors included professional improvement and development, interaction with other professionals, cost, course time, subject, personal benefit, job security, mandatory requirement for relicensure, paid for by my employer, required by my employer, location, course/vacation combination, course presenter, hands-on course format, and improvement of client care. Response to each Likert-type question ranged over a scale of six choices: (1) very unimportant, (2)

unimportant, (3) somewhat unimportant, (4) somewhat important, (5) important, and (6) very important.

Content validity of the questionnaire was established by a panel of educational experts including the director of continuing education at the College of Health Sciences and educators at the School of Dental Hygiene and Dental Assisting, Old Dominion University. Recommendations were taken into consideration and changes were made in the directions and section two and section three of the questionnaire. The directions were standardized throughout to avoid confusion and the initial factor of "course located at a vacation spot" was changed to "course/vacation combination" to avoid confusion with the factor of "location". Additionally, a pilot study was completed using a convenience sample of 20 licensed dental hygienists in the Commonwealth of Virginia.

STATISTICAL TREATMENT

Data collected were discrete and on the nominal or ordinal scale of measurement. Responses from each item were grouped into frequency distributions (See Appendix E). Differences in the approximate number of CEUs earned annually by dental hygienists prior to and after the initiation of mandatory continuing education were examined using the Wilcoxon matched-pairs signed-rank test. Factor importance responses prior to and after the initiation of mandatory continuing education were collapsed into two variables, important and unimportant, to allow for further analysis using McNemar's test. McNemar's test was used to determine if there was a difference in the percent of dental hygienists who rate factors as important prior to and after the initiation of mandatory

continuing education in the Commonwealth of Virginia. Those differences with a p-value of .05 or less are deemed statistically significant.

CHAPTER IV

RESULTS AND DISCUSSION

Description of Population. Section one of the questionnaire gathered demographic information such as year of graduation, year of licensure in the Commonwealth of Virginia, degree status, and primary employment setting. Questionnaire item one asked dental hygienists to report their year of dental hygiene graduation. The average respondent graduated in 1978, with graduation years ranging from 1951 to 1993. Analysis by frequencies indicated that 14 (6.5%) of the respondents graduated prior to 1964, 40 (18.6%) graduated between 1964 and 1973, 97 (45.1%) graduated between 1974 and 1983, and 64 (29.8%) graduated between 1984 and 1993.

Questionnaire item two asked respondents to report their initial year of licensure in the Commonwealth of Virginia. The average respondent was initially licensed in 1981, with licensure years ranging from 1953 to 1993. Analysis by frequencies indicated that 7 (3.3%) of the respondents were initially licensed prior to 1964, 27 (12.6%) were licensed between 1964 and 1973, 99 (46.0%) were licensed between 1974 and 1983, and 82 (38.1%) were licensed between 1984 and 1993.

Questionnaire item three asked respondents if they have always been required to attend mandatory continuing education for relicensure in a state other than the Commonwealth of Virginia, following their graduation. The total useable sample of 215 respondents answered "no".

Questionnaire item four asked for the highest degree possessed by each respondent. Of the respondents, 13 (6%) held a certificate, 85 (39.5%) held an associate, 107 (49.8%) held a baccalaureate, 9 (4.2%) held a masters, and 1 (.5%) held a doctoral degree (See Table 1).

Questionnaire item five asked respondents to report their primary employment setting. In the sample, 177 (82.3%) respondents reported being primarily employed in a private practice/general dentistry setting, 13 (6.0%) were employed in a private practice/specialty practice setting, 3 (1.4%) were employed in dental hygiene and/or dental assisting education, 5 (2.3%) were employed in a public health/governmental setting, 4 (1.9%) were employed in another dentally-related setting, and 13 (6%) were not currently employed as a dental hygienist (See Table 1).

Table 1
Highest degree possessed and primary employment setting of licensed dental hygienists in the Commonwealth of Virginia (n=215).

HIGHEST DEGREE POSSESSED	FREQUENCY	PERCENTAGE
Certificate	13	6.0%
Associate	85	39.5%
Baccalaureate	107	49.8%
Masters/Doctorate	10	4.7%
TOTALS	215	100%
EMPLOYMENT SETTING	FREQUENCY	PERCENTAGE
Private practice/general practice	177	82.3%
Private practice/specialty practice	13	6.0%

Table 1 (Continued)

EMPLOYMENT SETTING	FREQUENCY	PERCENTAGE
Dental hygiene and/or dental assisting education	3	1.4%
Public health/government setting	5	2.3%
Another dentally related setting	4	1.9%
Not employed as a dental hygienist	13	6.0%
TOTALS	215	100%

Continuing Education Experience. Section two of the questionnaire gathered information concerning the continuing education experiences of the dental hygiene sample (n=215). Questionnaire items six and seven assessed the number of CEUs earned annually by dental hygienists prior to and after the initiation of mandatory continuing education (See Table 2). As Table 2 shows, subjects earned significantly more CEUs after the initiation of mandatory continuing education. Prior to mandatory continuing education, 11.2% of the respondents reported that they did not attend continuing education courses. However, after the initiation of mandatory continuing education no respondents reported not attending continuing education courses. Furthermore, before mandatory continuing education, only 11.6% reported taking more than 1.5 CEUs; after mandatory continuing education 78.6% reported taking more than 1.5 CEUs.

Table 2

Approximate number of CEUs earned annually by dental hygienists prior to and after the initiation of mandatory continuing education (MCE) in the Commonwealth of Virginia (n=215).

NUMBER OF CEUs EARNED ANNUALLY	PRIOR TO MCE Frequency (Percent)	AFTER MCE Frequency (Percent)
Did not attend courses	24 (11.2%)	0 (0.0%)
0.1 - 0.5 CEUs	67 (31.2%)	0 (0.0%)
0.6 - 1.0 CEUs	70 (32.6%)	2 (0.9%)
1.1 - 1.5 CEUs	29 (13.5%)	44 (20.5%)
More than 1.5 CEUs	25 (11.6%)	169 (78.6%)
Totals	215 (100%)	215 (100%)

Questionnaire item eight asked respondents to state whether or not they perceived a change in how they selected a continuing education course after the initiation of mandatory continuing education in the Commonwealth of Virginia. As Table 3 shows, approximately half (48.4%) of the respondents perceived a change and approximately half (51.6%) did not perceive a change in how they selected a continuing education course after the initiation of mandatory continuing education (See Table 3).

Table 3

Perceived change by licensed dental hygienists in selection of continuing education courses after the initiation of mandatory continuing education (MCE) in the Commonwealth of Virginia (n=215).

PERCEIVED CHANGE	FREQUENCY	PERCENTAGE
Yes	104	48.4%
No	111	51.6%
TOTALS	215	100%

Questionnaire item nine asked respondents if mandatory continuing education altered course variety. Of the respondents, 147 (68.4%) reported that they think there are more course topic choices available now that continuing education is mandatory, 8 (3.7%) think that there are fewer course topic choices available now that continuing education is mandatory, and 60 (27.9%) reported that they do not think their course topic choices have changed (See Table 4).

Table 4

Perceived alteration by licensed dental hygienists in continuing education course variety following the initiation of mandatory continuing education (MCE) in the Commonwealth of Virginia (n=215).

ALTERATION IN COURSE VARIETY	FREQUENCY	PERCENTAGE
More course topic choices	147	68.4%
Fewer course topic choices	8	3.7%
No change in course topic choices	60	27.9%
TOTALS	215	100%

Questionnaire item ten asked respondents to state whether or not they feel mandatory continuing education has changed the way they feel toward continuing education. As Table 5 shows, half (50.3%) of the respondents feel that mandatory continuing education has not changed their feelings toward continuing education, while almost half (49.8%) of respondents feel that mandatory continuing education has changed their feelings toward continuing education (See Table 5).

Table 5
Change in feelings about continuing education by licensed dental hygienists following the initiation of mandatory continuing (MCE) education in the Commonwealth of Virginia (n=215).

FEELINGS ABOUT CONTINUING EDUCATION	FREQUENCY	PERCENTAGE
Changed, more negative	50	23.3%
Changed, more positive	58	27.0%
No change, remain negative	7	3.3%
No change, remain positive	100	46.5%
TOTALS	215	100%

Questionnaire item eleven asked respondents to chose where they prefer to attend continuing education courses. As Table 6 shows, 16 (7.4%) respondents reported that they prefer to attend courses at professional association meetings, 4 (1.9%) prefer to attend courses at a school of dental hygiene, 32 (14.9%) prefer to attend courses at a conference or symposium, 131 (60.9%) had no preference, and 32 (14.9%) chose a location other than the selection given in the survey (See Table 6).

Table 6

Continuing education course location preferences of licensed dental hygienists in the Commonwealth of Virginia (n=215).

COURSE LOCATION	FREQUENCY	PERCENTAGE
Professional association meetings	16	7.4%
School of dental hygiene	4	1.9%
Conference of Symposium	32	14.9%
No preference	131	60.9%
Other	32	14.9%
TOTALS	215	100%

Rating of Factors in Continuing Education Course Selection. Section three of the questionnaire, which included questionnaire items 12-26, asked the respondents to indicate how important the factors of professional improvement and development, interaction with other professionals, cost, course time, subject, personal benefit, job security, mandatory requirement for relicensure in another state, paid for by my employer, required by my employer, location, course/vacation combination, course presenter, hands-on course format, and improvement of client care were in their continuing education course selections prior to the initiation of mandatory continuing education in the Commonwealth of Virginia. Responses were scored on a Likert scale with six possible choices: very unimportant, unimportant, somewhat unimportant, somewhat important, important or very important.

The factor of professional improvement and development was rated as very

unimportant by 3.3% (7), unimportant by 1.4% (3), somewhat unimportant by 6.0% (13), somewhat important by 7.9% (17), important by 19.5% (42), and very important by 61.9% (133) of the respondents. The factor of interaction with other professionals was rated as very unimportant by 7.4% (16), unimportant by 7.0% (15), somewhat unimportant by 14.9% (32), somewhat important by 27.0% (58), important by 27.9% (60), and very important by 15.8% (34) of the respondents. The factor of cost was rated as very unimportant by 5.1% (11), unimportant by 6.0% (13), somewhat unimportant by 12.1% (26), somewhat important by 31.6% (68), important by 22.8% (49), and very important by 22.3% (48) of the respondents. The factor of course time was rated very unimportant by 5.1% (11), unimportant by 5.1% (11), somewhat unimportant 12.6% (27), somewhat important 32.1% (69), important 27.9% (60), and very important by 17.2% (37) of the respondents. The factor of subject was rated very unimportant by 3.3% (7), unimportant by 0.0% (0), somewhat unimportant by 2.8% (6), somewhat important by 10.7% (23), important by 34.9% (75), and very important by 48.4% (104) of the respondents. The factor of personal benefit was rated very unimportant by 3.7% (8), unimportant by 0.5% (1), somewhat unimportant by 3.7% (8), somewhat important by 12.1% (26), important by 39.1% (84), very important by 40.9% (88) of the respondents. The factor of job security was rated as very unimportant by 18.1% (39), unimportant by 20.0% (43), somewhat unimportant by 18.6% (40), somewhat important by 20.0% (43), important by 12.6% (27), and very important by 10.7% (23) of the respondents. The factor of mandatory requirement for relicensure in another state was rated as very unimportant by 61.9% (133), unimportant by 17.7% (38), somewhat unimportant by

3.3% (7), somewhat important by 7.4% (16), important by 3.7% (8), and very important by 6.0% (13) of the respondents. The factor of paid for by my employer was rated as very unimportant by 18.1% (39), unimportant by 7.4% (16), somewhat unimportant by 9.8% (21), somewhat important by 23.7% (51), important by 21.9% (47), and very important by 19.1% (41) of the respondents. The factor of required by my employer was rated as very unimportant by 36.7% (79), unimportant by 11.2% (24), somewhat unimportant by 12.1% (26), somewhat important by 16.7% (36), important by 14.9% (32), and very important by 8.4% (18) of the respondents. The factor of location was rated as very unimportant by 5.1% (11), unimportant by 0.9% (2), somewhat unimportant by 6.0% (13), somewhat important by 18.1% (39), important by 39.5% (85), and very important by 30.2% (65) of the respondents. The factor of course/vacation combination was rated as very unimportant by 41.9% (90), unimportant by 25.1% (54), somewhat unimportant by 11.2% (24), somewhat important by 12.6% (27), important by 7.0% (15), and very important by 2.3% (5) of the respondents. The factor of course presenter was rated as very unimportant by 9.3% (20), unimportant by 2.3% (5), somewhat unimportant by 8.4% (18), somewhat important by 24.7% (53), important by 40.0% (86), and very important by 15.3% (33) of the respondents. The factor of hands-on course format was rated as very unimportant by 11.2% (24), unimportant by 7.0% (15), somewhat unimportant by 17.2% (37), somewhat important by 35.8% (77), important by 21.9% (47), and very important by 7.0% (15) of the respondents. The factor of improvement of client care was rated as very unimportant by 3.7% (8), unimportant by 0.9% (2), somewhat unimportant by 1.9% (4), somewhat important by 8.4% (18), important by

35.8% (77), and very important by 49.3% (106) of the respondents.

Section four of the questionnaire, which included questionnaire items twenty-seven through forty-one, asked respondents to indicate how important the factors of professional improvement and development, interaction with other professionals, cost, course time, subject, personal benefit, job security, mandatory requirement for relicensure in the Commonwealth of Virginia, paid for by my employer, required by my employer, location, course/vacation combination, course presenter, hands-on course format, and improvement of client care were in their continuing education course selections following the initiation of mandatory continuing education in the Commonwealth of Virginia. Responses were scored on a Likert scale with six possible choices: very unimportant, unimportant, somewhat unimportant, somewhat important, important or very important.

The factor of professional improvement and development was rated as very unimportant by 0.9% (2), unimportant by 0.9% (2), somewhat unimportant by 2.8% (6), somewhat important by 5.1% (11), important by 23.7% (51), and very important by 66.5% (143) of the respondents. The factor of interaction with other professionals was rated as very unimportant by 5.6% (12), unimportant by 7.9% (17), somewhat unimportant by 15.8% (34), somewhat important by 22.8% (49), important by 29.8% (64), and very important by 18.1% (39) of the respondents. The factor of cost was rated as very unimportant by 3.7% (8), unimportant by 1.9% (4), somewhat unimportant by 10.7% (23), somewhat important by 26.5% (57), important by 27.9% (60), and very important by 29.3% (63) of the respondents. The factor of course time was rated very

unimportant by 1.9% (4), unimportant by 1.9% (4), somewhat unimportant 5.6% (12), somewhat important 24.2% (52), important 31.6% (68), and very important by 34.9% (75) of the respondents. The factor of subject was rated very unimportant by 0.9% (2), unimportant by 0.9% (2), somewhat unimportant by 3.7% (8), somewhat important by 6.5% (14), important by 41.4% (89), and very important by 46.5% (100) of the respondents. The factor of personal benefit was rated very unimportant by 2.3% (5), unimportant by 1.4% (3), somewhat unimportant by 2.3% (5), somewhat important by 12.1% (26), important by 38.1% (82), very important by 43.7% (94) of the respondents. The factor of job security was rated as very unimportant by 17.2% (37), unimportant by 12.6% (27), somewhat unimportant by 13.5% (29), somewhat important by 19.5% (42), important by 15.8% (34), and very important by 21.4% (46) of the respondents. The factor of mandatory requirement for relicensure in the Commonwealth of Virginia was rated as very unimportant by 13.0% (28), unimportant by 4.7% (10), somewhat unimportant by 3.7% (8), somewhat important by 6.5% (14), important by 15.3% (33), and very important by 56.7% (122) of the respondents. The factor of paid for by my employer was rated as very unimportant by 20.5% (44), unimportant by 5.6% (12), somewhat unimportant by 5.6% (12), somewhat important by 25.1% (54), important by 24.7% (53), and very important by 18.6% (40) of the respondents. The factor of required by my employer was rated as very unimportant by 32.6% (70), unimportant by 9.8% (21), somewhat unimportant by 10.7% (23), somewhat important by 17.7% (38), important by 15.8% (34), and very important by 13.5% (29) of the respondents. The factor of location was rated as very unimportant by 1.4% (3), unimportant by 0.9% (2), somewhat

unimportant by 4.2% (9), somewhat important by 20.0% (43), important by 37.7% (81), and very important by 35.8% (77) of the respondents. The factor of course/vacation combination was rated as very unimportant by 41.4% (89), unimportant by 22.8% (49), somewhat unimportant by 10.7% (23), somewhat important by 15.3% (33), important by 5.6% (12), and very important by 4.2% (9) of the respondents. The factor of course presenter was rated as very unimportant by 9.8% (21), unimportant by 2.8% (6), somewhat unimportant by 5.6% (12), somewhat important by 24.7% (53), important by 38.6% (83), and very important by 18.4% (40) of the respondents. The factor of hands-on course format was rated as very unimportant by 8.8% (19), unimportant by 9.8% (21), somewhat unimportant by 15.3% (33), somewhat important by 39.1% (84), important by 20.0% (43), and very important by 7.0% (15) of the respondents. The factor of improvement of client care was rated as very unimportant by 1.9% (4), unimportant by 0.5% (1), somewhat unimportant by 1.4% (3), somewhat important by 7.9% (17), important by 36.3% (78), and very important by 52.1% (112) of the respondents.

Research Question 1. Relative to each other, how important are the factors of cost, time, location, improvement of client care, subject, professional improvement and development, interaction with other professionals, personal benefit, job security, mandatory requirement for relicensure, employer requirement or provision, course presenter, and hands-on course format in continuing education course selection by dental hygienists in the Commonwealth of Virginia? The mean and mode were used to examine the importance of factors in continuing education course selection prior to and after the initiation of mandatory continuing education. As Table 7 shows, the mean importance

differs only slightly before and after the initiation of mandatory continuing education.

While the mode for most of the factors remained the same both prior to and after mandatory continuing education, the factors of cost, course time, job security, and paid for by my employer changed (See Table 7).

Table 7
Mean and mode of factors in continuing education course selection by dental hygienists prior to and after the initiation of mandatory continuing education (MCE) in the Commonwealth of Virginia (n=215).

FACTOR	MEAN		MODE	
	BEFORE	AFTER	BEFORE	AFTER
Professional improvement and development	5.25	5.49	Very Important	Very Important
Interaction with other professionals	4.08	4.18	Important	Important
Cost	4.28	4.77	Somewhat Important	Very Important
Course time	4.24	4.87	Somewhat Important	Very Important
Subject	5.19	5.26	Very Important	Very Important
Personal benefit	5.05	5.14	Very Important	Very Important
Job security	3.21	3.68	Unimportant	Very Important
Mandatory requirement for relicensure	1.92	4.77	Very Unimportant	Very Important
Paid for by my employer	3.81	3.84	Somewhat Important	Very Important
Required by my employer	2.87	3.15	Very Unimportant	Very Unimportant

Table 7 (Continued)

FACTOR	MEAN		MODE	
	BEFORE	AFTER	BEFORE	AFTER
Location	4.77	5.00	Important	Important
Course/vacation combination	2.25	2.34	Very Unimportant	Very Unimportant
Course presenter	4.30	4.35	Important	Important
Hands-on course format	3.71	3.73	Somewhat Important	Somewhat Important
Improvement of client care	5.20	5.33	Very Important	Very Important

Research Question 2. Did factors deemed important by dental hygienists in selecting continuing education courses change after the initiation of mandatory continuing education in the Commonwealth of Virginia? The importance of factors in continuing education course selection by Virginia dental hygienist prior to the initiation of mandatory continuing education are ranked, by the mean score, from most important to least important as follows: professional improvement and development, improvement of client care, subject, personal benefit, location, course presenter, cost, course time, interaction with other professionals, paid for by my employer, hands-on course format, job security, required by my employer, course/vacation combination, and mandatory requirement for relicensure in another state. The importance of factors in continuing education course selection by Virginia dental hygienist after the initiation of mandatory continuing education are ranked, by the mean score, from most important to least

important as follows: professional improvement and development, improvement of client care, subject, personal benefit, location, course time, mandatory requirement for relicensure in the Commonwealth of Virginia, cost, course presenter, interaction with other professionals, paid for by my employer, hands-on course format, job security, required by my employer, and course/vacation combination (See Table 8). The top five factors deemed important by dental hygienists were ranked the same in importance both prior to and after the initiation of mandatory continuing education. Professional improvement and development, improvement of client care, subject, personal benefit, and location were chosen as the top five most important factors when selecting continuing education courses, whether prior to or after mandatory continuing education.

Prior to mandatory continuing education, the factor of course presenter was ranked as the sixth most important, whereas after mandatory continuing education the importance of course presenter fell to ninth place. Additionally, the seventh most important factor, prior to mandatory continuing education was cost. After the initiation of mandatory continuing education, cost fell to eighth place. While these two factors decreased in importance following the initiation of mandatory continuing education, two other factors increased in importance. The factor of course time, ranked eighth prior to mandatory continuing education, was ranked sixth after mandatory continuing education. While the shifting in positions of importance of those three factors appears minor, the ranking of the factor of mandatory requirement for relicensure changed the greatest number of positions when comparing the two hierarchies. Prior to mandatory continuing education this factor was ranked last in importance, whereas after mandatory continuing

education it was ranked seventh of all the factors. The remaining six factors of interaction with other professionals, paid for by my employer, hands-on course format, job security, required by my employer, and course/vacation combination though rated slightly different in importance, still maintained the same rank order both prior to and after mandatory continuing education.

Table 8
Factor importance prior to and after the initiation of mandatory continuing education (MCE) in the Commonwealth of Virginia, by rank (n=215).

FACTOR	MEAN (SD)	FACTOR	MEAN (SD)
(1)Professional improvement/development	5.25 (1.24)	(1)Professional improvement/development	5.49 (0.91)
(2)Improvement of client care	5.20 (1.14)	(2)Improvement of client care	5.33 (0.95)
(3)Subject	5.19 (1.09)	(3)Subject	5.26 (0.92)
(4)Personal benefit	5.05 (1.15)	(4)Personal benefit	5.14 (1.07)
(5)Location	4.77 (1.26)	(5)Location	5.00 (1.02)
(6)Course presenter	4.30 (1.40)	(6)Course time	4.87 (1.13)
(7)Cost	4.28 (1.37)	(7)Mandatory requirement for relicensure in Virginia	4.77 (1.80)
(8)Course time	4.24 (1.31)	(8)Cost	4.61 (1.27)
(9)Interaction with other professionals	4.08 (1.42)	(9)Course presenter	4.35 (1.44)
(10)Paid for by my employer	3.81 (1.73)	(10)Interaction with other professionals	4.18 (1.41)
(11)Hands-on course format	3.71 (1.37)	(11)Paid for by my employer	3.84 (1.76)
(12)Job security	3.21 (1.60)	(12)Hands-on course format	3.73 (1.32)

Table 8 (Continued)

FACTOR	MEAN (SD)	FACTOR	MEAN (SD)
(13)Required by my employer	2.87 (1.76)	(13)Job security	3.68 (1.77)
(14)Course/vacation combination	2.25 (1.41)	(14)Required by my employer	3.15 (1.85)
(15)Mandatory requirement for relicensure in another state	1.92 (1.50)	(15)Course/vacation combination	2.34 (1.49)

Following analysis with McNemar's test, results show statistically significant evidence that the factors of professional improvement and development, cost, course time, job security, required by my employer, and location were deemed important by more dental hygienists following the initiation of mandatory continuing education in the Commonwealth of Virginia (See Table 9). The factors of mandatory requirement for relicensure in another state and mandatory requirement for relicensure in the Commonwealth of Virginia were eliminated from this statistical test due to the fact that both variables were not applicable as factors deemed important both prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia.

Table 9

Differences in the percent of dental hygienist who deemed factors important when choosing continuing education courses prior to and after the initiation of mandatory continuing education (MCE) in the Commonwealth of Virginia (n=215).

FACTOR	BEFORE MCE	AFTER MCE	P-VALUE
Professional improvement and development	89.3%	95.3%	.0044*
Interaction with other professionals	70.7%	70.7%	1.000
Cost	76.7%	83.7%	.0180*
Course time	77.2%	90.7%	.0000*
Subject	94.0%	94.4%	1.000
Personal benefit	92.1%	94.0%	.4807
Job security	43.3%	56.7%	.0001*
Paid for by my employer	64.7%	68.4%	.2433
Required by my employer	40.0%	47.0%	.0071*
Location	87.9%	93.5%	.0075*
Course/vacation combination	21.9%	25.1%	.1892
Course presenter	80.0%	81.9%	.5413
Hands-on format	64.6%	66.0%	.6776
Improvement of client care	93.5%	96.3%	.1796

*Statistically Significant

Research Question 3. Did dental hygienists perceive a change in how they selected continuing education courses following the initiation of mandatory continuing education in the Commonwealth of Virginia? Analysis by frequencies indicate that there is no

consistent trend in whether Virginia dental hygienists' perceived a change in how they selected continuing education courses following the initiation of mandatory continuing education.

Research Question 4. Do dental hygienists believe that their course topic selection options have changed as a result of mandatory continuing education? Analysis by frequencies indicate that the majority of dental hygienists feel there are more course topic choices available to them now that continuing education is mandatory in the Commonwealth of Virginia.

Research Question 5. Does the number of continuing education units earned by dental hygienists differ, prior to and after the initiation of mandatory continuing education regulation in the Commonwealth of Virginia? Analysis using Wilcoxon matched-pairs signed-rank test revealed a statistically significant difference in the number of CEUs earned annually by dental hygienists ($p=.0000$). Results show that significantly more CEUs were earned by Virginia dental hygienists following the initiation of mandatory continuing education.

Research Question 6. Has mandatory continuing education changed Virginia dental hygienists' feelings toward continuing education? Of the respondents, 50.3% (108) reported that their feelings have changed, becoming either more negative or more positive and 49.8% (107) reported that their feelings have not changed, and their feelings remain either negative or positive. Of those who reported a change in feelings, 23.3% (50) were more negative and 27.0% (58) were more positive. Of those who reported no change in feelings, 3.3% (7) reported that their feelings remained negative and 46.5%

(100) reported that their feelings remained positive. When the categories of “changed, more negative” and “no change, remain negative” are collapsed, 26.6% of dental hygienists reported an overall negative attitude toward continuing education. When the categories of “changed, more positive” and “no change, remain positive” are collapsed, 73.5% of dental hygienists report an overall positive attitude toward continuing education. While analysis of the frequencies indicate that there is no change in how dental hygienists feel toward continuing education as a result of mandatory continuing education, there is a trend in that the majority of dental hygienists (73.5%) report a positive attitude toward continuing education.

DISCUSSION

Regarding the demographics of this study, the 1994 Dental Hygiene Practice Survey by Shuman (1994) was used as a reference to determine if the sample was truly representative of the population of licensed dental hygienists in the Commonwealth of Virginia. The 1994 Dental Hygiene Practice Survey (Shuman, 1994), reported that, at the time, 49.6% of respondents held an associate degree, 43.5% held a baccalaureate degree, 6.9% held a master’s or doctoral degree. Respondents of this study reported that 13 (6%) held a certificate, 85 (39.5%) held an associate, 107 (49.8%) held a baccalaureate, 10 (4.7%) held a master’s or doctoral degree. These similar findings indicate that the useable sample for this study (n=215) did represent the population.

This discussion will follow the order of the research questions posed in this study.

Dental hygienists were asked to rank the importance of the factors of cost, time, location, improvement of client care, subject, professional improvement and development, interaction with other professionals, mandatory requirement for relicensure, personal benefit, job security, employee requirement or provision, course presenter, and hands-on course format in their continuing education course selection both prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia. When given the opportunity to rank the importance of these factors, the modal response indicated that dental hygienists in the Commonwealth of the Virginia found the following factors very important: professional improvement and development, subject, personal benefit, and improvement of client care. The factors of interaction with other professionals, location, and course presenter were important; cost, course time, paid for by my employer, and hands-on course format were reported as somewhat important; job security was unimportant; and required by my employer, mandatory requirement for relicensure, and course/vacation combination were very unimportant.

When asked to rank the importance of these factors in selecting continuing education courses after the initiation of mandatory continuing education, the modal response indicated that dental hygienists in the Commonwealth of Virginia found the following factors very important: professional improvement and development, cost, course time, subject, personal benefit, job security, paid for by my employer, mandatory requirement for relicensure, and improvement of client care. The factors of interaction with other professionals, location, and course presenter were important; hands-on course

format was somewhat important; required by my employer and course/vacation combination were very unimportant.

For discussion purposes the categories of very important, important, and somewhat important were collapsed into the category of important. The categories of very unimportant, unimportant, and somewhat unimportant were also collapsed into the category of unimportant. The factors of subject, interaction with other professionals, and job security were found to be deemed important by exactly the same percent of dental hygienists both prior to and after the initiation of mandatory continuing education. The factors of professional improvement and development, cost, course time, personal benefit, required by my employer, location, course presenter, hands-on course format, and improvement of client care were found to be deemed important by more dental hygienists after the initiation of mandatory continuing education. Finally, fewer dental hygienists found the factor of course/vacation combination unimportant after the initiation of mandatory continuing education. The similarities prior to and after mandatory continuing education may have occurred because the same respondent was asked to rate these factors both prior to and after mandatory continuing education. Since the questionnaire was completed only after the initiation of mandatory continuing education, respondents may not have been able to determine how important the factor was prior to mandatory continuing education or differentiate between importance both prior to and after. While the results appear similar, slight differences in the ranking and slight increases and decreases in the percent of respondents selecting factors important and unimportant are noted.

Prior to mandatory continuing education, the majority (89.3%) of dental hygienists reported the factor of professional improvement and development as important. After mandatory continuing education, the factor of professional improvement and development was still found to be important, but by more (95.3%) dental hygienists. This may be due to the fact that dental hygienists realize that continuing education promotes professionalism in dental hygiene. The increased exposure to continuing education after it became mandatory may also have caused dental hygienists to realize the importance of continuing education. Cunningham and Merriam (1989) stated that dental hygienists voluntarily choose to participate in continuing education for several reasons including enhancement of personal growth, support and maintenance of good social order, and promotion of productivity. Additionally, DeSilets (1995) found that one of the main reasons why nurses participate in continuing education is for the development of new professional knowledge and skill. It would appear that dental hygienists in Virginia also seek to gain knowledge and improve skills through participation in continuing education.

The majority (70.7%) of dental hygienists reported that the factor of interaction with other professionals was important prior to mandatory continuing education. After mandatory continuing education, the factor of interaction with other professionals was found to be important by the exact same percent (70.7%) of dental hygienists. Perhaps dental hygienists find internal factors such as interaction with other professionals important under any circumstance. This factor may have been found important by the majority of dental hygienists both prior to and after mandatory continuing education

because dental hygienists see continuing education courses as an opportunity to exchange ideas and problem solve through networking with colleagues. Because mandatory continuing education is new in the Commonwealth of Virginia and controversy surrounding the required post-test existed, dental hygienists may have desired to interact with other professionals to be sure they were fulfilling the requirements for relicensure. Interaction with others in similar situations gave dental hygienists the opportunity to answer questions and clarify concerns regarding these new regulations. Additionally, some dental hygienists may have perceived continuing education to be introduced without their input. Therefore, continuing education courses gave them the opportunity to be involved, to be heard, and to interact as a group.

Respondents were queried regarding the factor of cost. Prior to mandatory continuing education, the factor of cost was rated important by 76.7% of the dental hygienists. After mandatory continuing education, the factor of cost was still found to be important, but by a larger majority (83.7%) of dental hygienists. Since mandatory continuing education requires a minimum number of courses for relicensure, dental hygienists may desire to fill this requirement while keeping their cost to a minimum. Respondents commented that they would like to see the high cost of courses reduced. Others commented that they would pass up courses that they might benefit from because of the cost or the number of CEUs awarded. Now that continuing education is mandatory, dental hygienists are required to obtain a minimum number of continuing education units. Dental hygienists must attend several courses to fulfill the minimum of 1.5 CEUs and therefore may now be concerned with how much money it will cost to

meet this minimum. Courses that offer more continuing education units for the least amount of money, may now be deemed more important than interest or topic area.

The factor of course time was chosen to determine how important the day and time of year was in continuing education course selection by dental hygienists. When asked to rank the factor of course time, 77.2% of the respondents ranked course time as important prior to mandatory continuing education. This may be due to the fact that some courses may have required loss of work time. Since continuing education was voluntary, dental hygienists may have chosen courses that best fit their schedule in order to reduce lost wages. The majority (90.7%) of dental hygienists rated course time as important, after mandatory continuing education. The increase in the percent of respondents who rated the factor of course time as important may be due to the fact that mandatory continuing education requires a minimum number of courses for relicensure and dental hygienists may now choose courses that require the least loss of work time. Young (1989) and Cartwright & Keevil (1978) found that dental hygienists, in Saskatchewan and Michigan respectively, also think course time plays a role in continuing education course selection. The factor of course time in this study was not specifically defined and therefore can not support or contradict Young's or Cartwright & Keevil's research with regards to specific time of year or day.

The results of this study indicate that Virginia dental hygienists also rank subject as an important factor influencing continuing education course selection. Body (1987), found that the majority of Ohio dental hygienists rated the factor of subject as either important or very important in selecting continuing education courses. Cartwright and

Keevil (1978) found that under voluntary continuing education, Michigan dental hygienists wished to attend courses on periodontics, oral pathology, dental health education, radiography, and prophylaxis technique. Since voluntary continuing education put no restraints on continuing education courses prior to the initiation of mandatory continuing education, it is assumed that Virginia dental hygienists would choose course subjects they found interesting. However, both prior to and after mandatory continuing education, the majority (94%) of dental hygienists rated the factor of subject as important. Initiation of mandatory continuing education did not reduce in importance the factor of subject when dental hygienists choose which continuing education course to attend.

While the factor of personal benefit was rated as important both prior to and after mandatory continuing education, the percentage of dental hygienists rating this factor as important increased from 92.1% prior to mandatory continuing education to 94.0% after mandatory continuing education. Prior to mandatory continuing education, it might be assumed that dental hygienists would choose continuing education courses based on personal reasons because there were no external mandates directing their selection of courses. Though 92.1% of the dental hygienists surveyed indicated that personal benefit was important when selecting continuing education course voluntarily, after mandatory continuing education more dental hygienists rated this factor as important. Now, even with the regulations governing the topics approved for dental hygiene relicensure, a large majority still ranked this factor as important. Similarly, Waring (1991) found that 80% of dental hygienists she surveyed reported personal satisfaction as a reason for seeking to

continue their education. Dental hygienists in Virginia may see a personal benefit to continuing education attendance and are not attending merely because the law governs them to do so.

The factor of job security was ranked unimportant in continuing education course selection, prior to mandatory continuing education and very important after mandatory continuing education. Prior to mandatory continuing education there was no law requiring dental hygienists to attend continuing education for licensure. Therefore, dental hygienists may have felt that job security played an insignificant role in whether or not they selected a continuing education course to attend. Additionally, attending continuing education may have been perceived as having little affect on the opportunity for advancement or salary increases. Following the initiation of mandatory continuing education, respondents now reported that job security was very important in their decision to attend continuing education courses. Dental hygienists may have viewed the attainment of the required number of CEUs for relicensure as necessary because without relicensure, there is no employment. One respondent commented that prior to mandatory continuing education, classes were chosen based on interest, whereas after mandatory continuing education classes were chosen to obtain the 1.5 CEUs necessary to meet the relicensure requirements. Others commented that they chose courses with the most CEUs offered.

Because of the importance placed on what factors are important prior to and after the initiation of mandatory continuing education, the factor of mandatory requirement for relicensure was incorporated to see if the requirement itself played a role in selection of

continuing education. To balance the questionnaire, the factor of mandatory requirement for relicensure in another state was used as a factor prior to mandatory continuing education. While potential participants who had always been under mandatory continuing education due to their licensure in another state were eliminated from the study, some respondents may have been required to complete continuing education for another state at some time prior to their licensure in Virginia. Prior to mandatory continuing education, the majority (82.9%) of dental hygienists reported the factor of mandatory requirement for relicensure as unimportant. As expected, the majority of dental hygienists surveyed were not licensed in a state other than the Commonwealth of Virginia that required continuing education, and therefore the factor of mandatory requirement for relicensure in another state would not have played a role in their selection of continuing education.

After mandatory continuing education, the majority (78.5%) of dental hygienists reported the factor of mandatory requirement for relicensure in the Commonwealth of Virginia as important. While respondents did indicate the factor of mandatory requirement for relicensure in the Commonwealth of Virginia as important, it was not ranked as the most important factor. Prior to mandatory continuing education, this factor ranked at the bottom of the hierarchy, whereas after mandatory continuing education respondents ranked this factor seventh in importance. Still ranking higher in importance were professional improvement and development, interaction with other professionals, cost, course time, subject and personal benefit. Dental hygienists do not seem to place emphasis on mandatory requirements when choosing continuing education courses.

While deemed important, and indirectly deemed important in the factor of job security, dental hygienists consider personal and professional development factors most important.

The factor of paid for by my employer was rated as important by 64.7% of the dental hygienists prior to, and 68.4% after, mandatory continuing education. Similar findings both prior to and after mandatory continuing education may indicate that dental hygienists wish to share the expense of courses with employers, especially now that continuing education is required to maintain licensure and therefore to maintain employment. Dental hygienists have indicated that employers should be required to help pay for the costs associated with continuing education courses. Others indicated that paid time away from the office and help with travel expenses are especially important in rural areas. Others felt that if courses were paid for by their employer, they would be forced to accept the employer's choice of continuing education courses. Dental hygienists commented that while continuing education opportunities have flourished as a result of mandatory continuing education, so has the opportunity for increased cost.

Prior to mandatory continuing education, 60.0% of dental hygienists rated the factor of required by my employer as unimportant, while 40.0% rated this factor as important. After mandatory continuing education, about half (53%) of the dental hygienists reported the factor of required by my employer as unimportant while 47% reported this factor as important. Mandatory continuing education for dentists in the Commonwealth of Virginia took effect at the same time as mandatory continuing education for dental hygienists. Prior to mandatory continuing education, employers may not have attended continuing education and therefore did not require their employees to

attend. When continuing education became mandatory there was no need for employers to require continuing education because it was now required by state law.

In 1987, Body found that prior to mandatory continuing education, the majority of Ohio dental hygienists rated the factor of location as either important or very important in selecting continuing education courses. Since continuing education was voluntary, at the time of Body's study, dental hygienists may have chosen courses with a convenient location in order to reduce lost work time due to traveling. The factor of location in this study was found to be important both prior to and after mandatory continuing education by the majority, 87.9% and 93.5% respectively, of dental hygienists. The increase in the percent of dental hygienists who deem the factor of location as important may be due to the fact that under mandatory continuing education, dental hygienists wish to attend courses that require minimal loss of work time and pay. Respondents commented that continuing education courses should be made available in a wider variety of areas, especially rural settings to reduce expense and travel time. Respondents also commented that courses ordinarily chosen based on other factors may not be selected because of travel requirements.

The factor of course/vacation combination was ranked by the majority of dental hygienists as unimportant, prior to (78.2%) and unimportant after (74.9%) the initiation of mandatory continuing education. This similarity may be due to the fact that dental hygienists value their vacation time and choose not to incorporate their continuing education needs with their "free" time. Respondents commented that they preferred home study or correspondence courses which eliminated traveling and allowed them to

spend more time with their family. These findings support those of Young (1989) who found that only 8% of Saskatchewan dental hygienists preferred courses held at a resort or recreational location.

The factor of course presenter was rated as important by the majority (80%) of dental hygienists prior to mandatory continuing education. This result is similar to results found by Body (1987), who reported that the majority of Ohio dental hygienists rated the course instructors' reputation as important. After mandatory continuing education, the majority (81.9%) of dental hygienists rated the factor of course presenter as important. Therefore almost the same percent of dental hygienists deem the factor of course presenter as important both prior to and after mandatory continuing education. Respondents commented that continuing education courses should be presented by knowledgeable and interesting speakers who are informative and upbeat.

Prior to and after mandatory continuing education, the majority of dental hygienists, 64.6% and 66.0% respectively, rated the factor of hands-on course format as important. Perhaps dental hygienists enjoy active participation as opposed to being a passive learner. While these results do not support the findings of Young (1989) who found that Saskatchewan dental hygienists preferred the lecture method of learning, they do support the findings of Cartwright and Keevil (1978) who found that the majority of Michigan dental hygienists preferred a course format that combined lecture and laboratory experience. Respondents commented that they prefer a variety of course formats with actual hands-on experience. Since the initiation of mandatory continuing education, the perceived proliferation of continuing education opportunities has

prompted some dental hygienists to comment on the quality of continuing education available. Some dental hygienists voiced concerns regarding the format of continuing education courses stating that certain courses were boring and contained the same material offered previously. One respondent commented that many instructors did not teach quality courses but were there only to fill the necessary time. Dental hygienists are concerned about getting quality education from their continuing education courses. Therefore, it is not surprising that course format is an important factor in the selection of continuing education courses by dental hygienists.

Not surprisingly, the majority of dental hygienists (93.5%) rated the factor of improvement of client care as important, prior to mandatory continuing education. After mandatory continuing education, even more dental hygienists (96.3%) rated the factor of improvement of client care as important. Throughout the comments, was the underlying premise that dental hygienists were attending continuing education to improve client care. Respondents commented that they looked for free or convenient course opportunities, even if that meant attending less than helpful courses to obtain the majority of the CEUs required for relicensure. However, they made a commitment to attend at least one course that would help them provide quality client care regardless of cost or travel necessity. Others commented that they chose courses with topics that were not covered in their formal education in order to provide the most up to date care for their clients. Additionally, respondents reported that they wished to update their skills with courses directly related to the practice of dental hygiene.

The results of this study indicate that there is a hierarchy of importance of the fifteen factors rated by dental hygienists. While the mean importance of each factor was found to differ only slightly prior to and after the initiation of mandatory continuing education, when the mean importance score of each factor is ranked from highest to lowest, the order of importance of four of the fifteen factors changed. The factors of course time, mandatory requirement for relicensure, cost, and course presenter changed their rank order in the hierarchies prior to and after mandatory continuing education. The factors of course time and mandatory requirement for relicensure increased in importance and the factors of cost and course presenter decreased in importance following the initiation of mandatory continuing education.

Analysis through raking of the mean importance also revealed that the top five factors deemed important by dental hygienists were the same both prior to and after the initiation of mandatory continuing education as follows: professional improvement and development, improvement of client care, subject, personal benefit, and location. Therefore, the initiation of mandatory continuing education did not change the top five factors deemed important by dental hygienists in their continuing education course selection. It appears that dental hygienists feel committed to improve their person and profession and provide optimal client care under any circumstance. Additionally, dental hygienists appear to find course subject and location important in their selection process. Dental hygienists feel that they should attend courses that are of interest to them and are easily accessible.

Furthermore, as previously discussed, the modal response for most of the factors

remained the same, only the factors of cost, course time, job security, mandatory requirement for relicensure, and paid for by my employer changed after the initiation of mandatory continuing education. The modal response for the factors of cost and course time changed from somewhat important prior to mandatory continuing education to very important after mandatory continuing education. The modal response for the factor of job security changed from unimportant prior to mandatory continuing education to very important after mandatory continuing education. The modal response for the factor of mandatory requirement for relicensure changed from very unimportant to very important. Finally, the modal response for the factor of paid for by my employer changed from somewhat important prior to mandatory continuing education to important after mandatory continuing education.

When asked whether or not a change was perceived in how continuing education courses were selected following the initiation of mandatory continuing education in the Commonwealth of Virginia, approximately half (48.4%) of the dental hygienists responded that they feel their motivations or reasons for selecting a course changed after mandatory continuing education. It was expected that dental hygienists would have perceived a change in how they choose a course now that mandatory continuing education is mandatory due to the specific requirements of mandatory continuing education. Especially interesting is the ranking of the factor of mandatory requirement for relicensure in selecting continuing education courses prior to and after mandatory continuing education. Prior to mandatory continuing education this factor ranked last in importance, whereas, after mandatory continuing education it was ranked seventh of all

the factors. With such a large increase in the ranking of the importance of the factor of mandatory requirement for relicensure, it would seem reasonable that dental hygienists would notice a change in how they select continuing education courses. Yet, dental hygienists continue to choose courses much the same way as they did when continuing education was voluntary. Perhaps, dental hygienists would perceive that, under mandatory continuing education, they would find themselves choosing courses to meet requirements rather than courses that met their personal needs. Approximately half of the respondents (48.4%) reported that their motivations for selecting a course changed and half (51.6%) reported that their motivations for selecting a course did not change following the initiation of mandatory continuing education. Therefore, there is no consistent trend in whether Virginia dental hygienists' perceived a change in how they selected continuing education following the initiation of mandatory continuing education. This may be due to the fact that, in the Commonwealth of Virginia, mandatory continuing education has only been in effect for two years and some respondents may not have had enough experience with mandatory continuing education to notice a change.

Dental hygienists were asked whether or not they believe their course topic selection options have changed as a result of mandatory continuing education. The purpose of this question was to assess whether or not dental hygienists feel there are more, less, or exactly the same amount of continuing education courses available to them as a result of mandatory continuing education. It was expected that dental hygienists would perceive a decrease in the number of courses made available to them now that

continuing education is mandatory due to restrictions imposed by the Board of Dentistry, which regulates continuing education. However, mandatory continuing education has opened marketing opportunities for continuing education providers. Results indicate that the majority of dental hygienists 147 (68.4%) feel that there are more course topic choices available to them now that continuing education is mandatory in the Commonwealth of Virginia. Mandatory continuing created a marketing blitz for the business of continuing education. Mandatory continuing education gives educational providers the opportunity to offer as many courses as possible within the guidelines established by the Virginia Board of Dentistry knowing that dental hygienists are required to attend a minimum number of courses. With continuing educators increasing their continuing education business and marketing their courses through mailings and other advertisements dental hygienists perceived an increase in course availability after the initiation of mandatory continuing education.

Results of this study revealed that dental hygienists earned significantly more Continuing Education Units (CEUs) following the initiation of mandatory continuing education in the Commonwealth of Virginia. It can be assumed that the majority of Virginia dental hygienists earned at least 1.5 CEUs or more annually following the initiation of mandatory continuing education because the minimum number of CEUs required for relicensure in the Commonwealth of Virginia is 1.5 CEUs. However, two participants reported earning less than the required number of CEUs. Perhaps this was an error in completing the survey or they were exempt from fulfilling the requirement for relicensure for unexplained reasons such as disability. The increase found in the number

of CEUs earned annually by dental hygienists may also have been due to the increase in exposure to continuing education and a realization of the importance of continuing education in professional development. The marketing increases in continuing education after the initiation of mandatory continuing education may have lead dental hygienists to view continuing education as important or necessary. While the study by Darby and Hull (1989) provided evidence that dental hygienists realize the need for continuing education during a time when continuing education was voluntary, minimal exposure to continuing education through marketing may be the reason for dental hygienists earning less CEUs prior to mandatory continuing education. Additionally, respondents of this study commented that they needed and appreciated the incentive that mandatory continuing education provides.

Dental hygienists were asked if mandatory continuing education changed their feelings toward continuing education. While the data revealed that the answer to this question is "no", when the categories of changed, more positive and no change, remain positive are collapsed, the majority (73.5%) of dental hygienists report a positive attitude toward continuing education. Therefore, there is an overall positive trend in dental hygienists' feelings toward continuing education. These results support the findings of Behrooz et.al. (1989) who concluded that mandatory continuing education does not negatively influence the attitudes of dental hygienists toward continuing education. Darby and Hull (1989) found that dental hygienists realize the need for continuing education and appear to show favorable attitudes toward lifelong learning. Perhaps this positive attitude stems from increased exposure and positive experiences with continuing

education courses. An increase in agencies and institutions supplying continuing education may be creating competition for participants. Suppliers of continuing education may be acutely aware of the need to offer courses which attract participants. Providing "consumer friendly" continuing education courses may be creating positive attitudes and experiences for dental hygienists.

While providers of continuing education are interested in factors deemed important by dental hygienists, additional insight into continuing education characteristics and preferences of dental hygienists will help further produce continuing education courses which attract participants and foster positive attitudes toward continuing education. Questionnaire item eleven gathered additional data by asking respondents to choose where they prefer to attend continuing education courses. It is interesting to note that the majority of dental hygienists reported that they have no location preference for continuing education courses even though location was ranked as the fifth most important factor in continuing education course selection by dental hygienists both prior to and after the initiation of mandatory continuing education. However, this may be due to the multiple choice format of the question. The location choices for the question referred to settings rather than actual distance from the respondents home or office. When ranking the factor of location, the term location was meant to be interpreted as distance from home or office. So, dental hygienists indeed find travel distance important when selecting continuing education courses, yet they do not rate the physical setting of the course as important. Additionally, it would seem logical that dental hygienists would prefer to attend courses at a conference of

symposium which might allow them to obtain all of the required CEUs in a short time frame, decreasing lost work time and traveling as comments indicate. The results of this study differ from those found by Cannon and Waters (1993) who reported that the majority of nurses prefer to attend continuing education courses at a conference. These results also differ from those found in Saskatchewan by Young (1989) where the majority of dental hygienists preferred courses held at a school of dental hygiene. However, this could be due to the fact that continuing education requirements may differ between the countries of Canada and the United States. Also, comments have suggested that experience with continuing education in school settings have been less than ideal. Respondents commented that continuing education courses offered through universities and schools of dental hygiene are extremely expensive. Others commented that dental hygiene schools appear to give less credits per course than other continuing education avenues like home study.

While the *Dental Hygiene Continuing Education Questionnaire* was examined by a panel of experts it did not have prior established validity and reliability. After the completion of this research, several recommendations for the improvement of this data collection instrument are given. Questionnaire item eight, which asked dental hygienists if they perceived a change in how they selected a continuing education course after the initiation of mandatory continuing education, used the term motivations in the answer choices. Since the question did not use the term motivations, dental hygienists may have been confused in their answer selection. Both the question and answer choices should have used identical terminology.

Several of the factors that were ranked in importance by dental hygienists may have been better defined to assure uniform interpretation. The factor of course time could have been interpreted as time of year, time of day, or day of week. Since this factor was meant to determine the importance of course time, as the day of week in which the course is held, this factor should have been written as "day of course" or "course day". The factor of location may have been interpreted as where the course will be held such as a conference, symposium, school of dental hygiene, or professional meeting. This factor was meant to be interpreted as geographical location or distance from home or office. Therefore, this factor should have been written as "geographical location".

While the factors of mandatory requirement for relicensure in another state and mandatory requirement for relicensure in the Commonwealth of Virginia are considered potential important factors in continuing education course selection, these two factors are not applicable both prior to and after mandatory continuing education. The factor of mandatory requirement for relicensure in the Commonwealth of Virginia is only applicable as a factor after mandatory continuing education. While the factor of mandatory requirement for relicensure in another state is only applicable before mandatory continuing education. Therefore, these two factors had to be eliminated when analyzing the data using McNemar's test. This inequality also made ranking the fifteen factors prior to and after mandatory continuing education awkward because all other factors were identical. Future research efforts may want to consider completely eliminating these factors when comparing pre and post mandatory continuing education

differences.

Findings from this study indicate that dental hygienists in the Commonwealth of Virginia rank the factors of professional improvement and development, improvement of client care, subject, personal benefit, and location as the top five most important when selecting continuing education courses under voluntary continuing education. These factors are ranked the same when selecting courses under mandatory continuing education. However, more dental hygienists rate the factors of professional improvement and development, cost, course time, job security, required by my employer, and location as important under mandatory continuing education.

CHAPTER V

SUMMARY AND CONCLUSIONS

Dental hygienists choose to attend continuing education courses, whether voluntary or mandatory, for a variety of reasons. Identifying which factors are deemed important when selecting which continuing education course to attend may help planners of continuing education meet the needs of potential participants. Additionally, dental hygienists will benefit by having a wider variety of courses to choose from which fit their needs.

The purpose of this study was to examine factors deemed important by dental hygienists in continuing education course selection prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia. Results of this study may provide dental hygienists and dental hygiene educators with insight for planning continuing education courses which attract dental hygiene participants whether voluntary or under mandatory continuing education requirements. Course development which takes into consideration factors deemed important by dental hygienists may lead to increased participation. Additionally, addressing the factors deemed important by dental hygienists in selecting continuing education courses may lead to improved acceptance of mandatory continuing education.

Using a self-designed questionnaire, the *Dental Hygiene Continuing Education Selection Questionnaire*, data were gathered concerning the factors deemed important by dental hygienists in selecting continuing education courses prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia. Data

were examined using frequency distributions, percentages, Wilcoxon matched-pairs signed-rank test, and McNemar's test. Frequencies were used to determine study participants' year of graduation with a certificate or degree in dental hygiene, initial licensure date in the Commonwealth of Virginia, degrees held, primary employment setting, perceived change in continuing education course selection, perceived change in course variety, feelings about continuing education, and preferred course location. The Wilcoxon matched-pairs signed-rank test was used to determine a statistically significant difference between the number of CEUs earned annually by Virginia dental hygienists prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia. McNemar's test was used to determine a statistically significant difference in the percentage of hygienists who deemed factors important prior to and after the initiation of mandatory continuing education in the Commonwealth of Virginia.

Results of this study revealed that, relative to each other, the factors of professional improvement and development, improvement of client care, subject, personal benefit, and location ranked the same in importance prior to and after the initiation of mandatory continuing education. Additionally, more dental hygienists found the factors of professional improvement and development, cost, course time, job security, required by my employer, and location important after the initiation of mandatory continuing education. Data were also collected on demographics, which revealed that the average study participant graduated in the year 1978 and became licensed in the Commonwealth of Virginia in the year 1981. The majority of respondents held an associate or baccalaureate degree, 39.5% and 49.8% respectively, and reported working

in a private, general practice setting (82.3%). Subjects were found to have earned significantly more CEUs after the initiation of mandatory continuing education. Results indicated that there is no consistent trend in whether Virginia dental hygienists' perceived a change in how they selected continuing education following the initiation of mandatory continuing education. The majority of dental hygienists feel that there are more course topic choices available to them now that continuing education is mandatory in the Commonwealth of Virginia. Results also indicated no change in how dental hygienists' feel toward continuing education as a result of the initiation of mandatory continuing education. Dental hygienists continue to feel positive toward continuing education. Additionally, the majority of dental hygienists in the Commonwealth of Virginia reported having no preference as to the location setting of continuing education courses.

Planners of mandatory continuing education courses may wish to consider the statistically significant findings of this study when seeking to meet the continuing education needs of course participants. Course development which takes into consideration the factors deemed important by more dental hygienists following the initiation of mandatory continuing education may lead to an increase in participation. In addition, addressing these factors deemed important by dental hygienists in selecting continuing education courses may lead to better acceptance of mandatory continuing education.

Conclusions

The following conclusions are based on the results of this study:

1. Relative to each other, 4 of the 15 factors within this study changed in rank as a result of mandatory continuing education. The factors of course time and mandatory requirement for relicensure increased in importance and the factors of cost and course presenter decreased in importance as a result of mandatory continuing education.
2. Mandatory continuing education increases the importance of the factors of professional improvement and development, cost, course time, job security, required by my employer, and location in continuing education course selection by dental hygienists.
3. There is no consistent trend in motivations for selecting continuing education courses following the initiation of mandatory continuing education, as perceived by dental hygienists.
4. Mandatory continuing education increases the number of continuing education course choices available, as perceived by dental hygienists.
5. Mandatory continuing education increases the number of CEUs earned annually by dental hygienists.
6. Mandatory continuing education does not change how dental hygienists feel toward continuing education. Dental hygienists have positive feelings toward continuing education.

Considering the results of this study, the following recommendations for future study are made:

1. Establishment of the validity and reliability of the data collection instrument, the *Dental Hygiene Continuing Education Selection Questionnaire*.
2. Replication of this study with a larger sample to verify the findings within this study.
3. Investigate whether or not planners of continuing education have changed course development and marketing strategies now that continuing education is mandatory in the Commonwealth of Virginia.
4. Develop continuing education courses taking into consideration the factors deemed important in this study and investigate enrollment trends.
5. Repeat this investigation with two sample populations, one consisting of dental hygienists under voluntary continuing education and one with dental hygienists under mandatory continuing education.
6. Survey dental hygienists enrolled in a particular continuing education course as to what factors were important for their selection of that course.
7. Replicate this investigation with a modification of *Dental Hygiene Continuing Education Course Selection Questionnaire* that eliminates the somewhat unimportant and somewhat important categories in the ranking of factor importance.

In conclusion, the findings of this investigation suggest that dental hygienists have specific reasons for choosing continuing education whether voluntary or mandatory. These reasons fall in a hierarchy of importance with the factors of professional improvement and development, improvement of client care, subject, personal benefit, and location as the top five most important both prior to and after the initiation of mandatory continuing education. In addition, more dental hygienists rate the factors of professional improvement and development, cost, course time, job security, required by my employer, and location important after the initiation of mandatory continuing education. Planners of continuing education should keep these factors in mind when developing continuing education courses. Courses that take these factors into consideration may show an increase in participation and promote favorable attitudes toward mandatory continuing education.

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APPENDIX A
COVER LETTER - INITIAL MAILING

Gene W. Hirschfeld School of Dental Hygiene
and Dental Assisting
College of Health Sciences
Norfolk, Virginia 23529-0499
Phone: (757) 683-4310
FAX: (757) 683-5239

August 15, 1997



Dear Dental Hygienist:

For my Master's thesis at Old Dominion University I am conducting an investigation to assess what factors are important to dental hygienists when selecting continuing education courses. This information will benefit you the consumer of continuing education by allowing sponsors and developers of continuing education to plan courses that you want to attend.

Please take **10 minutes** to complete the enclosed questionnaire in a quiet, relaxed atmosphere. Try to respond to each item completely and honestly. Please return the survey by **September 12, 1997**. An addressed, stamped envelope is enclosed for your convenience. If your survey is received by September 12, 1997, your name will be entered into a drawing with a winning prize of free admission (a \$115.00 value) to the College of Health Sciences, Office of Continuing Education, Dental Hygiene Winter CE Blitz to be held during the month of February 1998. This weekend blitz includes the 1.5 CEU's necessary for Virginia relicensure. The winner will be notified by mail after December 1, 1997.

The return envelopes have been numbered for the purpose of determining which questionnaires have been returned and to register you for the drawing. Numbers will not be identified with any particular questionnaire so your responses will be completely confidential. Results will be reported in group form only and will be available, upon written request, to the School of Dental Hygiene and Dental Assisting, Old Dominion University, Norfolk, VA 23529-0499. There will be no risk involved for those who chose not to participate in this survey.

You may contact me at (757) 683-5233 or my thesis advisor, Evelyn Thomson-Lakey at (757) 683-3851, if you have any questions. Your participation and prompt response are greatly appreciated and will contribute to the results of this investigation.

Sincerely,

Melissa L. Sainsbury, RDH, BS
Masters Degree Candidate
School of Dental Hygiene and
Dental Assisting
Old Dominion University
Norfolk, VA 23529-0499

Old Dominion University is an equal opportunity, affirmative action institution.

APPENDIX B

DENTAL HYGIENE CONTINUING EDUCATION SELECTION QUESTIONNAIRE



**Dental Hygiene Continuing Education
Selection Questionnaire**

DENTAL HYGIENE CONTINUING EDUCATION SELECTION QUESTIONNAIRE

Directions: Please circle the appropriate answer to each question presented on the questionnaire. Choose only one answer per question and fill in the blanks where indicated.

Section I: DEMOGRAPHICS

1. When did you graduate with a certificate or degree in dental hygiene ?
 1. 1993 or Prior (please state the exact year _____)
 2. 1994 or later (please stop here and return the survey)

2. When did you become licensed in the Commonwealth of Virginia?
 1. 1993 or prior (please state the exact year _____)
 2. 1994 or later (please stop here and return the survey)

3. Since graduating, have you always been required to attend mandatory continuing education for relicensure in a state other than the Commonwealth of Virginia?
 1. No
 2. Yes. What State(s)_____. (please stop here and return the survey)

4. What is the highest degree that you currently possess? (Circle only one)
 1. Certificate
 2. Associate
 3. Baccalaureate
 4. Masters
 5. Doctorate

5. What is your primary employment setting? (Circle only one)
 1. Private practice/general dentistry
 2. Private practice/specialty practice
 3. Dental hygiene and/or dental assisting education
 4. Public health/governmental setting
 5. Another dentally related setting (Please describe _____)
 6. Not employed as a dental hygienist

Section II: CONTINUING EDUCATION EXPERIENCES

6. **PRIOR** to mandatory continuing education in the Commonwealth of Virginia (April 1, 1995), approximately how many Continuing Education Units did you earn annually? (1 hour of course time = 0.1 CEUs)
1. Did not attend continuing education courses
 2. 0.1 - 0.5 CEUs (1 - 5 hours of course time)
 3. 0.6 - 1.0 CEUs (6 - 10 hours of course time)
 4. 1.1 - 1.5 CEUs (11 - 15 hours of course time)
 5. More than 1.5 CEUs (15 hours or more of course time)
7. **AFTER** initiation of mandatory continuing education in the Commonwealth of Virginia (April 1, 1995), approximately how many Continuing Education Units did you earn annually? (1 hour of course time = 0.1 CEU)
1. Did not attend continuing education courses
 2. 0.1 - 0.5 CEUs (1 - 5 hours of course time)
 3. 0.6 - 1.0 CEUs (6 - 10 hours of course time)
 4. 1.1 - 1.5 CEUs (11 - 15 hours of course time)
 5. More than 1.5 CEUs (15 hours or more of course time)
8. **AFTER** mandatory continuing education became effective in Virginia (April 1, 1995), did you perceive a change in how you selected a continuing education course?
(Circle only one and fill in reason)
1. Yes, my motivations for selecting a course changed because _____

 2. No, my motivations for selecting a course did not change because _____

9. How do you think mandatory continuing education altered course variety?
(Circle only one)
1. I think that there are more course topic choices now that continuing education is mandatory.
 2. I think that there are fewer course topic choices now that continuing education is mandatory.
 3. I do not think that course topic choices have changed.

10. Has mandatory continuing education changed how you feel about continuing education courses? (Circle only one and fill in reason)

1. Yes, I have more negative feelings toward continuing education now that it is mandatory, because _____

2. Yes, I have more positive feelings toward continuing education now that it is mandatory, because _____

3. No, mandatory continuing education has not changed my negative feelings towards continuing education courses, because _____

4. No, mandatory continuing education has not changed my positive feelings toward continuing education courses, because _____

11. I prefer to attend continuing education courses at: (circle only one)

1. Professional association meetings
2. A school of dental hygiene
3. A conference or symposium
4. No preference
5. Other (Please describe _____)

Section III: BEFORE MANDATORY CONTINUING EDUCATION

Directions: Please circle the appropriate number which indicates how important the following factors were in your continuing education course selections **BEFORE** mandatory continuing education became effective in the Commonwealth of Virginia (**April 1, 1995**).

	<div style="display: flex; justify-content: space-between; padding: 0 10px;"> Very Unimportant Unimportant Somewhat Unimportant Somewhat Important Important Very Important </div>					
	1	2	3	4	5	6
12. Professional improvement and development	1	2	3	4	5	6
13. Interaction with other professionals	1	2	3	4	5	6
14. Cost	1	2	3	4	5	6
15. Course time	1	2	3	4	5	6
16. Subject	1	2	3	4	5	6
17. Personal benefit	1	2	3	4	5	6
18. Job security	1	2	3	4	5	6
19. Mandatory requirement for relicensure in another state	1	2	3	4	5	6
20. Paid for by my employer	1	2	3	4	5	6
21. Required by my employer	1	2	3	4	5	6
22. Location	1	2	3	4	5	6
23. Course/vacation combination	1	2	3	4	5	6
24. Course presenter	1	2	3	4	5	6
25. Hands-on course format	1	2	3	4	5	6
26. Improvement of client care	1	2	3	4	5	6

Section IV: AFTER MANDATORY CONTINUING EDUCATION

Directions: Please circle the appropriate number which indicates how important the following factors are in your continuing education course selections **AFTER** mandatory continuing education became effective in the Commonwealth of Virginia (April 1, 1995).

	<div style="display: flex; justify-content: space-between; padding: 0 10px;"> Very Unimportant Unimportant Somewhat Unimportant Somewhat Important Important Very Important </div>					
	1	2	3	4	5	6
27. Professional improvement and development	1	2	3	4	5	6
28. Interaction with other professionals	1	2	3	4	5	6
29. Cost	1	2	3	4	5	6
30. Course time	1	2	3	4	5	6
31. Subject	1	2	3	4	5	6
32. Personal benefit	1	2	3	4	5	6
33. Job security	1	2	3	4	5	6
34. Mandatory requirement for relicensure in the Commonwealth of Virginia	1	2	3	4	5	6
35. Paid for by my employer	1	2	3	4	5	6
36. Required by my employer	1	2	3	4	5	6
37. Location	1	2	3	4	5	6
38. Course/vacation combination	1	2	3	4	5	6
39. Course presenter	1	2	3	4	5	6
40. Hands-on course format	1	2	3	4	5	6
41. Improvement of client care	1	2	3	4	5	6

APPENDIX C
COVER LETTER - SECOND MAILING

OLD DOMINION UNIVERSITY

Gene W. Hirschfeld School of Dental Hygiene
and Dental Assisting
College of Health Sciences
Norfolk, Virginia 23529-0499
Phone: (757) 683-4310
FAX: (757) 683-5239

October 15, 1997

Dear Dental Hygienist:

Recently I mailed you the "Dental Hygiene Continuing Education Selection Questionnaire". If you have completed and returned the survey, thank you for your input. If not, please do so as soon as possible. I have enclosed a duplicate copy for your convenience. For this study to be representative of the dental hygiene community in the Commonwealth of Virginia, it is important that I receive as many responses as possible. Information obtained from you and other licensed dental hygienists will help sponsors and developers of continuing education to plan courses that you want to attend.

The return envelopes have been numbered for the purpose of determining which questionnaires have been returned. Numbers will not be identified with any particular questionnaire so your responses will be completely confidential. Results will be reported in group form only and will be available, upon written request, to the School of Dental Hygiene and Dental Assisting, Old Dominion University, Norfolk, VA 23529-0499. Your participation and prompt response are greatly appreciated and will contribute to the results of this investigation.

Sincerely,

Melissa Sainsbury, RDH, BS
Master Degree Candidate
School of Dental Hygiene and
Dental Assisting
Old Dominion University
Norfolk, VA 23529-0499

APPENDIX D
SURVEY COMMENTS

Questionnaire item # 3- Since graduating, have you always been required to attend mandatory continuing education for relicensure in a state other than the Commonwealth of Virginia?

2-No-list of states:

Michigan
New York
Illinois
Florida
Rhode Island
D.C.
Tennessee
Georgia
New Jersey
California
Texas
North Carolina

Questionnaire item #5-What is your primary employment setting?

5-Description of other dentally related setting:

64-Sales representative calling on dental offices.

102-Dental consultant and lecturer

Questionnaire item #8-After mandatory continuing education became effective in Virginia (April 1, 1995), did you perceive a change in how you selected a continuing education course?

1-Yes, my motivation for selecting a course changed because:

3-for the first time many new choices were available

6-More CEUs the better

8-I am more concerned with the number of CEUs each class offers

9-I have to have the hours now

11-More information was more readily available

12-There was a requirement for post-tests

13-Now I take classes just to meet the required 15 hours as opposed to before when I took classes that interested me

14-of the high cost of some C.E. courses

15-I looked for the CE that would offer me the ># of hours

16-I want to get the most hours for my time

17-the law changed

20-I wanted to do home study courses

22-I needed to take more courses so I was open to more topics.

23-I knew I needed a certain #!

24-of personal expense and if it affected my regular days of work

25-now I choose according to how many hours and if I think I'll gain something from the course to aid in my patient care.

27-I need a total of 15 hours annually

29-I need 15 credits

31-I choose rather than my boss selecting for me and my time is very valuable

32-Now I primarily choose courses that offered a high number of CEUs

34-I only selected courses with post-tests

35-I wanted the most CEUs for my money and time expended

39-they must be approved and include the post-test

41-Yes, I choose courses that carried a higher number of credits

43-of costs involved and time off to take courses

44-I would sometimes take a course I was not particularly interested in because it was low or no cost and/or gave me the required no. of CEUs

47-of the post test I had to make sure that each course offered a post test

48-it had to have substantially > hours

53-Of the post-test requirement and the type of courses required.

55-I needed them to maintain current licensure.

56-wanted to get hours in quickly; didn't select as carefully.

58-To keep me motivated there is only so many courses available.

59-the course needed to have a post-test and be accepted.

61-I was able to choose more courses, not go to one course selected by DDS for the office, usually OSHA/HIV update.

62-Before April 1995, my dentist always chose the courses. Now, he still chooses courses but I also choose other courses that interest me.

63-I need the credit.

70-Because most of my CE courses were with children's education, medications, CPR, etc. which also relates to my dental practice I am also a special needs foster parent-I now still do 20 hours of child development related and 15 hours have to be approved for dental hygiene, sometimes I can overlap them I usually end up with about 32 hrs.

71-I became responsible for the total expenses involved so variety and new topics became my focus. Course proximity is also a consideration.

79-I chose more full day courses to receive more credits.

87-I needed to find a course with the most CE credits.

94-the post-test was required and my choices were more limited now that the post-test is not required I have more choices.

95-I looked to see which course had the most CEUs rather than content.

100-I was more concerned with how many CEUs each course offered-Still wanted to take an interesting, practical, and informative course.

103-I wanted to attend a course of interest to me.

105-mandatory requirements-update info and general interest.

106-my own interest and the education for my patients.

107-Virginia became mandatory and more options became available to me.

110-I chose my own courses, rather than the dentist I worked for choosing them for me.

111-I needed courses close to home and not too high priced.

112-I wanted to get the best possible out of a course.

113- I did several at home study courses.

117-more correspondence courses of great interest to me became available.

118-At the same time I was considering going back to work in the field, so I needed to update my knowledge.

119-of the hours and cost involved for some many hours each year.

121-Previously, I took courses that were specifically relevant to my practice, Now I'm often forced to take totally irrelevant courses just to get required hours.

124-the location, subject matter and cost of the course.

127-cost and CEU nature became more significant.

128-because the selection of courses offered was so much greater and I felt I had much more of a choice in what I attended.

130-more emphasis on Peri, Patient education.

131-of the fees. I still take 1-"good" courses then fill in the rest with free or "bad" low education value courses.

133-I felt some stress in accomplishing 15 hours of credit.

135-I looked for courses that were offered close to home and which did not conflict with my work schedule.

136-I am trying to apply the CEUs to help me and my patients.

137-I need them for license renewal

138-I have to go when it is convenient, so what even is offered I go regardless.

139-of cost, content and location

141-the regulations require that the course pertain strictly to the practice of dental hygiene-ex. No stress management.

142-previously my employer chose the courses and I attended with him.

145-I was always looking for a course that was convenient and affordable.

148-I selected classes that contained material I had not covered since hygiene school.

149-might squeeze in a course before April 1 that may not have been something I needed.

155-I didn't want to travel far for course work. Chose what I needed to take that I could attend within a few hours of home.

156-I wanted to receive as many credits as quickly as possible due to a shortage of free time.

159-I was looking for courses with a post-test.

164-I was interested in maintaining current learning status even though I was retired.

166-I had to see how the courses related to my work hours.

171-I needed to find one with the post-test. It made it complicated to go to an out-of-state meeting at first because not everyone had the special little post-test for Virginia hygienists.

173-time frame to meet requirements.

175-if I had to have CEs I wanted to go to interesting courses.

179-I wanted to fulfill my requirements in a timely manner.

183-required post-test

184-I chose topics specifically geared to my practice and personal growth.

186-I feel I can take more diversified courses because there are more to choose from.

187-courses have greatly increased in cost and this has greatly limited my choices to fit within budget constraints.

188-I then needed the mandatory hours.

190-tended to select courses early in year in order to assure that I met deadline.

191-I had to take courses and being as I am not working as a RDH presently I chose courses that I need to keep up on being as I am not working.

194-I now make sure a course will count towards my CEUs before taking it.

195-I had to have the credits. Now I have to pay for boring or unwanted classes just to get 15 hours in. Finding that many hours without missing work is hard around our area.

196-I had to pick approved and post-test courses to satisfy my license. Many courses I would have taken on my limited free time did not offer post-tests.

200-towards the end of the year I'd often attend any course regardless of my interest in the topic just to fulfill the mandatory requirement.

203-they had to be hygiene based.

204-I needed to meet the minimum 1.5 CEUs required. Took more courses and took what was available at the last minute.

205-I had a far greater selection and I could choose courses more leisurely and those with more appeal.

207-I was now required to participate and wanted courses of interest to me.

208-any courses I took were initiated by my dentist employer.

211-I look forward to learning more.

213-I work mainly in an orthodontic practice and CE for ortho does not count for hygiene.

214-North Carolina also implemented CE and required the courses be related to direct patient care.

2-No, my motivations for selecting a course did not change because:

2-I still looked for interest and cost effectiveness

5-I still take courses I'm interested in

-Still must be an appealing subject-I just took more due mostly to availability of good courses.

7-My desire to increase my knowledge did not change

10-I always studied what particularly interested me

18-I take courses I feel will advance my knowledge

19-I have always enjoyed learning and improvement overall for my hygiene career.

26-I'm not going to attend a CE class I'm not interested in just for the credits

30-my courses were already varied.

33-I've always gone to whatever interested me

36-I attended CE courses regularly. I probably try to get the most for my money now

37-I have always believed in continuing education

40-based on availability I take the subject matter I am interested in

45-I went to only lectures I could learn from and apply

46-I enjoy dentistry and love to further my knowledge in the field

50-Usually suggested course of interest to the dentist who employs me

52-Improvement of client care was just as important before mandatory CE.

54-I continue to take classes of interest.

60-I usually choose perio, OSHA, Practice management courses.

65-In the office in which I work, we have always taken a wide variety of classes.

66-they have always been dental related.

67-I've always taken what was interesting to me.

69-I try to select courses that are interesting to me whether it is mandatory or not.

72-the end result I desired remained the same.

75- I always chose courses that I thought would benefit my skills as a hygienist.

76-I have always attended continuing education courses and have elected them to be very diverse.

77-I always felt that CE was important.

78- I chose what sounded interesting and challenging.

80-I've always tried to select CE that were of interest to me.

81-I always took courses that interested me.

83-I have always chosen those courses that met my interests, but I do admit I find myself checking the number of credit hours I will receive.

84-Never gave it much thought.

86-I still select courses that specifically interest me, I just take more classes now.

89-topics related to dental hygiene were of interest to me prior to mandatory CE and remain so.

92-Courses I would like to take have not been offered.

93-I have always felt CE is very important to remain current and active.

97-I continued to select courses that were of interest to me.

99-I chose courses of interest to me and of use in furthering the quality of my work.

109-I took the course I was interested in and often could benefit the practice.

114-I selected them based on personal interest and how they relate to my practice setting.

115-I had previously only selected courses pertinent to my practice.

116-I look for a variety of courses for broad education.

120-I have always been interested in continuing education.

122-I was always concerned with course material.

123- I still attend courses that are of interest to me.

125- I choose what interested me.

134-I always took a course that could benefit me in dental hygiene or something was interesting to me.

140-I usually choose something different that will interest me.

143-selection based on course content.

144-I feel you should always take courses to stay abreast of your field.

146-I still choose areas where an update is needed.

147-I have always taken courses of interest to me.

150-I would be interested anyhow.

151-I was already in the habit of selecting courses according to my interest.

152-I only enjoy applicable courses.

153-I choose courses that are interesting.

154-I've always tried to select courses very related to what I do.

158-I always take the course that interests me the most.

160-I always have enjoyed and sought new improved techniques.

161-My purpose has always been to increase my knowledge base regardless of a mandate.

162-I am learning to improve my knowledge not to meet state regulations.

163-I still select courses that I am truly interested in expanding my knowledge in and that I feel will benefit me.

165-I previously didn't attend many continuing education courses.

167-I still picked courses that were of interest.

168-I still take what I'm interested in. Now there are more choices.

169-I use CE courses to fill in gaps in my knowledge and to keep my mind active, I forget a lot.

170-my boss paid for part of our courses.

174- I pick courses that are of interest to me.

177-The profession of dental hygiene continues to change, ie-new materials and skills

178-I have continued to use my interest as my guide. Also, I evaluate my need to "brush up" on something (or initially learn) to help me decide.

180-I try to always select a course that I'm interested in.

181-I tried to choose thing relevant to my needs/my practice's needs.

185-I was already involved in continuing education on a yearly basis.

189-I look for what I need or am interested in and is economical-as many hours as possible in a weekend.

192-I choose courses of interest to me regardless of the number of hours required or not.

193-I feel that the courses available meet my professional needs.

198-I choose courses by interest.

201-I've always been interested in learning more about diagnosis, medical emergencies, and infection control and pharmacology.

202-I always wanted topics that would increase my "dental" knowledge.

206-I have always chosen courses to expand my knowledge of my area of dental hygiene as well as other areas not as familiar to me.

209-I took classes that were of interest to me.

210-it was close and interesting.

212-I still looked for courses I was interested in-just didn't take something because of the hours offered.

Questionnaire item #10-Has mandatory continuing education changed how you feel about continuing education courses?

1-Yes, I have more negative feelings toward continuing education now that it is mandatory, because:

9-Sometimes it is difficult to get all the required hours

13-I feel forced to spend time and money just to meet requirements and often feel forced to take classes that do not interest me.

14-Of it's cost. Not all employees pay their hygienists for the cost of C.E.; a day off from work is at the employee's expense

15-I'm not attending because of desire but because of law!

16-You have to be tested

19-Only because at the time we had to have post-test-very degrading!

23-I feel pressured to take a certain amount per year

29-there has been an increase in courses whose primary reason seems to be to make money for the provider

30-Only certain courses are approved

35-I am required to spend my money to keep my license active-there needs to be more variety of courses to choose from

38-a post test is required and the dentists are not required to take a post test

49-it requires post-test

55-of the time and money for 1.5 CEU's needed-Must loose work time to attend courses plus pay out of pocket.

73-I have to take the course now. 15 hours is too many per year. Cost too much. Time, you finish 15 for one year-you have to think about it again and again. The other state I am licensed in is 12 hours every two years-which I agree with.

76-I have less leverage in selecting a variety of or in the courses.

78-it has put a different perspective on why you would take a course. Putting your time in rather than learning from the course.

84-I do not like the post-test that we have to take-If I move out of the State of Virginia will a CEU still be mandatory-It is costly and the courses are not of much interest at times.

90-I tend to pick a course based on timing and credits and money instead of interest of subject.

93-the quality seems to have decreased.

96-in general the content of the courses does not impact on my daily experience as a dental hygienist and I am forced to pay for courses that so far have not been beneficial to me or my patients.

106-the rush to get 15 hours withing the mandatory time with 2 small children and finding sitters. Even finding time to read is almost impossible with a 2 year old infant.

119-15 hours of CEUs seems excessive for 1 year. The cost plus the time involved are high for a hygienists. The choice of courses being limited for hygienists means I will be repeating the same courses every couple of years which means I'll spend time and money on the same courses over and over.

121-I simply don't like "Big Brother" standing over me to take "x" number of hours. It implies that hygienists are too irresponsible to continue their education without fear of reprisals if they don't.

122-of cost!

124-so many of the courses are repetitive and not much changes from year to year, for example OSHA reg. also I wish hours could carry from year to year.

131-it is just a check in the box for most people. Most of it turns out to be money just changing hands.

133-I have seen an increase in prices for certain CE classes. Some classes that I do want to attend are much too expensive or are too far away to attend.

137-Seminars and courses are less likely to be available in rural areas. Travel time, accommodations and expense are unfair factors for rural residents.

138-I have to have the points but have to go when I can get away from the family-which is not always easy.

141-now I'm forced to take courses-I'm not taking them because I want to-I'm counting credits.

150-of pre/post test which doctors don't do.

152-I am sometimes forced to choose a course because I need the credit, not because it is one I would otherwise choose. Raising small children, courses I'd enjoy aren't always close enough or timely enough to go to as I'd like.

155-I don't want to be told I have to do something. I feel I made a commitment to staying on top of this science when I became a hygienist.

156-I did not like the post-test requirement. Now that the law has changed maybe it will be a more positive experience. Also, some courses are very expensive so I can't attend even if they seem interesting.

163-there have been times when course I was really interested in taking were not convenient but if I felt I was pushing the deadline for license renewal I might have to take a second or third choice over my number one choice.

164-I feel it is just a means of state obtaining more money and not geared to providing quality learning experiences.

173-the courses are too often put on by anyone having the slightest knowledge of dentistry or running a practice.

176-I usually have to travel 1+ hours to attend. There aren't any locally. It's a day's chore to attend due to travel. Some courses are 3 hours travel or more.

182-I feel as if I must get these credits regardless if I'm interested in the topic .

184-much of the info offered in the courses is review of previously taught material or already available in professional journals.

187-I am forced to depend more on my employer for funding and therefore forced to accept his/her choices rather than my own. Frustration that when I am unemployed I have additional burden of trying to pay for overpriced CE.

188-at one time a post-test was required.

189-it is difficult and expensive for me to travel to courses. I live in a rural area. I agree we need mandatory continuing education, but the number of hours and criteria for a course of study seems excessive. I would like home study to be easier to get credit for.

192-I am a person who doesn't like to be told what to do. I feel I was a hygienist who performed her duties well and maintained a high standard of care without required courses.

195-it's hard to find 15 hours of good credits without missing work, or a weekend with my family. It's the number of hours required that makes it hard.

196-I resent attending a course that is of poor quality as many companies are putting out quantity over quality. Education is becoming a money making business.

201-The students are present for the hours and not present to learn. The professors are aware of this and teach differently. This was my experience while attending courses at ODU. I get my hours elsewhere now.

210-I would like to take courses that are convenient as well as interesting without time pressures and constraints.

215-I feel after several years things are becoming very repetative. I would like to see more varied courses offered.

2-Yes, I have more positive feelings toward continuing education now that it is mandatory, because:

2-more choices in courses allows you to choose topics of interest and the chance to learn something new give you a more positive attitude.

4-I feel it is critical to those who have been in practice for many years-not all-but a lot of whom are not up on a lot of thing preferring to practice as they did in year one.

10-I realize it keeps me sharper and revived as a hygienist

11-There are a variety of courses even unrelated to dental hygiene-ex. DNA explained by FBI agent-Memory-Mind Matters Seminars.

12-Course selections have more depth and more relevance

17-I can justify absences to my employer. There was no reason to go before. There is an enormous amount of new information in the journals.

25-I think it is beneficial for dental professionals to "stay current" on techniques and information relating to patient care

31-I know I will always be kept up to date in my field

40-There is more course selection

43-I've always known I should do more continuing education and this has given me the push to do so.

51-I feel that I want to put my time into a course which would be most beneficial to me as an RDH.

52-I'm glad the public, political figures and dental personnel realized and felt it was a positive knowledge expanding way to improve care for patients and ourselves.

54-I worried about patients who were being treated by dentists/hygienists who never took continuing education classes. Hopefully people will now keep up with the changes in our profession.

61-I think seminars have to be more "competitive" offer something of real use in everyday practice. Even though I attend more courses, I choose the course and I want something of value in practice-maybe, more info. for my money. As consumers we are more selective of how we spend our mandatory time.

62-I am more motivated to look into courses that interest me and CE courses keep me updated in what's going on in dentistry and dental hygiene. Plus, I don't feel as stagnant when I update myself with theses CE courses.

66-I think it has opened up more choices for dental hygienists.

67-more selection.

74-I am required to stay in contact with new information.

79-I am more motivated to attend courses and incorporate new techniques into daily practice.

99-There are more and better quality courses overall.

103-I find I enjoy going to courses more than before. I enjoy attending as well as being with peers.

105-it encourages me to stay up on new ideas and techniques. I like my profession better because I am growing with the dental profession as it grows and expands.

108-more classes and speakers are available to us. Better selection.

110-you have to be more motivated to take them.

111-it keeps us up to date in the dental and health field.

114-the entire dental hygiene community is being educated-even though our course work may be different-we are all learning more then we would otherwise.

115-I graduated so long ago that I needed to stay current. I also believe that mandatory continuing education improves the quality and perception of our profession.

116-let's face it, it motivates us to do it promptly and take more courses.

117-of course quality and diversity.

118-I believe continuing education is important for active hygienists-many things have changed in the last 25 years-I'm sure many hygienists have not kept up-But it is an expense, with no employer to help, for inactive hygienists.

125-it raises the level of knowledge in the overall-dental hygiene community.

128-my boss is very much more willing to pay for these courses given it is required for licensure renewal. Also, I have enjoyed attendance, several non-dental related courses that I would have probably never have gone to had these CE requirements not been mandatory.

136-it is allowing the RDH's to get together and learn, to make us more united, and to keep active in our profession.

139-the courses I have chosen have been very enlightening. I also have taken some home study courses which I like as well if not better than attending the class.

140-I enjoy taking the courses. I wish they were tax deductible. I would spend more money if there was a tax advantage.

146-I know that more professionals are now seeking continuing education.

148-course selections are more varied.

151-I am an older dental hygienist. CEUs keep me abreast of the field.

157-I feel I need the "push" to make the time to do continuing education courses. Making them mandatory inspires me to keep current.

158-It motivates me to stay informed-on new techniques or approaches to treating patients as well as keeping up to date on the changes.

169-I felt it was important and there is more incentive.

165-I can now see the benefit and need for updating knowledge through these courses.

166-any new education improves attitude and ability as a hygienist and for a practice.

168-I get to interact with other hygienists.

172-The dental profession and science are changing and I always was aware that continuing education would be a necessity if I decided to go back to work as a dental hygienist.

174-I feel it is very important to stay aware of new techniques and research.

175-since we all have to go subjects are wider-newer subjects.

178-even though I continued my education and enjoyed doing so, the extra "umph" of having the authorities think that it is critical and demand it excited me. It gave me the excuse to do more of what I love to do.

179-I feel it is necessary.

190-courses should be available and easily attended. Group turnout should be good when CE is required. My colleagues can grow professionally as well as myself.

191-we need to keep up with issues that effect hygiene, AIDS, HIV, new sterilization, disinfections solutions, infection control, how to treat patients better.

194-it lends more credibility towards our profession.

200-it's important for the profession to keep up to date on any issues or topics that are related to our field. Continuing education courses offer us the latest updated info.

202-I feel that the profession can only benefit from quality continuing education.

205-I feel very strongly that everyone needs to continue their education in our ever changing field however, I'm sorry that it had to become mandatory in order to get compliance.

208-before I did not take the time or had the interest to take continuing education courses. Most of my continuing education was obtained through dental hygiene magazines or newsletters etc. Opportunity to get back into classroom setting and learn with other hygienists.

211-I enjoy seeing my peers more often.

214-it forced me to enhance my skills/knowledge and I have enjoyed the added education.

3-No, mandatory continuing education has not changed my negative feelings towards continuing education courses, because:

2-much of it is so very repetitive

32-I think and have always thought that as professionals we need to stay updated with new and old information so that we can keep our patients informed. We achieve things through publications and continuing education

57-I dislike being told this is mandatory and none of my bosses will put up the money for these expensive courses.

58-the courses are the same, I believe there is a need, I just wish we had more topics to choose from.

92-I spent more than 40 hrs. A week working and I have little or no time. The courses take away more of my time.

101-I feel that continuing education is most beneficial to those providing the continuing education-financially!

4-No, mandatory continuing has not changed my positive feeling toward continuing education courses, because:

1-I've always enjoyed taking CE courses.

6-I have always felt it was important.

18-Always felt it was important to keep current

20-I feel I will get something out of it

24-I feel it is our responsibility to stay as up to date as possible in all aspects of our profession

28-I already believed in it anyway

33-It makes no difference because I will always be interested in attending continuing education to stay up to date, meeting other people in my field.

34-I enjoy learning new things that may help me in patient care

36-part of being a healthcare professional is being a life-long learner especially in your ever changing field of interest

37-it is needed to stay abreast of current dental materials and technology

39-I have always enjoyed CE courses

41-I feel that they are an integral part of any professional career. We must keep current on all the changes in our profession

44-I have always believed in and tried to attend continuing education courses, but it has made me a little less discriminating about what I took

45-I have always thought they were important and used to go with my husband sometimes even before I was a hygienist

46-I have always been self-motivated in gaining more knowledge in my field

47-I enjoy learning and keeping current in my field

48-I have always believed in staying current in my chosen profession

50-I feel that CE courses are important and should be a requirement for all dental hygienists I do not agree with the post testing that until recently had been mandatory

53-with the ever changing field and studies we need to keep abreast of the changes.

56-there is a need to rejuvenate information not used on a regular basis and stay on top of new information.

59-I love feeling informed-I just wish employers were required to pay for them!!

60-I have always attended courses throughout the past 19 years.

64-the variety and caliber of speakers is enhanced when funds are available to pay them- and money is now as RDHs must attend.

65-I feel that I need to take CE classes, whether required or not, to keep me up to date on the latest and best happening in dental hygiene-I want to treat my patients with the most up to date knowledge available to me.

68-I've always felt it was important to keep ourselves updated and well informed.

69-as a professional continuing education is important whether it's mandatory or not.

70-I enjoy keeping up to date. A lot of the courses I truly would take just to pick up info.

71-I still seek courses with interesting content, though the expense of some offerings out of my local cut my interest very quickly.

72-I benefitted from them 20 years ago and I benefit from them now just the same. And so do my patients.

75-I believe in continuing education and learn as much as I can regarding new and improved techniques and equipment.

77-I have always felt that it was an important part of my career.

80-I've always enjoyed it and gotten a lot out of it. Also, my employer pays me for the hours I am in a CE class.

81-I feel everyone needs to brush up on all subjects.

82-I have always been in favor of CE. We all need to "keep up" with changes in dentistry.

83-I believe I benefit from these courses and enjoy the classes that I take.

86-I have always enjoyed CE courses and valued the knowledge gained.

87-I feel it is very important.

89-if one is to deliver excellent care staying current in the field is a must.

95-I always took them anyway now eventually you will be repeating courses though.

96-there is always something new to learn and even though I kept up, I'm glad other hygienists now have to.

97-I think it's very important to stay abreast of current information.

100-I feel it is very important for each dental hygienists to keep current with changes and keep knowledge fresh by taking CE courses. Mandatory CE forces me to attend courses I might not otherwise, especially since I am a homemaker presently. I am glad about the requirement.

102-committed to CEUs

107-I have always pursued continuing my education. I've been in the business long enough to feel confident in what I do, because of the broad understanding I have acquired through continuing education in the past 14 years.

109-I have always felt CE is important-not only to keep up on the latest but to better one's self.

112-I think taking courses and updating is a good thing.

120-it will benefit all of our patients and help promote the best/update care we can give.

123-I have attended courses whether they are mandatory or not.

126-I feel it keeps me up to date in my profession.

127-I've always felt CE was important.

130-I feel continuing education is a responsibility.

132-I've participated in CEU courses to be better informed on presented topics. That reason has not changed.

134-I am always interested in learning.

135- I have always enjoyed going to the CE courses.

142-dentistry is ever changing. We need to keep our knowledge and skills up to date.

143-I've always desired to increase my own knowledge to better treat my patients.

144-I have always taken continuing education courses.

145-I feel as a professional I should try to keep up to date on the latest information.

147-I have always felt it was essential.

153-I like learning new trends and becoming informed about products and treatments available for patients.

154-it's always been something I've tried to do, just more to choose from now.

160-I have always felt it is my professional duty to provide the best and most advanced care for my patients.

161-I feel it is my professional obligation to provide the best quality care available and I wish my colleagues would feel the same way.

162-If a person does not keep up with what is happening, they cannot be up to date in practicing their profession.

167-I feel they are necessary to keep up with advances in dentistry.

169-dentistry and medicine have changed so much and I want to stay on top of it. My patients are very complicated medically and I need to know for them. After all we are a service organization.

170-I still feel new developments and literature are changing and I like to keep up.

177-I think it's very important to keep up with changed in our profession.

180-continuing education, whether mandatory or not, enhances my ability to provide quality care to the patients I treat.

181-I have always thought they were a good way to keep knowledge current.

183-I feel it is important to be informed of new techniques and to update and review products and procedures in order to better serve ourselves and our patients.

185-I have always felt that continuing education is a critical part of one's profession.

197- I have always felt a need to learn materials associated with dental hygiene in order to keep current.

198- I think it should have been mandatory all along.

199-I have always wanted to keep up with the latest information and want very much to give my patients the best care.

206-I have always enjoyed the on-going learning experience whether or not it was mandatory. I not only enjoy the interaction with other professionals, but also look forward to returning to the practice with new knowledge and skills to better benefit the practice and patients.

Questionnaire item #11-I prefer to attend continuing education courses at:

5-other description:

-Home study

-Comfortable hotel setting

Correspondence

Questionnaire item #42-What could developers of continuing education courses do to make mandatory continuing education a positive experience?

1-Convenience, Cost/hour of course, weekend extravaganza-more hours withing a weekend.

2-I'm not sure that I can answer this in a positive fashion, but I will try. Oral pathology courses should cover more relevant, common pathology as opposed to the extremes that are rarely experiences in general practice. Having the longer programs in nicer facilities with catered meals is always a plus when spending several hours for one course-classrooms are not pleasant for longer programs.

3-Offer a variety of courses. ODU seems to offer the same courses every year. Expand courses to include a total healthcare approach; courses that would appeal to all health professionals.

4-I like short courses-it's easier to digest stuff in small bites - 4 or 3 hour courses in one day is better than one long one. I've taken some cruddy courses "targeted" to the hygienist - if they make that claim it better be true. I sat for 6 hours on surgical implants step by step to hear 15 min. Of implant care only to see a slide of "what is called a floss threader". Some courses are good for DDS, DH, and DA but not many. Current/new products, procedures and concepts are always gonna be hot topics.

6-More CEUs per course

7-This year I was very disappointed that ODU canceled four out of the five continuing education courses which I had signed up for. I thought the courses would appeal to all hygienists. I do not participate in your February blitz because I do not believe in waiting until the last minute and putting all my eggs into one basket! P.S. I still have not received my refund for the cancellation of two courses scheduled for June 28, 1997.

9-Make it less expensive, more interesting and more relevant to our profession

10-Employ a pleasing personality and sense of humor during presentations. Plenty of visual aids, Provide notes and packet of pencil, pen and pad, etc. Allow for questions. Comfortable seating and good visibility to speaker.

11-Be concise in speakers delivery. Held in refreshing, clean, facilities (some have been dirty and depressing). Try to hold the cost down. Remember we are sometimes giving up work days to attend and unpaid by employer. Most have been very positive. Variety of Selection.

12-Allot sufficient amount of time. Handouts are an important form of review. Remember interdisciplinary needs. Include info that provides depth and challenges. Don't talk down/Talk up/Provide stimulation/thought provoking.

15-Have CE's available in each city to prevent so much travel and money spent traveling. Choose interesting topics. Choose interesting speakers. Hands-on CE to keep everyone alert. Samples given out at presentation

16-Offer them at a variety of places. Most courses are not near my home.

17-Use variety and innovative subjects

19-It would be good if courses were given "all year"- they seem to be all at the same time. Some courses are full of useless "common knowledge" that we all know. I want something that I can grasp and put to good use. No post-test was a step in the right direction.

20-Offer more home study courses so it could be done at one's convenience at a reasonable cost if it's not paid for by the employer. I also personally absorb more from a book than listening to a lecture when I compare the two from many courses I have attended.

25-It is hard for me to say. I prefer home study courses. With two small children attending out of town courses is impossible.

27-Reduce the high cost of the courses.

29-Give more weight to courses provided by colleges or universities. Increase standard level so the certification is more credible

30-More varied information, Keep very Updated, Less political.

31-So far it has been very positive for me!

32-I think that this has already been done by removing the post-test requirement. Continuing education should be a benefit that is used as a tool to help us better serve our patients.

33-They are doing fine.

34-Have courses that would be helpful to hygienists in various practice settings.

35-Make available a wider variety of course topics- I am sick to death of HIV update, periodontics, instrument sharpening, etc. I would like more courses available on: Internet, Research, Computers, Personal Improvement, Forms of Alternative Medicine- Touch for health, massage/reflexology, nutrition-use of vitamins, herbs, and supplements, iridology, binesiology

36-Have a course that addresses something new. Example: unbiased review of new oral healthcare products. Possibly how to work in the managed care system and not decrease quality of care Pharmacology updates are always needed. The reputation of the speaker/presenter is important as well. Offer 2 courses in one day.

37-The most important factor to me is the content (medically informative) and a good speaker.

39-Continue to provide us with interesting topics, enthusiastic speakers, and affordable course costs.

40-Provide a larger selection of well qualified instructors with convenient locations. A wide selection of subject matter and convenient times.

41-Delete the need for a post-test. If they need to make sure you stayed for the entire seminar, then they could have a sign in and sign out sheet. I think it is only a negative influence, especially since the doctors are not made to take one; aren't their understandings just as important, if not more, than the hygienists?

43-Continue to offer more course variety and selection

44-Make available shorter courses (1-2 hours) more often, maybe evenings once a month or more.

45-I personally am not interesting in psychology type programs. Also varying the types available helps cut down on the burn out of a topic. I don't think people realize what they don't know in order to choose a course. Example: I attended a hands-on two day perio course several years ago and a hygienists (of 20 years) asked me what eh Dr. meant about two edges on the Columbia vs one on a Gracey. I was incredulous!

46-Removing the post test was the most positive thing. Continuing education is not a punishment; the post test insulted my integrity!

47-Dropping the post test July 1997 was very positive. I can now select courses that I'm interested in , instead of making sure that I choose ones with a post-test. A certificate of completion from the course should be enough proof of attendance.

48-Review current products. Insight to new products and procedures. Sponsor clinics from companies product lines-ie. Actisite-Proctor and Gamble.

50-Developers should strive to help the attenders of their courses to feel good about themselves and their staff. They should teach them ways to implement their information quickly and easily. Attenders should leave feeling excited about their profession in dentistry.

51-Have knowledgeable and interesting speakers. Availability of courses. Possible vacation and course.

53-Give courses in convenient locations. The state has made the requirement more positive now that the post test is dropped-Now when out of state and area the courses will count towards VA credit.

54-Serve good lunches!

55-Offer coffee and donuts in a.m.-Dismiss class early!

56-Precise lecturers, with personality gives good practical information. Have varied information in courses.

57-cut the price-most of us work part-time so no employers care how much we put towards this. Make it "mandatory" that the dentists pay for hygienists to attend courses of their choice. Cut out the test at the end-we are not children and it's degrading to our self esteem since the answers are right in front of us on the course paperwork so we can just copy it. I did this in 1-6th grade. Don't treat us as if we're ignorant-if we are present at the CE course we will learn...test or no test. Make more video home study courses available-since I work 6 days a week, my spare time is too precious to go attend a class.

58-Increase the range of topics making more subjects fit the requirement.

59-I love learning anything new but don't waste my time. Please don't waste my money. Please don't misrepresent yourself. I wish employers were required to help out either with time paid off or tuition. I'm glad the post-test requirement was dropped. I wish the board would expand accepted topics to include general communication, computers, self improvement, and team building, etc.

60-Continue to offer courses. Control cost of courses.

61-Give info. That can be used in everyday practice, not just high profit practice. Info. That affects a large part of the population. Personally, we don't want to build our practice so much, as, we want to help our patients.

62-Involve the audience.

64-No suggestions since I don't practice I do want to be conversant with the latest technology, however.

65-Interaction with attendees. Great speakers. Interesting topics.

66-Re-evaluate course topics and speakers-they need to be updated and interesting. We have heard "OSHA" thousands of time and could probably write the manual. The NWVDHA is having Dr. Michelle Kotkin, a chiropractor, speak on "the cause and effects of Carpal Tunnel Syndrome"-This not only sounds interesting, but also from a efficient approach-I am sure the meeting will be well attended. We have heard about Carpal Tunnel, but not by a chiropractor!

68-I would love to go to some of the courses held at the Dental Hygiene Schools, but generally speaking they are outrageously priced especially if you have to pay for it yourself. I only work part time so I can only get payment for the one I go to with the office.

69-For the most part my experiences with continuing education have been positive. I've taken home study courses as well as combining vacation/symposium in another state. I think having a variety of topics and keeping it practical are several ways to keep thing positive. I am also glad that the post-test was eliminated - somehow it made me feel belittled. Most of the post tests were jokes anyway.

70-For me it is already a positive experience. I live near Roanoke, VA so it is easy for me to attend courses. I think traveling to courses could be my biggest drawback otherwise.

71-They could continue to offer subjects that are current and interesting to the private practitioner. Seek out guest speakers that have not been to Virginia already.

72-Broader choice of locations. Diversity of subject matter becomes more important as the years pass. Not the same courses over again.

73-Reduce fees-and still have quality instructors-course materials. Free choice of courses-example: management, financial, taxes. And have count towards credit hours since we are professionals.

74-I feel the amount required is a little excessive. Being a full time hygienists and single parent of 2 kids, I find it very hard to get all required CEUs in.

75-Keep the subject matters interesting and updated, educational.

76-My alma mater, The University of Pennsylvania has a tremendous advantage of being highly financially endowed. The variety of locations and for subject matter is tremendous. As a result, the continuing education whether professional or personal development has been stimulating. Variety, location and subject matter has been, and always will be "key" in making continuing education a positive experience.

77-Continue offering interesting courses with excellent presenters speaking about up to the minute subjects.

78-Do away with the mandatory post-test- it is a joke and a pain for the speaker to have to put together. Most of the speakers I have been in contact with recently have treated this test as an annoyance and a joke. We are all professionals and we don't need this test.

79-Select more topics that are truly applicable to private practice.

80-I don't look at it as a negative experience but course topics and interesting speakers are important to me.

81-I do not need hours of slide presentations-that seems to be all some lectures do.

83-I am satisfied with my experience with continuing education. I don't always choose a topic related to my profession but look for classes that I would like to know more about a particular subject. I do admit I sometimes pass up some courses that I would benefit from because of the cost and/or amount of CEUs.

84-Location is important, having lunch at the place of presentation is important, presentation is important- It's difficult to run out looking for a place to eat. Cost is important-if it's too expensive, people will resent it. Topics are important-I would like to see more topics about medical history-HIV-Hepatitis-Heart conditions/blood pressure. Get rid of the post-test. Cut down to 12 CEUs instead of 15. Make it mandatory for employers to pay -most large corporations will pay for it's professionals.

86-I feel that we are offered courses on a wide variety of topics, presented in all different types of setting/locations; and I've always found the courses to be educational and somewhat entertaining, so I really don't think a whole lot of changes need to be made.

88-Increase frequency of courses available.

89-It usually is a positive experience.

90-I have mixed feeling about mandatory continuing education. I enjoy taking courses and would do so on my own-but when it's on a time deadline I tend to take the first one that comes along without caring what it's about. The pressure of getting so many credits by a certain date tends to panic a mother with three children in fear of missing the deadline due to changes in schedules (example:sickness). Also with the one year Virginia law-with the summer in the middle when courses aren't given much makes the deadline come so quickly. It's all changed my reasons for enjoying courses.

91-Convenient locations and times.

92-No test. Focus more on what really happen and is needed in an office setting day to day. What to expect from patients and the true ways in which an office and/or dentist support his hygienist. I get calls all the time from girls just out of school who seem surprised how different thing are in the real world. Helping to teach and deal with these situations would be a big help.

93-Keep quality of presentation-offer new areas or ideas to improve client care due to changes in dentistry.

94-Make courses more available ie location. Too many courses are offered only in larger metropolitan areas. Although my employer pay for mine the price of the courses are very high, particularly hard for those who work part-time. The dentist/hygienist salary differences are so extreme that many hygienists have to travel or research less expensive courses. 1.5 CEUs cost and average of \$150-200. Annually. Unemployed hygienists are not likely to want to pay this if they take a break for maternity leave or part-time work.

95-Continuing variety

96-I doubt seriously that they can. I personally don't feel that providing good dental hygiene care for my patients has changed all that much in 45 years. New technologies and instruments are readily made known through journals and dental personnel. Many of the new ideas put forth today are obviously market, bottom line, driven and frankly not primarily to the benefit of the patients. The increasing prevalence of DMO's etc. are going to further this trend. My one experience with a lecture-hands-on session in a university setting was so disappointing and pathetic that I have resolved to get all of my necessary credit by mail at my own pace and the topics available have little or no relevance to my work.

97-Offer a greater variety of courses and subjects. More on nutrition, immunity, disease processes and influence on oral health and overall oral health.

99-Keep the caliber of professionalism as high as possible. Keep the choice of topics as broad as possible. Keep some topics of personal use rather than only professional-ie. Psychologically related topics.

100-Line-up interesting, informative, and upbeat speakers with a useful and practical topic. Provide coffee, juice, snacks, and lunch (for all day seminars)

101-Make courses benefit the daily routine. Courses should provide training to improve performance or provide updates.

102-More attention to relevant topics-current. Application of current clinical concepts and requirements. Participants in my courses consistently comment on how much they value the "how to's" for daily application in their practice. (More hygienists/speakers are asked for)

103-Offer varied subject matters. Make courses interesting or available inconvenient locations.

106-Have an outline. Short lunches so we can leave earlier. Be interesting, give case studies. Have a target # of hours you want over a longer period of time. 3 years or so because of multiple reasons. Some years are easier to obtain than others.

107-Continuing education has always been a personal requirement of mine. I have been very fortunate as a hygienists in the Commonwealth to have employers who willingly send their staff off to seminars. We are so fortunate here in the Tidewater area of Virginia to have so many fine institutions with in driving distances in which we can take part- I really like UNC@Chapel Hill and have gone so often, the office staff of continuing education knows me by name. I have also taken advantage of Richmond, Northern VA and Washington DC meetings and seminars. By traveling to these places I've gotten to hear a variety of speakers and met a lot of nice people. It's a shame VA hasn't made continuing education mandatory prior to 95'. The general consensus and felling I get at localized courses is that most people attending would rather be doing something else. I guess as the main stream of the persons attending these courses find mor and more courses they truly enjoy, the post test sighs will dissapate. As mandatory continuing education continues the populus will lower their guard and find out they might actually learn a thing or two!

108-Offer outline before registration to decide benefits of attendance.

109-Improve the quality of the courses. Come up with some new courses-Innovative state of the art stuff! It's always the "same ol same ol" it gets discouraging to take a class sometimes for fear you've heard it all before and will learn nothing new! Offer the classes more regional and accessible.

110-I feel it already is a positive experience. It's a refresher course on things we need to know. It also helps us educate ourselves and our patients better. Perhaps, a course on new developments in dental hygiene field ie...intraoral camera, things that we have no experience with if we didn't learn it in school. It would be nice to be up to date on the latest procedures and would also benefit the companies who sell the products to show them to us.

111-Continue accepting home study courses. Offer lower priced courses.

113-Reasonable prices, convenient locations, interesting subject matter, interesting speakers.

115-Provide more variety in actual "hands-on" experiences, rather than just lecture, lecture, lecture.

116-Broad selection, fair cost. I've been to some that were costly and then products were promoted!

117-I am extremely pleased with the courses I have taken that have related to patient care, nutrition, dental cameras, perio, anatomy and skills. I have not been pleased with the high pressure sales presentations that some speakers present on implants bridges, and cosmetic dentistry. They give no second choices for the lower income clients that I frequently deal with on a daily basis.

118-The best courses I have taken have been offered through MCV/VCU-The presenters have been great-Knowledgeable and entertaining. The cost has been very good for the quality and they usually offer lunch and snacks-another perk. The most important factor to me is that MCV/VCU has brought CE to my part of the state (Roanoke). This is very important to most people with limited time and budget to spend on those courses. I am very disappointed in what our professional associations have offered us. Their courses continue to be low quality, expensive, and inaccessible. I have no motivation to join ADHA-There are many hygienists who do not live in the Eastern part of the State. We need quality CE courses also.

120-Offer material directly related to dental hygiene.

121-Some of the courses I take are courses I would take anyway-with or without external requirements. Because these relate directly to new developments and/or methodologies in my area of practice (perio), I find them Germane and useful as well as interesting. What I object to is the fact that now, with a set # of hours required, I find that I end up taking courses that are only of marginal use or interest just to get my 15 hours. This is wasteful of my time and money and accomplishes little of value.

122-Try to reduce the cost.

123-There is more course credit given if courses are taken outside of the University setting. I would attend courses at ODU if an eight hour session gave 8 CEUs as it does in other locations (at ODU only .8 CEU's are received) Can not compete time and cost with other programs offered. Although the education experience might be better.

124-They could offer more interesting subjects and drop the cost of the courses considerably.

125-To do them on weekends so that we don't have to loose salary.

126-I am a Seventh Day Adventist so offering courses on a day other than Saturday is very important to me.

127-It has been so far.

128-Give a variety of topics (perio is good but is that all they can think of?), Keep cost as low as possible, convenient locations.

129-Offer a variety of formats for presentations (not just lecture format), encourage active participation by audience during part of the course. Offer course outline/objectives to be covered when promoting courses. Adhere to publicized course schedule (begin and end time), Offer participants printed handout materials., Require less time.

130-Course outlines for "home" use after courses. Offer ½ day or full day options (3-6 CEUs). Practical topics, ie patient motivation, perio, new products. Trained presenters.

131-More classes on keeping up with dental education and less on running of the office and what we look like and think like.

134-Less technical. More hands-on and practical.

135-Provide interesting speakers and have a variety of topics to choose from.

136-Let's talk about what we can do to become independent from the dentist. How can we become our own profession if it means all gather in Richmond. Make it worthwhile, or a letter to the Senators. In other words, educate the hygienists more about what we need to do as a profession, all the topics represented can be read about in our journals we need something more exciting.

137-Offer more home study courses. I am aware and have utilized the ADHA's home courses, but there should be more options.

138-Lessen the amount required in a years time. When you have a family-plus work full time it is hard to get all these hours in plus work and spend time with family and friends-which is very important to me. I think continuing education is great and it always gives you a new outlook on your job but mandatory ruins it for me! I like to pick my courses for subject not for CEUs! Or that I have to go because it is the only time I can fit into my schedule.

139-I find the variety of topics in the home study courses very attractive. It seems at first (after April 1995) there was an over abundance of perio courses offering new and better ways that seemed to be the same old thing! Now, fortunately I'm receiving info on many different topics-for example I will be attending the mind matters seminar in Oct.-dealing with memory, anti-depressants and Alzheimers disease. Also a major concern is cost. Since my time and money are valuable I find it ridiculous to spend \$50 for less than 5 credit hours. That is why I usually choose to take at least one home study course. I've been surprised by the in depth subject matter-I don't think I have to take time away from

my family. I do like interaction with other hygienists so I like a combination of Home study and attending CE courses. I feel the handouts should be as in depth as possible for review at later dates.

140-Include lunch

141-don't be dry and drag things out. Keep the topic moving-possibly finish 30 minutes earlier than the scheduled time-This is always pleasant. Encourage a little group discussion instead of all lecture. The post test is a joke-drop it and attend the course and use only the certificates as proof of attendance.

142-As a mother I would like to see quality continuing education closer to Danville. Whenever I attend a course I must travel at least sixty miles in addition to the time that I spend at the course. Averett College or Danville Community College would be a great place to offer courses. There are many dental professionals in Danville and surrounding areas ie Martinsville, South Boston that I am sure would support any courses offered.

143-I am currently relocating to another state and am undecided about continuing employment in dental hygiene. I have no thoughts or suggestions to offer.

145-They could have good visual and audio aides to keep the lecture interesting. Have courses with info relevant to patient care.

147-Offer a diversity of topics-include more hands on courses-Utilize the dental clinics available at MCV for intensive perio courses (to negate the need for travel to another state for the course)

149-Be very organized. Most attendees are not only paying for the course but also losing pay and /or production by not being chairside.

150-Treat as professionals that we are and as co-therapist.

151-Questionnaires-either at the end of a course or by mail as to what topics, location et. The dental hygienists would prefer

152-More locations-closer to my home/office (Warrenton, VA)

153-Keep them: interesting, not too costly, not too long!

154-Noting that I can think of. Continuing education is what you make of it.

156-Continuing a greater variety of courses. Less expensive.

158-To offer more variety of topics and to get efficient and dynamic speakers. Also, to choose different locations-sometimes I find a lot of the good courses I would like to take are offered too far from where I live.

159-More question/answer time. Not so much lecture.

160-I feel the greatest change that has occurred is that there are those who have used mandatory continuing education as a quick money maker. I have found many courses to be of poor quality. Lack of organization, poor visuals and written hand-outs. A registry of approved speakers with a testimonies from former students would be good. Most courses provided questionnaires of performance.

162-I do most of my continuing education by correspondence courses and am generally happy with the courses.

163-Consider cost-my employer does not pay for continuing education nor my salary when I attend. Consider locations also due to costs. More in depth and hands-on formats would be more appealing.

164-More courses available (need greater variety). Lower cost of courses. Make CEUs more accessible to achieve without having to travel to Universities or large cities. Make content more applicable to dental hygienists (as apposed to nursing for example). Courses should have more hands-on approach-not just theory. I don't feel I should always be discriminated against because I am not a member of ADHA. When I am not generating any money as a dental hygienists, I do not feel I should pay so much money to be a member of ADHA. But I have wanted to retain my VA licensure (I have let all others expire). But, there should be exceptions for retired hygienists-maybe fewer CEUs.

165-I already think they are doing a good job. No complaints. I am happy though that hygienists in VA are now not required to take the post test.

166-Good, energetic, fun speaker. Easy to follow lecture. Good food. Interesting topics.

167-Topics of interest and practical application. Convenient locations and times. Cost.

168-Provide interesting topics about stress management, human relationship topics-more than dry subjects like instrument sharpening. I know I pick presenters that are interesting and even somewhat entertaining-instead of someone who just offers a boring lecture.

169-Offer a variety of topics. The rest is up to the individual because many hygienists have forgotten it is for their own personal benefit and they are here to serve the patient.

170-Be alert to the fact of promoting your own products vs. Important information. The CEUs by particular companies are less educational then by a presenter who isn't attached to a particular company.

172-Interesting teachers presenting current, relative material for a reasonable fee would make continuing education a positive experience.

174- I think they do a good job.

175-Interesting and new subjects. Low cost, sometimes (2) day subjects.

176-Overall, if a course is interesting, it's hard to maintain full attention all day - maybe give more breaks or reduce the time of the seminars.

177-Continue to offer a variety of related subjects on dentistry, personal health problems (physically and stress related).

178-Have more home study courses (and a large variety of them) available.

179-Continue to have interesting and motivational speakers. Offer many courses throughout the year at different locations.

180-Most CE courses I've attended have been very positive and I've been able to incorporate things learned into my daily practice. To keep courses a positive experience - presenters should be: well prepared and knowledgeable, able to answer questions thoroughly and give possible alternative for specific cases, and be humorous.

181-More home study courses.

182-Make it mandatory for employers to pay for CE and allow time off. This is a mandatory thing and it's only fair that the expensive cost be covered by employers. I have to get my CEUs through home-study because I am not allowed days off and he doesn't cover costs. This is the cheapest option for me.

183-I have attended some excellent courses in the last year. I feel that part of what made them so great was the time, (Friday afternoons are best, very few offices in this area are open on Friday), location (within a one hour drive of home) and wide array of topics and speakers. The hands-on courses including instrument sharpening. Ultrasonic cleaning and new fulcrums were especially good. I hope that I am able to attend more courses of this type but I do not feel that taking the same ones year after year is beneficial. I also thought the combination of CPR certification with courses such as medical office emergencies and pharmacology was a wonderful idea.

184-I choose to not attend continuing education courses with other RDHs because I dread the "social" aspect. The "clickness" of the women. I and many of my friends have experienced this atmosphere-because we are not active in the local hygiene association. I otherwise would seek out courses offered locally. Furthermore, I feel DDSs should be required to pay for courses in states where required. I love the ability to study at home with courses offered through Health Studies Institute in FL. It is a well designed program.

186-I enjoy almost every continuing education courses I attend but I don't enjoy the courses sponsored by specific companies.

187-Nothing! Get rid of it! It is intrusive over governmental regulation. What purpose is served when a licensed individual is supervised directly by another licensed professional; then required to have the same amount of CE hours as the supervising professional? This is governmental harassment. Dental hygienists must be the most ignorant of all professionals to required such a great amount of supervision.

189-We need more variety offered. I like having some choice at the Virginia DHA annual meetings, but to get the maximum hours you must take this group or the other group of courses. If each courses was offered twice (or at least the shorter courses) you could have more choice. I would like more hands-on courses at Dental Hygiene School clinics-preferably two or three subjects in one day. Six hours of perio lecture in one day will put me to sleep.

190-Quality programs with varied topics other than perio and specific dental hygiene topics. Hold courses at appealing locations/facilities. Continuing education is great-too bad everyone doesn't see it that way so it has to be required!

191-Be knowledgeable, interesting, start and finish on time, make it applicable for job in dental hygiene, keep the cost at a minimum. Make hand-outs easy to follow and that go with the lecture.

192-I prefer at home courses because I have 2 small children. I have taken a years sabbatical while I get the children settled in school but intend on keeping my license current. Therefore, I recommend in my instance at home courses available or courses available in the evening hours.

193-Have more "hands-on" courses, reasonable prices.

194-Choose subjects that are interesting and unique; choose locations which are comfortable; use presenters who are listener friendly.

195-Provide courses that we can use the information we learned-and not just to fill in for 15 credit hours. Make them centrally located for easy convenience. Review topics that we are interested in and need updating-example-pharmacology, pt's medicines change each visit-new meds on market-hygienists need updating. Somehow keep costs down-hard for part-timers, maternity leave hygienists, office non-payment of courses, etc. Need more available!

196-Variety of courses (each year the same ones seem to come through), weekend class, night class, reasonable cost.

197-Present new updated materials. I learn mor from home-study (book work) then conferences with speakers. Speakers just repeat the same material that I learned years ago.

198-Make people understand they need to be accountable and educated in order to provide quality care to patients and not be "old farts" who know everything.

199-I think it's important to vary topics. Only going to perio courses would get very old after a while. I prefer smaller groups with groups questions and participation.

200-Continue to let hygienists know when and where courses are offered-making them convenient and affordable. I feel like half-day courses offered on a number of different days especially when addressing pertinent topics for us. I personally prefer going to continuing education courses which will improve my skills and knowledge rather than a large marketing conference presented to try and sell a particular dental product. I wish there were more hands-on affordable courses available dealing in topics like soft-tissue management, ultrasonic scalers, using intra-oral cameras, the newest dental software, any changes in computer dental radiology-vertical bwx, etc.

201-Classrooms at ODU need to be air conditioned. The clinicians should not rush through courses just to present for x number of hours. Courses away from ODU have been very positive and comfortable.

202-Educate our bosses as to the advantages of professional interaction and education. So many dentists go for the continuing education "via mail" as do some RDHs. I feel that they mill so much with home study courses.

203-I do not feel that the courses need be only related to dental hygiene. Many times the entire staff can benefit from a class that has no relation to dental hygiene, but I would be reluctant to take the course if it did not meet qualifications. This seems to be another example of how dental hygienists place themselves "out" of the team effort and only care about themselves.

204-Good presenters-good teachers in addition to knowing the subject, energetic person. Comfortable room-table(not just chair) and not too crowded. Start early to finish early.

205-I think with the increased variety of topics and the greater availability of courses at a reasonable cost (usually), they are doing a good job. I have found most all courses I've taken to be quite a positive experience.

206-An important factor to me would be to address new issues as well as updating long standing data. Most important is the clinician not just one who is knowledgeable, but can also present the material and keep the subject alive for the duration of the course. Location should always be considered with attention to ease of getting there and also to details of sufficient parking, access to good dining if one must leave the seminar for meals.

207-I do not care for audio tapes much. I would choose reading material over audio tapes. In a presenter, I enjoy humor and good speaking skills. It's difficult to listen to someone who stutters or says "um" a lot.

208-Convenience is a factor. I liked taking ODU blitz because I could complete all CEUs at one time. Interaction with classmates makes it more interesting than reading information in a book or journal. Having material organized and presented by a speaker makes it a better learning experience.

210-There always seems to be a lot of courses in March that are interesting and few the rest of the year. Also the same courses keep reappearing each year.

211-More hands-on experience. Concentrate on periodontal treatment. Interesting speakers.

212-I think on the whole most of the education courses I have taken have given me a positive experience.

214-Increase locations so we don't have to travel so far to attend. Continue to allow home study courses.

215-Introduce subject matter which goes beyond the scope of everyday subjects. I feel like most course offerings deal with OSHA, perio, AIDS, etc. and that the subjects need to reach further. There are many areas which dental hygienists could be and are exposed to which you never see offered except by home-study courses; ie child abuse, drug abuse, connective tissue disorders, etc. I have taken home study on theses and found them very interesting. I think it would also be beneficial to many hygienists to have courses offered at local community colleges via computer because of limited time and convenience of traveling long distances to attend courses, especially in rural areas.

APPENDIX E

SUMMARY OF RESPONSES TO DENTAL HYGIENE CONTINUING EDUCATION
SELECTION QUESTIONNAIRE

1. When did you graduate with a certificate or degree in dental hygiene?

YEAR	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
1993-1984	64	29.8%	64	29.8%
1983-1974	97	45.1%	161	74.9%
1973-1964	40	18.6%	201	93.5%
Prior to 1963	14	6.5%	215	100%

2. When did you become licensed in the Commonwealth of Virginia?

YEAR	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
1993-1984	82	38.1%	82	38.1%
1983-1974	99	46.0%	181	84.1%
1973-1964	27	12.6%	208	96.7%
Prior to 1963	7	3.3%	215	100%

3. Since graduating, have you always, been required to attend mandatory continuing education for relicensure in a state other than the Commonwealth of Virginia?

RESPONSE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Yes	0	0.0%	0	0.0%
No	215	100.0%	215	100.0%

4. What is the highest degree that you currently possess?

DEGREE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Certificate	13	6.0%	13	6.0%
Associate	85	39.5%	98	45.5%
Baccalaureate	107	49.8%	205	95.3%
Masters	9	4.2%	214	99.5%
Doctorate	1	0.5%	215	100%

5. What is your primary employment setting?

SETTING	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Private/ general practice	177	82.3%	177	82.3%
Private/ specialty practice	13	6.0%	190	88.3%
Dental hygiene/ assisting education	3	1.4%	193	89.7%
Public health/ gov't setting	5	2.3%	198	92.0%
Other	4	1.9%	202	93.9%
Not employed as a dental hygienist	13	6.0%	215	100%

6. Prior to mandatory continuing education in the Commonwealth of Virginia (April 1, 1995), approximately how many Continuing Education Units did you earn annually ? (1 hour of course time = 0.1 CEUs)

CEUs	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Did not attend	24	11.2%	24	11.2%
0.1 - 0.5	67	31.2%	91	42.4%
0.6 - 1.0	70	32.6%	161	75.0%
1.1 - 1.5	29	13.5%	190	88.5%
More than 1.5	25	11.6%	215	100%

7. After mandatory continuing education in the Commonwealth of Virginia (April 1, 1995), approximately how many Continuing Education Units did you earn annually ? (1 hour of course time = 0.1 CEUs)

CEUs	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Did not attend	0	0.0%	0	0.0%
0.1 - 0.5	0	0.0%	0	0.0%
0.6 - 1.0	2	0.9%	2	0.9%
1.1 - 1.5	44	20.5%	46	21.4%
More than 1.5	169	78.6%	215	100%

8. After mandatory continuing education became effective in Virginia (April 1, 1995), did you perceive a change in how you selected a continuing education course?

PERCEIVED CHANGE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Yes	104	48.4%	104	48.4%
No	111	51.6%	215	100.0%

9. How do you think mandatory continuing education altered course variety?

COURSE VARIETY	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
More course choices	147	68.4%	147	68.4%
Less course choices	8	3.7%	155	72.1%
No change in courses	60	27.9%	215	100.0%

10. Has mandatory continuing education changed how you feel about continuing education courses?

COURSE VARIETY	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Yes, more negative	50	23.3%	50	23.3%
Yes, more positive	58	27.0%	108	50.3%
No, remain negative	7	3.3%	115	53.6%
No, remain positive	100	46.5%	215	100.0%

11. I prefer to attend continuing education courses at:

LOCATION	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Professional association meetings	16	7.4%	16	7.4%
School of dental hygiene	4	1.9%	20	9.3%
Conference or Symposium	32	14.9%	52	24.2%
No Preference	131	60.9%	183	85.1%
Other	32	14.9%	215	100.0%

12-26. Please circle the appropriate number which indicates how important the following factors were in your continuing education course selection before mandatory continuing education became effective in the Commonwealth of Virginia (April 1, 1995).

12. Professional improvement and development

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	7	3.3%	7	3.3%
Unimportant	3	1.4%	10	4.7%
Somewhat Unimportant	13	6.0%	23	10.7%
Somewhat Important	17	7.9%	40	18.6%
Important	42	19.5%	82	38.1%
Very Important	133	61.9%	215	100.0%

13. Interaction with other professionals

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	16	7.4%	16	7.4%
Unimportant	15	7.0%	31	14.4%
Somewhat Unimportant	32	14.9%	63	29.3%
Somewhat Important	58	27.0%	121	56.3%
Important	60	27.9%	181	84.2%
Very Important	34	15.8%	215	100.0%

14. Cost

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	11	5.1%	11	5.1%
Unimportant	13	6.0%	24	11.2%
Somewhat Unimportant	26	12.1%	50	23.3%
Somewhat Important	68	31.6%	118	54.9%
Important	49	22.8%	167	77.7%
Very Important	48	22.3%	215	100.0%

15. Course time

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	11	5.1%	11	5.1%
Unimportant	11	5.1%	22	10.2%
Somewhat Unimportant	27	12.6%	49	22.8%
Somewhat Important	69	32.1%	118	54.9%
Important	60	27.9%	178	82.8%
Very Important	37	17.2%	215	100.0%

16. Subject

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	7	3.3%	7	3.3%
Unimportant	0	0.0%	7	0.0%
Somewhat Unimportant	6	2.8%	13	6.0%
Somewhat Important	23	10.7%	36	16.7%
Important	75	34.9%	111	51.6%
Very Important	104	48.4%	215	100.0%

17. Personal benefit

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	8	3.7%	8	3.7%
Unimportant	1	0.5%	9	4.2%
Somewhat Unimportant	8	3.7%	17	7.9%
Somewhat Important	26	12.1%	43	20.0%
Important	84	39.1%	127	59.1%
Very Important	88	40.9%	215	100.0%

18. Job security

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	39	18.1%	39	18.1%
Unimportant	43	20.0%	82	38.1%
Somewhat Unimportant	40	18.6%	122	56.7%
Somewhat Important	43	20.0%	165	76.7%
Important	27	12.6%	192	89.3%
Very Important	23	10.7%	215	100.0%

19. Mandatory requirement for relicensure in another state

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	133	61.9%	133	61.9%
Unimportant	38	17.7%	171	79.5%
Somewhat Unimportant	7	3.3%	178	82.8%
Somewhat Important	16	7.4%	194	90.2%
Important	8	3.7%	202	94.0%
Very Important	13	6.0%	215	100.0%

20. Paid for by my employer

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	39	18.1%	39	18.1%
Unimportant	16	7.4%	55	25.6%
Somewhat Unimportant	21	9.8%	76	35.3%
Somewhat Important	51	23.7%	127	59.1%
Important	47	21.9%	174	80.9%
Very Important	41	19.1%	215	100.0%

21. Required by my employer

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	79	36.7%	79	36.7%
Unimportant	24	11.2%	103	47.9%
Somewhat Unimportant	26	12.1%	129	60.0%
Somewhat Important	36	16.7%	165	76.7%
Important	32	14.9%	197	91.6%
Very Important	18	8.4%	215	100.0%

22. Location

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	11	5.1%	11	5.1%
Unimportant	2	0.9%	13	6.0%
Somewhat Unimportant	13	6.0%	26	12.1%
Somewhat Important	39	18.1%	65	30.2%
Important	85	39.5%	150	69.8%
Very Important	65	30.2%	215	100.0%

23. Course/vacation combination

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	90	41.9%	90	41.9%
Unimportant	54	25.1%	144	67.0%
Somewhat Unimportant	24	11.2%	168	78.1%
Somewhat Important	27	12.6%	195	90.7%
Important	15	7.0%	210	97.7%
Very Important	5	2.3%	215	100.0%

24. Course presenter

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	20	9.3%	20	9.3%
Unimportant	5	2.3%	25	11.6%
Somewhat Unimportant	18	8.4%	43	20.0%
Somewhat Important	53	24.7%	96	44.7%
Important	86	40.0%	182	84.7%
Very Important	33	15.3%	215	100.0%

25. Hands-on course format

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	24	11.2%	24	11.2%
Unimportant	15	7.0%	39	18.1%
Somewhat Unimportant	37	17.2%	76	35.3%
Somewhat Important	77	35.8%	153	71.2%
Important	47	21.9%	200	93.0%
Very Important	15	7.0%	215	100.0%

26. Improvement of client care

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	8	3.7%	8	3.7%
Unimportant	2	0.9%	10	4.7%
Somewhat Unimportant	4	1.9%	14	6.5%
Somewhat Important	18	8.4%	32	14.9%
Important	77	35.8%	109	50.7%
Very Important	106	49.3%	215	100.0%

27-41. Please circle the appropriate number which indicates how important the following factors were in your continuing education course selection after mandatory continuing education became effective in the Commonwealth of Virginia (April 1, 1995).

27. Professional improvement and development

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	2	0.9%	2	0.9%
Unimportant	2	0.9%	4	1.9%
Somewhat Unimportant	6	2.8%	10	4.7%
Somewhat Important	11	5.1%	21	9.8%
Important	51	23.7%	72	33.5%
Very Important	143	66.5%	215	100.0%

28. Interaction with other professionals

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	12	5.6%	12	5.6%
Unimportant	17	7.9%	29	13.5%
Somewhat Unimportant	34	15.8%	63	29.3%
Somewhat Important	49	22.8%	112	52.1%
Important	64	29.8%	176	81.9%
Very Important	39	18.1%	215	100.0%

29. Cost

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	8	3.7%	8	3.7%
Unimportant	4	1.9%	12	5.6%
Somewhat Unimportant	23	10.7%	35	16.3%
Somewhat Important	57	26.5%	92	42.8%
Important	60	27.9%	152	70.7%
Very Important	63	29.3%	215	100.0%

30. Course time

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	4	1.9%	4	1.9%
Unimportant	4	1.9%	8	3.7%
Somewhat Unimportant	12	5.6%	20	9.3%
Somewhat Important	52	24.2%	72	33.5%
Important	68	31.6%	140	65.1%
Very Important	75	34.9%	215	100.0%

31. Subject

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	2	0.9%	2	0.9%
Unimportant	2	0.9%	4	1.9%
Somewhat Unimportant	8	3.7%	12	5.6%
Somewhat Important	14	6.5%	26	12.1%
Important	89	41.4%	115	53.5%
Very Important	100	46.5%	215	100.0%

32. Personal benefit

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	5	2.3%	5	2.3%
Unimportant	3	1.4%	8	3.7%
Somewhat Unimportant	5	2.3%	13	6.0%
Somewhat Important	26	12.1%	39	18.1%
Important	82	38.1%	121	56.3%
Very Important	94	43.7%	215	100.0%

33. Job security

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	37	17.2%	37	17.2%
Unimportant	27	12.6%	64	29.8%
Somewhat Unimportant	29	13.5%	93	43.3%
Somewhat Important	42	19.5%	71	62.8%
Important	34	15.8%	105	78.6%
Very Important	46	21.4%	151	100.0%

34. Mandatory requirement for relicensure in the Commonwealth of Virginia

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	28	13.0%	28	13.0%
Unimportant	10	4.7%	38	17.7%
Somewhat Unimportant	8	3.7%	46	21.4%
Somewhat Important	14	6.5%	60	27.9%
Important	33	15.3%	93	43.3%
Very Important	122	56.7%	215	100.0%

35. Paid for by my employer

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	44	20.5%	44	20.5%
Unimportant	12	5.6%	56	26.0%
Somewhat Unimportant	12	5.6%	68	31.6%
Somewhat Important	54	25.1%	122	56.7%
Important	53	24.7%	175	81.4%
Very Important	40	18.6%	215	100.0%

36. Required by my employer

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	70	32.6%	70	32.6%
Unimportant	21	9.8%	91	42.3%
Somewhat Unimportant	23	10.7%	114	53.0%
Somewhat Important	38	17.7%	152	70.7%
Important	34	15.8%	186	86.5%
Very Important	29	13.5%	215	100.0%

37. Location

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	3	1.4%	3	1.4%
Unimportant	2	0.9%	5	2.3%
Somewhat Unimportant	9	4.2%	14	6.5%
Somewhat Important	43	20.0%	57	26.5%
Important	81	37.7%	138	64.2%
Very Important	77	35.8%	215	100.0%

38. Course/vacation combination

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	89	41.4%	89	41.4%
Unimportant	49	22.8%	138	64.2%
Somewhat Unimportant	23	10.7%	161	74.9%
Somewhat Important	33	15.3%	194	90.2%
Important	12	5.6%	206	95.8%
Very Important	9	4.2%	215	100.0%

39. Course presenter

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	21	9.8%	21	9.8%
Unimportant	6	2.8%	27	12.6%
Somewhat Unimportant	12	5.6%	39	18.1%
Somewhat Important	53	24.7%	92	42.8%
Important	83	38.6%	175	81.4%
Very Important	40	18.6%	215	100.0%

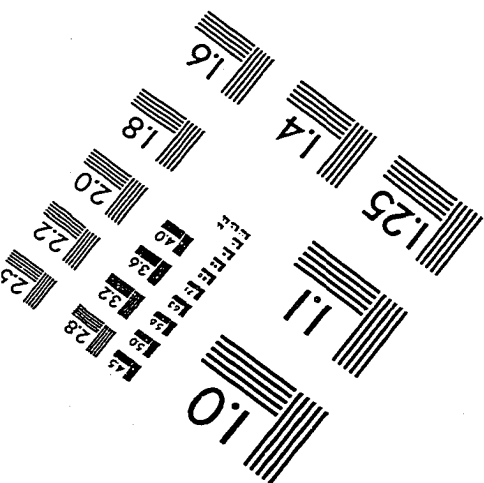
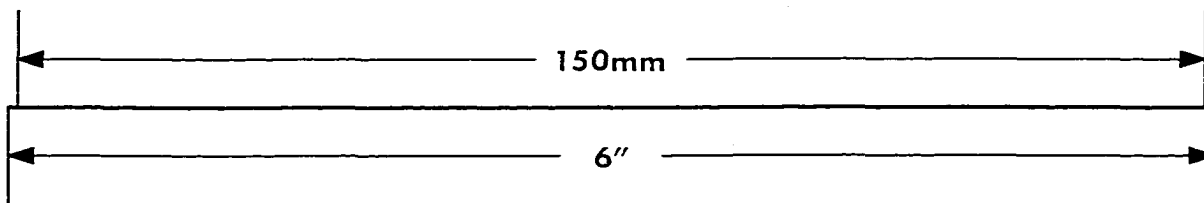
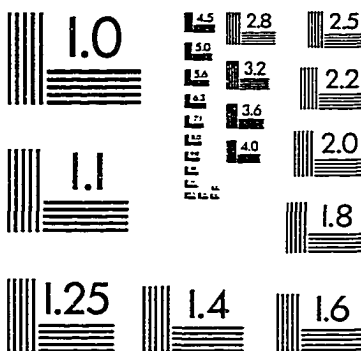
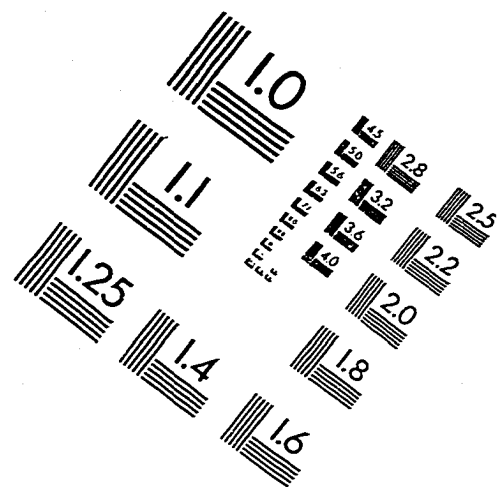
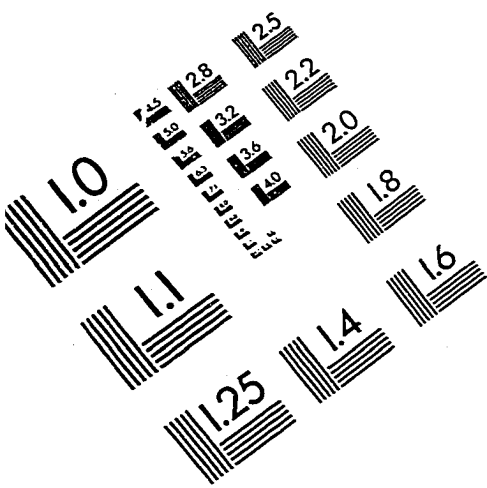
40. Hands-on course format

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	19	8.8%	19	8.8%
Unimportant	21	9.8%	40	18.6%
Somewhat Unimportant	33	15.3%	73	34.0%
Somewhat Important	84	39.1%	157	73.0%
Important	43	20.0%	200	93.0%
Very Important	15	7.0%	215	100.0%

41. Improvement of client care

IMPORTANCE	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
Very unimportant	4	1.9%	4	1.9%
Unimportant	1	0.5%	5	2.3%
Somewhat Unimportant	3	1.4%	8	3.7%
Somewhat Important	17	7.9%	25	11.6%
Important	78	36.3%	103	47.9%
Very Important	112	52.1%	215	100.0%

IMAGE EVALUATION TEST TARGET (QA-3)



APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989

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