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Job Satisfaction Among Three Different Dental Hygiene Occupational Settings

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JOB SATISFACTION AMONG THREE DIFFERENT
DENTAL HYGIENE OCCUPATIONAL SETTINGS

by

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R.D.H. August 1973, University of Pittsburgh
B.S. May 1977, University of Pittsburgh

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of Old Dominion University in Partial
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ABSTRACT

JOB SATISFACTION AMONG THREE DIFFERENT DENTAL HYGIENE OCCUPATIONAL SETTINGS

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A survey was conducted to determine differences in job satisfaction which may exist among dental hygienists employed in private practice positions, public health positions, and dental hygiene education positions. A modified version of the questionnaire developed by the Washington State Dental Auxiliaries Project was mailed to all public health dental hygienists, all dental hygiene educators, and a randomized sample containing ten percent of private practice employed dental hygienists residing in North Carolina for a total of 334 participants. From a 76 percent response rate, results indicated that dental hygiene educators feel more satisfied overall than private practice dental hygienists and public health dental hygienists, as revealed by analysis of variance. The investigation revealed statistically significant differences among the three occupational groups regarding opportunity to develop professionally with educators

ranked first, job security with private practitioners most satisfied, time pressure with private practitioners ranked first, and general job satisfaction with public health dental hygienists most satisfied.

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TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS.....	ii
LIST OF TABLES.....	vi
Chapter	
1. INTRODUCTION.....	1
STATEMENT OF THE PROBLEM.....	2
SIGNIFICANCE OF THE PROBLEM.....	5
DEFINITION OF TERMS.....	7
ASSUMPTIONS.....	9
LIMITATIONS.....	10
HYPOTHESES.....	11
METHODOLOGY.....	15
2. REVIEW OF THE LITERATURE.....	17
JOB SATISFACTION GENESIS.....	17
DEMOGRAPHIC CONSIDERATIONS OF DENTAL HYGIENE.....	20
PRIVATE PRACTICE.....	23
NONTRADITIONAL DENTAL HYGIENE OCCUPATIONAL SETTINGS.....	44
PUBLIC HEALTH.....	46
DENTAL HYGIENE EDUCATORS.....	50
SUMMARY.....	53
3. METHODS AND MATERIALS.....	55
SAMPLE DESCRIPTION.....	55
METHODOLOGY.....	56
PROTECTION OF HUMAN SUBJECTS.....	56
INSTRUMENTATION.....	58
STATISTICAL TREATMENT.....	61
4. RESULTS AND DISCUSSION.....	63
RESULTS.....	64
DISCUSSION.....	78

Chapter	Page
5. SUMMARY AND CONCLUSIONS.....	98
BIBLIOGRAPHY.....	104
 APPENDICES	
A. COVER LETTER FOR FIRST MAILING.....	110
B. DEMOGRAPHIC INFORMATION SHEET.....	112
C. WASHINGTON STATE DENTAL AUXILIARIES PROJECT JOB SATISFACTION INSTRUMENT.....	114
D. COVER LETTER FOR SECOND MAILING.....	130
E. RESPONSES TO THE WASHINGTON STATE DENTAL AUXILIARIES PROJECT JOB SATISFACTION INSTRUMENT.....	132

LIST OF TABLES

TABLE	PAGE
1. Analysis of Variance for Content Factors Among Three Occupational Settings.....	65
2. Level of Satisfaction with Content Factors Ranked by Occupational Setting.....	67
3. Analysis of Variance for Context Factors Among Three Occupational Settings.....	69
4. Level of Satisfaction with Context Factors Ranked by Occupational Setting.....	70
5. Analysis of Variance for Stress Factors Among Three Occupational Settings.....	72
6. Level of Satisfaction with Stress Factors Ranked by Occupational Setting.....	74
7. Analysis of Variance for General Factors Among Three Occupational Settings.....	76
8. Level of Satisfaction with General Factors Among Three Occupational Settings.....	77

CHAPTER 1

Introduction

Job satisfaction may be defined as a pleasurable or positive emotional state, resulting from the appraisal of one's job or job experiences.²⁹ The topic of job satisfaction has been studied extensively by industrial psychologists since the Hawthorne⁴⁰ studies of the early twentieth century. Since then, many theories of job satisfaction have emerged which may be grouped into two categories: content theories and process theories. Content theories include the work of Maslow³⁰ and Herzberg¹⁹ and explain what needs, values, or expectations are important to individuals in determining job satisfaction. Process theories of job satisfaction focus on how variables of individual need, values, and expectations interact to create fulfillment or frustration on the job.⁴⁵

Job satisfaction levels of dental hygienists have been investigated in the last 15 years using a variety of instruments and criteria based upon primarily content theories. A number of studies have dealt with the private practice setting as the source of job satisfaction or dissatisfaction using attrition as the indicating

factor.^{32,43,51} The literature included three studies which investigated job satisfaction and burnout among dental hygiene educators.^{23,35,39} Two studies were found which examined job satisfaction in dental hygiene public health positions.^{8,47} No studies were found that measured job satisfaction in all three settings using the same instrument.

This study surveyed job satisfaction levels among dental hygienists employed in private practice settings, public health practice settings, and dental hygiene education settings. Aspects of Herzberg's content theory along with other factors unique to dental environments are correlated with dental hygiene job satisfaction levels. Content factors related to qualities inherent in the job, context factors related to the job setting, and stress factors related to the diminishing energy and purpose on the job were examined, thereby contributing to the development of a distinct job satisfaction theory for dental hygiene professionals.

Statement of the Problem

Content, context, stress, and general factors were further subdivided into measurable units. The study addressed the following questions:

Content

1. What is the difference in level of satisfaction with recognition of achievements among private practice dental hygienists, public health dental hygienists, and

dental hygiene educators?

2. What is the difference in level of satisfaction with opportunity to develop professionally among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

3. What is the difference in level of satisfaction with time to develop professionally among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

4. What is the difference in level of satisfaction with responsibility among private practice dental hygienists, and public health dental hygienists, and dental hygiene educators?

5. What is the difference in level of satisfaction with quality of service delivery among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

Context

1. What is the difference in level of satisfaction with income among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

2. What is the difference in the level of satisfaction with job security among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

3. What is the difference in level of satisfaction

with nonpatient tasks among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

4. What is the difference in level of satisfaction with staff relations among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

5. What is the difference in level of satisfaction with feedback among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

6. What is the difference in level of satisfaction with role delineation among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

Stress

1. What is the difference in level of satisfaction with leisure time among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

2. What is the difference in level of satisfaction with fatigue among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

3. What is the difference in level of satisfaction with time pressure among private practice dental hygienists, public health dental hygienists, and dental

hygiene educators?

General

1. What is the difference in level of overall job satisfaction among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

2. What is the relationship between overall job satisfaction and length of time in present position among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

3. What is the relationship between overall job satisfaction and level of education among private practice dental hygienists, public health dental hygienists, and dental hygiene educators?

Significance of the Problem

The presence of low levels of job satisfaction perceived by dental hygiene practitioners merits careful investigation.^{33,48,51} Dental hygienists who continue to work in settings where satisfaction is low may suffer physical effects such as low energy, chronic fatigue, weakness, weariness, accident-proneness, increased susceptibility to illness, frequent headaches, nausea, and muscle tension in shoulders, neck, and back.³⁶ Moreover, skin allergies and other dermatological conditions resulting from exposure to toxic substances may become exacerbated in a high stress environment. Such toxic substances include chemical sterilizants, mercury vapor,

and nitrous oxide vapors.⁴⁶ Medical costs, recuperative time, and lost productivity combine to yield an expensive episode of job-related illness. Dental hygienists who quit their jobs waste expensive training and often feel a sense of failure and guilt while those who stay pay a high psychological price. Patients frequently wait longer for treatment and receive less attention and concern. The quality of care diminishes, and the dental hygienist may lack empathy for patients' concerns.³⁶ Through insufficient staffing or treatment of high numbers of patients due to cost/benefit considerations, personnel may suffer low satisfaction and burnout. Costs related to position turnover, absenteeism, decreased productivity, and burnout result in high costs economically and psychologically for workers, employers, and consumers.³⁶ The organization must include the cost of job dissatisfaction and burnout in the operating expenses.

This study examined current levels of job satisfaction in three different dental hygiene occupational settings and attempted to define the role that content, context, and stress factors have on job satisfaction. Additionally, the effect occupational setting has on job satisfaction was investigated. Dimensions of Herzberg's satisfaction theory as well as aspects unique to dental hygiene positions were analyzed. Through an index which used 15 different subscales, an in-depth profile of dental hygiene job

satisfaction emerged.

Results from this study have implications for future dental hygiene positions. Qualified applicants might vie for positions found to be most stimulating and fulfilling. Private practice dentists interested in staff development and in minimizing turnover rate might use information from sub-indices on which private practice dental hygienists scored low to enrich the position. A comparison of specific values of subscales indicating significant differences may stimulate changes or modifications in practice behaviors. In an educational setting, results from the study may help high school and college counselors guide students in their selection of a dental hygiene career based on individual factors which enhance job satisfaction and career orientation factors.

Definition of Terms

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

1. Dental Hygienist: A licensed oral health clinician and educator who uses preventive, therapeutic, and educational means to control oral diseases to assist individuals and groups in attaining and maintaining optimum oral health⁴⁹

2. Private Practice Dental Hygienist (PPDH): A licensed dental hygienist who is employed in a private dental practice for a minimum of twenty-eight (28) hours per week.

3. Public Health Dental Hygienist (PHDH): A licensed dental hygienist who is employed for a minimum of thirty (30) hours per week in a public health dental hygiene position. Responsibilities are primarily community health and education services.

4. Dental Hygiene Educator (DHE): A teacher of dental hygiene whose primary responsibility is instruction within the dental hygiene curriculum and is considered a full-time faculty member.

5. Job Satisfaction: A pleasurable or positive emotional state, resulting from the appraisal of one's job or job experiences.¹⁴ Job satisfaction will be measured by the responses to the Washington State Dental Auxiliaries Project Job Satisfaction Instrument (WSDAPJSI).⁵ Three sub-dimensions of job satisfaction will be measured:

- A. Content dimensions: Those factors related to qualities inherent in the job itself. Sub-indices which measure content factors include: recognition of achievements, opportunity and time to develop professionally, responsibility, and quality of service delivery.
- B. Context dimensions: Those factors related to circumstances in which the job is performed. Sub-indices which measure context factors include: income, job security,

nonpatient tasks, staff relations, role delineation, and feedback.

C. **Stress:** A physical, chemical, or emotional factor that causes bodily or mental tension. Sub-indices of the instrument which measure stress include: leisure time, fatigue, and time pressure.

6. **Burnout:** A progressive loss of idealism, energy, and purpose on the job.¹⁰

Assumptions

The following assumptions are made for this study:

1. The subjects will answer the questionnaire and Demographic Information Sheet accurately, completely, and truthfully. All subjects will receive printed directions for completing the instruments in the cover letter and on the questionnaire and Demographic Information Sheet (Appendices A, B, and C).

2. The WSDAPJSI, as modified, is an appropriate instrument for measuring job satisfaction in three different dental hygiene settings. All subscales in the original instrument were developed using a rational empirical approach and have internal consistencies greater than 0.68r using Crombach's alpha. These reliabilities are adequate for group comparisons.³⁴ Content validity was assessed by a panel review of dental professionals. PHDH and DHE groups were given modified instruments with descriptors changed to apply to the particular reference

group. Changing descriptive terms to relate to the reference groups might not significantly change item validity.

3. Individuals selected for the study were representative of the sample.

4. Individuals responding to the study were representative of the target population.

Limitations

The investigation might have been limited by the following factors:

1. The Demographic Information Sheet had no previously established validity; however, a group of experts determined content validity of items.

2. Validity of the questionnaire might be affected by the following factors:

A. Individuals might misinterpret the meaning of the questions.

B. The responses might be affected by ego-defensive responses. Under reporting of dissatisfaction which implies personal failings or deficiencies is common in the helping professions.³¹

C. Individuals genuinely might lack insight into their situation. Often teachers lack training in identifying stress sources and the cause of their anxiety.²⁷

D. Individuals might feel threatened by the

personal nature of the questionnaire. An attempt to control for this effect was the provision of confidentiality.

- F. Subject selection bias might exist since respondents are volunteers. Volunteers characteristically exhibit higher interest and motivation than do non-volunteers.

Hypotheses

The following null hypotheses will be tested at the 0.05 level of significance:

Content

Ho₁ There is no statistically significant difference in the level of satisfaction with recognition of achievements among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₂ There is no statistically significant difference in the level of satisfaction with opportunity to develop professionally among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₃ There is no statistically significant difference in the level of satisfaction with time to develop professionally among private practice dental hygienists, public health dental hygienists, and dental hygiene

educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₄ There is no statistically significant difference in the level of satisfaction with responsibility among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₅ There is no statistically significant difference in the level of satisfaction with quality of service delivery among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Context

Ho₁ There is no statistically significant difference in the level of satisfaction with income among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₂ There is no statistically significant difference in the level of satisfaction with job security among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₃ There is no statistically significant difference in the level of satisfaction with nonpatient tasks among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₄ There is no statistically significant difference in the level of satisfaction with staff relations among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₅ There is no statistically significant difference in the level of satisfaction with feedback among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₆ There is no statistically significant difference in the level of satisfaction with role delineation among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Stress

Ho₁ There is no statistically significant difference in the level of satisfaction with leisure time among

private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₂ There is no statistically significant difference in the level of satisfaction with fatigue among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₃ There is no statistically significant difference in the level of satisfaction with time pressure among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

General

Ho₁ There is no statistically significant difference in overall job satisfaction among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the overall score on the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Ho₂ There is no statistically significant difference between length of time in present position and overall job satisfaction among private practice dental hygienists, public health dental hygienists, and dental hygiene

educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument..

Ho₃ There is no statistically significant difference between level of education and overall job satisfaction among private practice dental hygienists, public health dental hygienists, and dental hygiene educators as measured by the Washington State Dental Auxiliaries Project Job Satisfaction Instrument.

Methodology

The purpose of this study was to measure levels of job satisfaction in three different dental hygiene occupational settings. All licensed dental hygienists and dental hygiene educators in North Carolina were eligible for participation in this investigation. North Carolina was chosen due to the size of sampling groups. One hundred percent of the PHDH and DHE groups were included in the study. Of the remaining dental hygienists licensed in North Carolina, a ten percent randomized sample was surveyed for a total sample of 334. All participants were sent a packet including a Demographic Information Sheet, a WSDAPJSI, and an addressed stamped envelope. After approximately two weeks, non-responders were sent a second cover letter with a WSDAPJSI and a stamped addressed envelope. Only responses received within the four week data-collection period were included in the study. From a response rate of 79 percent, data obtained from the demographic information sheet and the job satisfaction

instrument were analyzed using analysis of variance.

CHAPTER 2

Review of the Literature

Employment satisfaction of dental hygienists has been examined by many researchers in the past 15 years. Numerous articles 7,13,17,18,20,21,28,33 reveal that a majority of dental hygienists appear satisfied with their positions while other studies^{11,37,51} indicate high levels of dissatisfaction with dental hygiene practice.

While researchers have examined extensively those factors contributing to satisfaction or dissatisfaction in private practice settings, little has been written concerning job satisfaction in public health dental hygiene positions and dental hygiene education positions. 8,23,35,39,47 To date, no study has contrasted job satisfaction levels of the three positions using the same instrument.

This review analyzed the literature pertaining to job satisfaction criteria in three different dental hygiene settings: private practice, public health, and dental hygiene education. Factors which enhanced satisfaction or contributed to dissatisfaction were identified.

Job Satisfaction Genesis

Roethlisberger and Dickson⁴⁰ examined the

relationship between productivity and working conditions in the Hawthorne Studies of the 1940's. From the work of Dickson and Roethlisberger emphasis on worker satisfaction and the effect satisfaction had on productivity gained importance. Many theories of job satisfaction have emerged of which content theories and process theories are major types. Content theories examine the needs, values, and expectations of workers and are applied in Maslow's³⁰ hierarchy. Maslow developed a hierarchy of needs based on a pyramidal structure with basic physiological needs at the lowest level and self-actualization at the highest level. Maslow's³⁰ hierarchy of needs purports that individuals in lower level occupations are motivated by lower level needs. Individuals in higher level occupations, with their basic needs satisfied, are motivated to achieve higher level needs.

Herzberg¹⁹ developed content theory in his two-factor approach to job satisfaction using context and content factors associated with the job. Context factors were related to the circumstances in which the job was performed: salary, working conditions, quality of supervision, job security, and fringe benefits. Context factors were not capable of causing satisfaction if present, but were capable of causing dissatisfaction if not present. The factors considered to be context related equate to lower order needs in Maslow's hierarchy. Content factors capable of causing motivation and

satisfaction on the job were related to qualities inherent in the job itself: achievement, recognition, and the intrinsic interest of the work itself. Content factors were capable of causing high satisfaction when present, but when lacking, did not produce dissatisfaction. The content factors correspond to Maslow's higher level needs, such as self-actualization.

Process theories of job satisfaction focus on how variables of individual need, values, and expectations interact to create fulfillment or frustration on the job.⁴ Expectations for fulfillment vary by the individual according to sex,²⁴ nature of supervision,¹² and level of education.²⁴ Process theories of job satisfaction include expectation theory, equity theory, and reference group theory. The expectation that individuals will fulfill their needs through the job yields satisfaction or dissatisfaction when individuals' needs are perceived to be met or unmet. A specified input by the individual is expected to be followed by a specified outcome. To the degree input is positive or negative in a given situation, the outcome is positively or negatively rewarded.⁴⁵ Equity theory proposes that the ratio of the amount of input, or work, to the amount of output, or reward, determines individual job satisfaction.¹ When the input/output ratios of the individual and a reference person are compared, an equity exists when both ratios are equal. The equity between individuals' ratios yields

satisfaction. When the worker exerts greater effort or receives lesser compensation, an inequity exists resulting in dissatisfaction. In applying equity theory, several theorists have argued that an understanding of the reference groups upon which the ratio is compared is essential.²⁶ An outcome perceived as inequitable may be based on a reference group which is not a true parallel. Expectations based on reference groups must consider personality factors and individual needs and values. High levels of dissatisfaction on the job can precede burnout, a psychological construct defined as the progressive loss of idealism, energy, and purpose on the job.¹⁰

From the work of industrial psychologists, dental hygiene job satisfaction determinants may be proposed. While three studies^{13,20,48} have used Herzberg's two-factor approach as the theoretical basis, most studies have used investigator-designed questionnaires to solicit reasons for satisfaction and dissatisfaction.

Demographic Considerations of Dental Hygienists

Demographic characteristics of dental hygiene practice were considered in a survey of graduates of the University of Iowa dental hygiene program.⁴¹ Twelve consecutive classes of dental hygienists (N=435) were sent a closed-item questionnaire prepared by the investigators with assistance from dental hygiene faculty and measurement specialists. Items were reviewed for modification before the final form was completed. A cover

letter and addressed, stamped envelope accompanied the questionnaire. After three weeks, non-responders were sent a second cover letter, questionnaire, and return envelope. Results indicated that 81 percent of respondents were presently employed in some type of dental hygiene practice. Of that 81 percent, private practice was the employment setting for 70.4 percent of the respondents, dental hygiene education accounted for 6.3 percent of the respondents, and another 6.3 percent of the respondents were involved in various types of public health and community dental health employment settings. Findings revealed that 19.1 percent of all respondents were not presently employed as dental hygienists. The major reason for unemployment was family commitments. Disinterest in dental hygiene was expressed by 13.4 percent of those not presently employed as their reason for not being employed in the field.

A demographic profile by Sodano and Javian⁴³ used 16 classes of graduates of the Fones School of Dental Hygiene in studying attrition from active practice. Questionnaires containing demographic data were sent to 719 graduates. Most items for the questionnaire called for open-ended responses. The replies were categorized and frequency distributions were obtained. No information was given concerning content validity or reliability of the questionnaire. Three hundred thirty-six questionnaires were returned for a response rate of 47

percent. In an effort to diminish non-response bias, a random sample of 110 was selected from the group which had not replied and efforts were made to contact non-responders by telephone. Of those in the group of non-responders, half were successfully contacted. All of the non-respondents reached were still in active practice. Results showed that 85 percent of the dental hygienists having graduated between 1963 and 1978 included in this study were still practicing. Approximately 75 percent were employed in private practice, 5.4 percent were employed in education, and 2.7 percent were employed in public health positions. Of the 14.5 percent not employed in dental hygiene, the major reasons cited for leaving were maternity and family responsibilities. Less than 20 percent of those not employed in dental hygiene left for reasons of career change or low job satisfaction. Sodano observed that the low attrition rate might be an indication of the difficulty of transferring dental hygiene skills to other endeavors given the limited educational preparation for other roles.

Williams and Schuman⁵⁰ studied the attrition of dental hygienists and the impact attrition had on manpower needs. Registered dental hygienists from Tennessee comprised the population. The sample consisted of 15 percent of all certified dental hygienists in Tennessee and was randomly selected by the Tennessee Health Labor Statistics Bureau. A 16-item questionnaire/opinionnaire

was constructed to determine employment characteristics, attrition or growth in the profession, plus selected demographic information. Results, based on a 53 percent response rate (N=95), showed that 73.7 percent of dental hygienists surveyed had remained in their profession since graduation. Of the 26.3 percent who had left practice on a permanent basis, almost half attributed the change to career dissatisfaction and lack of respect from dentists. The remaining 13 percent reported a high degree of satisfaction at the time of their withdrawal, but listed family demands as the prime reason for leaving active practice. Occupational settings of respondents were as follows: private practice (91.7 percent), dental hygiene education (5.5 percent), and public health facilities (2.7 percent). No mention was made of validity and reliability of the questionnaire. The small number of responses may diminish the generalization of the findings; however, the results are consistent with those of Sodano and Javian⁴³ and Rossman and Hunter⁴¹.

Private Practice

One of the earliest surveys of dental hygiene practice was done by Zaki and Stallard.⁵¹ This study used actual and predicted attrition from dental hygiene practice as an indication of dissatisfaction. Thirty-eight senior dental hygiene students were asked to predict how long they would practice full-time and then were asked the same question one year later to test any change in

perception. Initially, 18 percent of the senior class stated that they would practice over five years; however, after the first year, a follow-up questionnaire revealed that 42 percent had left full-time practice. The authors state that it is interesting to speculate if the reason for such large scale abandonment of full-time practice resulted from disillusionment with the dental hygienist's role or from largely personal reasons. Perhaps, the findings reflect the women's lack of career orientation of that time. Since Zaki's study was the first documented work examining dental hygiene job satisfaction levels, the study is frequently referenced. However, due to the changes over the past 15 years in career perceptions by women, observations recorded in 1971 might not be valid in 1988.

The authors do not suggest what reasons prompted the shift of dental hygienists from full-time practice, nor whether part-time employment was substituted, nor whether active practice was entirely abandoned. Sampling techniques were a possible limitation in that intact groups were used. No information on validity or reliability was furnished for the questionnaire.

Pitchford, et al.³⁷ examined job satisfaction by comparing senior baccalaureate students with dental hygiene practitioners in three of the five elements of the Job Descriptive Index (JDI). The Job Descriptive Index has proven construct validity^{15,16} and measures levels of

satisfaction for the following categories: work on the job, supervision, co-workers, present pay, and opportunities for promotion. The sample for this study consisted of 140 graduates of the Ohio State University Division of Dental Hygiene for the practitioner group and the senior dental hygiene class (N=78) from the same institution for the student sample. Using the Statistical Package for the Social Sciences programs, analysis of variance procedures were used to detect differences between graduate and student scores. Results showed that student expectations were significantly higher than graduates for pay and opportunities for promotion which led the authors to conclude that such expectations may lead to "reality shock" and probably contribute to eventual dissatisfaction with the job and/or the profession. The authors further conclude that many graduates view dental hygiene as a "dead end" job. Generalizability of the results might be hampered due to the use of male norms for comparison purposes which may not accurately represent the overwhelmingly female dental hygienist population. Generalizability may be further compromised by the use of intact groups.

Two aspects of dental hygiene practice were examined by Farrugia:¹¹ first, the relationship between the scope of functions and career and job satisfaction, and second, whether a broader range of functions in practice promoted satisfaction. Two senior dental hygiene classes from the

University of Michigan (N=62) and 76 graduates of the program who were then practicing participated by completing a questionnaire developed by the investigator. Response rates for the students and alumnae were 94 percent and 87 percent, respectively. Sub-indices of the questionnaire examined: scope of traditional dental hygiene functions expected by students and experienced by graduates, the alumnae's satisfaction with their current positions, and the students' and alumnae's satisfaction with their career choice. The instrument was pre-tested on ten students and eight graduates prior to general distribution; however, no validity or reliability information is given for the instrument. Results, significant at the 0.10 level, revealed that students expected a greater scope of functions than the alumni practiced and expressed greater career satisfaction than the alumni. The majority of alumni were dissatisfied with the chance to use their skills and knowledge, the variety in the work, and the opportunity for advancement.

McAdams³² surveyed 100 California dental hygienists to determine reasons why they disliked their practices then correlated the findings with interpersonal behavior characteristics. An author-designed questionnaire and the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) survey instrument were administered at the Northern California Dental Hygienists' Association's Annual Meeting in 1974. Results indicated that 47 percent

of the respondents disliked the limitation of duties imposed by law (no expanded duties); 36 percent disliked the lack of staff meetings; 35 percent disliked outdated, outmoded equipment; 33 percent disliked the fact that patients were not referred often enough to the periodontist; and 32 percent disliked excessive waiting for the dentist to examine the patient. No significant correlation existed between likes or dislikes of the dental hygiene current practices and scores on the interpersonal behavior questionnaire. Eighty-seven percent of the respondents indicated that they would become dental hygienists again and 85 percent of the respondents claimed they liked their last dental hygiene position.

McAdam's study has questionable generalizability due to sampling technique since only 100 of the 160 dental hygienists attending the meeting responded by completing the survey instruments. Additionally, the use of intact groups may have introduced bias.

Green and Comisarow¹³ used Herzberg's Motivator-Hygiene theory to discover which specific job experiences lead to job satisfaction or dissatisfaction. Factors which lead to positive feelings are related to the job itself or the content of the job: achievement, recognition of achievement, the work itself, responsibility, and advancement. Herzberg termed these factors as motivators. Factors which lead to negative

feelings are related to the environment in which the work is done or the job context: company policy and administration, technical supervision, salary, interpersonal relations within the working environment, and working conditions. These factors are considered hygiene or maintenance factors. The environment becomes more comfortable with good hygiene factors. The survey utilized questionnaire packets which included three items: a demographic data sheet with checklists for determining reasons for cessation of active practice had they done so, a Choice Motivator Scale which included nine task groups rated by respondents for motivator content, and the Job Motivation Inventory which measured one's need for motivators and maintenance factors. All instruments were author-designed with no information furnished regarding reliability and validity. The sample consisted of 76 dental hygiene students and 113 practicing dental hygienists. Students completed survey instruments shortly before graduation. Dental hygiene practitioners were obtained by random selection of 435 registered dental hygienists in Ohio and mailed questionnaire packets. The response rate was 25.9 percent for the practitioners. Results of students were not given; however, those of the practitioners showed that of the 113 responding graduates, 73 (64.6 percent) were currently employed, and 40 (35.4 percent) were currently unemployed. Of those who were not employed, 75 percent indicated that "pregnancy or family

responsibilities" was the reason. The second most prevalent reason was marriage, chosen by 27.5 percent. When asked whether they intended to return to work, 87.5 percent answered "yes". Respondents were asked to rate "most liked" and "least liked" aspects of their job from a list of descriptors. Subjects selected "working with the public" and "helping people help themselves" as the most liked aspects while the least liked aspect was repetitiveness of the work. The authors indicated that dental hygienists see a need for job enrichment and desire enriching tasks. Serious limitations of this study include the very low response rate (25.9 percent) on which data are analyzed and a lack of information on sampling techniques. No further mention is made of data collected from students.

Hunter and Rossman²⁰ assessed several aspects of dental hygiene practice in 1978 by surveying 247 University of Iowa baccalaureate dental hygiene graduates employed in dental office settings. The population consisted of graduates from the classes of 1966 through 1977 (N=435). Graduates were sent a questionnaire, an addressed stamped envelope, and a cover letter. In three weeks a second mailing was made to nonrespondents. An overall response rate of 80.9 percent yielded 70.4 percent of respondents currently employed as dental hygienists in dental office settings. Reasons for current employment, satisfaction with current employment, impressions of

private practice employment, and interest in accepting other types of dental hygiene employment were examined. Factors used in selecting their present employment were termed extrinsic (relating to job context) or intrinsic (relating to job content). Results showed that 90.4 percent of the respondents were satisfied with their current employment; however, 52 percent indicated interest in practice settings other than private dental offices. Extrinsic factors in employment consisted of pleasant working conditions (75.5 percent), convenient working hours (56.7 percent), and availability of employment (55.5 percent). Intrinsic factors in employment consisted of quality-oriented practice (69.8 percent) and preventive-oriented practice (64.1 percent). Although 70 percent agreed or strongly agreed that private practice offers personal satisfaction, nearly 75 percent of the population disagreed or strongly disagreed that opportunities for professional advancement existed in private practice. The authors stated that "while personal satisfaction may be derived from private practice employment, the presence of personal satisfaction may not be a determining factor in employment satisfaction".²⁰ Employment satisfaction is more likely attributable to factors such as convenient work hours, pleasant conditions, and working in a quality-oriented and preventive-oriented practice.

Intrinsic versus extrinsic factors were examined again in 1984 by Weinstein and Perri.⁴⁸ Their study

examined the idea that job satisfaction, attitudes about professional autonomy, and preservice educational preparation are related to the rewards and gratifications sought by dental hygienists through their work. Participants in the study included 120 practicing dental hygienists in the metropolitan New York City area. From the pool of 120, a sample of 69 (57 percent) volunteered to participate by completing and returning a questionnaire. The questionnaire included four sub-indices plus demographic information. Sub-indices examined intrinsic-extrinsic reward motivation, job dissatisfaction, attitudes about preservice educational requirements, and attitudes toward professional autonomy. Content validity for three author-constructed indices was determined by review by a panel of three experts. The intrinsic-extrinsic scale was adapted from the Sherlock and Morris scale. Reliability for the subscales ranged from .73 to .91. Difficulty in interpretation of findings occurred due to utilization of Likert scales which are more appropriate for making relative judgments between groups rather than absolute statements describing a single group. However, the data suggested that respondents tended to be intrinsically motivated, "somewhat" satisfied with their occupation, seeking more autonomy, and of the opinion that two-year educational preparation is adequate. Correlations between subscales showed that higher levels of job satisfaction

and intrinsic rewards correlated positively, postulating that salary is not significantly related to job satisfaction. Associate degree-holders favor their own level of education, less autonomy, and appear happier with less financial reward than those with higher levels of education. Several limitations of the study may limit its generalizability. The population of convenience and opportunity yielded a sample of volunteers (57 percent) which may have introduced bias. The resultant sample size was small (N=69).

Lawson and Martinoff²⁸ examined perceptions of satisfaction in private dental offices by investigating: factors which relate to job satisfaction of dental hygienists, whether differences exist between hygienists who are certified to practice expanded functions and those who are not, and whether satisfaction is affected by the number of years in practice. The sample consisted of dental hygiene practitioners licensed in California, a portion of whom had completed a course in expanded functions. Of the total 309 dental hygienists surveyed, 136, or 44 percent, provided meaningful data. A questionnaire, adapted from the "Minnesota Satisfaction Questionnaire", was adjusted for relevance to dental hygienists. The instrument measured the degree of satisfaction or dissatisfaction of 32 aspects of dental hygiene work. Correlations between subscales, t-tests, and analysis of variance procedures were performed on data

to yield results. Findings indicated which aspects of the dental hygienists' job were most satisfying or dissatisfying. Overall, the level of satisfaction the dental hygienists felt was very positive, scoring a 3.69 on a 5.0 scale. Items which dental hygienists rated highest in satisfaction related primarily to independence, relationship with co-workers, and a feeling of accomplishment and service. Those areas that are closely related to job performance itself and the relatively independent work situation were rated highest. Those aspects of the job found to be least satisfying were: opportunities for advancement, lack of variety on the job, and chance to do different things occasionally. Those items that fell into the areas involving reward for work and relationship with the dentist were perceived as least satisfying. Satisfaction does not appear to be related to the number of years a hygienist has been in practice, but does relate to the ability to perform expanded functions. The ability to perform additional procedures not only increased the variety and interest of the job, but also the hygienist's feeling of accomplishment. Satisfaction with the amount of status was significantly higher for dental hygienists able to perform expanded functions.

Keevil's²² study, completed in 1979, surveyed the University of Michigan School of Dentistry dental hygiene graduates to obtain information about their employment

status and to determine their attitudes regarding their educational preparation and profession. An attitude survey was sent to graduates of the dental hygiene classes of 1940 through 1978. Alumni were surveyed first in 1974, then again in 1979 to test for any change in attitudes and opinions. The methodology used in surveying the graduates was consistent between the sampling years. Questionnaires were mailed to graduates of the program along with a postpaid return envelope and an introductory statement. A follow-up postcard was sent to everyone on the initial mailing as a reminder. Of the 1,255 questionnaires distributed, 764 were returned for a 60.9 percent response rate. The percentage of alumni working increased between 1974 and 1979 from 63.2 percent to 68.2 percent. The major reason for inactive status in the profession was full-time homemaker. Ninety-five percent of respondents rated their educational preparation as good or excellent for employment in private practice. Employed dental hygienists were found slightly less satisfied with their education, in the 1974 survey. In both surveys, alumni were asked if they would recommend dental hygiene as a career. The number recommending dental hygiene as a career dropped from 88.3 percent in 1974 to 79.6 percent in 1979; however, the difference was not significant at the .05 level. In the 1979 survey, the dental hygiene graduates who answered that they would not recommend dental hygiene (N=150) were asked to explain their

reasoning. Reasons cited were that the career was limited in growth and development, dental hygiene was not intellectually stimulating, and too many dental hygienists were being educated. Generalizability may be limited due to the questionnaire having several different formats and response modes and no proven validity or reliability.

A questionnaire survey administered by Meskin³³ in 1978 asked if dental hygienists were satisfied with their dental hygiene position and if not, why. The questionnaire was mailed to all Minnesota licensed dental hygienists and of the 1,926 potential respondents, 1,592 were returned for an 83 percent response rate. Thirty percent of respondents indicated they were dissatisfied with their dental hygiene positions. Dissatisfaction of many dental hygienists with their present position was not the only indicator of potential problems facing the profession. Fifty-six percent of the respondents said that they were undecided or negative toward encouraging others to enter into the dental hygiene field. Concerns expressed by the dental hygienists surveyed were: oversupply of dental hygienists, lack of opportunity for career growth, and overeducation or not being permitted to perform up to legal potential. No information on validity or reliability is given for the questionnaire; however, the sample size and response rate suggest that the study was sound. Meskin's examination of 100 randomly selected Minnesota licensed dental hygienists indicated that 13

percent were not working, 73 percent were working full-time or part-time, six percent were teaching, and two percent were employed in public health. Approximately, ten percent of dental hygienists randomly surveyed were employed in positions other than the dental office.

Meskin proposed that outside office opportunities would increase; however, a far greater growth would occur in the number of individuals with credentials, bachelor's degree or higher, eligible to compete for these positions.³³

Heine, Johnson, and Emily¹⁷ surveyed Colorado licensed dental hygienists to determine factors which contribute to job satisfaction. Attrition and professional "burnout" were investigated because their incidence in the literature had increased. The burnout syndrome occurs most often as a result of substantial job and career dissatisfaction. The study was descriptive in nature and did not propose any hypotheses. Data which defined the problem of dental hygiene career satisfaction and identified the specific characteristics of job-related dissatisfaction for dental hygienists were the focus of the study. Two data collection instruments were used: a career satisfaction questionnaire developed by the investigators and a standardized work values inventory. The career satisfaction survey included five sections which examined background characteristics, dental hygiene work history, dental hygiene employment history, educational and administrative activities, and career

satisfaction. The survey instrument was pretested on three dental hygiene practitioners and six faculty members of the Dental Hygiene Program at the University of Colorado. Further information on validity and reliability was not given. The second survey instrument, the Work Values Instrument, was selected as a psychometrically sound, validated instrument for assessing work-related values. Forty-five value statements in the instrument required ranking on a five-point Likert scale. The two instruments were sent with a cover letter and a stamped return envelope to a random sample of 300 dental hygienists selected from 1,077 dental hygienists licensed and residing in Colorado. No further information on sampling techniques was given. From the 300 potential respondents, a response rate of 37 percent usable questionnaires was achieved. Results indicated that 82 percent were extremely or somewhat satisfied and 12 percent were extremely or somewhat dissatisfied. Data were descriptive in nature; however, in situations where comparisons were made, t-tests were utilized for the parametric data, and chi-square and Mann-Whitney U-tests were used in group comparisons of nonparametric data.

Findings indicated that demographic factors had little effect on career satisfaction. A relationship did exist between persons educated to the baccalaureate level which showed a 20 percent dissatisfaction level compared to 8.6 percent dissatisfaction from persons graduating

from associate degree/certificate programs. Because more than twice the level of baccalaureate dental hygienists were dissatisfied with private practice, the authors suggested that overeducation was related to dissatisfaction. Those subjects which were satisfied with their career choice were able to perform more of a variety of tasks on a routine basis than those listed as dissatisfied. Of the 19 tasks included on the career satisfaction survey, 15 were more often performed routinely by satisfied dental hygienists than by the dissatisfied dental hygienists, although differences were not statistically significant. Moreover, for all dental hygienists, regardless of their degree of satisfaction, a large disparity existed between skills in which they were trained and their routine performance of these skills. Aspects of satisfaction in the entire sample fell into two distinct categories: first, freedom on the job and second, interpersonal factors. The Work Values Inventory was analyzed to provide additional information on career satisfaction. Three scales of the Work Values Inventory were used to statistically differentiate satisfied and dissatisfied dental hygienists. The scales of achievement, independence, and altruism were all valued more highly, to a statistically significant degree, by the satisfied dental hygienists than by the dissatisfied dental hygienists. The most important work-related value of the dissatisfied dental hygienists appeared to be the

economic return.

Deckard and Rountree⁹ tested the supposition that the dental hygiene profession and dental environments are burnout-prone. The sample for this study included 111 dental hygienists attending the University of Missouri-Kansas City Alumni Meeting in 1982. Although not randomly selected, the authors propose that the sample is representative of the population on demographic criteria, as outlined by the American Dental Hygienists Association.³⁸ Two instruments were used to test the hypothesis that the dental hygiene profession and dental environments are burnout-prone. They were the Job Diagnostic Survey and the Maslach Burnout Inventory.

The Job Diagnostic Survey (JDS), developed by Hackman and Oldham,^{15,16} measured worker perceptions of job characteristics as well as contextual satisfactions. The job dimensions and context satisfactions include: skill variety, task identity, task significance, autonomy, feedback from the job, satisfactions with job security, pay and other compensation, peers and co-workers, and supervision. The JDS utilized a seven-point Likert scale with reliability and validity proven through testing on 62 different jobs in seven organizations. Normed values for JDS scores for professionals and all jobs were compared to those of dental hygienists. The Maslach Burnout Inventory (MBI) examined twenty-two job attitudes and focused on identification of three burnout dimensions: emotional

exhaustion, depersonalization, and personal accomplishment. Responses included the dimensions of frequency and intensity, ranging from zero to six. The survey packet containing the two questionnaires was distributed to the participants of a continuing education meeting held in conjunction with the alumni session.

Findings indicated that dental hygienists held positive perceptions of their jobs on all dimensions except skill variety; however, statistical significance is lacking in the results. A comparison of the average score on skill variety for hygienists (mean=4.5) was lower than both the norm for professionals (5.4) and the norm for all jobs (4.7). Hygienists scored higher on task identity (mean=5.9) than professionals (norm=5.1) and all other jobs (norm=4.7). Values for task significance, autonomy, and feedback were similar or fell between those values for professionals and all other jobs. Results from administration of the Maslach Burnout Inventory showed that the incidence of burnout in this sample of dental hygienists was at the lower end of the health and human service professionals. The dental hygienists experienced lower than average frequencies and intensities of feelings of emotional exhaustion and depersonalization than MBI normed averages; however, feelings of personal accomplishment were lower than average also.

Heine-Draznin, et al.¹⁸ investigated job and career factors which were previously identified as dissatisfy-

ing.³³ A nationwide convenience sample of 1,200 dental hygienists was selected for participation in the study. Questionnaires were sent to participants with nonresponders contacted a maximum of three additional times by questionnaire. A final response rate of 49 percent was obtained.

Respondents were asked which traditional and expanded duties they performed, the level of frequency of performance, where they learned to perform such duties, and the level of satisfaction they experienced with 22 clinical activities. Differences in job satisfaction with each of the 22 clinical duties were correlated with the number of overall satisfied and dissatisfied dental hygienists.

Results indicated that 83 percent of the respondents were currently employed in dental hygiene for a median of 23.7 hours per week. Eighty percent were either satisfied or extremely satisfied while 20 percent were either dissatisfied or extremely dissatisfied with their careers. Of the expanded duties investigated, dissatisfied dental hygienists with proper training were more often denied the opportunity of providing local anesthesia, placing restorations, or diet counseling than were the satisfied dental hygienists, to a statistically significant degree. Discriminant analysis applied to the characteristics of the work environment that most greatly impact on satisfaction revealed that the following six

factors were correlated with satisfaction most frequently: intellectual stimulation, variety of responsibility, level of income, professional growth, employer compliments work, and type of practice.

The authors, drawing from Herzberg's work, proposed that the true motivating factors for dental hygienists are not easily affected by the dentist-employer but instead are affected by the intrinsic limitations of the profession, such as control of the profession by dentists and limitations of duties. While such factors as fringe benefits, financial growth, and staff meetings may decrease dissatisfaction, such factors were not found to enhance satisfaction.

Several aspects of the study may inhibit the generalizability of results. No mention is made of the reliability, validity, or format of the questionnaire. The use of a convenience sample may further decrease generalizability due to possible nonrepresentativeness of population.

In summary, for private practice dental hygiene occupational settings, job satisfaction is a multifaceted issue. As studies have shown, several different instruments have been employed to test job satisfaction: the Job Descriptive Index, Minnesota Satisfaction Questionnaire, the Job Diagnostic Survey, Maslach Burnout Inventory, and author-developed questionnaires and/or opinionnaires, several of which have no known validity or

reliability. Several investigator-designed questionnaires have been combined with other known instruments, such as the Fundamental Interpersonal Relations Orientation-Behavior Scale to test interpersonal characteristics or the Work Values Instrument to measure values related to work.

The percentage of dental hygienists employed in private practice ranged from 70.4 percent to 91.7 percent. This finding is consistent with that of Richards³⁸ who found that almost 90 percent of members of the American Dental Hygienists Association worked at general or specialty practice sites. Of dental hygienists surveyed in the various studies, 73.7 percent to 91.8 percent were actively practicing dental hygiene at the time of the survey.^{2,18,41,43,50} Of those not actively practicing, family responsibilities were listed as the major reasons.^{2,13,22,43,50} When asked if they planned to return to the work force, 52 percent to 75 percent of those not actively practicing answered yes.

The percentage range of dental hygienists not actively employed due to dissatisfaction with their career choice ranged from 3 percent to 20 percent.^{2,18,41,43,50} Reasons for the dissatisfaction included: underutilization of skills,^{11,17,32,33} lack of intellectual stimulation,¹⁸ lack of work variety,^{9,11,13,18,28} little opportunity for advancement,^{11,18,20,22,28,33} interpersonal relations,^{18,28,32} "reality shock",^{11,37}

level of income,¹⁸ and type of practice.¹⁸ Aspects of the job which enhanced satisfaction were freedom on the job and interpersonal relations factors.²⁸

Nontraditional Dental Hygiene Occupational Settings

The desire for employment opportunities outside of the private practice setting has been documented,²⁰ but little was known of nontraditional dental hygiene practice until Cohen, et al.⁷ studied a 50 percent sample of all licensed dental hygienists in the United States in 1983. The survey was undertaken to identify: the extent to which hygienists were providing needed services in nontraditional settings, the range of nontraditional settings and types of special populations being served, the range of functions performed by hygienists in nontraditional settings, and the degree and type of supervision under which dental hygienists work. The report presents preliminary findings on the percentage of dental hygienists practicing in nontraditional settings and the types of settings in which they are employed.

In an exhaustive two-phase study, 5,000 dental hygienists in the first mailing and 33,380 dental hygienists in a second mailing, were systematically selected to receive a screening questionnaire and letter of transmittal. Two mailings were needed to adequately sample the population to determine prevalence of nontraditional practice settings. A random sample of nonrespondents was contacted (N=748) a maximum of three

additional times to diminish nonresponse bias. Questionnaires were returned from 56.9 percent of the individuals surveyed. Of the returns, 77.5 percent of respondents indicated that they currently were employed as a dental hygienist. Those hygienists most recently licensed were most likely to report being currently employed as a dental hygienist. Those hygienists licensed the longest were most likely to indicate employment in nontraditional settings. The number of respondents reporting working in nontraditional settings was 9.2 percent. The distribution of nontraditional settings revealed that 35.9 percent work in a dental or dental hygiene school, 22.7 percent work in a government clinic, and 16.5 percent work in a nongovernment clinic. The authors found a significant association between state supervision requirements and the prevalence of nontraditional hygiene practice in the different states. Generalizability of findings is enhanced by the large random sample size and the efforts to assess nonresponse bias.

From a portion of the results of Cohen's previous study, characteristics of employment and job satisfaction in nontraditional settings were analyzed.^{8,42} Personal satisfaction, more challenging position, increased job flexibility, and benefits were the factors most frequently reported as important in the dental hygienists' decisions to work in a nontraditional setting. Dental hygienists

employed in nontraditional settings were found to be satisfied with all job characteristics examined except advancement opportunities. Those characteristics with which dental hygienists were satisfied included: salary, fringe benefits, sense of accomplishment working with a special population, professional stimulation, and interaction with other health professionals. A high level of acceptance of the dental hygienists' professional role by patients as well as other health professionals evinced correspondingly high levels of job satisfaction.⁴² Overall satisfaction with their jobs was expressed by 89.7 percent of the respondents. The motivation for seeking employment in nontraditional settings was found to be personal satisfaction and good benefits. Salaries of nontraditional dental hygienists were found to be lower than their private practice colleagues; however, partially offsetting the lower salaries, hygienists working in nontraditional settings were afforded broader and better benefits. Three-quarters of the respondents stated that if they were to seek employment in the future, they would prefer working in a nontraditional setting. Private practice would be desired by only 15.8 percent.

Public Health

Federal service guidelines were revised in 1982 to reflect changes in dental hygiene practice in the last ten years, as revealed by Burkard.³ The study was begun at the request of the Veterans' Administration and the

Department of the Army for determination of grades on which compensation is based and determination of minimum qualification requirements. The new standards consolidate clinical dental hygiene positions and community health dental hygiene positions as specialties within one occupation.

Five major agencies employ federal service dental hygienists. These include the Veterans' Administration; Departments of the Army, Navy, Air Force; and the Department of Health and Human Services. The federal government employs 385 dental hygienists of which 26 are community health dental hygienists and approximately 155 work at Veterans' Administration facilities.³

Burkard's³ study found that most hygienists agreed that while base salaries were lower in comparison to the private sector, the federal service offered job security and better benefits. Federal service hygienists found the work more interesting than private practice due to the emphasis on hospital preventive dentistry: planning dental hygiene treatment, assessing special needs of patients, and conducting oral health education. Specific responsibilities may vary depending on the particular dental philosophy and delegation patterns of the dentist in federal service, the character of the patient population, and the kind and extent of the dental hygienist's training and education. In some situations, root planing, soft tissue curettage, and administration of

local anesthetics are performed. The opportunity for continuing education courses and in-service training is readily available through the employee's place of work or through a jointly-affiliated college or university. Although not a formal research study, fact-finding techniques yielded usable and pertinent information regarding dental hygiene practice in one nontraditional setting.

Another nontraditional setting was examined by Hunter and Rossman²¹ in 1980 in community dental health employment. Community dental health positions in elementary and secondary school systems and state, county, and local public health systems were considered in this study. Specific questions surveyed what percentage of respondents had been employed in community dental health, what percentage of the respondents were interested in accepting community dental health employment positions, how the respondents perceived community dental health employment as it relates to the dental hygienist, and whether dental hygienists who were interested in and/or had been employed in community dental health positions had different perceptions of community dental health employment than those who were not interested in such employment positions.

A questionnaire, cover letter, and stamped envelope were sent to all graduates from the classes of the University of Iowa dental hygiene program, from 1966-1977,

(N=435). The response rate was 80.9 percent (N=352). Results showed that 13.1 percent had experienced community dental health employment and 38.4 percent were interested in community dental health positions. State public health accounted for 47.8 percent and school systems accounted for 39.1 percent of public health hygienists.

Extrinsic factors perceived as enhancing career satisfaction included a variety of employment opportunities, employee fringe benefits, and convenient working hours. Intrinsic factors which increased job satisfaction included personal satisfaction, decision-making authority, and opportunities for professional advancement. Eight chi-square tests showed that salary level may not be a primary factor that influences interest in community dental health employment, yet the extrinsic and intrinsic factors might be considerations which influence interest in this practice setting.

West and Russell⁴⁷ investigated employment opportunities available in public health dental hygiene. The population included all state Departments of Education, all regional offices of the Veterans' Administration, and selected federal offices and agencies involved in general and dental health matters. An eight-item questionnaire, along with a cover letter and a stamped, addressed return envelope, was mailed to each member of the population. In three weeks, nonrespondents were sent a reminder, a second questionnaire, and a

stamped, addressed return envelope. Of the 176 agencies contacted, 149 responses were received, for an 85 percent response rate. Results showed that approximately one-third of responding agencies employed dental hygienists at the time of the survey. The duties of presenting oral health education units to school children and liaison or adjunct faculty member to affiliated dental hygiene programs were included in job duties along with clinical and educational responsibilities in numerous responses. Approximately, one-third of all positions reported included responsibilities for conducting research projects, and nearly half of the reported positions listed data collection for research as a responsibility.

Dental Hygiene Educators

Little was known of the levels of job satisfaction of dental hygiene educators until 1985 when burnout prevalence was examined.^{23,35,39} Burnout of dental hygiene educators has been examined by Ricks³⁹ in relation to job satisfaction, morale, and perceived institutional/program effectiveness. The survey instrument was investigator-designed, with reliability established during a pilot using the test-retest method. The Spearman Correlation Coefficient of .77 was obtained. Dental hygiene programs were cluster sampled and chosen at random for inclusion in the study. After obtaining consent, programs were sent survey forms, stamped, addressed envelopes, and postcards to mail back with the

institution's name on the back. Two hundred forty-nine questionnaires were sent to 50 schools of dental hygiene for distribution to full-time dental hygiene faculty. One hundred fifty-nine questionnaires were returned for a 64 percent response rate. Data were analyzed using contingency tables and chi-square analysis. A significant relationship existed between institutional setting type and aspects of job satisfaction as well as institutional effectiveness and aspects of job satisfaction. Burnout was found to be a problem in the dental hygiene educator workforce with almost one-third currently considering leaving their present position, with one-fifth giving job dissatisfaction as a factor in their decision. Educators in the four year settings were more likely to be dissatisfied with their position. Individuals at the rank of assistant professor were most likely to report dissatisfaction with their job; job satisfaction most frequently related to institutional effectiveness regarding tenure policy, student respect, supportive faculty relationships, and class size.

Klausner, et al.²³ examined the nature and prevalence of burnout among dental hygiene educators using the Maslach Burnout Inventory. Three hundred fifty randomly selected members of the Section on Dental Hygiene of the American Association of Dental Schools were sent a packet containing the Maslach Burnout Inventory, demographic data sheet, and open response questionnaire. Compared to norms

for other helping professions, dental hygiene educators were lower in emotional exhaustion and depersonalization and higher in personal accomplishment. Dental hygiene educators experienced frustration from administration (not enough time and resources), inadequate finances, insufficient time, lack of dedication in peers, and inappropriate student attitudes. Although educators appeared to exhibit less severe burnout than others in the helping professions, 81 percent reported physical and/or mental signs and symptoms of burnout. The most rewarding aspects of dental hygiene education were: interaction with students, belonging to a profession with a variety of involvements, self-development, and interaction with peers.

Odrich and Wayman³⁵ examined burnout levels of dental hygiene educators as a function of the school's institutional setting: community colleges, four-year colleges, and universities. The sample consisted of 284 dental hygiene educators in 65 of approximately 200 programs. Copies of the Maslach Burnout Inventory, demographic questionnaires, and stamped, addressed envelopes were mailed to each program director for distribution to the faculty. Responses were received from 284 educators who were not dentists, which represented 96 percent of schools surveyed. Results showed that the number of years educators were employed in the program and the level of academic rank, regardless of program's

institutional setting, predicted burnout. The higher the rank, the higher the burnout felt, except at the highest rank, that of full professor, where the scores were low.

Summary

Dental hygienists employed in private practice settings, public health settings, and dental hygiene education settings appear to have different motivations for entering the particular occupational positions. For private practice dental hygienists, a stereotypical person emerges who represents approximately 90 percent of all practicing dental hygienists. The private practice dental hygienist may be satisfied by a variety of factors known as job content factors, which contribute greatly to job satisfaction. Job content factors include satisfaction with freedom on the job and interpersonal relations factors. Job factors identified with public health dental hygiene positions which enhance satisfaction are associated with feelings of personal accomplishment, emphasis on prevention, job security, and benefits. Although public health dental hygienists do not command salaries as high as those in private practice, benefits given by agencies appear to offset the decreased income. Areas of frustration with private practice dental hygiene settings include underutilization of skills, lack of work variety, little opportunity for advancement, interpersonal relations, and "reality shock". For educators, dissatisfaction related to institutional effectiveness and

academic rank determined the extent of burnout. Working with peers who lacked dedication contributed to dissatisfaction while supportive faculty relationships enhanced satisfaction. Other institutional policies which contributed to satisfaction with education included tenure policies and the respect of the students.

Clearly, a study using one testing instrument is needed to compare and contrast the three occupational settings using the same criteria. Only then may an accurate analysis of satisfiers and dissatisfiers for private practice dental hygiene, public health dental hygiene, and dental hygiene education be achieved.

CHAPTER 3

Methods and Materials

Three groups of licensed dental hygienists in North Carolina were mailed packets containing a demographic information sheet, a WSDAPJSI, and an addressed stamped envelope. Questionnaires returned within the allotted time frame were analyzed for differences in job satisfaction levels. Analysis techniques included descriptive statistics and analysis of variance. A multivariate analysis followed by Tukey's procedures revealed statistically significant differences among the three occupational settings.

Sample Description

The accessible population for this survey included all licensed dental hygienists and dental hygiene educators residing in North Carolina. All dental hygiene programs in North Carolina were contacted by mail and telephone to gather names and addresses of dental hygiene educators who were employed but who may not have been currently licensed in the state (N=30). The North Carolina Division of Health Services Section Chief responsible for dental hygiene services was contacted for names and addresses of all public health dental hygienists in the

state (N=68). One hundred percent of PHDH and DHE were surveyed. A computer-generated listing of all licensed in-state dental hygienists was obtained from the North Carolina State Board of Dentistry and was used to randomly select a ten percent sample of private practice dental hygienists after PHDH and DHE were deleted. Of dental hygienists not already grouped, a ten percent randomized sample was selected for participation (N=236). From information obtained from the demographic sheet, private practice dental hygienists meeting the specified criteria were selected for inclusion in this study. The homogenous grouping of dental hygienists provided control for representativeness of sample. The total sample for the study was 334 dental hygienists.

Methodology

A packet containing a cover letter, a Demographic Information Sheet, WSDAPJS Instrument, and a stamped addressed envelope was mailed to each participant. (Appendices A, B, and C) Subject participation was voluntary; however, efforts were made to reduce nonresponse bias and nonrepresentative sample. Return envelopes were coded enabling a second packet to be sent to nonrespondents. After approximately two weeks following the initial mailing, a follow-up cover letter (Appendix D) and a second questionnaire were sent.

Protection of Human Subjects

In accordance with the policy on research using

humans, subjects were protected through the following methods:

1. Subject population: Subjects were current licensed dental hygienists or dental hygiene educators. Full-time practitioners and educators were chosen to assure homogeneity of sample.
2. Potential risks: A questionnaire of this personal nature might have created anxiety, particularly if the respondents felt pressure to respond in a certain manner or if their responses could influence their job security or perceptions of their colleagues toward them. Information enclosed with the questionnaire ensuring confidentiality and reporting findings in group form only should have somewhat compensated for this risk.
3. Consent procedures: Participation in the study was voluntary. Completion and return of the questionnaire constituted consent.
4. Protection of subjects' rights: All responses were kept confidential. No attempt was made to identify individual responses or particular institutions. A coded return envelope was included for participants to use, enabling a second mailing to nonrespondents. The information was reported in group form only.
5. Potential benefits: Potential benefits included: an increased awareness of the facets of job satisfaction as it applies to the individual dental hygienist and knowledge of occupational dental hygiene

settings which may promote more or less job satisfaction.

6. Risk/benefit ratio: The risks to subjects were minor in comparison to the potential benefits of this study.

Instrumentation

The 51-item Washington State Dental Auxiliaries Project Job Satisfaction Instrument (WSDAPJSI)⁵ was used to measure job satisfaction of dental hygienists in private practice, public health, and education. Permission to use the WSDAPJSI was granted by the senior author.⁶ The decision to use this instrument was made due to the specificity of the questionnaire to dental environments. The instrument consisted of a general job satisfaction measure and 15 specific subscales (Appendix C). Specific subscales measured different conceptual factors which were grouped into context, content, stress, or general dimensions of job satisfaction.

Content factors were measured by the subscales of recognition of achievements, opportunity and time to develop professionally, responsibility, and quality of service delivery. Recognition was measured by item numbers 23 and 30. The items measuring opportunity to develop professionally were numbers 15-17 and 25. Time to develop professionally was assessed by numbers 6, 9, and 18. The items measuring responsibility were numbers 1, 2, 5, 7, and 14. Quality of care was determined by numbers 10, 11, and 35.

Context factors were measured by the subscales of income, job security, nonpatient tasks, staff relations, feedback, and role delineation. Satisfaction with income was measured by item number 33. Job security satisfaction was assessed by item number 36. The items measuring nonpatient tasks were numbers 12, 13, 24, 26, and 29. Feedback was gauged by question numbers 3, 8, and 32. Number 28 assessed satisfaction with role delineation. The items measuring staff relations were numbers 4, 27, and 34.

Stress factors were measured by the subscales of leisure time, fatigue, and time pressure. Satisfaction with leisure time was determined by numbers 19 and 31. The items measuring fatigue were numbers 37, 42, 44, and 45. The items assessing time pressure were numbers 38, 40, and 43.

General factors of job satisfaction were measured by the subscale of general job satisfaction which included numbers 46, 47, and 48. The analysis of demographic variables of length of time in present position and level of education provided further insight into general job satisfaction.

Grouping into conceptual subscales of the 35 job satisfaction items was done by a panel of five professionals (two dentists, two dental hygienists, and one psychologist). Alpha coefficients for the ten multi-item subscales ranges from 0.68 to 0.94.⁵ Test-retest

reliability ranges from 0.43 to 0.69 with a median of 0.55.⁵ A minimum reliability of 0.50 is suggested for group comparisons and 0.90 for categorization of individuals;³³ therefore, the instrument is adequate for comparing the groups under investigation.

Participants completed each of the 36 specific job satisfaction items rated on a six point scale by circling a number from one through six which designated very dissatisfied, moderately dissatisfied, slightly dissatisfied, slightly satisfied, moderately satisfied, and very satisfied, respectively. For the nine stress items rated on a four point scale, respondents circled a number from one through four which designated: not a problem, not serious, fairly serious, and very serious, respectively. Subscale scores for each individual were then calculated by summing the items within the subscale and dividing by the number of items. The three general job satisfaction items were rated on a three point scale with the response representing high job satisfaction given a value of 3, the response representing moderate job satisfaction given a value of 2, and the response representing low job satisfaction given a value of 1. The scores of the three general job satisfaction items, were summed and divided by three in order to produce an overall general job satisfaction score which ranged from 1.00 to 3.00. The higher the score, the greater the overall general job satisfaction.

Subscales missing one value were computed by summing the remaining values and dividing by the number of questions answered. A subscale missing more than one response was assigned a missing value for that measure. The missing value was a "0".

The original questionnaire was modified slightly by changing subscale descriptors to enhance relevance to specific groups. A panel of dental hygiene professionals felt that the validity and reliability of the questionnaire would not be affected; rather modification would provide a better standard framework for dental hygiene responsibilities.

A pilot study, including dental hygienists in the Tidewater Dental Hygienists' Association, faculty of Old Dominion University, School of Dental Hygiene and Dental Assisting, and all Virginia public health dental hygienists, was performed to test the sampling procedures, research methodology, the modified instrument, and data analysis. Analysis of the pilot study highlighted areas of ambiguity in item wording and inadequate mail interval which were changed prior to full-scale implementation of the research study.

Statistical Treatment

Discrete, ordinal data were generated using a six-point Likert scale for the 36 job satisfaction items and a four-point Likert scale for the nine stress items. The large, random sample size (N=208) and comparative means

permitted the use of parametric statistics.

Results were tabulated using the Statistical Analysis System (SAS). One-way analysis of variance (ANOVA) by the generalized linear regression model produced F-statistics for scores by occupational setting. Analysis of variance using the F-test is sensitive to differences between treatment population means but is robust against nonnormality and unequal variances.²⁵ Following the one-way ANOVA, Tukey's Studentized Range (HSD) Test determined significant differences among the three occupational settings and each subscale. A multivariate analysis tested significant differences among the three occupational settings regarding job satisfaction dimensions (content, context, and general job satisfaction factors) and stress dimensions (leisure time, fatigue, and time pressure factors).

CHAPTER 4

Results and Discussion

Differences in levels of job satisfaction of dental hygienists in private practice, public health, and education were investigated by surveying 235 private practice dental hygienists, 68 public health dental hygienists, and 30 dental hygiene educators in North Carolina using the Washington State Dental Auxiliaries Project Job Satisfaction Instrument. A total of 254 questionnaires and Demographic Information Sheets were returned for an overall response rate of 76 percent. Two hundred eight respondents completed the questionnaire correctly and met the occupational criteria determined for this study (Appendix E). Of the responses from the private practice dental hygiene group, 51 percent (n=121) of the responses were usable. When the criterion of full-time practice was considered, 33 percent (n=86) were included in the analysis. From the public health dental hygiene group, 90 percent (n=61) of the responses were suitable for analysis, while 87 percent (n=26) of dental hygiene educators' responses were included. Reasons for less than 100 percent usable response rate included: respondents worked less than 28 hours, respondents were

not currently employed as dental hygienists, incomplete questionnaires, or nonresponse.

Results

Analysis of the demographic data indicated that the majority of respondents hold an Associate's Degree (64 percent), followed by Bachelor's Degree (27 percent), and Master's Degree (9 percent). Within the private practice dental hygienist sample (PPDH), 74.4 percent (N=90) hold Associate's Degrees, 24.4 percent (N=30) hold Bachelor's Degrees, and 1.2 percent (N=1) have a Master's Degree. Public health dental hygienists (PHDH) include 65.6 percent (N=49) Associate's Degree holders, 29.5 percent (N=18) Bachelor's Degree holders, and 4.9 percent (N=3) Master's Degree holders. Within the dental hygiene educators' sample (DHE), 57.7 percent (N=15) hold Master's Degrees, 34.6 percent (N=9) hold Bachelor's Degrees, and 7.7 percent (N=2) hold Associate's Degrees.

Content

Data were examined to determine if a statistically significant difference existed in the level of satisfaction with the content factors of recognition of achievements, opportunity and time to develop professionally, responsibility, and quality of care. Data in Table 1 indicated that the level of satisfaction with all of the content factors except opportunity to develop professionally failed to reject the corresponding null hypotheses among the three occupational settings. The

Table 1
 Analysis of Variance for Content Factors
 Among Three Occupational Settings

Factor	SS	df	MS	F-ratio	P
Recognition of Achievements					
Model	6.26	2	3.13	1.68	0.19
Error	311.96	167	1.87		
Total	318.22	169			
Opportunity to Develop Professionally					
Model	7.41	2	3.71	2.96	0.05*
Error	208.84	167	1.25		
Total	216.25	169			
Time to Develop Professionally					
Model	1.64	2	0.82	0.79	0.46
Error	172.00	167	0.45		
Total	173.63	169			
Responsibility					
Model	0.98	2	0.49	1.10	0.34
Error	74.36	167	0.45		
Total	75.34	169			
Quality of Care					
Model	0.77	2	0.39	0.55	0.58
Error	115.68	167	0.69		
Total	116.54	169			

* Indicates significance.

null hypothesis of no statistically significant difference at the 0.05 level among the three occupational settings with opportunity to develop professionally was rejected.

Utilizing differences between group means generated by Tukey's Studentized Range (HSD) Test, a descriptive ranking of occupational settings was possible (Table 2). Satisfaction with opportunity to develop professionally identified educators as most satisfied, followed by public health and private practice dental hygienists. A statistically significant difference existed between educators and private practice dental hygienists regarding opportunities for professional development. For recognition, educators again were most satisfied, followed by public health and private practice dental hygienists. Concerning time to develop professionally, public health dental hygienists ranked first, followed by educators and private practice dental hygienists. Analysis of satisfaction with responsibility found that educators were most satisfied, followed by public health and private practice dental hygienists. With quality of care, private practice dental hygienists ranked first in level of satisfaction, followed by educators and public health dental hygienists.

Utilizing a six-point Likert scale, all content factor means were above four points indicating that the three occupational groups were slightly to moderately satisfied with each content factor tested.

Table 2

Level of Satisfaction with Content Factors Ranked by Occupational Setting

Factor	Occupational Setting								
	Private Practice			Public Health			Education		
	Rank	\bar{X}	SD	Rank	\bar{X}	SD	Rank	\bar{X}	SD
Recognition of Achievements	3	4.33	1.41	2	4.42	1.41	1	4.88	.78
Opportunity to Develop Professionally	3	4.28	1.18*	2	4.51	1.14	1	4.88	.82
Time to Develop Professionally	3	4.37	1.09	1	4.58	0.91	2	4.50	.99
Responsibility	3	5.14	1.09	2	5.15	0.64	1	5.35	.57
Quality of Care	1	5.27	0.73	3	5.13	1.01	2	5.22	.64

* Indicates significance between Private Practice and Education.

Ranking Key: 1 Highest Ranking Satisfaction
 2 Second Ranking Satisfaction
 3 Lowest Ranking Satisfaction

Alpha = 0.05
 df = 167
 Critical Value of Studentized Range = 3.344

Context

Data were analyzed to determine whether statistically significant differences existed in the level of satisfaction among the three occupational settings with the context factors of income, job security, nonpatient tasks, feedback, role delineation, and staff relations among the three occupational settings. An examination of context factors which differed significantly in levels of satisfaction among the three occupational settings revealed that the factors of income, nonpatient tasks, feedback, role delineation, and staff relations did not differ significantly; therefore, data failed to reject the corresponding null hypotheses (Table 3). The remaining null hypothesis testing job security was rejected at the 0.05 level of significance among private practice dental hygienists, public health dental hygienists, and dental hygiene educators.

A descriptive analysis of satisfaction with context factors using Tukey's Studentized Range (HSD) Test found that regarding job security, both private practice dental hygienists and public health dental hygienists felt more satisfaction with their job security than dental hygiene educators felt, to a statistically significant degree (Table 4). Concerning income, private practice dental hygienists were most satisfied, followed by educators and public health dental hygienists. Considering nonpatient tasks, educators were most satisfied, followed by private

Table 3
 Analysis of Variance for Context Factors
 Among Three Occupational Settings

Factor	SS	df	MS	F-ratio	P
Income					
Model	9.08	2	4.54	2.29	0.11
Error	331.34	167	1.98		
Total	340.41	169			
Job Security					
Model	14.89	2	7.44	5.31	0.01*
Error	233.99	167	1.40		
Total	248.88	169			
Nonpatient Tasks					
Model	1.99	2	1.00	1.35	0.26
Error	123.03	167	0.74		
Total	125.02	169			
Feedback					
Model	0.22	2	0.11	0.15	0.86
Error	121.31	167	0.73		
Total	121.53	169			
Role Delineation					
Model	0.16	2	0.08	0.07	0.93
Error	193.94	167	1.16		
Total	194.09	169			
Staff Relations					
Model	0.08	2	0.04	0.03	0.97
Error	223.13	167	1.34		
Total	223.22	169			

* Indicates significance.

Table 4
Level of Satisfaction with Context Factors Ranked by Occupational Setting

Factor	Occupational Setting								
	Private Practice			Public Health			Education		
	Rank	\bar{X}	SD	Rank	\bar{X}	SD	Rank	\bar{X}	SD
Income	1	4.39	1.29	3	3.89	1.44	2	4.23	1.68
Job Security	1	5.28	1.17	2	5.18	1.06	3*	4.42	1.47
Nonpatient Tasks	2	4.53	0.89	3	4.31	0.84	1	4.58	0.78
Feedback	2	4.80	0.81	3	4.73	1.01	1	4.81	0.53
Role Delineation	3	4.87	1.03	1	4.93	1.18	2	4.88	0.95
Staff Relations	1	4.78	1.12	2	4.74	1.20	3	4.73	1.17

* Indicates significance between Private Practice and Education, and significance between Public Health and Education.

Ranking Key: 1 Highest Ranking Satisfaction
 2 Second Ranking Satisfaction
 3 Lowest Ranking Satisfaction

Alpha = 0.05
 df = 167
 Critical Value of Studentized Range = 3.344

practice dental hygienists, and public health dental hygienists. Analysis of satisfaction with feedback found that educators were most satisfied, with private practitioners and public health dental hygienists following. Ranking of satisfaction with role delineation revealed that public health dental hygienists were most satisfied, followed by educators and private practice dental hygienists. Private practitioners were most satisfied with staff relations, followed by public health dental hygienists and educators.

Data indicated that mean values for satisfaction with context factors ranged from 3.9 to 5.3 on a six-point Likert scale. Interpretation of the numerical values revealed slight dissatisfaction to moderate satisfaction. The level of satisfaction ranges for context factors appear to be greater than the level of satisfaction ranges for content factors.

Stress

The levels of satisfaction with leisure time, fatigue, and time pressure were examined among private practice dental hygienists, public health dental hygienists, and dental hygiene educators (Table 5). Analysis of variance procedures revealed no statistically significant difference among the three occupational settings in levels of satisfaction with leisure time or fatigue, thereby, failing to reject the corresponding null hypotheses. A statistically significant difference was

Table 5
 Analysis of Variance for Stress Factors
 Among Three Occupational Settings

Factor	SS	df	MS	F-ratio	P
Leisure Time					
Model	5.61	2	2.81	1.85	0.16
Error	253.08	167	1.52		
Total	258.69	169			
Fatigue					
Model	0.75	2	0.38	1.68	0.19
Error	37.28	167	0.22		
Total	38.03	169			
Time Pressure					
Model	8.14	2	4.07	7.26	0.001*
Error	93.66	167	0.56		
Total	101.80	169			

* Indicates significance.

found regarding the level of satisfaction with time pressure; therefore, the null hypothesis of no difference was rejected at the 0.05 level of significance.

Utilizing a descriptive ranking of the three occupational groups generated by Tukey's Studentized Range (HSD) Test, Table 6 shows that regarding time pressure, private practitioners and public health dental hygienists were more satisfied than educators, to a statistically significant degree. Public health dental hygienists ranked first (most satisfied) with leisure time, followed by private practice dental hygienists, and educators (least satisfied). Concerning fatigue, public health dental hygienists were again most satisfied, followed by private practitioners and educators.

With leisure time scored on a six-point Likert scale, means of 4.0 to 4.6 indicated that all three groups were slightly to moderately satisfied with the amount of leisure time. Regarding fatigue and time pressure, a four-point Likert scale revealed values ranging from 1.8 to 2.5 indicating no problem to a fairly serious problem.

General

Analysis of data indicated that a statistically significant difference existed among private practice dental hygienists, public health dental hygienists, and dental hygiene educators regarding the general desirability of the job; therefore, the null hypothesis of no difference in level of satisfaction was rejected at the

Table 6

Level of Satisfaction with Stress Factors Ranked by Occupational Setting

Factor	Occupational Setting								
	Private Practice			Public Health			Education		
	Rank	\bar{X}	SD	Rank	\bar{X}	SD	Rank	\bar{X}	SD
Leisure Time	2	4.49	1.25	1	4.56	1.20	3	4.02	1.24
Fatigue	2	2.27	0.46	1	2.23	0.49	3	2.43	0.46
Time Pressure	1	1.83	0.81	2	1.96	0.73	3*	2.47	0.59

* Indicates significance between Private Practice and Education, and significance between Public Health and Education

Ranking Key: 1 Highest Ranking Satisfaction
 2 Second Ranking Satisfaction
 3 Lowest Ranking Satisfaction

Alpha = 0.05

df = 167

Critical Value of Studentized Range = 3.344

0.01 level (Table 7). No significant difference was found between level of education and general job satisfaction, nor between length of time in present position and general job satisfaction.

Tukey's Studentized Range (HSD) Test applied to the general job satisfaction hypothesis revealed that public health dental hygienists were more satisfied with their positions than private practice dental hygienists, to a statistically significant degree (Table 8). Dental hygiene educators also were significantly more satisfied than private practitioners.

A three-point Likert scale utilized to measure levels of satisfaction with general job satisfaction revealed a range of 2.3 to 2.6. Interpretation of the numerical values found the three occupational groups somewhat satisfied to very satisfied with their occupations.

A multivariate analysis utilizing the Wilks' Criterion found a statistically significant difference in job satisfaction among the three occupational groups, at the $p < .0001$ level. When content, context, and general job satisfaction subscales are combined, dental hygiene educators exhibit the highest level of overall job satisfaction, followed by public health dental hygienists and private practice dental hygienists. A separate multivariate analysis utilizing the Wilks' Criterion was performed to analyze stress factors across the three occupational settings. Statistical significance at the

Table 7
 Analysis of Variance for General Factors
 Among Three Occupational Settings

Factor	SS	df	MS	F-ratio	P
General Job Satisfaction					
Model	4.20	2	2.01	8.21	0.004*
Error	42.70	167	0.26		
Total	46.90	169			
Level of Education					
Model	0.10	2	0.05	0.18	0.84
Error	57.32	205	0.28		
Total	57.42	207			
Length of Time in Present Position					
Model	31.68	108	0.29	1.13	0.27
Error	25.74	99	0.26		
Total	57.47	207			

* Indicates significance.

Table 8

Level of Satisfaction with General Job Satisfaction Ranked by Occupational Setting

Factor	Occupational Setting								
	Private Practice			Public Health			Education		
	Rank	\bar{X}	SD	Rank	\bar{X}	SD	Rank	\bar{X}	SD
General Job Satisfaction	3*	2.25	0.55	1	2.57	0.47	2	2.55	0.4

* Indicates significance between Public Health and Private Practice, and significance between Education and Private Practice.

Ranking Key: 1 Highest Ranking Satisfaction
 2 Second Ranking Satisfaction
 3 Lowest Ranking Satisfaction

Alpha = 0.05

df = 167

Critical Value of Studentized Range = 3.344

$p < .01$ level existed among the three occupational levels regarding stress. When the subscales of stress were combined, dental hygiene educators exhibited the highest level of stress followed by private practice dental hygienists and public health dental hygienists. A definite difference appears to exist with regard to not only job satisfaction factors, but also stress factors.

Discussion

Content

The results of data analysis for the level of satisfaction with the content factor measuring opportunity to develop professionally indicated that a statistically significant difference existed among dental hygienists in private practice, public health, and dental hygiene education. For each of the remaining four content factors: recognition of achievements, time to develop professionally, responsibility, and quality of care, results indicated that no statistically significant difference existed in the levels of job satisfaction. Content factors included in the study appeared not to differ significantly in their effect on satisfaction in dental hygienists employed in the three occupational settings, except for opportunity to develop professionally.

Data suggest that with regard to recognition of achievements, private practice dental hygienists, public health dental hygienists, and dental hygiene educators

perceive moderate levels of satisfaction. The three occupational setting means on a six-point Likert scale showed slight to moderate satisfaction. A descriptive ranking of the occupational settings, provided by Tukey's Studentized Range (HSD) Test, showed that dental hygiene educators were most satisfied with recognition, followed by public health dental hygienists and private practice dental hygienists. Perhaps educators' opportunities for publishing and presenting research papers at national meetings of professional groups account for the high ranking of educators' recognition of achievement. The academic setting rewards achievement and accomplishment by merit raises and increased academic rank. Conversely, when private practice dental hygienists work chairside daily, limited opportunities for public recognition exists. In the event recognition of efforts is not given by the dentist/employer, initiative may diminish. Because the private practice dental hygienist interacts with a limited number of people, limited opportunities for recognition exist. For public health dental hygienists, the capacity to change the health status of many individuals is greater than that of private practice. The public servant image of the public health dental hygienist increases the corresponding opportunities for recognition. Cohen, et al.⁸ found that dental hygienists employed in public health settings were perceived by patients and other health care workers as valuable team

members, thereby enhancing satisfaction. No other studies could be found in the literature which support or refute the current findings; therefore, further research in this area is needed.

Analysis of levels of satisfaction with opportunity to develop professionally revealed a statistically significant difference among the three occupational settings. Mean values on a six-point Likert scale indicated slight to moderate satisfaction. Educators ranked first in satisfaction with opportunities for professional development, followed by public health dental hygienists and private practice dental hygienists. Educators are afforded numerous opportunities to develop professionally. Frequently called upon to conduct continuing education courses and through teaching classes of their own, faculty are constantly encouraged to update and expand professionally. Through exposure to distinguished scholars and researchers at national meetings, faculty are exposed to the most current information available. Conversely, private practice dental hygienists frequently do not receive funding or paid leave for participation in continuing education. Location is frequently a problem for dental hygienists who must travel considerable distances to participate in local dental hygiene association meetings or continuing education. In some offices, information learned through continuing education or self-study is not permitted to be

implemented. Klausner²³ identified the opportunity for professional advancement in education as a satisfying aspect of the education career, while Hunter and Rossman²⁰ found that within private practice 75 percent of respondents were dissatisfied with opportunities for professional growth. Results of research by Keevil²² and Pitchford,³⁷ which examined private practice issues, concur that the career as currently defined is limited in growth and development.

Data revealed that with regard to time to develop professionally, no significant differences existed among the three occupational settings. Slight to moderate satisfaction existed among the three occupational settings. A descriptive ranking revealed public health dental hygienists were the most satisfied of the three occupational settings, followed by dental hygiene educators and private practice dental hygienists. Public health dental hygienists are encouraged to participate in professional development; however, precise mechanisms and attitudes vary by the institution. With annual leave days in the public health dental hygienist's contract, ample time to develop professionally is included. Interaction with other health care professionals at local, regional, and state departmental meetings provides additional time for professional growth. In education, faculty development funding to expand teaching and research skills is available in most institutions. Time for research may

be allotted in faculty work schedules. Sabbatical leave may be granted for additional development of faculty. Fewer opportunities for professional development exist for the private practice dental hygienist. Private practice dental hygienists may be hampered by demands such as economic necessity to work or lack of employer support. Frequently, time to attend courses is not compensated nor paid. Confirmation of public health dental hygienists' perceptions of availability of time for professional development is provided by Burkard³ and Hunter and Rossman.²¹

Analysis of satisfaction with responsibility revealed no significant differences in levels of satisfaction among the three dental hygiene occupational settings. Moderate satisfaction with responsibilities was expressed within all three occupational settings. The descriptive ranking, provided by Tukey's Studentized Range (HSD) Test, showed that educators felt the most satisfaction with their responsibilities, followed by public health dental hygienists and private practice dental hygienists. By virtue of the state-of-the-art thrust of education, educators appear well satisfied with their job responsibilities and parameters when educating students in current practices and base of knowledge. The scope of responsibilities of the private practice dental hygienist may be limited through autocratic supervision which does not permit initiative and professional growth within the

position. For example, private practice dental hygienists may lack the opportunity to plan dental hygiene therapy, refer patients to specialists, or schedule appointments of an appropriate frequency or duration. The relative lack of private practitioners' satisfaction with scope of responsibilities is supported by Farrugia,¹¹ who compared students' perceptions of job scope with practitioners' perceptions. Both Farrugia¹¹ and McAdams³² found that the majority of practitioners were dissatisfied with the opportunities to use their full complement of skills and abilities. Further validation is provided by the literature which indicates that the underutilization of the hygienist's abilities and skills has resulted in decreased satisfaction.^{11,17,18,21,28}

Analysis of satisfaction with the quality of care provided to others revealed no statistically significant difference among private practice dental hygienists, public health dental hygienists, and dental hygiene educators. Each occupational setting was moderately satisfied with the standard quality of care given recipients. Utilizing a ranking generated by Tukey's Studentized Range (HSD) Test, private practice dental hygienists ranked first, followed by dental hygiene educators and public health dental hygienists. The results may be due to the degree of task identification of private practice dental hygienists. The complete unit of work which comprises the oral prophylaxis contributes to

feelings of satisfaction when the unit of work is perceived to be of a high quality. Moreover, private practice dental hygienists have immediate, measurable outcomes from their services and may identify more strongly with their services than the other occupational groups. Public health dental hygienists and educators must measure their effectiveness only at specified intervals: client feedbacks, end-of-semester evaluations, and test scores. Quality of care issues have not been examined in any of the existing literature; therefore, more research should be performed to validate the results.

A descriptive summary of the content factors which affect dental hygienists showed that, overall, educators are most satisfied of the three occupational groups. Private practice dental hygienists appeared the least satisfied of the three occupational groups with all of the content factors except quality of care. Results of Weinstein and Perri⁴⁸ concur that hygienists who are more content-oriented in job satisfaction perception are more satisfied. The 33 percent of private practitioners meeting the full-time practice criterion cannot be assumed to be representative of all full-time practitioners in North Carolina; therefore, an accurate representation of job satisfaction levels might not have been achieved.

Context

Analysis of context factors relating to income, job security, nonpatient tasks, feedback, role delineation,

and staff relations revealed that the hypothesis testing job security was rejected at the 0.01 level of significance among private practice dental hygienists, public health dental hygienists, and dental hygiene educators.

Analysis of job security levels of satisfaction were found to be significantly different among the three occupational settings. Mean scores for job security among the three occupational settings indicated slight to significant satisfaction. Tukey's Studentized Range (HSD) Test revealed that both private practice dental hygienists and public health dental hygienists felt more satisfaction with their job security, to a statistically significant degree, than dental hygiene educators felt. Private practice dental hygienists may feel more secure in their positions due to strong employment opportunities in the areas sampled in the current study. For educators, tenure issues might be a factor in their perceived lack of job security. Although not tested, tenured versus nontenured faculty may feel differently about job security. The absence of the Doctor of Philosophy Degree and the lack of experience with research may yield questionable employment status for dental hygiene educators at some institutions of higher education. Public health dental hygienists may enjoy increased job security due to the structure of the organization. Given performance appraisal systems and a lack of tenure-type evaluation mechanism, turnover in

public health positions may be lower than education. Results of Burkard³ and Cohen⁷ concur that job security is a satisfying aspect of public health dental hygiene and other nontraditional practice settings. Additionally, Burkard³ identified job security and better benefits as positive aspects of public health dental hygiene positions. Ricks³⁹ identified institutional effectiveness regarding tenure policy as a determinant of satisfaction in education. Both Ricks³⁹ and Odrich and Wayman³⁵ found academic rank to be a determinant of dissatisfaction, possibly due to certain academic levels in tenure-track positions requiring significant accomplishments to assure advancement.

Data indicated that mean values for satisfaction with income ranged from 3.8 to 4.3, or slightly dissatisfied to slightly satisfied across the three occupational settings. Results of this study which indicate that private practice dental hygienists appear most satisfied of the three occupational settings, followed by dental hygiene educators, and public health dental hygienists might be a result of the job market climate. When few dental hygienists are in a given area, income levels are higher than when many persons vie for the same position. Although satisfaction with fringe benefits was not measured, the number of benefits enjoyed by public health dental hygienists may compensate for lower income satisfaction. The interrelationship between income and

other job satisfaction subscales within each occupational setting was not explored; therefore, a clear interpretation of the findings is not possible. Weinstein and Perri⁴⁸ found that salary was not significantly related to job satisfaction while conflicting results were reported by Deckard and Rountree,⁹ who found that dental hygienists' satisfaction with pay fell below that of other professionals, and Lawson and Martinoff,²⁸ who found salary an aspect of least satisfaction for dental hygienists. Hunter and Rossman²⁰ found that adequate salary levels were a consideration in the employment selection of dental hygienists.

Satisfaction with nonpatient tasks was analyzed and found to be not significant among the three occupational settings. A mean range of 4.3 to 4.5 indicated that all three settings perceive slight to moderate satisfaction with nonpatient tasks. The descriptive ranking of work settings found dental hygiene educators most satisfied with nonpatient tasks, followed by private practice dental hygienists and public health dental hygienists. The education setting provides a variety of activities in addition to instruction. Such activities might further enrich the educator's professional performance and decrease boredom and stress on the job. Public health dental hygienists were less satisfied with nonpatient tasks, possibly due to the responsibility of filing numerous forms for interagency communication and

referral. The dimension of nonpatient tasks could not be found in any of the cited literature.

Analysis of levels of satisfaction with feedback indicated that no difference existed between dental hygienists in the three occupational settings. A comparison of means, all above 4.7 on a six-point scale, indicated that satisfaction with feedback was moderately high for all three occupational settings. A descriptive ranking of the three occupational settings regarding feedback indicated that dental hygiene educators were most satisfied, followed by private practice dental hygienists and public health dental hygienists. Educators may be most satisfied with feedback due to the evaluations done each semester for promotion and merit raise purposes and close contact with department administrators in small dental hygiene programs. Private practice dental hygienists, by the very nature of their position in states with direct supervision, work closely with their employer/dentists. Feedback in such an environment may be delivered efficiently and in a timely manner. Deckard and Rountree's⁹ findings of satisfaction with feedback concur with the current research, revealing a value of 5.0 on a seven-point scale.

Role delineation analysis revealed no differences among the three occupational settings. Mean values for the three settings ranged from 4.8 to 4.9 on a six-point scale. A descriptive ranking of the occupational settings

placed public health dental hygienists most satisfied, followed by dental hygiene educators and private practice dental hygienists. Each occupational group appears to hold a clear perception of its role and function. The dental hygienists responding, by virtue of their education, job description, or organizational training, appear to clearly understand the role they perform within the occupational group in which they work. Further interpretation of the finding is difficult due to a lack of supporting or refuting evidence in the existing literature.

Results of testing for levels of satisfaction with staff relations indicated that no difference exists between private practice dental hygienists, public health dental hygienists, and dental hygiene educators. Means for all three occupational settings ranged from 4.7 to 4.8 on a six-point scale, indicating a moderate level of satisfaction. Private practitioners were most satisfied with staff relations, followed by public health dental hygienists and dental hygiene educators. Interpersonal relations of dental hygienists employed in private practice depend to a great degree on personalities of staff members. For the respondents of the current study, harmonious relations appear to exist, as evinced by the moderate degree of satisfaction. Although not tested, the finding may correlate with the degree of satisfaction with role delineation in which each staff member knows the

parameters of the job and acts appropriately. Relations between staff and public health dental hygienists, and between staff and educators also appear to reflect sufficient cooperation and positive regard. Co-workers in public health departments may help to initiate and facilitate programs of the dental hygienist.

Additionally, resource allocation and program completion depend on the efforts of numerous individuals working together. Educators who join together in research and writing endeavors may enjoy enhanced cooperation and teamwork. Deckard and Rountree's⁹ results provide partial confirmation of dental hygienists' perceptions of high satisfaction with staff relations when compared with other professionals and were found significantly more satisfied. Lawson and Martinoff²⁸ also concur that hygienists are highly satisfied with relationships with co-workers; however, they are dissatisfied with relationships with dentist/employers. McAdams'³² findings indicate that hygienists find interpersonal relations with dentist/employers and staff a prime dislike area. Klausner,²³ in examining dental hygiene educators, found relationships with peers to cause frustration or fulfillment depending on the interaction. Ricks³⁹ identified supportive faculty relationships as a partial determinant of satisfaction.

Private practice dental hygienists were most satisfied with context factors, overall, followed by

educators and public health dental hygienists. Hunter and Rossman²⁰ corroborate these findings of private practitioners' attribution of satisfaction to extrinsic or context factors. The sample of private practice dental hygienists responding appear satisfied with most aspects of their working environment, although, except for job security, not significantly more than either of the other two groups.

Stress

Satisfaction with the stress factors of leisure time, fatigue, and time pressure were examined among private practice dental hygienists, public health dental hygienists, and dental hygiene educators. Analysis of leisure time indicated that the three occupational settings perceived slight to moderate satisfaction. Public health dental hygienists ranked first with satisfaction with leisure time, followed by private practice dental hygienists and dental hygiene educators. In comparing and contrasting the occupational settings, the stresses of private practice are borne during working hours. When the private practitioner is finished, there is no unfinished business to take home. Educators, on the other hand, must continuously keep up with numerous activities outside the classroom: research, writing, community service. If the educator is working toward tenure, stresses of time orientation become greater. No studies could be found in the literature which examine

leisure time.

Fatigue was analyzed among the different occupational settings and all three occupational settings were above the midrange value, indicating small to very serious problems with fatigue. A descriptive ranking placed public health dental hygienists the most satisfied with amount of fatigue, followed by private practice dental hygienists and dental hygiene educators. The numerous roles working women fill as wives or household heads and/or mothers contributes to serious fatigue. All three occupational settings show that fatigue is a problem; however, no concurring nor conflicting literature exists regarding this facet of job satisfaction.

Data were analyzed for time pressure among the three occupational settings and significant differences were found. Educators were significantly more dissatisfied with time pressure than both private practice dental hygienists and public health dental hygienists. Means of 1.8 to 2.5 on a four-point Likert scale show a small to fairly serious problem. A descriptive ranking placed private practice dental hygienists most satisfied with their level of time pressure, followed by public health dental hygienists and dental hygiene educators. In private practice, satisfaction with patient scheduling, auxiliary duty time, and office hours appears to modify stresses of fatigue and lack of leisure time. When considering the work dynamics of education versus public

health and private practice, education is the career which does not adhere to working hours. For the educators sampled, the work dynamic of education definitely altered the level of satisfaction with the three stress factors measured, while private practice dental hygienists appeared least stressed of the three occupational groups. Confirmation of educators' time pressure is supplied by Klausner.²³

Overall, educators are the most stressed of the three occupational settings, followed by private practice dental hygienists and public health dental hygienists. For each of the stress factors examined: leisure time, fatigue, and time pressure, educators were the least satisfied.

General

General job satisfaction hypothesis testing found a statistically significant difference among the three occupational settings regarding the general desirability of the job. Means of 2.3 or higher on a three-point Likert scale indicated a high level of satisfaction for the dental hygiene occupational settings tested. Dental hygienists employed in private practice, public health and education appear well satisfied with their choice of career, overall. Given the characteristics of the three occupational settings, dental hygienists may have chosen the setting within which they are most satisfied. Results of Sodano, Javian, and Judd⁴⁴ and Lawson and Martinoff²⁸ concur with the general positive regard of dental

hygienists for their positions, with general satisfaction measured at 5.1 on a seven-point scale, and 3.69 on a five-point scale, respectively. Hunter and Rossman²⁰ provide further confirmation of general satisfaction with 90 percent of respondents satisfied with their current employment. A ranking of the three occupational settings found public health dental hygienists to be most satisfied, followed by dental hygiene educators, and private practice dental hygienists. Public health dental hygienists frequently begin working in private practice and experience increased levels of satisfaction once in public health positions. Perhaps public health dental hygienists derive more satisfaction using associated marketing, communication, and organizational skills developed in private practice within the public health system. Closely following public health in general job satisfaction is education. Abilities in addition to clinical skill are developed within education and are reflected in educators' perceptions of high levels of satisfaction with content factors. Conversely, the low ranking of private practice dental hygienists may be a reflection of the low level of satisfaction private practitioners feel with content factors. Confirmation of the high degree of satisfaction in public health dental hygiene was provided by Cohen,⁸ who found 90 percent of dental hygienists working in nontraditional settings to be satisfied with their positions. As Sodano, Javian, and

Judd,⁴⁴ Lawson and Martinoff,²⁸ and Weinstein and Perri⁴⁸ indicated, low levels of satisfaction are correlated with intrinsic job characteristics. Findings of Keevil²² provide partial confirmation with the present study in that the percentage of dental hygienists who would recommend dental hygiene as a career dropped from initial results of 88.3 percent in 1974 to 79.6 percent in 1979.

In analyzing level of education, results indicate there is no significant difference in levels of job satisfaction among the three occupational settings. This study did not measure levels of job satisfaction and education within groups. Through sampling three different occupational settings, educational level was controlled because 57.7 percent of educators have Master's Degrees; 65.6 percent of public health dental hygienists have Associate's Degrees; and 74.4 percent private practice dental hygienists have Associate's Degrees. Perceived satisfaction may be a function of the level of education required or desired for a specific occupational setting. Weinstein and Perri⁴⁸ concur that level of education is not a significant indicator of job satisfaction. Conflicting results, obtained by Hunter and Rossman,²⁰ revealed that weaknesses of private practice, including limitation of duties and the absence of professional advancement opportunities, are exacerbated due to conflicting educational preparation for roles available. Sodano, Javian, and Judd⁴⁴ also found that the higher the

educational level of the dental hygienist, the lower the level of satisfaction experienced on the job. Heine, Johnson, and Emily¹⁷ found 20 percent of baccalaureate degree dental hygienists were dissatisfied with their careers versus 8.6 percent of associate's degree dental hygienists.

Analysis of length of time in present position as a determinant of job satisfaction was examined and found not to be valid. Many private practice dental hygienists take breaks in active employment for numerous reasons and render interpretation of such data meaningless.

Overall job satisfaction was measured by combining subscales pertaining to content, context, and general job satisfaction. Stress subscales were not included because the presence or lack of stress does not indicate presence of lack of satisfaction. The constructs of stress and job satisfaction are mutually exclusive; however, they were important in examining overall job satisfaction. Educators appear to be most satisfied overall with their positions followed by public health dental hygienists and private practice dental hygienists. Greater opportunities for professional growth in education and high rankings in other content and general areas might provide more intellectual stimulation and satisfaction than public health and private practice. Additionally, educators usually have been employed in private practice and may have chosen to leave for more stimulating opportunities.

No literature exists to support or refute this position; therefore, more research is indicated.

Stress or the lack of stress was measured and found to be a slight to a fairly serious problem. Dental hygiene, although a highly technical occupation, also appears to be a moderately stressful one regarding leisure time, fatigue, and time pressure. Although further research is needed to validate these findings, stresses from fatigue, time pressure, and lack of leisure time appear combined in each occupational setting investigated to create significant problems.

Chapter 5

Summary and Conclusions

Job satisfaction levels of dental hygienists have been investigated in the past to determine influential factors in perceptions of fulfillment on the job. Many studies have considered private practice settings in examining job satisfaction; however, current interest and emphasis on multiple roles for dental hygienists indicates a need for a comparison of other occupational settings within the dental hygiene profession. The purpose of this investigation was to compare the job satisfaction levels of dental hygienists employed in three occupational settings: private practice, public health, and dental hygiene education. A determination of the relative strengths and weaknesses of dental hygiene occupational settings would contribute to the body of knowledge available to individuals when determining career goals.

Two hundred fifty-four licensed dental hygienists residing in North Carolina completed a Demographic Information Sheet and a modified Washington State Dental Auxiliaries Project Job Satisfaction Instrument (WSDAPJSI). Three groups of dental hygienists employed in private practice, public health, and dental hygiene

education comprised the independent variables for the survey, while job satisfaction values were the dependent variables and were measured by the fifteen subscales of the WSDAPJSI. One-way analysis of variance was used to determine if statistically significant differences existed in levels of satisfaction with each of fifteen different factors of dental hygiene employment. Tukey's Studentized Range (HSD) Test determined a ranking of occupational settings for each factor as well as statistical significance among the three occupational settings. Multivariate analysis of variance was employed to determine overall differences among private practice settings, public health settings, and dental hygiene education settings with job satisfaction factors and stress factors.

The results obtained in this study rejected the null hypothesis of no statistically significant difference at the 0.05 level among the three occupational settings regarding the content factor of opportunity to develop professionally. For the remaining content factors of: recognition of achievements, time to develop professionally, responsibility, and quality of service delivery the results failed to reject the corresponding null hypotheses. When context factors were considered, the results of this investigation rejected the null hypothesis that there is no statistically significant difference at the 0.05 level of significance among the

three occupational settings concerning job security. For the remaining context factors of: income, nonpatient tasks, staff relations, feedback, and role delineation, results failed to reject the corresponding null hypotheses of no difference among the three occupational settings at the 0.05 level of significance. Stress factors of leisure time and fatigue were tested at the 0.05 level among the three occupational settings and found not to differ significantly; therefore, the corresponding null hypotheses were retained. The null hypothesis testing time pressure was rejected at the 0.05 level of significance among the three occupational settings. General job satisfaction and its relationship to level of education and length of time in present position were tested at the 0.05 level of significance. The results failed to reject the hypotheses testing differences among the three occupational settings regarding level of education and length of time in present position; however, a significant difference existed among the three settings with regard to general job satisfaction.

The results of this research tend to support the presence of different levels of job satisfaction in private practice dental hygiene, public health dental hygiene, and dental hygiene education. Based upon the statistical significances and rankings revealed in this study, educators appear to be the most satisfied of the three occupational settings with their jobs. Educators

also appear to experience the most stress of the three occupational settings. While education offers much fulfillment and satisfaction, the occupational setting also produces significant stress concerning time factors.

The statistically significant differences revealed through this investigation may be applied in guidance of students in dental hygiene career choices as well as by high school, college, and military career counselors in recruiting students to a dental hygiene career.

Additionally, depending on the occupational settings, steps could be taken to enrich the job or alleviate the dissatisfaction occurring in each occupational setting.

Considering the discussion and limitations of this research, the following conclusions are offered:

1. Dental hygiene educators are the most satisfied with opportunities for professional development of the three occupational settings.

2. Private practice dental hygienists and public health dental hygienists are more satisfied with job security than dental hygiene educators.

3. Private practice dental hygienists and public health dental hygienists are more satisfied with time pressure (lack of) than dental hygiene educators.

4. Public health dental hygienists are more satisfied with general aspects of job satisfaction than private practice dental hygienists and dental hygiene educators.

As a result of this investigation, the following recommendations for future study are offered:

1. Validity and reliability of the Demographic Information Sheet should be established.
2. A replication of this study using a larger sample of full-time private practice dental hygienists to verify findings should be conducted.
3. A replication of this study should be conducted with demographic questions included which could be matched to those characteristics nationwide, thereby assuring a representative sample.
4. The present investigation should be repeated with other occupational settings using the same instrument.
5. A duplication of this study between states differing in supervision requirements for dental hygienists should be conducted.
6. The present study should be duplicated using graduates of Old Dominion University School of Dental Hygiene and Dental Assisting in order to ensure that their educational preparation is sufficient to produce qualified graduates for a variety of occupational settings.

Findings of this investigation suggest that there are significant differences in levels of job satisfaction and stress among private practice dental hygienists, public health dental hygienists, and dental hygiene educators. Based on these results, dental hygienists may choose career paths and occupational settings which provide

desired levels of satisfaction in areas in which they are most interested.

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APPENDIX A

Cover Letter for First Mailing

OLD DOMINION UNIVERSITY

College of Health Sciences
Norfolk, Virginia 23529-0499



Old Dominion University
School of Dental Hygiene and
Dental Assisting
Norfolk, Virginia 23529-0499
October 6, 1987

Office of the Dean
804-440-4960

Office of
Continuing
Education
440-4256

School of
Community
Health
Professions and
Physical
Therapy
440-4409

Community
Health
Education
440-4410

Environmental
Health
440-3611

Ophthalmic
Technology
461-0050

Physical Therapy
440-4519

School of Dental
Hygiene and
Dental Assisting
440-4310

School of Medical
Technology
440-3589

School of Nursing
440-4297

Clinical Practice
Center
440-4960

Dear Colleague:

Studies have shown that greater numbers of hygienists are looking to non-traditional practice settings for stimulation and fulfillment. You can assist me in determining levels of job satisfaction in three selected practice settings. I have included a short questionnaire and a demographic information sheet which will take less than fifteen minutes of your time to answer. Please complete each item with the answer which most closely describes the way you feel.

For your convenience, a pre-addressed, stamped envelope is enclosed for the return of the demographic sheet and the questionnaire. Please return both items within ten days.

For purposes of assuring confidentiality, envelopes have been coded. In this way, non-responders may be given a second chance to take part in the study. Be assured that results will be reported in group form only. Results of the study will be available on request through the School of Dental Hygiene and Dental Assisting, Old Dominion University, Norfolk, Virginia, by May 15, 1988.

Very sincerely yours,

Ruth H. Hull, RDH, BS
Masters Degree Candidate
Old Dominion University
School of Dental Hygiene and
Dental Assisting

APPENDIX B
Demographic Information Sheet

DEMOGRAPHIC INFORMATION

Please complete the following three (3) items as they apply to you:

1. Length of time in present position _____ Years _____ Months.

2. Level of education: (Check all that apply)

- _____ Certificate or Associate's Degree
- _____ Bachelor's Degree in _____
- _____ Master's Degree in _____
- _____ Doctorate in _____

3. Please check () one of the following five statements as it applies to you:

_____ A. I am a dental hygienist employed in a private practice.

1. Total number of hours worked per week _____
2. Number of practices _____
3. Types of practices:
 - general _____
 - periodontic _____
 - pedodontic _____
 - other, please specify _____

_____ B. I am a dental hygienist employed in a public health dental hygiene position.
 Number of hours per week spent in clinical responsibilities _____

_____ C. I am an educator of dental hygiene whose primary responsibility is teaching within a dental hygiene curriculum and who is considered a full-time faculty member.

_____ D. I am a dental hygienist whose job description and/or hours of work does not fill one of the above categories.
 * Please describe your position and hours of work in the following space:

_____ E. I am not currently employed as a dental hygienist.
 * Please list reasons why you are not currently employed as a dental hygienist:

APPENDIX C

**Washington State Dental Auxiliaries Project
Job Satisfaction Instrument**

QUESTIONNAIRE FOR PRIVATE PRACTICE DENTAL HYGIENISTS

Below are some statements which describe different aspects of a person's work. For each statement, we would like to know how satisfied you are with that aspect of your work. Please answer questions based on the practice where you are employed the most number of hours per week. By circling the appropriate number, please indicate whether you are very satisfied, moderately satisfied, slightly satisfied, slightly dissatisfied, moderately dissatisfied, or very dissatisfied.

	Satisfied			Dissatisfied		
	Very	Moderately	Slightly	Slightly	Moderately	Very
1. The amount of responsibility entrusted to you...	6	5	4	3	2	1
2. The opportunity to be helpful to patients...	6	5	4	3	2	1
3. The timeliness and appropriateness of the feedback you receive regarding your work...	6	5	4	3	2	1
4. The concern that staff members show towards each other...	6	5	4	3	2	1
5. The opportunity to use your skills, training, and talents to the fullest...	6	5	4	3	2	1
6. With the time you have for professional contacts with colleagues...	6	5	4	3	2	1
7. The responsibilities that you delegate to others...	6	5	4	3	2	1
8. The information given to you by other staff members to get the job done right...	6	5	4	3	2	1
9. The time and opportunity to keep up with your field...	6	5	4	3	2	1
10. The quality of dental care provided by the auxiliaries in the office...	6	5	4	3	2	1

	Satisfied			Dissatisfied		
	Very	Moderately	Slightly	Slightly	Moderately	Very
11. The competence of the office staff...	6	5	4	3	2	1
12. The number of job related functions/duties you have to do that you dislike...	6	5	4	3	2	1
13. The amount of checking up on the work of others that you must do...	6	5	4	3	2	1
14. The variety of job related functions/duties you do...	6	5	4	3	2	1
15. With opportunities to advance your career...	6	5	4	3	2	1
16. The opportunity for personal growth through your work...	6	5	4	3	2	1
17. The prestige associated with your work...	6	5	4	3	2	1
18. The time and opportunities to improve your skills...	6	5	4	3	2	1
19. The amount of time you have for leisure...	6	5	4	3	2	1
20. The amount of freedom you have to decide how to do the work...	6	5	4	3	2	1
21. The opportunity to develop your own special abilities...	6	5	4	3	2	1
22. The availability of enough help to get the job done right...	6	5	4	3	2	1
23. The praise you receive for work done particularly well...	6	5	4	3	2	1

	<u>Satisfied</u>			<u>Dissatisfied</u>		
	<u>Very</u>	<u>Moderately</u>	<u>Slightly</u>	<u>Slightly</u>	<u>Moderately</u>	<u>Very</u>
24. The amount of your time devoted to doing things that could be done by others with less training and experience...	6	5	4	3	2	1
25. The amount of challenge in your work...	6	5	4	3	2	1
26. The amount of paperwork you have to do...	6	5	4	3	2	1
27. The amount of help the office staff give to each other...	6	5	4	3	2	1
28. The degree to which your responsibilities are clearly defined...	6	5	4	3	2	1
29. The amount of supervision you have to do...	6	5	4	3	2	1
30. The recognition you receive for doing a good job...	6	5	4	3	2	1
31. The number of hours you devote to the job...	6	5	4	3	2	1
32. The amount of information given to you to get the job done right...	6	5	4	3	2	1
33. The income you receive from your work in this job setting...	6	5	4	3	2	1
34. How well the office staff works together...	6	5	4	3	2	1
35. With your opportunity to provide high quality services...	6	5	4	3	2	1
36. The security of your job...	6	5	4	3	2	1

Below are a few more statements. For each one, indicate the degree that it is a problem for you. Is it very serious problem, a fairly serious problem, a problem but not serious, or not a problem. PLEASE ANSWER BY CIRCLING THE APPROPRIATE NUMBER.

	<u>Very Serious</u>	<u>Fairly Serious</u>	<u>Not Serious</u>	<u>Not a Problem</u>
37. Fatigue from work...	4	3	2	1
38. The amount of time you have for each patient...	4	3	2	1
39. The physical layout of the office...	4	3	2	1
40. The amount of time available to get the job done...	4	3	2	1
41. The number of uncooperative patients...	4	3	2	1
42. Frustrations during work...	4	3	2	1
43. Feeling rushed...	4	3	2	1
44. The amount of on-the-job pressures...	4	3	2	1
45. Physical problems resulting from work, e.g., eye-strain, back pain, headache...	4	3	2	1

46. All in all, how satisfied would you say you are with your work -- very satisfied, somewhat satisfied, not too satisfied, or not at all satisfied? (CHECK ONE BOX)

1 Very Satisfied 2 Somewhat Satisfied 3 Not Too Satisfied 4 Not At All Satisfied

47. If a good friend of yours told you he/she was interested in work like yours, what would you tell him/her? Would you strongly recommend this work, would you have doubts about recommending it, or would you strongly advise him/her against this sort of work? (CHECK ONE BOX)

1 Strongly Recommend It 2 Have Doubts About Recommending It 3 Advise Him/Her Against It

48. Knowing what you know now, if you had to decide all over again whether to do this type of work, what would you decide? Would you decide without any hesitation to do the same work, would you have some second thoughts, or would you decide definitely not to be doing the same work? (CHECK ONE BOX)

1 Decide Without
Hesitation To
Take Same Work

2 Have Some
Second
Thoughts

3 Decide Definitely
Not To Take The
Work

49. Taking everything into consideration, how likely is it that you will make a genuine effort to find new work within the next year -- very likely, somewhat likely, or not at all likely? (CHECK ONE BOX)

1 Very
Likely

2 Somewhat
Likely

3 Not At All
Likely

50. How many days of scheduled work have you missed in the past three months?

days

51. How many of these days (in the last three months) did you miss because you were sick?

days

THANK YOU FOR YOUR COOPERATION!

Please return to:
Ruth H. Hull
School of Dental Hygiene
Old Dominion University
Room 149, Technology Building
Norfolk, Virginia 23529-0499

QUESTIONNAIRE FOR PUBLIC HEALTH DENTAL HYGIENISTS

Below are some statements which describe different aspects of a person's work. For each statement, we would like to know how satisfied you are with that aspect of your work. By circling the appropriate number, please indicate whether you are very satisfied, moderately satisfied, slightly satisfied, slightly dissatisfied, moderately dissatisfied, or very dissatisfied. With your unique position in mind, please respond to the statements below.

	<u>Satisfied</u>			<u>Dissatisfied</u>		
	<u>Very</u>	<u>Moderately</u>	<u>Slightly</u>	<u>Slightly</u>	<u>Moderately</u>	<u>Very</u>
1. The amount of responsibility entrusted to you...	6	5	4	3	2	1
2. The opportunity to be helpful to patients/clients...	6	5	4	3	2	1
3. The timeliness and appropriateness of the feedback you receive regarding your work...	6	5	4	3	2	1
4. The concern that staff members show towards each other...	6	5	4	3	2	1
5. The opportunity to use your skills, training, and talents to the fullest...	6	5	4	3	2	1
6. With the time you have for professional contacts with colleagues...	6	5	4	3	2	1
7. The responsibilities that you delegate to others...	6	5	4	3	2	1
8. The information given to you by other staff members to get the job done right...	6	5	4	3	2	1
9. The time and opportunity to keep up with your field...	6	5	4	3	2	1
10. The quality of dental care provided by the auxiliaries in the department... If not employed clinically, circle...	6	5	4	3	2	1
	NA					

	Satisfied			Dissatisfied		
	Very	Moderately	Slightly	Slightly	Moderately	Very
11. The competence of the office staff... If not employed clinically, circle...	6	5	4	3	2	1
	NA					
12. The number of job related functions/duties you have to do that you dislike...	6	5	4	3	2	1
13. The amount of checking up on the work of others that you must do...	6	5	4	3	2	1
14. The variety of the job related functions/duties you do...	6	5	4	3	2	1
15. With opportunities to advance your career...	6	5	4	3	2	1
16. The opportunity for personal growth through your work...	6	5	4	3	2	1
17. The prestige associated with your work...	6	5	4	3	2	1
18. The time and opportunities to improve your skills...	6	5	4	3	2	1
19. The amount of time you have for leisure...	6	5	4	3	2	1
20. The amount of freedom you have to decide how to do the work...	6	5	4	3	2	1
21. The opportunity to develop your own special abilities...	6	5	4	3	2	1
22. The availability of enough help to get the job done right...	6	5	4	3	2	1
23. The praise you receive for work done particularly well...	6	5	4	3	2	1

	<u>Satisfied</u>			<u>Dissatisfied</u>		
	<u>Very</u>	<u>Moderately</u>	<u>Slightly</u>	<u>Slightly</u>	<u>Moderately</u>	<u>Very</u>
24. The amount of your time devoted to doing things that could be done by others with less training and experience...	6	5	4	3	2	1
25. The amount of challenge in your work...	6	5	4	3	2	1
26. The amount of paperwork you have to do...	6	5	4	3	2	1
27. The amount of help the staff give to each other...	6	5	4	3	2	1
28. The degree to which your responsibilities are clearly defined...	6	5	4	3	2	1
29. The amount of supervision you have to do...	6	5	4	3	2	1
30. The recognition you receive for doing a good job...	6	5	4	3	2	1
31. The number of hours you devote to the job..	6	5	4	3	2	1
32. The amount of information given to you to get the job done right...	6	5	4	3	2	1
33. The income you receive from your work in this job setting...	6	5	4	3	2	1
34. How well the staff works together...	6	5	4	3	2	1
35. With your opportunity to provide high quality services...	6	5	4	3	2	1
36. The security of your job...	6	5	4	3	2	1

Below are a few more statements. For each one, indicate the degree that it is a problem for you. Is it very serious problem, a fairly serious problem, a problem but not serious, or not a problem. PLEASE ANSWER BY CIRCLING THE APPROPRIATE NUMBER.

	<u>Very Serious</u>	<u>Fairly Serious</u>	<u>Not Serious</u>	<u>Not a Problem</u>
37. Fatigue from work...	4	3	2	1
38. The amount of time you have for each patient/client/classroom...	4	3	2	1
39. The physical layout of the health department/classroom...	4	3	2	1
40. The amount of time available to get the job done...	4	3	2	1
41. The number of uncooperative patients/schoolchildren/school personnel...	4	3	2	1
42. Frustrations during work...	4	3	2	1
43. Feeling rushed...	4	3	2	1
44. The amount of on-the-job pressures...	4	3	2	1
45. Physical problems resulting from work, e.g., eye-strain, back pain, headache...	4	3	2	1

46. All in all, how satisfied would you say you are with your work -- very satisfied, somewhat satisfied, not too satisfied, or not at all satisfied?
(CHECK ONE BOX)

1 Very Satisfied 2 Somewhat Satisfied 3 Not Too Satisfied 4 Not At All Satisfied

47. If a good friend of yours told you he/she was interested in work like yours, what would you tell him/her? Would you strongly recommend this work, would you have doubts about recommending it, or would you strongly advise him/her against this sort of work? (CHECK ONE BOX)

1 Strongly Recommend It 2 Have Doubts About Recommending It 3 Advise Him/Her Against It

48. Knowing what you know now, if you had to decide all over again whether to do this type of work, what would you decide? Would you decide without any hesitation to do the same work, would you have some second thoughts, or would you decide definitely not to be doing the same work? (CHECK ONE BOX)

1 Decide Without
Hesitation To
Take Same Work

2 Have Some
Second
Thoughts

3 Decide Definitely
Not To Take The
Work

49. Taking everything into consideration, how likely is it that you will make a genuine effort to find new work within the next year -- very likely, somewhat likely, or not at all likely? (CHECK ONE BOX)

1 Very
Likely

2 Somewhat
Likely

3 Not At All
Likely

50. How many days of scheduled work have you missed in the past three months?

days

51. How many of these days (in the last three months) did you miss because you were sick?

days

THANK YOU FOR YOUR COOPERATION!

Please return to:
Ruth H. Hull
School of Dental Hygiene
Old Dominion University
Room 149, Technology Building
Norfolk, Virginia 23529-0499

QUESTIONNAIRE FOR EDUCATORS

Below are some statements which describe different aspects of a person's work. For each statement, we would like to know how satisfied you are with that aspect of your work. By circling the appropriate number, please indicate whether you are very satisfied, moderately satisfied, slightly satisfied, slightly dissatisfied, moderately dissatisfied, or very dissatisfied.

	<u>Satisfied</u>			<u>Dissatisfied</u>		
	<u>Very</u>	<u>Moderately</u>	<u>Slightly</u>	<u>Slightly</u>	<u>Moderately</u>	<u>Very</u>
1. The amount of responsibility entrusted to you...	6	5	4	3	2	1
2. The opportunity to be helpful to students...	6	5	4	3	2	1
3. The timeliness and appropriateness of the feedback you receive regarding your work...	6	5	4	3	2	1
4. The concern that faculty members show towards each other...	6	5	4	3	2	1
5. The opportunity to use your skills, training, and talents to the fullest...	6	5	4	3	2	1
6. With the time you have for professional contacts with colleagues...	6	5	4	3	2	1
7. The responsibilities that you delegate to others...	6	5	4	3	2	1
8. The information given to you by other faculty members to get the job done right...	6	5	4	3	2	1
9. The time and opportunity to keep up with your field...	6	5	4	3	2	1
10. The quality of education provided by faculty in the department...	6	5	4	3	2	1

	Satisfied			Dissatisfied		
	<u>Very</u>	<u>Moderately</u>	<u>Slightly</u>	<u>Slightly</u>	<u>Moderately</u>	<u>Very</u>
11. The competence of the faculty...	6	5	4	3	2	1
12. The number of job related functions/duties you have to do that you dislike...	6	5	4	3	2	1
13. The amount of checking up on the work of others that you must do...	6	5	4	3	2	1
14. The variety of job related functions/duties you do...	6	5	4	3	2	1
15. With opportunities to advance your career...	6	5	4	3	2	1
16. The opportunity for personal growth through your work...	6	5	4	3	2	1
17. The prestige associated with your work...	6	5	4	3	2	1
18. The time and opportunities to improve your skills...	6	5	4	3	2	1
19. The amount of time you have for leisure...	6	5	4	3	2	1
20. The amount of freedom you have to decide how to do the work...	6	5	4	3	2	1
21. The opportunity to develop your own special abilities...	6	5	4	3	2	1
22. The availability of enough help to get the job done right...	6	5	4	3	2	1
23. The praise you receive for work done particularly well...	6	5	4	3	2	1

	<u>Satisfied</u>			<u>Dissatisfied</u>		
	<u>Very</u>	<u>Moderately</u>	<u>Slightly</u>	<u>Slightly</u>	<u>Moderately</u>	<u>Very</u>
24. The amount of your time devoted to doing things that could be done by others with less training and experience...	6	5	4	3	2	1
25. The amount of challenge in your work...	6	5	4	3	2	1
26. The amount of paperwork you have to do...	6	5	4	3	2	1
27. The amount of help the faculty give to each other...	6	5	4	3	2	1
28. The degree to which your responsibilities are clearly defined...	6	5	4	3	2	1
29. The amount of supervising you have to do...	6	5	4	3	2	1
30. The recognition you receive for doing a good job...	6	5	4	3	2	1
31. The number of hours you devote to the job...	6	5	4	3	2	1
32. The amount of information given to you to get the job done right...	6	5	4	3	2	1
33. The income you receive from your work in this job setting...	6	5	4	3	2	1
34. How well the faculty works together...	6	5	4	3	2	1
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Below are a few more statements. For each one, indicate the degree that it is a problem for you. Is it very serious problem, a fairly serious problem, a problem but not serious, or not a problem. PLEASE ANSWER BY CIRCLING THE APPROPRIATE NUMBER.

	<u>Very Serious</u>	<u>Fairly Serious</u>	<u>Not Serious</u>	<u>Not a Problem</u>
37. Fatigue from work...	4	3	2	1
38. The amount of time you have for each student...	4	3	2	1
39. The physical layout of the office/department...	4	3	2	1
40. The amount of time available to get the job done...	4	3	2	1
41. The number of uncooperative students...	4	3	2	1
42. Frustrations during work...	4	3	2	1
43. Feeling rushed...	4	3	2	1
44. The amount of on-the-job pressures...	4	3	2	1
45. Physical problems resulting from work, e.g., eye-strain, back pain, headache...	4	3	2	1

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2 Have Some
Second
Thoughts

3 Decide Definitely
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Work

49. Taking everything into consideration, how likely is it that you will make a genuine effort to find new work within the next year -- very likely, somewhat likely, or not at all likely? (CHECK ONE BOX)

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Likely

2 Somewhat
Likely

3 Not At All
Likely

50. How many days of scheduled work have you missed in the past three months?

days

51. How many of these days (in the last three months) did you miss because you were sick?

days

THANK YOU FOR YOUR COOPERATION!

Please return to:
Ruth H. Hull
School of Dental Hygiene
Old Dominion University
Room 149, Technology Building
Norfolk, Virginia 23529-0499

APPENDIX D

Cover Letter for Second Mailing

OLD DOMINION UNIVERSITY

College of Health Sciences
Norfolk, Virginia 23529-0499



Office of the Dean
804-440-4960

Office of
Continuing
Education
440-4256

School of
Community
Health
Professions and
Physical
Therapy
440-4409

Community
Health
Education
440-4410

Environmental
Health
440-3611

Ophthalmic
Technology
461-0050

Physical Therapy
440-4519

School of Dental
Hygiene and
Dental Assisting
440-4310

School of Medical
Technology
440-3589

School of Nursing
440-4297

Clinical Practice
Center
440-4960

Old Dominion University
School of Dental Hygiene and
Dental Assisting
Norfolk, Virginia 23529-0499
October 23, 1987

Dear Colleague:

All of us are busier these days than ever, and most of us have a hard time keeping abreast of those obligations which are essential and required.

I have had no reply from the questionnaire and demographic sheet which reached you about two weeks ago. Perhaps you mislaid the questionnaire, or it may have miscarried in the mail. Any one of dozens of contingencies could have happened.

In any event, I am enclosing another copy of the questionnaire and demographic sheet. I am sure you will try to find fifteen minutes somewhere in your busy schedule to check its several items and drop it in the nearest postal box. Most of them have been returned. I would like to get them all back in the next ten days. Will you help me?

Very sincerely yours,

Ruth H. Hull, RDH, BS
Masters Degree Candidate
Old Dominion University
School of Dental Hygiene and
Dental Assisting

APPENDIX E

**Responses to the Washington State Dental Auxiliaries
Project Job Satisfaction Instrument**

APPENDIX E

Responses to the Washington State Dental Auxiliaries
Project Job Satisfaction Instrument

Groups	Number Returned
Included in study:	(Sub-total) 173
PPDH	86
PHDH	61
DHE	26
Not included in study:	(Sub-total) 81
Employed less than 28 hours/week	35
Not employed as dental hygienist	41
Incomplete questionnaires	5
Total Returned	254
Total Mailed	334
Response Rate	76%