

PERCEPTIONS OF THE DENTAL HYGIENE PROFESSION

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BY

BARBARA J. BIRDWELL DEBOIS, B.S.

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DENTON, TEXAS

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TEXAS WOMAN'S UNIVERSITY  
DENTON, TEXAS

March 22, 1988  
DATE

To the Provost of the Graduate School:

I am submitting herewith a thesis written by Barbara J. Birdwell DeBois, entitled "Perceptions of the Dental Hygiene Profession." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Health Sciences Instruction.

Barbara J. Deamer  
Major Professor

We have read this thesis  
and recommend its acceptance:

Eileen E. Morrison  
Nancy L. Gluck

Accepted

Lesly M. Thompson  
Provost of the Graduate School



## DEDICATION

This work is dedicated to my family and friends who were always there for me.

My husband Bill, who pushed me to finish with nudges and never any shoving.

My friend Cathy, for always being there with support and words of encouragement.

JoLynn, my traveling companion, without whom I never would have started any of this.

Sheryl Cleveland, who helped me to make some sense out of all the confusion.

My children Abby and James Allen, for all the soccer, baseball, and basketball games you so gracefully let me miss.

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This study was conducted to measure dental hygiene students' and instructors' perceptions of the dental hygiene profession. The Dental Hygiene Profession Attitude Inventory (DHPAI) was developed by the researcher to measure the perceptions over a four month time span utilizing a pretest-posttest survey design. Results indicated that there was a significant difference in perceptions of the dental hygiene profession between instructors and students, and that the perceptions tended to become more negative as the educational level of the subjects increased. The instructor group had the least positive perception scores while the first year student group had the most positive perception scores. Significant changes in perception scores over time were noted for the second year student group and the instructor group. There were no statistically significant changes in perception scores of the first year group, over time.

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## CHAPTER I

### INTRODUCTION

The formation of negative attitudes toward the major course of study is a problem that affects many students in the health disciplines. Sharp (1981) stated that studies indicate that as the education levels of students in the health professions increase, their perceptions of their profession move on a continuum from positive toward negative. According to Sheid, D'Costa, and Winter (1985) negative perceptions may affect many aspects of students' lives; from their performance while in school to their health care delivery after graduation, and even to their future job satisfaction. Negative perceptions, carried beyond graduation by students, may also adversely affect the overall image of a profession. The members of a profession serve as the representatives of their profession for the people with whom they come into contact. A professional's negative perceptions, in regards to his or her profession, may be picked up and adopted by the individuals with whom he or she comes into contact.

Many elements or factors have an impact on dental hygiene students' professional development during their years in school. An important area of concern, but one that has not been extensively studied, is the relationship between faculty, as role models, and students in regards to their perceptions of the profession of dental

hygiene. While in school, dental hygiene students' primary contacts with their profession are through the instructors in their disciplines. Instructors become role models and serve as professional examples. Even though it is hoped that faculty serve as positive role models, in many cases they have a negative affect on students (Lange and Friedman, 1985). The impact of these influences on the students' overall perceptions of their profession is relatively unknown.

#### Statement of the Problem

What is the difference in selected Texas dental hygiene students' and instructors' perceptions of the dental hygiene profession, over time?

#### Statement of Purposes

The purposes of this study were to:

1. Develop a Likert-type attitude inventory to measure perceptions of the dental hygiene profession as they change over time.
2. Measure selected Texas dental hygiene students' and instructors' dental hygiene profession perception scores.
3. Determine the ex post facto reliability and construct validity of the investigator-designed Dental Hygiene Profession Attitude Inventory (DHPAI).
4. Determine the difference between selected Texas dental hygiene students' and instructors' DHPAI scores.

### Hypotheses

The hypotheses tested in this study were as follows:

1. There is no significant difference between all selected Texas dental hygiene students' and instructors' perception scores, as measured by the DHPAI pretest.
2. There is no significant difference between all selected Texas dental hygiene students' and instructors' perception scores, as measured by the DHPAI posttest.
3. There is no significant difference between all selected Texas dental hygiene students' DHPAI pretest and posttest perception scores.
4. There is no significant difference between all selected Texas dental hygiene instructors' DHPAI pretest and posttest scores.
5. There is no significant difference between all selected Texas dental hygiene students' and instructors' DHPAI pretest-posttest scores.
6. There is no significant difference between all selected Texas first and second year dental hygiene students' perception scores, as measured by the DHPAI pretest.
7. There is no significant difference between all selected Texas first and second year dental hygiene students' perception scores, as measured by the DHPAI posttest.
8. There is no significant difference between all selected Texas first and second year dental hygiene students' DHPAI pretest-posttest scores.



9. There is no significant difference between all selected Texas first year dental hygiene students' DHPAI pretest and posttest scores.

10. There is no significant difference between all selected Texas second year dental hygiene students' DHPAI pretest and posttest scores.

### Definition of Terms

The following definitions were used in this study:

Dental Hygiene Profession. A group of individuals educated to provide dental services such as dental prophylaxis, radiographic surveys, application of medications as approved by state laws, and provision of dental education at the chairside and in the community. These services are provided under the supervision of a dentist. For the purposes of this study, students enrolled in accredited dental hygiene programs were considered members of the profession.

First Year Dental Hygiene Student. A student who has completed the required predental hygiene academic courses, has been admitted into an accredited dental hygiene program, and is currently taking the first year of didactic and clinical dental hygiene courses.

Second Year Dental Hygiene Student. A student who has completed required predental hygiene academic courses, has been admitted into an accredited dental hygiene program, has completed the first year of didactic and clinical dental hygiene courses, and is currently taking the second year of didactic and clinical dental hygiene courses.

Dental Hygiene Instructor. A licensed dental hygienist or

dentist who is employed, on a full-time basis, to teach didactic or clinical dental hygiene courses in an accredited dental hygiene program.

Perceptions of the Dental Hygiene Profession. Expressed attitudes, opinions, and values concerning the profession of dental hygiene. The words "attitude" and "perception" will be used synonymously.

Dental Hygiene Profession Attitude Inventory (DHPAI). A Likert-type attitude inventory used to measure perceptions of the dental hygiene profession.

DHPAI Perception Score. A numerical value or score obtained from the DHPAI.

### Assumptions

The assumptions made relative to this study were that the perceptions of the students and instructors, regarding the dental hygiene profession, could be measured; that the DHPAI pretest and posttest would be administered under similar conditions; and that students and instructors would honestly answer the DHPAI.

### Limitations

The limitations of this study were as follows:

1. The reliability of the DHPAI was unknown.
2. The sample used was small in comparison to the number of dental hygiene students and instructors in the state of Texas; therefore, generalizability to other populations is not advised.

3. The time span between the DHPAI pretest and posttest was four months.
4. Only content validity was predetermined.
5. Construct validity of the DHPAI was unknown.

#### Significance of the Study

This study, conducted to ascertain the statistical relationship between faculty and student perceptions may provide a broader base of knowledge regarding the attitude shift that occurs in dental hygiene students' perceptions of their profession and a better understanding of career satisfaction in dental hygiene. The identification of attitude shift in a less positive or negative direction may lead to other studies in dental hygiene that ascertain the cause(s) of this attitude change. This knowledge may also aid other health disciplines in determining the variables responsible for the negative shift of their students' perceptions of their professions. This study may also serve to encourage faculty to reexamine their responsibilities as role models.

## CHAPTER II

### REVIEW OF THE RELATED LITERATURE

The literature review in this chapter focuses on three areas. The first two deal with the concept of attitude and the most widely used methods of measurement. The third area is concerned with literature exploring the changes in attitudes of college students, specifically those students in related disciplines such as nursing, medicine, dentistry, and dental hygiene.

#### Concept of Attitude

The concept of attitude and its measurement have been the basis for many studies in social psychology during the past fifty years. According to Oskamp (1977), the term "attitude" originally referred to an individual's bodily position or posture, but in social science it has come to mean a "posture of the mind," rather than the body. Thurstone (1959) used the concept of attitude to denote "the sum total of a man's inclinations and feelings, prejudices or bias, preconceived notions, ideas, fears, threats, and convictions about any specified topic" (p. 216). Oskamp (1977) suggested that attitudes are the basis of perceptions, because an individual's attitudes toward various psychological objects reflects the way he or she perceives the world around them. A psychological object can be an abstract, as well

as a concrete object, and it can be anything; a symbol, a person, an institution, an ideal, or even an idea. Webster's Dictionary (1970) defined perceptions as specific ideas, concepts, or impressions formed from the mental grasp of objects.

### Measurement of Attitudes

Even though the concept of attitude has been discussed by philosophers since the time of Plato, and the term "attitude" was first used in 1862, Oskamp (1977) noted that the quantitative study of attitude was just over 50 years old, beginning in 1925 with Bogardus' scale of social distance toward various ethnic groups. There have been four other widely used attitude scaling methods developed since Bogardus' Social-Distance Scale (Oskamp 1977). These include Thurstone's method of equal-appearing intervals, Likert's method of summated ratings, Guttman's Scalogram Analysis method of constructing a unidimensional scale, and Osgood's Semantic Differential, a scale of connotative meaning.

In 1928, Thurstone proposed the method of equal-appearing intervals, which is the most time-consuming and complex attitude scaling method of them all (Oskamp 1977). Thurstone's method attempted to indicate the precise amount of difference between the attitudes of respondents. The first step in this method is to have a large group of judges rate the favorability or unfavorability of statements concerning a particular topic. The statements on which the judges show substantial disagreement are discarded as ambiguous,

and the remaining statements are assigned scale values based on the median favorability rating of the judges. Approximately twenty items are selected from these remaining statements and randomly arranged without any indication of their scale value. Oskamp (1977) noted that Thurstone's assumption, that the opinion of the judges did not affect the scale values of the items, had been shown to be reasonably correct except where the judges had extreme views or were highly ego-involved in the topic.

In 1932, in an attempt to find a simpler method of attitude scale construction than Thurstone's, Likert proposed a scale which did not require the use of judges. In Likert's method of attitude measurement positive and negative statements are answered on a rating scale. Respondents select one of the possible choices, which are scored 5 (Strongly Agree), 4 (Agree), 3 (Undecided), 2 (Disagree), and 1 (Strongly Disagree) for positively stated items. The reverse scoring system is used on negative statements. The attitude score is determined by adding the ratings for all of the statements. The use of item analysis techniques insures that only the best items from the initial item collection are utilized. The omission of an item analysis results in the absence of empirical evidence that the items are useful and discriminating, and that they are all measuring the same underlying attitude. According to Oskamp (1977) the reliability of Likert scales had been shown to be as high as that of the Thurstone scales, and the Likert method was the most popular of the

frequently used attitude scaling strategies.

### Changes in Student Attitudes

According to Feldman and Newcomb (1970) colleges are socializing organizations in which students, in varying degrees, come to accept normative attitudes and values by interacting with each other, and with the faculty. There have been many studies conducted to ascertain the effects of faculty and curriculum on the attitudes and performance of students (Feldman and Newcomb 1970). Teachers may serve as models for their students because they function as representatives of various subject matters and disciplines. A teacher can expose students, through what they say and do in class, to a wide variety of new knowledge and values. What a teacher is, or generally represents, may serve as a catalyst to students' restructuring their attitudes and opinions, or serve to reinforce their existing ones. While it is hopeful that teachers are positive role models, in many instances they can be negative or antimodels inducing the development and nourishment of negative attitudes on the part of their students.

The formation of negative attitudes toward the major course of study is a problem that affects many students in disciplines such as nursing, medicine, and dentistry (Sharp 1981). Feldman and Newcomb (1970) noted that various studies indicate that faculty are important in influencing occupational decisions and educational aspirations on a positive, as well as a negative basis. In a discussion of studies conducted to ascertain the effects of dental faculty on the attitudes

and performances of dental students, Lange and Friedman (1985) noted that Rosen, Marcus, and Johnson (1977) expanded the scope of variables affecting student attitudes by demonstrating that dental students' changes in perception began early in the discipline's curriculum and were attributed to upper level dental students.

As the education level of professional students increases, more and more of their perceptions approximate those of the influencing professional group; a phenomenon referred to by Sharp (1981) as professional socialization. Sharp (1981) defined professional socialization as a type of adult socialization in which "individuals internalize the roles of specialized occupational groups through education and training" (p. 24). The professional socialization process has been studied in many of the health disciplines and research has shown that as the education levels of students in the health professions increase, their perceptions of their professions change on a continuum from positive toward negative. Sharp (1981) noted that, utilizing the concepts of idealism and realism to describe the evolving socialization process among professional students, "Levinson, Becker, and Geer, and Becker et al showed that a change in medical students' perceptions of themselves as physicians, from idealism to realism, does occur as a result of their medical education" (p. 24). Idealistic perceptions are usually based on popular attitudes and tend to emphasize only the positive aspects of a profession, while realistic perceptions are those which represent an awareness of what actually exists, in regards to a profession



(Sharp 1981).

A study done by Sharp in 1977, indicated that as dental hygiene students' educational experiences increased their perceptions of the profession of dental hygiene tended to become more negative (Sharp 1981). Sharp (1981) stated that the findings of this study correlate with the findings of studies that have examined the attitudes or perceptions of students in other health disciplines; suggesting that dental hygiene students' perceptions of their profession also move on a continuum from positive toward negative, as a result of their dental hygiene education. Sharp (1981) suggested that identification of factors which may account for these changes in students' perceptions would not be simple, because of the multidimensional nature of the professional socialization process. She stated that maturity, professional education, and faculty influence are just several of the many possible variables that may play a role in the perceptual development of the dental hygiene student. She noted that:

. . . since dental hygiene faculty serve as primary role models for their students, the faculty's influence from their varied experiences and views about the profession of dental hygiene and dental hygiene practice may be transmitted to students and have some effect on their imagery of dental hygiene practice. (p. 27)

Few studies have been conducted on the effects of faculty role models on dental hygiene students (Sharp 1981). Faculty serve as role models, positive as well as negative, however the impact of these influences on the students' overall perceptions of their profession is relatively unknown.

### Summary

This chapter dealt with the concept of attitude and how the term "perception" relates to this concept, as well as the selected methods that have been used to measure attitude. It included a description of some of the research that has been conducted relative to negative attitude changes among college students, specifically students in health disciplines such as dentistry and dental hygiene.

## CHAPTER III

### METHODOLOGY

This was a descriptive study which utilized a pretest-posttest survey design. This chapter describes the setting in which the pretest and posttest were administered, and the population and sample involved in the study. A discussion of the instrument, Dental Hygiene Profession Attitude Inventory (DHPAI) and its scoring are also included. Lastly, the data collection and the subsequent treatment of the data are presented.

#### Setting

The DHPAI pretest and posttest were administered to instructors, and first and second year students from accredited dental hygiene programs. The pretest and posttest were administered to students in a classroom setting, while instructors completed the pretest and posttest at their own convenience, in an office setting.

#### Population and Sample

The population consisted of dental hygiene students and instructors in the state of Texas. The sample utilized was a nonrandomized sample of convenience, which consisted of all instructors, and first and second year students from three selected Texas dental hygiene programs, who were willing to participate. The sample

consisted of 13 instructors and 111 student volunteers.

#### Protection of Human Subjects and Agency Approval

Permission to administer this survey and to utilize the data collected was secured from the director of the selected dental hygiene programs (see Appendix A). No individual or program was identified by name, and all results were reported as group data. In order to protect the confidentiality of the respondents, and for statistical matching purposes, each questionnaire was coded with a five digit number. The questionnaires were precoded by the researcher to indicate the respondent's status in regards to instructor, or first or second year student. Questionnaires taken by first year students were coded with a 1, while questionnaires taken by second year students were coded with a 2. Questionnaires taken by instructors were coded with a 3. This number was the first digit of the five digit coding number. The last four digits of the code number were the last four digits of the respondent's social security number. Each respondent filled in the last four digits of his or her social security number before answering the questionnaire.

Respondents were informed that their participation was strictly on a voluntary basis, and that the completed questionnaire would serve to indicate their consent to participate in this study. A cover letter, which accompanied the questionnaire, indicated the purpose of the information and how to contact the researcher if the respondent had any questions, or wished to see the results of the research

(see Appendix B).

### Instrument

The instrument used in this study, Dental Hygiene Profession Attitude Inventory (DHPAI), was an investigator-made Likert-type attitude inventory. It consisted of 30 statements which took the respondents approximately 15 to 20 minutes to complete (see Appendix C). Some of the statements were constructed with adjectives used in a study conducted in 1977 with University of Iowa dental hygiene students, based on face validity and frequency of selection by faculty evaluators (Sharp, 1981).

### Validity and Reliability

An ex post facto reliability score of the DHPAI was determined. Content validity was determined by three experts in dental hygiene education. Individually, each expert examined all of the items that comprised the DHPAI and noted questions that they felt were not applicable or were questionable. The researcher then met with all three experts and the statements on which the majority of these experts disagreed were modified or eliminated from the questionnaire.

The DHPAI was reduced in length from 32 to 30 statements. The experts decided that two of the statements were too ambiguous in their meanings, and consequently they were deleted from the instrument. Four other statements were slightly modified in order to strengthen their positions in terms of favorable or unfavorable. The statements that were modified included 9, 21, 25, and 29.

### Scoring

The DHPAI utilized a 4-point rating scale. The choices that were offered included: (1) Strongly Agree, (2) Agree, (3) Disagree, and (4) Strongly Disagree. The category "undecided" was not offered as an option, in an effort to force a definite choice, in one direction or another. The favorable statements were scored: (1) Strongly Agree--4 points, (2) Agree--3 points, (3) Disagree--2 points, and (4) Strongly Disagree--1 point. Item number 1, 2, 4, 5, 9, 10, 11, 12, 16, 17, 18, 19, 20, 23, 25, 28, and 29 were favorable statements. The unfavorable statements were scored: (1) Strongly Agree--1 point, (2) Agree--2 points, (3) Disagree--3 points, and (4) Strongly Disagree--4 points. Item number 3, 6, 7, 8, 13, 14, 15, 21, 22, 24, 26, 27, and 30 were unfavorable statements.

The subjects' DHPAI perception score was determined by summing all the item values. The scores ranged from 30 to 120. Mean scores were then used for category interpretation. These follow:

- 3.5 (105) to 4.0 (120) Strongly Agree
- 2.5 (75) to 3.4 (102) Agree
- 1.6 (48) to 2.4 (72) Disagree
- 1.0 (30) to 1.5 (45) Strongly Disagree

### Data Collection

A verbal request, to conduct this research and to utilize the data collected, was made to the directors of the selected Texas dental hygiene programs. A formal request was then sent, in letter format,

to two of the three selected programs (see Appendix D). A letter granting permission to conduct this research and to utilize the data collected was then obtained from the program director of each of the three selected dental hygiene programs (see Appendix A).

The DHPAI pretest was administered to students in the first week of the 1986 Fall semester, during a regularly scheduled class session. The posttest was administered in a regularly scheduled class session during the week before the 1986 Fall semester final examinations began. The pretest and posttest were administered by the same individual reading a prepared statement of instructions, the cover letter (see Appendix B). The instructors completed the pretest, at their own convenience, during the first week of the 1986 Fall semester and the posttest was completed, at their own convenience, during the last week of regularly scheduled classes in the 1986 Fall semester.

The DHPAI pretest packet, which consisted of copies of the cover letter and instrument, a letter to the program director (see Appendix E), and a stamped preaddressed return envelope, was mailed to the directors of two of the selected Texas dental hygiene programs during the second week of August 1986. The researcher contacted each of the directors by telephone the third week of August 1986, to confirm packet delivery and to answer any questions they might have had concerning the questionnaire and its administration. The directors were responsible for the administration of the questionnaires to their dental hygiene instructors and students, during the first week of the 1986 Fall semester. All of the questionnaires were returned

to the researcher in the stamped preaddressed envelope, within three days of their completion by students and instructors.

The DHPAI posttest packet, which was identical to the pretest packet, was mailed the second week of November 1986 to each of the directors, who were responsible for administration of the questionnaires during the week before the 1986 Fall semester final examinations began. A letter of instructions was sent with the posttest packet to the program directors (see Appendix F). All, but one, of the posttest questionnaires were returned to the researcher in the stamped preaddressed envelope within three days of their completion by students and instructors. One questionnaire, completed by an instructor, was received in a separate envelope.

The researcher administered the DHPAI pretest and posttest to the students and instructors from one of the three selected dental hygiene programs, during the first and last weeks of regularly scheduled class sessions in the 1986 Fall semester.

Questionnaires that were returned blank or completed incorrectly were not included in the study. However, if a statement was not marked or marked in a questionable manner, it was not included in the statistical analysis of the questionnaire.

#### Treatment of the Data

The data collected in this study were raw scores. These scores were interpreted as interval data so that inferential statistics (t-test and ANOVA) could be used for analysis. Upon completion of the



pretest and posttest, a profile of the mean scores for: (1) all selected instructors, (2) all selected first year dental hygiene students, and (3) all selected second year dental hygiene students was developed. A paired t-test was used to accept or reject hypotheses 1,2,3,4, 6, 7, 9, and 10. Hypotheses 5 and 8 were accepted or rejected on the basis of an analysis of variance (ANOVA) and the Pearson product moment correlation between pretest and posttest. Fisher's Z was used to compare pretest-posttest correlations between groups over time. A .05 significance level was set for this research and a post hoc Student-Newman-Keuls procedure was used to demonstrate the difference between groups. Construct validity of the DHPAI was determined through factor analysis using principle components analysis (PCA) and Kaiser-Eigenvalue criterion.

## CHAPTER IV

### FINDINGS

This research was conducted to determine the difference in the perceptions of the dental hygiene profession, of selected Texas dental hygiene instructors and students, over time. In this chapter, the findings include a description of the collected data, statistical results for the ten research hypotheses, and statistical results in regards to the ex post facto reliability and construct validity of the instrument. Also included is a description of the statistical results of factor analysis.

#### Description of Participants

The subjects in the sample (124) were either first or second year dental hygiene students (111), or full-time dental hygiene instructors (13). One hundred percent of the dental hygiene instructors surveyed completed both the pretest and posttest. Of the 58 first year students involved, 56 (96.5%) completed both the pretest and posttest. There were two first year students who completed the pretest, but withdrew from their respective dental hygiene programs prior to the administration of the posttest. Of the 57 second year students involved, 55 (96.4%) completed both the pretest and posttest. There were two second year students who were not included in the sample

because one completed the pretest, but withdrew from the respective dental hygiene program prior to the administration of the posttest; while one student completed a posttest, but did not complete a pretest. The second year sample included 5 students who were repeating their first year. These 5 students were included in the second year group because they had already been in their respective program for one year, time equivalent with the other 50 second year students.

### Descriptive Statistics

Descriptive statistics for this research were as follows. The 30 item research tool had a range of scores of 30 to 120. The mean scores for all groups on the pretest and posttest are depicted in Table 1. All pretest and posttest scores for students were in the ninetys, whereas both scores for the instructors were in the eighties.

Table 1

#### Group Mean Total Scores for the DHPAI Pretest and Posttest

Group	Pretest	Posttest
First Year Students	95.94	95.00
Second Year Students	93.02	90.59
All Students	94.55	92.89
Instructors	86.50	82.31

For purposes of data analysis, the mean score was used (Table 2). The highest pretest mean score was found in the first year student group (3.20) and the lowest pretest mean score was obtained by the instructor group (2.88). The highest posttest mean score was found in the first year student group (3.17) while the lowest posttest mean score was again obtained by the instructor group (2.74).

Table 2

Group Mean Item Scores for the DHPAI Pretest and Posttest

Group	Pretest	Posttest
First Year Students	3.20	3.17
Second Year Students	3.10	3.02
All Students	3.15	3.10
Instructors	2.88	2.74

Findings by Hypotheses

The first hypothesis stated: "There is no significant difference between all selected Texas dental hygiene students' and instructors' perception scores, as measured by the DHPAI pretest." The pretest mean for all of the dental hygiene students was 3.15 (SD = 0.25), while the pretest mean for all dental hygiene instructors was 2.88 (SD = 0.28). Both of these means fell within the "Agree" category, however there was a shift in instructors' attitude scores toward the

"Disagree" category. The difference between the two mean scores was .27. The paired  $t$ -test revealed that there is a statistically significant difference between the scores ( $t(122) = 3.64, p < .001$ ). Therefore, the hypothesis was rejected.

The second hypothesis stated: "There is no significant difference between all selected Texas dental hygiene students' and instructors' perception scores, as measured by the DHPAI posttest." The posttest mean for all dental hygiene students was 3.10 ( $SD = 0.29$ ), while the posttest mean for the dental hygiene instructors was 2.74 ( $SD = 0.30$ ). While both scores were within the "Agree" category, the instructors' attitude scores were in the more negative position being the closer of the two to the "Disagree" category. The difference between the two mean scores was 0.35. The paired  $t$ -test revealed that there is a statistically significant difference between the scores ( $t(122) = 4.11, p < .001$ ). Therefore, the hypothesis was rejected.

The third hypothesis stated: "There is no significant difference between all selected Texas dental hygiene students' DHPAI pretest and posttest perception scores." The pretest mean for all the students was 3.15 ( $SD = 0.25$ ), while the posttest mean for all students was 3.10 ( $SD = 0.29$ ). The difference between the two mean scores was 0.06. The pretest and posttest means were within the "Agree" category, with a negative shift in the posttest mean toward the "Disagree" category. The paired  $t$ -test revealed that there is a statistically significant difference between the scores ( $t(110) =$

2.33,  $p = .02$ ). Therefore, the hypothesis was rejected.

The fourth hypothesis stated: "There is no significant difference between all selected Texas dental hygiene instructors' DHPAI pretest and posttest score." The pretest mean for the dental hygiene instructors was 2.88 (SD = 0.28). The posttest mean for this group was 2.74 (SD = 0.30). Both the pretest and posttest means fell within the "Agree" category, however there was a negative shift in attitude scores toward the "Disagree" category with the posttest. The difference between the two mean scores was 0.14. The paired t-test revealed that there is a statistically significant difference between the scores ( $t(12) = 2.86$ ,  $p = .014$ ). The hypothesis was rejected.

The fifth hypothesis stated: "There is no significant difference between all selected Texas dental hygiene students' and instructors' DHPAI pretest-posttest scores." Using Pearson  $r$  the correlation between all students' pretest-posttest means was .58, while the correlation between instructors' pretest-posttest means was .81. An analysis of variance with a Fisher's Z ( $z = -1.44$ ) revealed that there is no statistically significant relationship in pretest-posttest means between students versus instructors over time. Therefore, the hypothesis was accepted.

The sixth hypothesis stated: "There is no significant difference between all selected Texas first and second year dental hygiene students' perception scores, as measured by the DHPAI pretest." The pretest mean for the first year students was 3.20 (SD = 0.23). The pretest mean for the second year students was 3.10 (SD = 0.26). Both

of these pretest means fell within the "Agree" category, however there was a more negative attitude score on the part of the second year students. The difference between the two mean scores was 0.10. The paired t-test revealed that there is a statistically significant difference at the .05 level between the scores ( $t(109) = 2.10$ ,  $p = .04$ ). Therefore, the hypothesis was rejected.

The seventh hypothesis stated: "There is no significant difference between all selected Texas first and second year dental hygiene students' perception scores, as measured by the DHPAI posttest." The posttest mean for the first year students was 3.17 (SD = 0.25) while the posttest mean for the second year students was 3.11 (SD = 0.32). Both mean scores were within the "Agree" category. However, the second year students' attitude scores depicted a negative shift toward the "Disagree" category. The difference between the two mean scores was .06. The paired t-test revealed that there is a statistically significant difference between the scores ( $t(109) = 2.72$ ,  $p = .008$ ). Therefore, the hypothesis was rejected.

The eighth hypothesis stated: "There is no significant difference between all selected Texas first and second year dental hygiene students' DHPAI pretest-posttest scores." Using Pearson r the correlation between all selected first year students' pretest-posttest means was .60, while the correlation between all selected second year students' pretest-posttest means was .53. An analysis of variance with a Fisher's Z ( $z = .56$ ) revealed that there was no

statistically significant relationship in pretest-posttest means between first year versus second year students over time. Therefore, the hypothesis was accepted.

The ninth hypothesis stated: "There is no significant difference between all selected Texas first year dental hygiene students' DHPAI pretest and posttest scores." The pretest mean for the first year dental hygiene students was 3.20 (SD = 0.23) while the posttest mean for these students was 3.17 (SD = 0.25). Thus, there was a negative shift in attitude scores toward the "Disagree" category. The difference between the two mean scores was 0.03. The paired t-test revealed that there is no statistically significant difference, at the .05 level, between the scores ( $t(57) = 1.11, p = .27$ ). Therefore, the hypothesis was accepted.

The tenth hypothesis stated: "There is no significant difference between all selected Texas second year dental hygiene students' DHPAI pretest and posttest scores." The pretest mean for the second year students was 3.10 (SD = 0.26). The posttest mean for this group was 3.02 (SD = 0.31), depicting a negative shift in attitude scores toward the "Disagree" category. The difference between the two mean scores was 0.08. The paired t-test revealed that there is a statistically significant difference between the scores ( $t(52) = 2.09, p = 0.04$ ). The hypothesis was rejected.



### Reliability and Validity

Reliability was evaluated using coefficient alpha, which was .84 in the pretest, and .88 in the posttest. Since both the pretest and posttest figures were greater than the acceptable minimum level of .77, test reliability was high for the DHPAI. Test-retest reliability, indicating the DHPAI's stability over time, was .65,  $p = .001$ . This was greater than the acceptable minimum of .50, thereby depicting high test-retest reliability. The fact that the  $z$  scores (depicted in Hypotheses 5 and 8) were not significant supports the reliability of the research tool over time. Nonsignificant  $z$  scores indicate that there were no major differences or changes in the way the test items were answered from pretest to posttest. Therefore, maturation did not affect answers.

Construct validity of the researcher-designed tool (DHPAI) was tested through factor analysis, which reduces numbers of variables such as test items into a smaller number of underlying hypothetical variables or subscales referred to as factors (Kim and Mueller, 1978). Exploratory factor analysis of the DHPAI revealed nine subscales (Table 3). Examination of the subscales using principle components analysis (PCA) and Kaiser-Eigenvalue criterion, indicate that these nine subscales accounted for 63 percent of the variance on the pretest and 66.4 percent of the variance on the posttest.

Table 3

DHPAI Subscales

- 
- I - Professional Satisfaction
  - II - Professional Status
  - III - Professional Status
  - IV - Esteem
  - V - Control
  - VI - Growth
  - VII - Cognitive
  - VIII - Personal Satisfaction
  - IX - Professional Satisfaction
- 

On the pretest, all but one of the 30 items loaded on at least one factor at the .40 level or greater (Table 4, see Appendix G). Analysis of the posttest indicated that all 30 items loaded on at least one factor at the .40 level or greater (Table 5, see Appendix H). On both the pretest and posttest, several items loaded on more than one factor, as noted in "Items Loading" in Tables 4 and 5.

Examination of the subscales using a .40 criterion loading level indicate that there are eight factors to be retained in the pretest; accounting for 58.3 percent of the variance. Factor 5 was factor deficient, with less than three items loaded in at a .40 level or greater. The weakest factors were Factor 3 and 7, with only three

items loaded in at the .40 level or greater. The PCA indicated that none of the nine factors in the posttest were factor deficient. However, factors 3, 5, 6, and 8 were the weakest of the nine factors, with only three items loaded in at the .40 level or greater.

The data generated by the factor analysis and the PCA of the subscales indicate that the DHPAI could be shortened by deleting items which do not contribute to the variance. PCA of all items on the pretest and posttest indicate that at least three items could be deleted from the pretest and posttest. The items which could be deleted include 28, 29, and 30 because they did not account for at least one percent of the variance on either the pretest or posttest. However, the communality of each item considered as a variable with each other item is 1.00, indicating that the items are measuring a central concept (Kerlinger and Pedhauzer, 1973).

#### Additional Findings

A one way analysis of variance (ANOVA) between all three groups (first year students, second year students, and instructors) showed a significant difference; pretest ( $F 8.93$   $p = .0002$ ) and posttest ( $F 12.55$   $p = .0001$ ). A post hoc Student-Newman-Keuls procedure demonstrated a significant difference at the .05 level between second year students and instructors.

#### Summary

The disposition of the hypotheses are summarized in the following table.

Table 8

Disposition of Hypotheses

Hypothesis	Disposition
1. There is no significant difference between all selected Texas dental hygiene students' and instructors' perception scores, as measured by the DHPAI pretest.	Rejected
2. There is no significant difference between all selected Texas dental hygiene students' and instructors' perception scores, as measured by the DHPAI posttest.	Rejected
3. There is no significant difference between all selected Texas dental hygiene students' DHPAI pretest and posttest perception scores.	Rejected
4. There is no significant difference between all selected Texas dental hygiene instructors' DHPAI pretest and posttest scores.	Rejected
5. There is no significant difference between all selected Texas dental hygiene students' and instructors' DHPAI pretest-posttest scores.	Accepted
6. There is no significant difference between all selected Texas first and second year dental hygiene students' perception scores, as measured by the DHPAI pretest.	Rejected
7. There is no significant difference between all selected Texas first and second year dental hygiene students' perception scores, as measured by the DHPAI posttest.	Rejected
8. There is no significant difference between all selected Texas first and second year dental hygiene students' DHPAI pretest-posttest scores.	Accepted
9. There is no significant difference between all selected Texas first year dental hygiene students' DHPAI pretest and posttest scores.	Accepted

Table 8

Disposition of Hypotheses Continued

Hypothesis	Disposition
10. There is no significant difference between all selected Texas second year dental hygiene students' DHPAI pretest and posttest scores.	Rejected

## CHAPTER V

### SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

#### Summary

The problem of this study was to determine the difference in selected Texas dental hygiene students' and instructors' perceptions of the dental hygiene profession, over time. The purpose of this research was to measure selected Texas dental hygiene students' and instructors' dental hygiene profession perception scores through the use of the researcher-designed Likert-type Dental Hygiene Profession Attitude Inventory (DHPAI), and to determine the ex post facto reliability and construct validity.

After the instrument's content validity was determined by three experts in dental hygiene education, the investigator obtained permission to conduct the study in three selected dental hygiene programs. The study was conducted during a four month time span in the Fall of 1986, and utilized a descriptive study approach, with a two-group pretest-posttest survey design. The DHPAI pretest was administered to all first and second year students and full-time instructors in three selected dental hygiene programs during the first week of the 1986 Fall semester. The identical posttest was administered to the same participants during the last week of the

1986 Fall semester. Data were collected from a sample population which consisted of 124 subjects (111 students and 13 instructors).

The ten research hypotheses were:

1. There is no significant difference between all selected Texas dental hygiene students' and instructors' perception scores, as measured by the DHPAI pretest.

2. There is no significant difference between all selected Texas dental hygiene students' and instructors' perception scores, as measured by the DHPAI posttest.

3. There is no significant difference between all selected Texas dental hygiene students' DHPAI pretest and posttest perception scores.

4. There is no significant difference between all selected Texas dental hygiene instructors' DHPAI pretest and posttest scores.

5. There is no significant difference between all selected Texas dental hygiene students' and instructors' DHPAI pretest-posttest scores.

6. There is no significant difference between all selected Texas first and second year dental hygiene students' perception scores, as measured by the DHPAI pretest.

7. There is no significant difference between all selected Texas first and second year dental hygiene students' perception scores, as measured by the DHPAI posttest.

8. There is no significant difference between all selected Texas first and second year dental hygiene students' DHPAI pretest-posttest

scores.

9. There is no significant difference between all selected Texas first year dental hygiene students' DHPAI pretest and posttest scores.

10. There is no significant difference between all selected Texas second year dental hygiene students' DHPAI pretest and posttest scores.

The data collected in this study were raw scores. Inferential data were used to determine inferential statistical methodology. A paired t-test was used to analyze the data on Hypotheses 1 through 4 and Hypotheses 6,7,9, and 10. Data on Hypotheses 5 and 8 were analyzed using an analysis of variance (ANOVA) and the Pearson product moment correlation coefficients, with a Fisher's Z test used to compare pretest-posttest correlations between groups over time.

Reliability was evaluated using coefficient alpha, which was .84 in the pretest, and .88 in the posttest. Test-retest reliability was .65,  $p = .001$ . Nonsignificant z scores were depicted in Hypotheses 5 and 8, supporting the reliability of the research tool over time.

Construct validity of the DHPAI was established through factor analysis and principle components analysis. All but one of the 30 items on the DHPAI pretest loaded on one or more factors at .40 or greater, while all 30 items on the DHPAI posttest loaded on at least one factor at the .40 level or greater. Examination of the subscales using principle components analysis indicated that the nine subscales revealed accounted for 63.0 percent of the variance on the pretest and 66.4 percent of the variance on the posttest.



### Conclusions

The following conclusions were offered based on the findings of this research.

1. There is a statistically significant difference between students' and instructors' perceptions of the dental hygiene profession.
2. There is a statistically significant difference between first and second year dental hygiene students' perceptions of their profession.
3. There is a statistically significant difference between second year students' and instructors' perceptions of the dental hygiene profession over time.
4. There is no statistically significant difference in first year students' perceptions of the dental hygiene profession, over time.

### Discussion

A comparison of the posttest mean scores revealed that each groups' score showed a negative shift in attitude from their respective pretest score. The negative shift in posttest mean score, as well as the location of each group's score on a continuum from positive to negative with the most positive position held by the most inexperienced group and the least positive position held by the most experienced group, may be an indication of the negative shift in attitudes Sharp (1981) found in her study on the professional

socialization of dental hygiene students.

According to the data collected in this study, it would appear that the longer someone is in the dental hygiene profession the more negative or realistic his or her perceptions of the profession become. This phenomenon was referred to by Sharp (1981) as professional socialization and involves the internalization of the roles of specialized occupational groups through education and training. Feldman and Newcomb (1970) noted that teachers serve as role models for their students and what a teacher is, or generally represents, may serve as a catalyst to students' restructuring their attitudes and opinions, or serve to reinforce their existing ones. Therefore, it is conceivable that the more negative attitudes of the instructor group in this study may in some way, have affected the negative shift in students' attitudes. Considering this, instructors must be aware of their attitudes regarding their profession and the potential for student internalization of them, in order to help prevent perpetuation of negative attitudes that might possibly hamper personal and professional growth.

Data analysis indicated that there was a statistically significant difference between the pretest and posttest mean scores of all but one of the four groups examined in this study. A significant difference was noted between the pretest and posttest scores of (1) all students, (2) instructors, and (3) second year students. Analysis of the data on the first year students did not depict a statistically significant difference between the pretest and posttest

mean scores. This may be an indication that the negative shift in dental hygiene students' attitudes toward their profession was not critical during their first semester in their respective dental hygiene programs. The fact that the second year student group did show a statistically significant difference during the same time span, could possibly indicate that the negative shift in student attitudes becomes critical during the first semester of the second year.

Further research may even indicate that this negative shift on the part of students becomes significant during the second semester of the first year in the dental hygiene program. If this is true, even though many things influence the attitudes or perceptions of students, the instructors from the dental hygiene programs involved in this research may need to evaluate their program's curriculum and specific activities for this semester, as well as their own personal attitudes, to determine which of these might play a major role in the development of less positive attitudes over time.

A major difference between the first semester and the ones that follow in a dental hygiene program may be the amount of student-patient contact. During the first semester of the first year in a dental hygiene program students have very little actual patient contact in a clinical setting. Students develop their initial clinical skills primarily on typodonts and their fellow classmates in a relatively relaxed atmosphere. They begin to see patients on a regular basis in a formal clinical setting during the second semester of their first year. This one-on-one professional relationship with

the patient carries a considerable amount of inherent stress and frustration on the part of the student. Students have to strive to meet established clinical requirements which may be an important factor in attitude change. In addition, the students must deal with the needs and requirements of their patients on an individualized basis which may become stressful. They are forced to assume an ever increasing amount of responsibility for the care they provide for their patients; physical care which involves examinations and instrumentation, and psychological care which involves working with patients' anxieties and fears, negative attitudes regarding dental care, and attempts to provide appropriate dental health education. This patient contact could possibly be a critical element involved in students' negative attitude shift, specifically second year students' negative attitude shifts because they are expected to assume an ever increasing amount of decision making responsibilities and professional liability for their patients. These students may not be psychologically ready to assume the amount of responsibility set forth by the programs' clinical curriculums.

This ever increasing amount of decision making responsibility and professional liability may also play a role in the negative shift of the instructors' attitudes from pretest to posttest. Dental hygiene instructors are responsible not only for each student's performance, but also for the safety and care of patients seen by the students in the clinical setting. It is conceivable that the transmission of AIDS, a disease without a cure, has added

another dimension to safety concerns for the patients, students, and themselves. This is a tremendous and, at times, overwhelming amount of professional and personal responsibility which may very well have major implications in the way dental hygiene instructors perceive the profession of dental hygiene on a more realistic note than do their students.

As patient contact increases so does clinical evaluation of student performance. Second year students may have unfavorable attitudes regarding their program's clinical evaluation system and they may transfer some of those attitudes to their perceptions of the profession as a whole. This may also have implications in the second year dental hygiene students' negative shift in perceptions of their profession.

### Recommendations

As a result of this study, recommendations for future investigation are as follows:

1. Replication of the study on a similar population during each semester that the subjects are actually involved in their respective dental hygiene programs.
2. A qualitative study to identify what specific elements result in the negative shift of student and instructor perceptions of the dental hygiene profession.
3. A study to determine the effect of specific elements on student and instructor perceptions of the dental hygiene profession.

4. Comparison of the DHPAI perception scores of graduating students and graduates who have been in practice for one year.
5. Replication of the study using a larger number of subjects in the instructor group.

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## REFERENCES

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## APPENDIXES

## APPENDIX A

### Permission Letters

TEXAS WOMAN'S UNIVERSITY  
SCHOOL OF HEALTH CARE SERVICES  
HEALTH SCIENCES INSTRUCTION PROGRAM

AGENCY PERMISSION FOR CONDUCTING STUDY

The \_\_\_\_\_ #1  
DENTAL HYGIENE PROGRAM

GRANTS TO BARBARA J. BIRDWELL DEBOIS

a student enrolled in the School of Health Care Services who is working on a master's degree in Health Sciences Instruction at the Texas Woman's University, the privilege of its facilities/data in order to study the following problem:

The interrelationship of the perceptions of the dental hygiene profession, of selected Texas dental hygiene instructors and students over time, is unknown.

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (not willing) to allow the completed report to circulated through inter-library loan.
5. Other \_\_\_\_\_

DATE: 6/5/86

Signature of Agency

Barbara J. DeBois  
Signature of Student

\_\_\_\_\_  
Thesis Committee Chairman

47

TEXAS WOMAN'S UNIVERSITY  
SCHOOL OF HEALTH CARE SERVICES  
HEALTH SCIENCES INSTRUCTION PROGRAM

AGENCY PERMISSION FOR CONDUCTING STUDY

The \_\_\_\_\_ DENTAL HYGIENE PROGRAM #2

GRANTS TO

BARBARA J. BIRDWELL DEBOIS

a student enrolled in the School of Health Care Services who is working on a master's degree in Health Sciences Instruction at the Texas Woman's University, the privilege of its facilities/data in order to study the following problem:

The interrelationship of the perceptions of the dental hygiene profession, of selected Texas dental hygiene instructors and students over time, is unknown.

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (not willing) to allow the completed report to circulated through inter-library loan.
5. Other We would like a copy of the final report

DATE: 7/9/86

Signature of Agency

Barbara J. DeBois  
Signature of Student

\_\_\_\_\_  
Thesis Committee Chairman

TEXAS WOMAN'S UNIVERSITY  
SCHOOL OF HEALTH CARE SERVICES  
HEALTH SCIENCES INSTRUCTION PROGRAM

AGENCY PERMISSION FOR CONDUCTING STUDY

#3

The \_\_\_\_\_ Dental Hygiene Program

GRANTS TO

Barbara J. Birdwell DeBois

a student enrolled in the School of Health Care Services who is working on a master's degree in Health Sciences Instruction at the Texas Woman's University, the privilege of its facilities/data in order to study the following problem:

The interrelationship of the perceptions of the dental hygiene profession, of selected Texas dental hygiene instructors and students over time, is unknown.

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (not willing) to allow the completed report to circulated through inter-library loan.
5. Other \_\_\_\_\_

DATE: \_\_\_\_\_

July 1, 1986

\_\_\_\_\_  
Signature of Agency

Barbara J. DeBois  
Signature of Student

\_\_\_\_\_  
Thesis Committee Chairman

APPENDIX B

Instrument Cover Letter

Dear Participant,

As a dental hygiene educator, I am interested in the perceptions that instructors and students have of the dental hygiene profession, and the role that dental hygiene instructors play in the development of students' perceptions. In the attached survey, I am asking that you take a few minutes of your time to indicate your attitude toward each of the statements regarding the profession of dental hygiene. There are no right or wrong answers.

You may be assured of complete confidentiality. All information received from this questionnaire will be presented as group data. No one individual will be identified. The questionnaires have been pre-coded to indicate your status in terms of instructor, or first or second year student. For statistical matching purposes only, please indicate the last four digits of your social security number in the boxes provided on the front of the questionnaire.

Your participation is strictly voluntary and completion of the questionnaire indicates your willingness to participate. PLEASE REMEMBER THAT THERE ARE NO RIGHT OR WRONG ANSWERS.

The results of this research will be available to you upon completion of this study. As a graduate student of Texas Woman's University, I will be using these data to fulfill my thesis requirement for a Master of Science in Health Sciences Instruction. These data may also be used, at a later date, as the basis of articles submitted to professional journals for publication. If you wish to know the results of this research, or have any questions, please contact me at:

1-817-692-6611 Ext. 4764

Barbara J. BeBois  
1541 Malcolm  
Wichita Falls TX 76302

Thank you for your cooperation.

Sincerely,

A handwritten signature in cursive script that reads "Barbara J. DeBois".

Barbara J. DeBois, R.D.H., B.S.

## APPENDIX C

### Instrument



# PERCEPTIONS OF THE DENTAL HYGIENE PROFESSION

Please write in the last four digits of your social security number in the spaces provided to the right. This number will be used for matching purposes only, and no one individual will be identified. Thank you.

--	--	--	--	--

INSTRUCTIONS:

For each of the following statements, place a check in the column that most nearly indicates your attitude toward that statement. This is an attitude inventory. THERE ARE NO RIGHT OR WRONG ANSWERS. The choices range from one extreme to the other and include:

- Strongly Agree (SA)  
Agree (A)  
Disagree (D)  
Strongly Disagree (SD)

PLEASE ANSWER EACH OF THE STATEMENTS. THANK YOU.

1. The dental hygiene profession is a very prestigious health care profession.
2. The dental hygiene profession is an intellectually stimulating profession.
3. The dental hygiene profession is one of the lowest paid health care professions.
4. The dental hygiene profession is a rapidly growing health care profession.
5. The dental hygiene profession is highly controlled by the dental profession.
6. The dental hygiene profession is boring.

[illegible]

	Strongly Agree	Agree	Disagree	Strongly Disagree
7. The dental hygiene profession is held in very low esteem by members of other health care professions.				
8. The dental hygiene profession contributes very little to the prevention of dental disease.				
9. The dental hygiene profession is a very rewarding career choice in regards to personal satisfaction.				
10. The dental hygiene profession is in control of its own destiny.				
11. The dental hygiene profession is a career choice which I would highly recommend.				
12. The dental hygiene profession greatly enhances the practice of dentistry.				
13. The dental hygiene profession requires rigid conformance to tradition.				
14. The dental hygiene profession inadequately educates its members.				
15. The dental hygiene profession is poorly respected by the general public.				
16. The dental hygiene profession makes a valuable contribution to the prevention of dental disease.				
17. The dental hygiene profession offers financial security for its members.				
18. The dental hygiene profession is a very satisfying career choice.				
19. The dental hygiene profession allows an individual to be creative in his or her work.				
20. The dental hygiene profession offers flexibility in the job market.				



APPENDIX D

Letters Requesting Permission to Conduct Study

1541 Malcolm  
Wichita Falls, TX 76302  
March 17, 1986

Dear

As a dental hygiene educator, I am very interested in the role that I and other instructors have in the development of students' perceptions of the dental hygiene profession. Research has indicated that the perceptions of students in the health disciplines move toward the negative end of a continuum, as their education levels increase. I am interested in seeing if there is a relationship between the perceptions of students and their instructors, in regards to the profession of dental hygiene. The results of this research may provide more knowledge as to what variables play a role in the negative shift of students' perceptions.

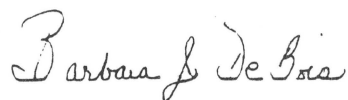
The Dental Hygiene Program is one of three programs being asked to participate in this study. Your program has been selected as a sample of convenience, and because it offers a different degree than the other programs participating in this research. The study would involve the administration of a researcher-designed Likert-type questionnaire, the Dental Hygiene Profession Attitude Inventory (DHPAI), during the first and last weeks of the 1986 Fall semester. The questionnaire would need to be administered to all first and second year dental hygiene students during a regularly scheduled class session, by the same individual reading a prepared statement of directions. The time needed for test administration is estimated at approximately 20 minutes. Your program's instructors would also need to answer the questionnaire during the first and last weeks of the 1986 Fall semester, however they would be able to do so at their own convenience.

You may be assured of complete confidentiality. In order to insure this, and be able to accomplish statistical matching, the questionnaires would be coded. This would require the respondent to indicate (1) status of instructor or first or second year student, and (2) the last four digits of his or her Social Security number. All information would be reported as group data.

The results of this research would be available to you upon completion of the study. As a graduate student of Texas Woman's University, I would be using these data to fulfill my master's requirement for a Master of Science in Health Sciences Instruction. These data may also be used, at a later date, as the basis of articles submitted to professional journals for publication.

Please let me know if you would agree to participate in this study. Your participation would be greatly appreciated. I will be most happy to answer any questions you might have. Please write, or call STS number (8-817-836-4737), Regular number (1-817-692-6611).

Sincerely,

A handwritten signature in cursive script that reads "Barbara J. DeBois". The signature is written in dark ink and is positioned above the printed name.

Barbara J. DeBois, R.D.H.

BJD: se

1541 Malcolm  
Wichita Falls, TX 76302  
June 9, 1986

Dear

As a dental hygiene educator, I am very interested in the role that I and other instructors have in the development of students' perceptions of the dental hygiene profession. Research has indicated that the perceptions of students in the health disciplines move toward the negative end of a continuum, as their education levels increase. I am interested in seeing if there is a relationship between the perceptions of students and their instructors, in regards to the profession of dental hygiene. The results of this research may provide more knowledge as to what variables play a role in the negative shift of students' perceptions.

The Dental Hygiene Program is one of three programs being asked to participate in this study. The study would involve the administration of a researcher-designed Likert-type questionnaire, the Dental Hygiene Profession Attitude Inventory (DHPAI) during the first and last weeks of the 1986 Fall semester. The questionnaire would need to be administered to all first and second year dental hygiene students during a regularly scheduled class session, by the same individual reading a prepared statement of direction. The time needed for test administration is estimated at approximately 20 minutes. Your program's full-time instructors would also need to answer the questionnaire during the first and last weeks of the 1986 Fall semester, however they would be able to do so at their own convenience.

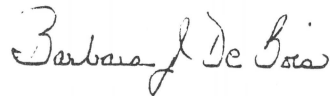
You may be assured of complete confidentiality. In order to insure this, and be able to accomplish statistical matching, the questionnaires would be coded. This would require the respondent to indicate (1) status of instructor, or first or second year student, and (2) the last four digits of his or her Social Security number. All information would be reported as group data.

The results of this research would be available to you upon completion of the study. As a graduate student of Texas Woman's University, I would be using these data to fulfill my master's requirement for a

Master of Science in Health Sciences Instruction. These data may also be used, at a later date, as the basis of articles submitted to professional journals for publication.

Please let me know if you would agree to participate in this study by filling out the attached consent form. Your participation would be greatly appreciated. I will be most happy to answer any questions you might have. Please write, or call STS number (8-817-836-4737), Regular number (1-817-692-6611), Home number (1-817-723-8216).

Sincerely,

A handwritten signature in cursive script that reads "Barbara J. DeBois".

Barbara J. DeBois, R.D.H.

BJD: se



APPENDIX E

Pretest Packet  
Letters to Program Directors

1541 Malcolm  
Wichita Falls TX 76302  
August 15, 1986

Dear

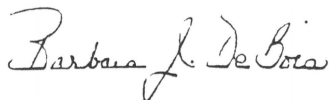
Enclosed you will find 50 copies of the Dental Hygiene Profession Attitude Inventory (DHPAI), and a stamped preaddressed envelope in which to return the questionnaires. Please return all 50 copies of the DHPAI within three days of their completion by your students and instructors.

Please have all of your first and second year dental hygiene students complete the questionnaire during the first week of the coming 1986 Fall semester, in a regularly scheduled class session. Your program's full-time instructors will also need to answer the questionnaire during the first week of the 1986 Fall semester, however they may do so at their own convenience. A letter of explanation has been attached to the front of each questionnaire. Please have the survey administrator verbally review this letter of explanation with the students, before they begin to answer the questionnaire.

I will be contacting you, by telephone, within the next two weeks to insure that you have received this DHPAI pretest packet, and to answer any questions you may have regarding the questionnaire and/or this research. If you need to contact me, for any reason, please write, or call STS number (8-817-836-4737), Regular number (1-817-692-6611), or my Home number (1-817-723-8216).

Thank you for your cooperation. Your participation in this research is greatly appreciated.

Sincerely,

A handwritten signature in cursive script, reading "Barbara J. DeBois".

Barbara J. DeBois, R.D.H.

1541 Malcolm  
Wichita Falls, TX 76302  
August 15, 1986

Dear

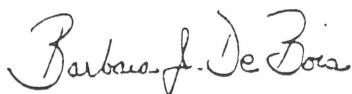
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Thank you for your cooperation. Your participation in this research is greatly appreciated.

Sincerely,



Barbara J. DeBois, R.D.H.

APPENDIX F

Posttest Packet  
Letters to Program Directors

1541 Malcolm  
Wichita Falls, TX 76302  
November 14, 1986

Dear

Enclosed you will find 50 copies of the Dental Hygiene Profession Attitude Inventory (DHPAI), and a stamped preaddressed envelope in which to return the questionnaires. Please return all 55 copies of the DHPAI within three days of their completion by your students and instructors.

Please have all of your first and second year dental hygiene students complete the questionnaire during the last week of this 1986 Fall semester, in a regularly scheduled class session. Your program's full-time instructors will also need to answer the questionnaire during the last week of this 1986 Fall semester, however they may do so at their own convenience. A letter of explanation has been attached to the front of each questionnaire. Please have the survey administrator verbally review this letter of explanation with the students, before they begin to answer the questionnaire.

I will be contacting you, by telephone, within the next two weeks to insure that you have received this DHPAI pretest packet, and to answer any questions you may have regarding the questionnaire and/or this research. If you need to contact me, for any reason, please write, or call STS number (8-817-836-4737), Regular number (1-817-692-6611), or my Home number (1-817-723-8216).

Thank you for your cooperation. Your participation in this research is greatly appreciated.

Sincerely,



Barbara J. DeBois, R.D.H., B.S.

1541 Malcolm  
Wichita Falls, TX 76302  
November 14, 1986

Dear

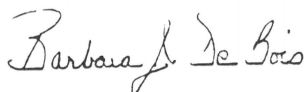
Enclosed you will find 50 copies of the Dental Hygiene Profession Attitude Inventory (DHPAI), and a stamped preaddressed envelope in which to return the questionnaires. Please return all 55 copies of the DHPAI within three days of their completion by your students and instructors.

Please have all of your first and second year dental hygiene students complete the questionnaire during the last week of this 1986 Fall semester, in a regularly scheduled class session. Your program's full-time instructors will also need to answer the questionnaire during the last week of this 1986 Fall semester, however they may do so at their own convenience. A letter of explanation has been attached to the front of each questionnaire. Please have the survey administrator verbally review this letter of explanation with the students, before they begin to answer the questionnaire.

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Thank you for your cooperation. Your participation in this research is greatly appreciated.

Sincerely,



Barbara J. DeBois, R.D.H., B.S.

## APPENDIX G

Table 4 DHPAI Pretest Factor Analysis

Table 4

DHPAI Pretest Factor Analysis

Item	Factors								
	1	2	3	4	5	6	7	8	9
1	.374	.314	.563	.231	-.126	-.312	.191	-.200	.105
2	.169	-.048	.094	.054	-.052	-.619	.408	-.371	.297
3	.273	-.449	.222	.532	.166	-.136	-.103	-.155	.378
4	.749	.118	.039	.127	-.039	.047	.039	-.110	.205
5	-.469	.423	-.214	.063	-.361	.148	.159	-.050	.133
6	.587	.211	.207	.322	.195	-.282	-.121	-.398	.507
7	.115	-.047	.136	.731	.028	-.329	-.186	-.428	.349
8	.068	.755	.073	-.032	.179	-.015	.015	-.016	.049
9	.529	-.027	.303	.203	-.086	-.488	-.292	-.414	.533
10	.602	-.208	.387	.263	-.295	-.129	-.264	-.114	.279
11	.505	.053	.009	.350	-.142	-.435	-.204	-.507	.502
12	.091	.333	-.049	.284	-.381	-.383	.040	-.135	.433
13	-.017	.125	.019	.067	.812	.015	-.116	.020	.096
14	.111	.339	.113	.159	-.026	-.662	-.160	-.125	.133
15	-.072	-.004	.355	.700	-.052	-.079	-.301	-.170	.308
16	.168	.472	.243	.204	-.057	-.234	.003	-.512	.179



Table 4

DHPAI Pretest Factor Analysis

Item	Factors								
	1	2	3	4	5	6	7	8	9
21	-.030	.333	.153	.203	.212	-.396	-.141	-.167	.349
22	-.041	.018	.475	.134	.017	.029	-.515	-.321	.463
23	.123	.044	-.077	.773	-.048	-.025	.134	-.025	.061
24	.398	.017	.194	.532	.189	-.151	-.197	-.402	.238
25	-.062	.037	.145	-.009	-.145	.138	.773	-.016	-.049
26	.078	.050	.808	.065	.082	-.200	.101	-.259	.055
27	-.003	-.205	.257	.170	-.054	-.702	-.086	-.022	.209
28	.406	-.152	.301	.341	-.159	.108	-.332	-.147	.369
29	.206	-.061	.034	.233	-.114	-.265	-.281	-.270	.764
30	.052	.029	.220	.159	-.036	.017	.009	-.871	.045
Items loading	4,5,6, 9,10, 11,18,28	3,5,8, 16	1,22,26	3,7,15, 17,23, 24	13	2,9,11, 14,18, 27	2,22,25	7,9,11,16, 17,18,24 30	6,9,11, 12,18,19, 20,22,29

## APPENDIX H

### Table 5 DHPAI Posttest Factor Analysis

Table 5

DHPAI Posttest Factor Analysis

Item	Factors								
	1	2	3	4	5	6	7	8	9
1	.472	-.223	-.218	.235	.312	.414	-.271	.213	.347
2	.523	-.148	-.201	-.002	.464	.404	.244	.290	.244
3	.125	-.684	.224	.003	.289	.323	-.227	-.215	-.117
4	.135	-.207	.013	.139	-.027	.779	-.279	-.039	.156
5	.042	.086	.068	-.068	-.109	-.073	-.158	.797	-.115
6	.819	-.391	.297	.229	.275	.351	.025	-.034	.216
7	.251	-.837	.055	.129	.079	.263	.066	-.002	-.029
8	.393	-.071	.270	.107	.616	.058	-.075	-.128	-.152
9	.649	-.220	.162	.405	.182	.517	-.101	.254	.101
10	.437	-.309	.053	-.035	.138	.684	.001	-.153	-.096
11	.788	-.413	.229	.190	.273	.140	-.120	.269	.315
12	.356	-.228	.382	-.027	.276	.165	.140	.457	.386
13	-.044	.031	.129	.005	-.139	-.120	.800	-.161	.097
14	.350	-.081	.673	.034	.143	-.030	.022	.220	.319
15	.273	-.696	.127	.192	.035	-.011	-.248	-.142	.225
16	.253	-.078	.569	.247	.491	.378	.033	.029	.045

Table 5

DHPAI Posttest Factor Analysis

Item	Factors								
	1	2	3	4	5	6	7	8	9
17	.430	-.357	.048	.378	.321	.319	-.461	-.141	.106
18	.775	-.444	.187	.415	.275	.367	-.163	.173	.280
19	.637	-.299	.267	.030	.092	.370	-.181	.037	.408
20	.261	-.355	.199	.048	.352	.228	-.434	-.050	.468
21	.289	-.249	.132	.753	.079	.003	-.020	.057	.070
22	.220	-.263	.627	.248	-.156	.094	.036	.040	.201
23	.289	-.795	.053	.235	.028	.171	-.094	.057	.141
24	.300	-.375	.236	.548	.247	.573	-.011	-.035	.107
25	.065	-.107	-.106	.083	.791	.015	-.157	.022	.081
26	.136	-.131	.108	.667	.139	.285	-.088	-.183	.441
27	.128	.033	.224	.213	-.078	-.012	.200	-.028	.747
28	.482	-.299	.144	-.049	-.033	.299	-.454	-.440	-.024
29	.841	-.235	.340	.310	.172	.236	-.035	.032	.048
30	.671	-.410	.009	.283	.328	.115	-.186	.139	.343
Items loadings	1,2,6,9, 10,11,17, 18,19,28, 29,30	3,7,11, 15,18, 23,30	14,16, 22	9,18,21, 24,26	2,8,16, 25	1,2,4,9, 10,24	13,17, 20,28	5,12,28	19,20, 26,27

APPENDIX I

Table 6 DHPAI Pretest  
Principle Components Analysis

Table 6

DHPAI Pretest Principle Components Analysis

Item	Communality	Eigenvalue	% of Variance
1	1.00	7.03792	23.5
2		2.07559	6.9
3		1.73942	5.8
4		1.67484	5.6
5		1.56965	5.2
6		1.44522	4.8
7		1.24607	4.2
8		1.17461	3.9
9		1.07630	3.6
10		.94311	3.1
11		.90964	3.0
12		.85670	2.9
13		.75062	2.5
14		.72546	2.4
15		.68065	2.3
16		.67017	2.2
17		.60771	2.0
18		.58231	1.9
19		.55562	1.9
20	1.00	.45403	1.5

Table 6

DHPAI Pretest Principle Components Analysis

Item	Communality	Eigenvalue	% of Variance
21	1.00	.44969	1.5
22		.43340	1.4
23		.41359	1.4
24		.39664	1.3
25		.34263	1.1
26		.32785	1.1
27		.29318	1.0
28		.21497	.7
29		.20427	.7
30	1.00	.14812	.5

## APPENDIX J

### Table 7 DHPAI Posttest Principle Components Analysis



Table 7

DHPAI Posttest Principle Components Analysis

Item	Communality	Eigenvalue	% of Variance
1	1.00	8.08186	26.9
2		2.21753	7.4
3		1.82081	6.1
4		1.51862	5.1
5		1.40862	4.7
6		1.35731	4.5
7		1.24829	4.2
8		1.15399	3.8
9		1.10598	3.7
10		.88818	3.0
11		.85245	2.8
12		.82457	2.7
13		.78223	2.6
14		.66238	2.2
15		.65397	2.2
16		.59340	2.0
17		.57131	1.9
18		.55370	1.8
19		.51245	1.7
20	1.00	.47627	1.6

Table 7

DHPAI Posttest Principle Components Analysis

Item	Communality	Eigenvalue	% of Variance
21	1.00	.42605	1.4
22		.36122	1.2
23		.32910	1.1
24		.29893	1.0
25		.28898	1.0
26		.27046	.9
27		.22068	.7
28		.19104	.6
29		.17296	.6
30	1.00	.15667	.5