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CHARACTERISTICS AND WORKLOAD OF FULL-TIME FACULTY IN
BACCALAUREATE DENTAL HYGIENE PROGRAMS

by

MARIE ANTOINETTE COLLINS

(Under the Direction of Michael D. Richardson)

ABSTRACT

The purpose of this study was to determine the characteristics and workload of full-time faculty in baccalaureate dental hygiene programs. A mail questionnaire was sent to program administrators for distribution to faculty. Program response rate was 89.7% (26/29) and full-time faculty response rate was 68.3% (114/167).

The number of faculty who hold the Associate or Assistant Professor ranks was similar (35.1% and 34.2%, respectively). Forty percent of faculty are not on tenure track and 38.6% are tenured. Faculty were most likely to be White (94%) and female (96%) with an average age of 50.2 years. Faculty reported levels of dissatisfaction with time available for student advisement, time available for class preparation, workload, time available to keep current in field, and salary. About 56% (39/70) of the faculty plan to retire from the labor force in 10 year or less.

Faculty reported an average work week of 50.5 hours, which includes 46.9 hours spent on paid activities and 3.6 hours spent on unpaid activities. In specific workload activities, the allocation of faculty time was: 56.8% on teaching undergraduate students, 14.9% on institutional service, and 9.5% on research/scholarship. Forty-seven percent of the faculty described their primary professional research as program/curriculum design

and 78% were not engaged in funded research. The average number of professional presentations outnumbered all other types of scholarly activity/publications.

Faculty spent significantly more time, than they preferred, on teaching undergraduate students and on institutional service. Faculty spent significantly less time, than they preferred, on teaching graduate/first professional students, on research/scholarship, on professional growth, and on public service. Faculty in Master's institutions spent significantly more time in Public Service than those in Doctorate and Specialized institutions.

Several conclusions were made based on findings: there is a lack of diversity within the dental hygiene profession in regards to underrepresented minorities and males; there will be a noticeable shortage of dental hygiene faculty as current faculty age and retire; there is a lack of information regarding dental hygiene faculty characteristics, workload, working conditions, and effect of institution type. Implications on the profession and suggestions for future studies were presented.

INDEX WORDS: Dental hygiene programs, Dental hygiene faculty, Faculty characteristics, Faculty workload, Institution types

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A Dissertation Submitted to the Graduate Faculty of Georgia Southern University in
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DOCTOR OF EDUCATION

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2006

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BACCALAUREATE DENTAL HYGIENE PROGRAMS

by

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Electronic Version Approved:
December 2006

DEDICATION

This dissertation is dedicated to the memory of my dear grandmother,

Georgiana Marshall Horne

1914-2004

Train up a child in the way he should go: and when he is old, he will not depart from it.

-Proverbs 22:6

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My eternal love and gratitude is extended to my husband, **Ronnie Collins**, for being the mom and dad [to our wonderful son, **Myles**], aunt and uncle [to our wonderful nephews **Quinn, Tevin, and Aaron**] during the numerous times that I had to surrender these roles to focus on this dissertation.

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CHAPTER 1

INTRODUCTION

Accountability of faculty in higher education has been examined by the public, by legislators, and by educational administrators (Allen, 2004; Amey, 2002; Fairweather, 2002a, 2002b, 2004). There were several attempts to develop workload formulas and to quantify faculty productivity (American Association of University Professors [AAUP], 2000; Bamberg & Free, 1986; Crawford, Laing, Linwood, Kyle, & DeBlock, 1983; Freund, Ulin, & Pierce, 1990; Kirkpatrick, Rose, & Thiele, 1987; Porter & Umbach, 2001; Voignier, Hermann, & Brouse, 1998). Others, like Ruby (1998), contended that faculty workload should be evaluated in a more qualitative fashion that expands on the role that motivation plays in productivity. Nonetheless, Mayes (1998) found that higher education institutions which are dependent upon state revenue to support their organization often find that quantitative reports are the only mechanisms to objectively describe and defend faculty workload and contact hour data.

Faculty Workload

Expectations for faculty workload are often based on the mission and type of institution according to Boyer (1990). The 2000 Carnegie classification of higher education institutions, edited by McCormick in 2001, includes Doctorate-granting Institutions, Master's Colleges and Universities, Baccalaureate Colleges, Associate's Colleges, Specialized Institutions, and Tribal Colleges and Universities. In Doctorate-granting Institutions, a research model is embraced. In Baccalaureate and Associate's colleges, teaching is the central mission. Boyer also stated that in Master's Colleges and Universities, the institutional mission may integrate both research and teaching models.

Fairweather (2004), Paulsen (2002), Porter and Umbach (2001) agreed that disciplines should be similarly grouped when assessing and comparing faculty workload data. Lau (1996) and Seaberg (1998) published studies regarding faculty workload in the disciplines of social work, business, and liberal arts. These studies focused on faculty workloads in academic, non-practice disciplines.

After comprehensive review of a variety of databases and topic-related dissertation abstracts, the researcher found that nursing was the only practice discipline with multiple publications regarding faculty workloads. As explained by Nunn et al. (2004) and O'Shea (1986), clinical education in a practice discipline requires substantial student instructional time or contact hours. These contact hours are not often captured in credit hour assessments of course workload. Therefore, consideration of the discipline is advised.

Baccalaureate dental hygiene education is comparable to baccalaureate nursing education when considering the academic preparation (four years of college level courses), the institutional rewards in both practice disciplines (BSDH and BSRN, respectively), and the credentialing process for licensure (national written board examinations). Ruby (1998) explained that despite a history of resistance from physicians, nursing has evolved into a self-governing profession. Darby and Walsh (2003) similarly noted that dental hygienists, formerly known as dental nurses, have historically faced similar resistance from dentists as they struggled for self-governance and true professional status. A brief overview of dental hygiene education programs and then introduces readers to the study is provided in next section.

Dental Hygiene Education Programs

The Commission on Dental Accreditation (1998) outlined accreditation standards that are similar for all dental hygiene education programs in the United States. Dental hygiene education programs are located in a variety of settings such as university or four-year colleges, community/junior colleges, technical colleges/institutes, vocational schools, and others as reported in an annual national survey by the American Dental Association (2005). Certificates, associate's degrees, and baccalaureate degrees are the entry-level awards granted to graduates of dental hygiene programs. After or near the completion of the dental hygiene curriculum, graduates must pass the written National Dental Hygiene Board Examination that is administered by the American Dental Association. To become a registered dental hygienist (RDH), graduates must also pass a clinical examination administered by the state or region where the graduate plans to practice.

The level of degree entry (certificate, associate's, and baccalaureate) carries no distinction in salary or tangible benefits for the majority of dental hygiene graduates who pursue a clinical practice career. For students, the dental hygiene curriculum and requirements for licensure are very similar, regardless of the degree awarded or institution attended.

For faculty, these similarities might not exist. The role of dental hygiene faculty in Doctorate-granting Institutions, Master's Colleges and Universities, Baccalaureate Colleges, and Specialized Institutions may be different than faculty roles in Associate's Colleges (Fairweather, 2004). The institutional setting and the degree awarded influences the expectations and outcomes of dental hygiene faculty workload. The majority of

certificate and associate's dental hygiene education programs are located in Associate's Colleges where the primary mission and expectation of the faculty is teaching and service (American Dental Association [ADA], 2005; Boyer, 1990; McCormick, 2001).

In contrast, most baccalaureate dental hygiene programs are located in Doctorate-granting Institutions, Master's Colleges and Universities, and Specialized Institutions (ADA, 2005; McCormick, 2001). In these institutions, Boyer (1990) noted that faculty may have the additional responsibilities of research and clinical practice, in addition to their teaching and service workload. These additional responsibilities were discussed in Glick's (1990) survey of baccalaureate dental hygiene faculty.

Glick (1990) found that the average teaching contact hours ranged from 11 to 25 for 92% of the respondents. Glick further acknowledged that teaching, research, and service are required for promotion and tenure in 97% of the baccalaureate dental hygiene programs surveyed. To date, there have been no published studies which investigate the non-teaching workload of dental hygiene faculty.

Statement of the Problem

Dental hygiene programs are located in a variety of institutional settings. Upon completion of an accredited entry-level program in dental hygiene, graduates can earn a certificate, an associate's degree, or a baccalaureate degree. In many certificate and associate degree programs, dental hygiene faculty workload primarily involves teaching and service. In baccalaureate degree programs, dental hygiene faculty are often expected to show productivity in the areas of teaching, research, service, and sometimes, clinical practice.

Faculty workload has been assessed in academic majors at liberal arts institutions. However, in practice professions like dental hygiene, faculty workload is unique. Student credit hours are often the benchmark for program budgetary allocations. This poses a problem in dental hygiene programs because faculty contact hours in clinical courses often exceed the student credit hours earned for a course. Also, multiple full-time and part-time faculty participate in clinical courses due to the low student to faculty ratios that are mandated by national accreditation standards.

When this study began, a current analysis of dental hygiene faculty characteristics and workload was not available. Accreditation standards for dental hygiene education do not provide definitive benchmarks for dental hygiene faculty workload. This decision is left up to the institution. It is difficult to assess program needs and faculty accountability without baseline workload data relating to institutional expectations such as research, service, and clinical practice. Therefore, the purpose of this study was to assess the characteristics and workload of full-time faculty in baccalaureate dental hygiene programs.

Research Questions

The overarching research question was: What are the characteristics and workload of faculty in baccalaureate dental hygiene programs? Specifically, the researcher surveyed full-time baccalaureate dental hygiene faculty to answer the following research questions:

1. What are the characteristics of baccalaureate dental hygiene faculty in regards to employment, academic background, demographics, job satisfaction, and opinions?

2. What are the institutional responsibilities and workload of baccalaureate dental hygiene faculty?
3. To what extent are there differences between the percent of work time spent and the percent of work time preferred in various institutional activities?
4. To what extent are there differences between the Carnegie institution types when considering baccalaureate dental hygiene faculty workload?

Theoretical Framework

The Guba and Getzels (1957) *Model of Behavior in Social Systems* provided the theoretical framework and organizational structures pertinent for conceptualizing the various components and complexities of faculty workload. In Appendix A, the model created by Guba and Getzels was modified by the researcher. The diagram uses brackets to illustrate the role expectations of baccalaureate dental hygiene faculty who are members of the encompassing institution, as well as members of the practice discipline.

The model of social behavior relates role expectations [actual v. preferred faculty workload] and role perceptions [mission guided workload] of individuals [dental hygiene faculty] within a given institution [higher education] and cultural social system [practice discipline of dental hygiene].

Importance of the Study

Prior to this study, the most recent study examining the characteristics of dental hygienists who are faculty members in baccalaureate dental hygiene programs was conducted in 1990 by Glick. Many changes in dental hygiene education occurred between 1990 and 2006. These changes include the opening and closing of baccalaureate

programs as well as changes in institutional missions. This study provided a current status of baccalaureate dental hygiene faculty.

There was no comparative literature for dental hygiene faculty workloads that included teaching, research/scholarship, and service activities. Due to the uniqueness of disciplines and institutions, workload assessments of similar disciplines in peer institutions are more meaningful than comparing across dissimilar disciplines.

Dental hygiene program administrators are directly responsible for faculty development, faculty scheduling, and faculty workload assignments. These assignments must ensure adequate career growth for attaining promotion and tenure, as well as faculty satisfaction. With the demands of excellence in teaching, research, service, and clinical practice, the knowledge of standard faculty workloads is an asset to dental hygiene program administrators. This is a pertinent topic for the discipline and one that is relative to current concepts in educational administration.

Results from this study are useful to the dental hygiene program administrator who is often responsible for the mentoring, hiring and scheduling of faculty. The results also provide a baseline for proper assignment of new dental hygiene faculty to tenure or non-tenure tracks. Tenure track appointments generally require substantial research or scholarly activity. Results of this assessment of faculty workload might assist program administrators in making more informed decisions when allocating and accounting for faculty time.

This research was significant to the researcher because she serves as department chair of a baccalaureate dental hygiene program. The researcher is directly responsible for faculty development, faculty scheduling, and balancing faculty workload.

Individually, these assignments must ensure career growth of the faculty for promotion and tenure attainment. Collectively, these assignments must be congruent with the mission of the university.

Procedures

The theoretical population of interest for this study was all full-time faculty at every accredited baccalaureate dental hygiene program in the United States. Due to the small number of baccalaureate dental hygiene programs, the accessible population was asked to participate in this study. Further sampling procedures were not warranted. The study population was obtained from the most current listing of the American Dental Association's (n.d.) database of accredited dental hygiene programs, which is updated periodically as existing programs renew accreditation, new programs obtain accreditation status, and discontinued programs phase out.

According to the *2003/04 Survey of Allied Dental Education*, there were 184 full-time faculty in the 35 baccalaureate dental hygiene programs (ADA, 2005). It is common for the number of full-time faculty to fluctuate due to position vacancies, position creation, or reclassification of work commitment. The most current number of full-time faculty was obtained from the program administrators.

The researcher made initial contact with each baccalaureate dental hygiene program administrator through an electronic mail message, shown in Appendix B. The message included a brief description of the study and an announcement that the researcher would contact the program administrator, by telephone, within one week. Within one week, the researcher called each program administrator using the script in Appendix C. One purpose of this call was to verify institutional and program data printed

in the *2003/04 Survey of Allied Dental Education*, including verification of the degree awarded, current number of full-time, and current number of part-time faculty positions and vacancies (ADA, 2005). Another purpose of this call was to solicit program participation and ask for program administrator help in distributing the survey to each full-time faculty member.

After support was obtained, surveys and stamped self-addressed envelopes were mailed to each program administrator. Directions for survey distribution and collection were outlined in an explanatory letter to the program administrators, shown in Appendix D. The survey cover letter and survey instrument for faculty are shown in Appendices E and F. Each program administrator was responsible for distributing surveys to each full-time faculty. Upon completion of the survey, faculty were instructed to seal it in the envelope provided and return it to their program administrator for bulk mailing. After two weeks, a follow-up electronic mail message, shown in Appendix G, was sent to program administrators thanking them for their participation and reminding them to send surveys if they had not already done so.

The mail survey was chosen since it is ideal for collecting perceptual and value data. The mail survey was also feasible for a small population since postage is relatively inexpensive. The mailing address, office telephone number, and electronic mail address of all program administrators were publicly and readily accessible (ADA, 2005).

The design of this study was quantitative descriptive self-report research. The type of self-report research used in this study was survey research, using a mail questionnaire. Descriptive statistics, as described by Gay, Mills, and Airasian (2005), permit the researcher to meaningfully describe many scores with a small number of

indices. The types of descriptive statistics used in this study are frequencies, percentages, measures of central tendency (mean, median, mode), and measures of variability (range and standard deviation).

The inferential statistics, *t* test and univariate analysis of variance (ANOVA), were also used in this study. Inferential statistics allow inferences of judgments about a population based on the behavior of samples. Gay et al. (2005) summarized that inferential statistics are concerned with determining how likely it is that the results based on a sample or samples are the same results that would have been obtained from the entire population.

The researcher used survey items from the published *1999 National Study of Postsecondary Faculty (NSOPF:99)*. Twenty-three items from the original 93-item *NSOPF:99* survey were used to create the *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*. Two additional free response items and a comment section were added by the researcher.

The researcher submitted the proposed study protocol and data collection instrument to institutional review boards at Georgia Southern University, where the researcher is student; and at the Medical College of Georgia, where the researcher is faculty. After approval from both institutions, a panel of three full-time faculty in associate's degree dental hygiene programs reviewed the survey for face and content validity. Results from the panel review, as well as suggestions from the researcher's dissertation committee, were incorporated into the final instrument, *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*.

Each completed survey was numbered and coded with a 3-digit institution identifier. All surveys were filed securely in the researcher's office. All data were reported using group summaries and no information identifying specific schools, program, or faculty was used. These methods to assure confidentiality were conveyed to each program administrator in the initial telephone conversation and in electronic mail correspondence, shown in Appendices D and E.

Assumptions of the Study

In this study, the researcher made the following assumptions:

1. The teaching, research, service, and clinical practice components of dental hygiene faculty workload would be operationalized using the survey instrument.
2. Dental hygiene faculty are competent in providing accurate estimates of their workload using the survey instrument.
3. The response rate would be favorable because dental hygiene faculty would be interested in workload research that is unique to the discipline and reflective of peer institutions.
4. Institutional expectations for full-time dental hygiene faculty in Baccalaureate Colleges, Master's Colleges and Universities, and Specialized Institutions might include teaching, research, service, and clinical practice.

Limitations and Delimitations of the Study

During the development of the study, the researcher noted limitations and delimitations. These limitations and delimitations are presented in the next section.

Limitations

The following limitations applied to the study:

1. The number of full-time faculty participants per baccalaureate dental hygiene program would vary.
2. There is a paucity of comparative data related to dental hygiene faculty characteristics and teaching workload.
3. There is no comparative data related to the non-teaching aspect of dental hygiene faculty workload and institutional responsibilities.

Delimitations

The following were identified as delimitations in this study:

1. The researcher chose to exclude all part-time dental hygiene faculty in the baccalaureate dental hygiene education programs.
2. The researcher chose to exclude all full-time and part-time dental hygiene faculty in the certificate and associate's degree dental hygiene education programs.
3. The researcher chose to assign the responsibility of faculty survey distribution, collection, and bulk return to the program administrator.
4. The researcher chose to begin data collection in February 2006 and collect survey faculty workload data from the fall 2005 term.
5. The researcher chose to use 23 of 93 items on the *1999 National Survey of Postsecondary Faculty* to operationalize full-time baccalaureate dental hygiene faculty instructional responsibilities and workload.

6. The researcher chose to include the baccalaureate dental hygiene program where she is program administrator.

Definition of Terms

The following terms, defined below, apply to this study:

1. **Faculty workload** – commitment spent on various activities associated with faculty roles including teaching, research, service, administration, and clinical practice. The *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*, developed by the researcher, will operationalize each activity.
2. **Full-time dental hygiene faculty** – individuals who are identified or designated as paid full-time faculty by dental hygiene program administrators responding to the *2003/04 Survey of Allied Dental Education*, excluding dentists who serve only in the capacity of clinic supervisor (ADA, 2005).
3. **Part-time dental hygiene faculty** – individuals who are identified or designated as paid part-time faculty by dental hygiene program administrators responding to the *2003/04 Survey of Allied Dental Education*, excluding dentists who serve only in the capacity of clinic supervisor, staff, adjunct faculty, volunteer faculty, teaching assistants, and research assistants (ADA, 2005).
4. **Program Administrator** – person responsible for the day-to-day operation of the dental hygiene program as operationally defined by the *2003/04 Survey of Allied Dental Education* (ADA, 2005).

Summary

In Chapter 1, the researcher proposed a study to answer the overarching research question, “What are the characteristics and workload of faculty in baccalaureate dental hygiene education programs?” There is a lack of current information regarding baccalaureate dental hygiene faculty characteristics and workload so the importance of the study was clarified. The researcher briefly discussed the methods used to survey the accessible population of U.S. accredited baccalaureate dental hygiene program faculty.

Assumptions, limitations, and delimitations of the study were explained in the current chapter and followed by a list defining various terms to be used throughout the research. In the next chapter, an extensive review of the literature is presented as it relates to the theoretical framework guiding this study. Studies regarding faculty workload in higher education, in academic disciplines, and in practice disciplines are described and then followed by a historical overview of the dental hygiene discipline, educational programs, and faculty.

CHAPTER 2

REVIEW OF RESEARCH AND RELATED LITERATURE

Chapter 1 provided an introduction to the study. The statement of the problem was followed by a listing of four research questions. The theoretical framework for the study was followed by the importance, procedures, assumptions, limitations, delimitations, and definition of terms.

In Chapter 2, faculty workload literature in higher education and in practice disciplines is reviewed. A historical overview of the dental hygiene discipline and its current education programs is followed by a section reiterating the relevance of dental hygiene faculty workload studies. Elements of the Guba and Getzels (1957) *Model of Behavior in Social Systems* were used throughout the chapter as the theoretical framework capturing the essence and relevance of this study.

Institution Type and Mission

The organizational mission is a key component in the Guba and Getzels (1957) *Model of Behavior in Social Systems*. The priority assigned to faculty roles and rewards is often dependent on the institution type and mission as stressed by Allen (1996) and Boyer (1990). Accordingly, a typology to classify American institutions of higher education was created by The Carnegie Foundation for the Advancement of Teaching in 2000 and later edited by McCormick in 2001.

Specific organizational missions are reflected in the 2000 Carnegie Classification of institutions outlined by McCormick (2001). The Carnegie Classification includes all colleges and universities in the United States that are degree-granting and accredited by a recognized agency. The level of learners (undergraduate, graduate) and degrees awarded

(associate's, baccalaureate, master's, doctorate) are considered in the Carnegie Classification (McCormick).

The 2000 Carnegie Classification includes Doctorate-granting Institutions, Master's Colleges and Universities, Baccalaureate Colleges, Associate's Colleges, Specialized Institutions, and Tribal Colleges and Universities. Doctorate-granting Institutions typically offer a wide range of baccalaureate programs and they are committed to graduate education through the doctorate. Master's Colleges and Universities offer a wide range of baccalaureate programs and they are committed to graduate education through the master's degree. Specialized Institutions award degrees from the bachelor's to the doctorate, typically in a single field.

Baccalaureate Colleges are primarily undergraduate colleges with major emphasis on baccalaureate programs. They award liberal arts and general baccalaureate degrees. Associate's Colleges offer associate's degrees and certificates and usually, no baccalaureate degrees. Lastly, McCormick (2001) classifies Tribal Colleges and Universities as those that are tribally controlled and located on reservations. Tribal Colleges typically offer a variety of certificate, associate's, and baccalaureate degrees.

Boyer (1990) and Fairweather (2004) discussed the importance of the institutional type on expected faculty roles. According to Boyer, expectations of postsecondary faculty are based on the type of institution in which their discipline resides. In Doctorate-granting Institutions, a research model is often embraced. In Master's Colleges and Universities, the institutional mission may integrate both research and teaching models. In Baccalaureate Colleges, teaching is the central mission. Boyer, Glick (1990), and Fairweather assessed that the workload of full-time faculty in Associate's Colleges may

include teaching and service with minimal expectations, if any, for research and clinical practice activity. A key conclusion of the *1993 National Survey of Postsecondary Faculty* confirmed that institutional type defines the parameters and dynamics of a faculty career. Therefore, the connection between faculty workload and institution type and mission should be acknowledged.

Faculty Workload in Higher Education

Faculty workload is broadly defined by Kirkpatrick, Rose, and Thiele (1987) as the “sum of all activities which take the time of a college or university teacher and which are related either directly or indirectly to his professional duties, responsibilities, and interest” (p. 84). Interest in faculty workload surfaced in the 1960’s and again in the 1990’s during times of economic hardship and recession. Zumeta (2004) provided an update of higher education finances as of late 2003, giving the historical landslides in the U.S. economy. The stagnation of higher education funding was described by Zumeta as he assessed the effect of a poor U.S. economy and shrinking state budgets. In such times of budgetary constraints, state legislators, as well as the public, became concerned about how faculty were spending their time (American Association of University Professors [AAUP], 2000; Boyer, 1990; Fairweather, 2004).

Colbeck (2002) discussed two problems that surfaced when attempting to describe the work of faculty. The first problem is when the processes of engaging in teaching, research, and service activities are confused with their products. Or, the processes could be confused with institutional goals to which the activities and products contributed. A second problem with describing faculty work, noted by Colbeck, is when teaching,

research, and service are seen as mutually exclusive activities. It is often difficult to categorize these activities singularly.

Colbeck (2002) further described three common ways of assessing faculty work. Workload surveys ask faculty to categorize their activities and list hours or percentage of time spent in each activity. Annual reports require that faculty address their activity and production in teaching, research, and service for the past year. Lastly, Colbeck described how promotion and tenure dossiers are used to comprehensively document faculty work. Colbeck also noted that reflective narratives are often included for faculty to express qualitative views of their work.

Two recent investigations of faculty workload occurred on the national level. Under the auspices of the American Association of University Professors, The Committee on College and University Teaching, Research, and Publication, issued a revised *Statement on Faculty Workload* in 2000 (AAUP, 2000). The original *Statement on Faculty Workload* was developed in 1969 and revised in 1990 by the AAUP.

A second investigation and most extensive survey of faculty is the *National Survey of Postsecondary Faculty* (NSOPF). The NSOPF is sponsored by the U.S. Department of Education, National Center of Education Statistics (National Center for Education Statistics [NCES], n.d.). The NCES is the primary federal entity for collecting, analyzing, and reporting data related to education in the United States and other nations. The NSOPF was conducted in response to a continuing need for data on faculty and instructors in postsecondary institutions.

Similar to the AAUP efforts, the *National Study of Postsecondary Faculty* (NSOPF) has undergone revisions. The first cycle of the NSOPF was conducted in 1988,

the second in 1993, the third in 1999, and the most recent one in 2004 (*NSOPF:88*, *NSOPF:93*, *NSOPF:99*, and *NSOPF:04*, respectively). The *NSOPF:04* assessed faculty activity during the fall 2003 term. The first report of data from the *NSOPF:04* was published by Cataldi, Fahimi, and Bradburn (2005). However, the methodology report of the *NSOPF:04*, establishing its reliability and validity, has not been released. Therefore, the extensively analyzed and published findings from the *NSOPF:99* survey was used as the instrument in this study.

Institutions selected for participation in the *NSOPF:99* were stratified according to their public or private status and their 2000 Carnegie Classification (Abraham et al., 2002; McCormick, 2001). Abraham et al. explained that the *NSOPF:99* was designed, field tested, and revised prior to the full scale study. The full scale study was completed by 960 public and private not-for-profit degree-granting postsecondary institutions. The sample included approximately 18,000 faculty and instructional staff with a survey response rate of 93% from the institutions and 83% from the faculty. Sections of the *NSOPF:99* included the background, responsibilities, workload, salary, benefits, attitudes, and future plans of both full- and part-time faculty.

In a methodology report, Abraham et al. (2002) explained that a portion of the *NSOPF* was an effort to capture the institutional responsibilities and workload of faculty. The workload components included: teaching undergraduate students, teaching graduate or first professional students, research/scholarship, professional growth, administration, service, and other activities. This study extrapolated items from the *NSOPF:99* into an instrument that pertain specifically to faculty characteristics and workload.

Components of Faculty Workload

Boyer (1990) defined the traditional components of faculty roles in higher education that include teaching, research, and service. Defining institutional expectations, faculty roles, and faculty productivity in each of these components is an on-going dilemma in higher education. The next section describes current literature as it is related to each component of faculty workload.

Teaching

Most institutions will undoubtedly cite teaching as their most important mission. In a report by Paulsen (2002), faculty also concurred that teaching is their foremost interest when compared to other activities. Teaching activities were defined on the *NSOPF:99* as teaching, grading papers, preparing courses, developing new curricula, advising or supervising students, supervising student teachers and interns, and working with student organizations or intramural athletics.

On the *NSOPF:99*, instructional faculty reported that they spent 57% (30.5 hours out of a 53.4 workweek total) of their work hours on teaching activities during the fall 1998 term (NCES, 2001). According to the NCES, faculty at research (45% teaching time) and doctoral (47% teaching time) institutions spent less time teaching than did faculty at other types of institutions which had teaching times ranging from 63% to 73%.

There has been controversy on how to quantify faculty teaching load. Some institutions have addressed these inequities by measuring faculty workload in student instructional load (contact hours) in addition to the conventional credit hours. The American Association of University Professors or AAUP (2000) acknowledged common sources for inequity in the distribution of teaching workload, including the number of

different course preparations, the considerations for an old versus a new course, the scope and difficulty of the course, and class size. The 2000 version of the AAUP's *Statement on Faculty Workload* specifies maximum and preferred teaching loads at the undergraduate level (12 hours per week maximum, 9 hours per week preferred) and at the graduate level (9 hours per week maximum, 6 hours per week preferred).

In Wellman and Ehrlich's (2003) *Re-examination of the Sacrosanct Credit Hour*, they discussed how credit hour is used as a common measure for comparing activities and encouraging greater efficiency and competition among institutions. The federal government is stated as the biggest proponent for the student credit hour due to financial aid regulation. The credit hour approach is most often used but may not be an accurate indicator of faculty time. Wellman and Ehrlich suggested that institutions conduct internal reviews of how measures of student credit hours are used and then test if the measure can be justified in terms of current institutional priorities.

Research

Research activities were defined on the *NSOPF:99* as conducting research, reviewing or preparing articles or books, attending or preparing for professional meetings or conferences, reviewing proposals, seeking outside funding, giving performances or exhibitions in the fine or applied arts, and giving speeches. On the *NSOPF:99*, instructional faculty reported that they spent an average of 15% (8 hours out of a 53.4 workweek total) of their work hours on teaching activities during the fall 1998 term (NCES, 2001). Also, faculty at research (27% research time) and doctoral (19.7% research time) institutions spent considerably more time doing research than did faculty at other types of institutions (4-10% research time).

Achieving a balance between teaching and research activity is a major issue for faculty. Edgerton (1993) wrote that many supporters of higher education often believe that teaching loads in research universities and elite liberal arts colleges have declined to an embarrassing point as faculty are pressured into conducting research that has no particular value to society. Faculty reward systems are heavily based on research productivity and faculty are often confused about institutional expectations for research according to the AAUP (2000), Boyer (1990), Braxton and Favero (2002), and Fairweather (2002b, 2004).

The AAUP (2000) stated that research is another common source of inequity in defining faculty work. The AAUP suggested that if research is considered a general faculty responsibility, then the fair way to achieve it would be a general reduction in faculty teaching load. Some institutions, with research expectations, have decreased the 12 hour teaching load to nine hours. AAUP noted that a greater reduction has occurred in some research intensive institutions which have decreased teaching workload to six hours to accommodate the time required for faculty research activities.

Braxton and Favero (2002) described several difficulties with evaluating faculty scholarship performance. The traditional methods of assessing scholarship rely upon the number of publications, the form of publications, and the prestige of the publication source. Discipline differences and interpretation of journal prestige pose several problems with this method of assessment.

Boyer (1990) proposed a new paradigm for assessing scholarship in his book, *Scholarship Reconsidered*. His template emphasized four domains. The first domain, scholarship of discovery would include publications describing a new theory developed

by the author. The second domain, scholarship of application, would entail an article that outlines a new research problem identified through new knowledge to a practical problem in the practice of the discipline.

The third domain, scholarship of integration, would include reviews of literature on a disciplinary or interdisciplinary topic, application of a research method or borrowed theory from one discipline to another. Boyer's final domain, scholarship of teaching, would include publications that report a new teaching methodology developed by the author or publication of other resource materials for an educational course.

Fairweather (2002b) supported non-traditional 'value' approaches to evaluating the teaching and scholarly activity of faculty but warned that these methods will 'add to' and not 'reduce' faculty workload. According to Fairweather, the time spent with complex evaluation systems will actually take away from faculty research and teaching time.

Service

A third component of faculty workload is service. Edgerton (1993) described service as the category treated like the "country cousin" and purports that "the definitional issues of service are as muddled as ever." The AAUP (2000) echoed that service is broadly defined and often includes responsibilities other than teaching and research.

On the *NSOPF:99*, service is separated into two categories, institutional and public. Institutional service is defined as administration including departmental or institution-wide meetings or committee work. Public service includes services or

consulting to prospective students, clients, or patients; paid or unpaid community or public service; and, service to professional societies/associations.

Professional growth and outside activities are often combined into the service category of workload. Professional growth is taking courses or pursuing an advanced degree or other professional development activities to remain current in a discipline. Outside consulting or freelance work includes any outside consulting or employment.

In the fall 1998 *National Study of Postsecondary Faculty*, faculty spent 13% of their time on institutional service and a combined 14% of time on public service, professional growth, and outside consulting/freelance work according to the NCES (2001). The AAUP suggested a reduction in the teaching loads of faculty if the institution wishes to assign service roles to faculty.

Balancing Faculty Workload

In several studies, faculty reported working more than 40 hours per week. The AAUP (2000) cited a 48-52 hour work week and according to Allen (2004), national faculty surveys consistently report a 49-53 hour work week.

Several studies on faculty workload report that faculty expectations are affected by institutional, departmental, disciplinary, and individual faculty priorities (AAUP, 2000; Amey, 2002; Boyer, 1990; Colbeck, 2002; Fairweather, 2002a, 2002b; Paulsen, 2002, Wergin & Swingen, 2000). Winkler (1992) described several institutional task forces in various states designed to address the faculty workload question within their university systems. Quantitative assessments of faculty workload have been conducted within the academic disciplines of business by Lau (1996) and in the field of social work by Seaberg (1998).

Porter and Umbach (2001) noted that universities are organized with faculty nested in departments, with departments nested in colleges, and with colleges nested in universities. According to Porter and Umbach, research on faculty productivity fails to account for the hierarchical nature of the data and faculty within an academic discipline will more closely resemble one another than faculty in other disciplines. Multilevel modeling techniques were used by Porter and Umbach to account for differences in academic disciplines and ultimately, to avoid poor analyses of productivity data.

In the next section, nursing faculty workload literature was reviewed. Because there is a scarcity of workload literature in the dental hygiene discipline, the next section will focus on nursing discipline, a similar practice discipline.

Faculty Workload in a Practice Discipline

In addition to the nomothetic dimension of the organization (institution), the Guba and Getzels (1957) *Model of Behavior in Social Systems* takes into account the idiographic dimension. Guba and Getzels' idiographic dimension includes the unique facts or events that carry variation in personalities, needs, and disciplines. In a nursing publication by Grams and Christ (1992), they explained that the unquestioning acceptance of institutional norms may not be in the best interest of the nursing discipline and that the contributions and values unique to nursing, such as caring and service, contrast with institutional values of production.

Academic Versus Practice Disciplines

The Carnegie Foundation recently acknowledged the unique issues with education delivery in practice disciplines. An examination of teaching and learning in nursing education began in 2004 with a study called *Preparation for the Professions Program*

(www.carnegiefoundation.org/PPP/nursingstudy/index.htm). The Foundation visited eight schools of nursing to capture the full range of this professional education field. The program also conducted a web-based national education survey on teaching and learning in nursing in order to better understand the craft of the profession. These studies examined key educational goals, basic practices of teaching and learning, and assessment of student learning. In several publications by nursing educators (Adams, 1995; Anderson, 1986; Cahill, 1997; Freund, Ulin, & Pierce, 1990; Holzemer & Chambers, 1988; Ruby, 1998), readers were reminded that faculty workload in practice disciplines will vary from academic disciplines.

O'Shea (1986) states that one of the major problems with the AAUP *Statement on Faculty Workload* is using credit hours to determine maximum and minimum teaching loads. According to O'Shea, the credit hour approach does not reflect contact hours in courses which have a laboratory or clinical practice component. A faculty workload plan for Nursing and Allied Health, presented by Bamberg and Free (1986) accounted for clinical instruction by assigning additional unit credit for each contact hour of instruction.

Andrews (1993) agreed that the traditional use of the credit hour designation does not meet the nursing faculty workload criteria in baccalaureate degree programs. Andrews concluded that student contact hours provide the best assessment of teaching activity.

Nursing Faculty Workload

In Anderson's (1986) study of baccalaureate nursing faculty, nursing faculty spent 68% (30.2 hours) of their 44.4 hour average work week performing teaching activities, 5 hours a week in research/scholarly activities, 4.7 hours in service activities, and 4.5 hours

on professional enhancement. When faculty were asked to plan their ideal work week, faculty preferred a reduction of their teaching time by about 4 hours a week and an increase in research time by about 5 hours a week. Research was ranked as the most rewarded behavior by the faculty but clinical activities were in conflict the most with research efforts. Results of Anderson's study claimed that multiple roles and heavy teaching workload may be the reason that nursing has published little research when compared to other disciplines.

Bower (1984) compared faculty workload in two baccalaureate schools of nursing and found that the average total workload was approximately 53 hours per week with a 70% of the total workload dedicated to teaching, 15% to research and scholarly activity, and 15% to service activities. Similar to faculty surveyed in the Anderson (1986) study, faculty in the Bower study preferred to devote less time to teaching and more time to research. Research was again perceived as the most rewarding activity for promotion. In a qualitative study by Cahill (1997), the competition of research and clinical practice with teaching roles was also a recurring theme with nurse teachers.

After extensive investigation of faculty workload policies in undergraduate nursing programs, researchers (Coudret, 1980; de Tornyay, 1988; Freund et al., 1990; Kirkpatrick et al., 1987) concluded that of the three approaches to faculty workload (credit hour, contact hour, formula), formula was the best procedure for establishing nursing faculty workload policy. One formula method proposed by Crawford, Laing, Linwood, Kyle, and DeBlock (1983) has factors which account for number of hours of lecture and seminar per week, preparation time for lecture and seminar, number of hours of clinical and laboratory per week, preparation time for clinical and laboratory, average

weekly teaching load and preparation time for the university as a whole, number of weeks in term, and the number of units for teaching load.

This formula approach, proposed by Crawford et al. (1983) addressed prior problems with equitable weighting of clinical teaching compared with classroom teaching. Credit is given for the actual hours of teaching and includes separate factors for preparation time. Crawford et al. stated benefits of the formula approach as an objective justification for faculty required for each course and as an objective tool for presenting nursing faculty personnel needs to university administrators.

Another formula approach, described by Kirkpatrick et al. (1987), is the assignment of units per clock hour/per week for various activities in four categories (teaching, research/creative activity, service, and other activity). Problems with the point system, identified by Kirkpatrick et al., include uncertainty of how to determine the appropriate number of work hours per week for use in formulas and inadequacy of the point system to address the variation in teaching method, course preparation time, and equity in the assignment of scholarly activity.

Voignier, Hermann, and Brouse (1998) developed a different formula approach for the teaching component of faculty workload using the university mandate of a full-time (100%) teaching load is equivalent to 15 credit hours. Teaching units were weighted using the workload formula. The percentage of faculty time assigned to other non-teaching areas were negotiated with the appropriate administrator and documented in the written faculty workload. Voignier et al. concluded that the workload assignment helped faculty and administrators focus on the unit's mission and goals but recommended that future examinations include other areas of scholarship in the workload formula.

Contrary to the supporters of workload formulas, Grams and Christ (1992) stated that “faculty work load formulas serve the interests of the institution and its hierarchical structure, not the interests of nursing and individual faculty members” (p. 100). They listed several constraints to faculty workload formulas. First, there is a false assumption that there is an equal opportunity for all faculty to achieve academic goals because everyone has the same guidelines and the same amount of time in which to plan and perform. Therefore, the uniqueness of the faculty member is not recognized. Secondly, formulas do not account for the changing clinical teaching environment like that created by nursing shortages and they do not account for possible reductions in secretarial, research, and administrative staff.

Anema (1991) presented another model for examining faculty work, the systems model approach with the workload process as a component. Organizational support (institutional environment supportive of scholarly productivity) and human support (faculty development and mentoring) make up the input elements. In the Anema model, the workload process incorporates teaching, research, service, and practice expectations. Output elements in the model included creation of a faculty achievement database that is updated every three months. The achievement database provided the benefit of a comprehensive list of faculty achievements that could be incorporated into other informational systems. Anema’s model approach drastically increased faculty productivity in research publications and presentations.

Clinical Faculty Practice

Ruby (1998) suggested that a fourth domain is missing from the traditional categories of teaching, research, and service. In addition to the traditional roles of

teaching and research, faculty in practice disciplines are often expected to maintain their professional skills through clinical practice. Kirkpatrick et al. (1987) raised the question if the fourth domain is expected to be a faculty role or if this activity should be considered an extra-college expectation. Ruby explained that non-practice disciplines question the value of practice competency as a legitimate marker of faculty productivity and that institutional requirements for practice competency varies greatly.

Speziale (2001) discussed the development of nursing faculty practice in a small liberal arts college. Workload is identified as one of the major challenges to faculty practice in publications by Sawyer, Alexander, Gordon, Juszczak, and Gilliss (2000), Speziale, and Steele (1991). Faculty were given the option to have clinical practice as part of the teaching load or in addition to it. Faculty who chose to have clinical practice calculated as part of their teaching load were awarded teaching credit similar to off-site clinical teaching.

However, if a faculty opted to have clinical practice in addition to a full teaching load, they were remunerated based on the institution's credit load formula for overload. Speziale noted that the workload formula for faculty clinical practice is not perfect but notes its effectiveness in providing for practice experiences that are rewarding. Speziale stated that faculty may also use faculty practice as incentive to earn money or to reduce teaching load.

In a critical review of nursing faculty practice models, Sawyer et al. (2000), discussed the difficulty with integrating the practitioner, educator and researcher roles into faculty workload. Educational and research opportunities were noted as advantages to faculty practice when it is utilized to gather and analyze descriptive data. Other

advantages to clinical practice include practice sites and community healthcare. To develop strong practice models, Sawyer et al. concluded that there needs to be more disclosure of existing models through scholarly dissemination.

Similar to nursing, Motley (1986) noted that dental hygiene is a practice discipline and is relatively new to academia, entering higher education in 1916. Dental hygiene is rooted as a service and practice discipline. Roles of baccalaureate dental hygiene educators may include teaching, research, service, and clinical practice. The next section will provide a historical overview of the dental hygiene discipline, the focus of the current study.

The Emergence of Dental Hygiene: A Practice Discipline

In a historical overview of dental hygiene, Motley (1973) cited that the oral hygiene movement began in 1844 when an editorial was published in the *American Journal of Dental Science*. The editor was furious with the amount of attention given to the mechanics of operative dentistry while the hygiene of the teeth was so poorly neglected. Subsequently, other pioneers for oral hygiene emerged and began to promote the dental education of patients. In 1902, Dr. Cyrus Mansfield Wright of Cincinnati, Ohio was the first to suggest that women be trained to clean teeth as a subspecialty of dentistry. Wright advocated a one-year program of study to obtain this training. This early philosophy began the oral hygiene movement that continued into the early 1900's. As a result, Motley noted that several independent dentists began to employ dental nurses.

Early Dental Hygiene Education Programs

Organized dental hygiene education is relatively new to the profession of dentistry. The first training course for dental nurses, with dental hygiene functions, and

dental assistants began in 1910 at the Ohio College of Dental Surgery. However, Motley (1986) described how this one-year program of study was closed in 1914 due to opposition from Ohio dentists.

In 1913, Dr. Alfred Civilion Fones began a similar one-year training program at his carriage house in Bridgeport, Connecticut. Fones graduated from dental school in 1890 and returned to Bridgeport to practice dentistry with his father. Fones' interest was in the specialty of prevention. He lectured on dental prophylaxis and presented numerous papers on the topic. Fones was successful in opening the first structured dental hygiene program in Bridgeport, Connecticut. The 1914 graduates of Fones' course were the first to be called dental hygienists, a name he invented. Fones (1929) conducted two more classes and totaled 97 graduates before organized institutions took over the training of dental hygienists.

Dental hygiene programs began to emerge all over the country. In 1916, Columbia University became the first school of dental hygiene to develop specific educational requirements. The first two-year educational program in dental hygiene began at the University of Minnesota in 1919. By 1931, sixteen dental hygiene education programs were in existence. The University of Michigan and the University of California at San Francisco were the first to institute a baccalaureate degree program in dental hygiene (1939 and 1941, respectively).

By 1947, the American Dental Association Council on Dental Education, now called the Commission on Dental Accreditation, required that all dental hygiene programs be at least two years in length and meet approved standards for accreditation. In 1952, the

council began an active program in the accreditation of dental hygiene schools according to Motley (1986).

The conceptualization of dental hygiene has evolved with the profession. Fones' (1929) focus in the early 1900's was to channel the knowledge of dentistry about oral hygiene to the public. Current philosophy of dental hygiene involves a long-term well being by focusing on human needs and interventions aimed at promoting oral health behaviors that will optimize oral health over the lifespan. This evolution of philosophy is reflected in the various roles of dental hygienists, as described by Darby and Walsh (2003) in the next section.

Contemporary Roles of Dental Hygienists

Darby and Walsh (2003) outlined six primary roles of dental hygienists. These equally important roles are (1) administrator/manager, (2) change agent, (3) clinician, (4) client advocate, (5) educator/oral health promoter, and (6) researcher. The dental hygiene administrator/manager includes roles such as coordinating health promotion and disease prevention programs for target populations and/or communities. As a change agent, dental hygienists promote innovation and change in healthcare through political and entrepreneurial efforts.

The traditional clinician role of the dental hygienist involves a process of care including assessment, diagnosis, planning, implementation, and evaluation. This process includes the patient as an integral factor in controlling oral infection. As a client advocate, the dental hygienist represents the interest of patients through legislation, health agencies, and other organizations. The dental hygienist role of educator/oral health promoter is essential in the development of oral health promotion strategies, the design of

instructional materials, and recruitment for the profession. The final role, researcher, is essential for developing a knowledge base to help build the professionalism of the field. Darby and Walsh emphasized that conducting and publishing research related to dental hygiene care is essential for the continuum of the profession.

Current Dental Hygiene Education Programs

The *2003/04 Survey of Allied Dental Education* (American Dental Association [ADA], 2005) is the most comprehensive assessment of dental hygiene education programs. Completion of the ADA questionnaire is required for accreditation purposes so a 100% response rate was obtained. The ADA survey assessed a total of 273 accredited entry-level dental hygiene education programs in the United States. Over 75% dental hygiene programs were located in community, junior, or technical colleges. The remaining 25% were located in universities or 4-year college settings. The ADA (2005) also reported that 92% of dental hygiene programs were located in public non-profit institutions.

The entry-level award granted and the Carnegie institutional classification of the 273 accredited dental hygiene education programs are summarized in Table 1. Most of the 35 baccalaureate dental hygiene programs are located in Doctorate-granting Institutions (21, 60%), followed by Specialized Institutions (10, 28.6%), Master's Colleges and Universities (3, 8.6%), and Baccalaureate Colleges (1, 2.9%). Full-time faculty in these institution types are often expected to engage in research, service, and clinical practice, according to Boyer (1990), Glick (1990), and Fairweather (2004).

Table 1

Dental Hygiene Education Programs According to Entry-Level Award and Carnegie Classification

| Highest entry-level award | Number of programs | Carnegie Classification | | | | |
|---------------------------|--------------------|-------------------------|-----------------|--------|---------------|--------|
| | | Doctorate-granting | Specialized | Master | Baccalaureate | Assoc. |
| Baccalaureate | 35 ^{a,b} | 21 ^a | 10 ^b | 3 | 1 | 0 |
| Associate's | 231 | 9 | 5 | 15 | 9 | 193 |
| Certificate | 7 | 2 | 2 | 1 | 0 | 2 |
| Total | 273 | 32 | 17 | 19 | 10 | 195 |

Note. Data obtained from ADA (2005) and McCormick (2001) publications.

^aTwo programs closed in 2004. ^bOne program had a moratorium on enrollment, effective Fall 2004. There are no dental hygiene programs in institutions classified as Tribal Colleges and Universities.

Boyer (1990) and Fairweather (2004) recognized that there are faculty who teach in certificate and associate's degree programs which are located in Doctorate-granting Institutions, Master's Colleges and Universities, Specialized Institutions, and Baccalaureate Colleges. This holds true for dental hygiene programs shown in Table 1.

Faculty who teach in certificate and associate's degree programs may also be expected to engage in teaching, research, service, and clinical practice, just as full-time faculty in other institution types. However, the researcher chose to exclude the faculty in associate's degree and certificate dental hygiene education programs to preserve the 'degree program' characteristic of the study population. All 32 active baccalaureate dental hygiene programs were invited to participate in this study. The note in Table 1 explains that three programs were excluded from this study due to their inactive status, beginning in 2004.

In a survey, Nunn et al. (2004) found the dental hygiene program settings and degrees awarded were similar to those reported by the ADA (2005). Sixty-eight percent of the dental hygiene programs were located in community or technical colleges while 32% were located in 4-year universities or dental school settings. Associate degrees were awarded in 83% of the programs while the baccalaureate degree was awarded in 22% of the programs. According to Nunn et al., the number of full-time faculty in dental hygiene averaged 4.5 and the number of part-time faculty averaged 7.7 members per program.

A baccalaureate degree was the most common institutional requirement for full-time faculty appointment in 61% of dental hygiene programs while a master's degree was the minimum requirement in 47% of programs (Nunn et al., 2004). The doctorate degree was least commonly required. Wilder, Mann, and Tishk (1999) reported that only 1.2%

of programs required an Ed.D. or Ph.D. for full-time tenure track faculty appointments and 0.8% required a doctorate degree for full-time non-tenure track faculty appointments.

Tenure was offered in 44% of the dental hygiene programs surveyed. Most dental hygiene programs also required that faculty hold a Registered Dental Hygienist (RDH) credential and have three to five years of experience in the discipline. Nonetheless, 21% of dental hygiene programs reported hiring faculty who did not have minimal requirements to meet their need for faculty.

The ADA (2005) provides data for entry-level dental hygiene education programs. Advanced education programs are also available in dental hygiene. They include approximately 60 baccalaureate degree completion programs as noted by Stolberg (2004). Dental hygiene graduates holding licensure and the certificate or associate's degree qualify for baccalaureate degree completion programs. Dental hygiene courses taught in associate's degree and baccalaureate programs are similar since all programs must meet the same accreditation standards mandated by the Commission on Dental Accreditation (2006).

Wilder et al. (1999) listed graduate education opportunities available for dental hygiene graduates holding the baccalaureate degree but also noted that programs with a specific major in dental hygiene are scarce. Dominick (2004) listed nine master degree programs, with a specific major in dental hygiene, which currently exists. In a survey of dental hygiene program administrators, Holt (1998) reported that 16.5% ($N=109$) of the administrators held a master's degree with specialization in dental hygiene. Holt reported that the remaining specializations are in education, science, public health, and other fields.

Darby and Walsh (2003) stated that there are currently no opportunities for earning a doctoral degree with a specialization in dental hygiene. The doctoral degree was not commonly required for dental hygiene faculty appointments. In a survey of program administrators by Wilder et al. (1999), an Ed.D. or Ph.D. was strongly required in 23.6% of dental hygiene programs for full-time tenure track faculty and in 13% of dental hygiene programs for full-time non-tenure track faculty. Wilder et al. further noted that 53% of the program administrators indicated a need for Ph.D. or Ed.D. programs in dental hygiene.

Trends in dental hygiene programs, throughout the 1990s, have shown a significant increase in associate degree programs and a decrease in the number of baccalaureate degree programs (Nunn et al., 2004; Pattison, 2004; Rowe, 2004; Stolberg, 2004). In an article discussing the closure of baccalaureate degree programs, Rowe (2004) asked, “Are entry-level baccalaureate degree dental hygiene programs becoming an endangered species, and should all of us in the dental hygiene community rally forth to preserve them” (p. 3)? Rowe pointed out that the majority of closed programs have been situated in dental schools, whose primary mission is to educate dentists, not dental hygienists.

Pattison (2004) also discussed a “sad history of dental hygiene program closures” (p. 5) as she reported the closing of two baccalaureate programs and the moratorium of another in 2004 (see notes in Table 1). Pattison called for an investigation of the status of dental hygiene education and planning for the future by professional organizations. Dental hygienists were also called to address this problem. Pattison emphasized that they are the ones who will approach it with the intensity it deserves.

In 2002, a group of dental hygienists met to establish a future focus on the profession. As a result of this collaboration, a report titled *Dental Hygiene: Focus on Advancing the Profession* was released in 2005 by the American Dental Hygienists' Association (ADHA).

In the ADHA (2005) report, two major issues relating to the current research were addressed. The baccalaureate degree was recommended as the entry point for dental hygiene practice. Also, there is warning that without the development of an advanced dental hygiene practitioner, other health professionals will assume the responsibility of meeting the diverse oral health care needs of the public, especially the underserved. These issues, in the ADHA report, are in line with those described earlier by Dominick (2004), Holt (1998), Pattison (2004), and Wilder et al. (1999).

Dental Hygiene Faculty Characteristics

Dental hygiene faculty and program administrator characteristics were described in studies by Glick (1990), Holt (1998), and Wilder et al. (1999). The most recent demographic study of dental hygiene faculty was conducted by the Task Force on the Status of Allied Dental Faculty, a group charged by the American Dental Education Association Board of Directors and published by Nunn et al. (2004).

The survey instrument, distributed by Nunn et al. (2004), was completed by program administrators in all types of allied dental programs including, dental assisting, dental hygiene, and dental laboratory technology. The next section specifically discusses characteristics of dental hygiene faculty including their education, age, gender, race/ethnicity, academic rank and tenure status.

Academic Background

In 1982, Wayman reported that 12% (n=259) of dental hygiene educators held a master's degree and 8% held an advanced doctorate or second master's degree. In a 1991 survey, Huntley and Minneman (1994) found that 64% of the dental hygiene educators surveyed held a master's degree and 5% held doctorate degrees. In two separate 1996 surveys of dental hygiene program administrators, Holt (1998) and Wilder (1999) found that a master's degree was held by about 64% of the respondents. Wilder et al. further noted that 12% of dental hygiene program administrators held a doctorate degree. Minimal requirements for dental hygiene faculty appointment were discussed in the Glick (1990) and Nunn et al. (2004) studies but an assessment of degrees held by faculty was not included.

Age

In 1996, Holt (1998) reported 47 as the mean age of dental hygiene program administrators. Wilder et al. (1999) found that 18% of program administrators surveyed had been a program administrator for sixteen or more years. In 1998, the mean faculty age in allied dental education was reported as 46 by Haden (2001). In 2004, Nunn et al. also reported 46 as the mean age of full-time dental hygiene faculty. Nunn et al. further noted that 33% of dental hygiene faculty were over age 50.

Dominick (2004) asked, "Have we mentored our replacements?" (p. 12) in a recent article discussing the rapidly approaching retirements of dental hygiene faculty. An increase in programs and student enrollments creates a critical need for dental hygiene educators. Dominick further suggested that dental hygiene educators must provide baccalaureate and master's level educational programs, create appropriate

specializations in dental hygiene education, public health, and expanded function and finally, mentor promising dental hygienists.

Gender

The gender demographics of dental hygiene have changed little since the inception of the profession. In general, Brutvan (1998) found that more than 90% of credentialed dental hygienists were female. Holt (1998) found that the majority of dental hygiene program administrators (88%) were also female. Dental hygiene faculty reflect a similar demographic. Results of a 1991 study by Huntley and Minneman (1994) showed that 87% of dental hygiene faculty were female. In 1998, Haden reported that over 95% of dental hygiene faculty were female. This statistic remained practically unchanged in 2004 when Nunn et al. reported that 93% of dental hygiene faculty were female.

There is a paucity of literature related to male dental hygienists in the predominantly female field of dental hygiene. In a qualitative study, Faust (1999) interviewed 14 male dental hygienists and summarized four themes that emerged. Male dental hygienists did not experience job search difficulties. They did, however, experience feelings of societal gender stereotypes/discrimination and mixed feelings of acceptance by the profession. The final theme was an overall feeling of career satisfaction in the profession.

Race/Ethnicity

As with gender, race and ethnicity of dental hygiene has changed very little over the existence of the profession. Huntley and Minneman (1994) surveyed the ethnicity of faculty in accredited dental hygiene programs in 1991. They found that 94% of full-time faculty were Caucasian, 3% were Black/African American, 2% were Hispanic, and .03%

were Pacific Islanders (Huntley & Minneman). In 2004, Nunn et al. reported similar dental hygiene faculty demographics: 92% Caucasian, 4% Black/African American, 1% Hispanic, 1% Asian/Pacific Islander, and less than 1% American Indian. Holt (1998) found that dental hygiene program administrators follow the same gender trend as dental hygiene faculty, 96% were Caucasian.

Academic Rank and Tenure Status

Glick (1990) found that 97% of the baccalaureate dental hygiene programs required teaching, research, and service as documentation for promotion and tenure. There is a paucity of literature that describes the academic rank and tenure status of dental hygiene faculty. Two studies were found that addressed this topic. Wayman (1982) reported the academic ranks of dental hygiene faculty as 14% instructors, 48% assistant professors, 30% associate professors, 2% full professors and 32% administrators. Glick (1990) reported less instructors and assistant professor ranks than Wayman (10% & 37%, respectively). However, Glick reported more associate professors and full professors (43% & 5%, respectively).

In Glick's (1990) study, 60% of all full-time baccalaureate dental hygiene faculty positions were tenure track lines. Twelve percent of the faculty were in non-tenure track positions and 28% of the faculty worked at institutions where tenure was not designated. Glick's study was the only one published that gathered tenure status specifically for faculty in baccalaureate degree programs. Of the 752 full-time dental hygiene faculty (all degree programs) assessed by Nunn et al. (2004), a total of 701 were on tenure track (341) or tenured (360).

Relevance of Dental Hygiene Faculty Workload

Major research studies, listed in Table 2 and Table 3 relate specifically to faculty workload in higher education and faculty workload in nursing: a practice discipline. Table 4 details studies conducted in dental hygiene education, related broadly to trends and faculty characteristics. However, there are no recent studies that specifically relate to the workload of dental hygiene faculty in any degree-granting program. Most baccalaureate degree programs are located in university settings where teaching, research, and service are part of the institutional mission and consequently, necessary for career advancement. Therefore, the researcher was particularly interested in the characteristics and workload of baccalaureate dental hygiene faculty.

Three benefits of workload measures were identified by Kirkpatrick et al. (1987). First, these measures promote the development of dialogue between faculty and administration concerning the overall responsibilities of faculty members. Next, workload measures provide the expectations from which merit and promotion criteria can evolve. A final benefit noted by Kirkpatrick et al. was university administration may elicit departmental or school workload measures to analyze costs.

Holt (1998) recommended future research to assess the major responsibilities and teaching loads of dental hygiene administrators. Another report by Haden, Morr, and Valachovic (2001) listed salary, workload, and benefits as major factors influencing the hiring of new faculty. Gadbury-Amyot et al. (2001) listed the development of a predictive model for future needs/demands for dental hygiene personnel as a research topic in the education category of the American Dental Hygienists' Association's National Dental Hygiene Research Agenda. Mentorship was echoed as a critical component for

Table 2

Major Research Studies: Faculty Workload Studies in Higher Education

| Study | Purpose | Participants | Design/Analysis | Outcomes |
|----------------|--|---|---------------------|---|
| NCES (1999) | To gather information regarding the backgrounds, responsibilities, workloads, salaries, benefits, attitudes, and future plans of full- and part-time faculty | 18,000 faculty and instructional staff from 960 degree-granting post-secondary institutions | Quantitative Survey | Faculty averaged a 53.4 hour work week 57.1%, Teaching 15.3%, Research 13.4%, Administration 14.2%, Other |

Table 2 (continued)

Major Research Studies: Faculty Workload Studies in Higher Education

| Study | Purpose | Participants | Design/Analysis | Outcomes |
|----------------|--|------------------------------|--------------------|---|
| AAUP (2000) | To provide preferred and maximum teaching loads for undergraduate and graduate courses | Degree-granting Institutions | Qualitative Report | Faculty at research institutions spend more than half of their time teaching Faculty work long hours (48-52 hours) Maximum teaching loads established Procedures described to establish, administer, and revise workload policies Most common sources of inequity in the distribution of workloads identified |

Table 3

Major Research Studies: Faculty Workload Studies in Nursing, a Practice Discipline

| Study | Purpose | Participants | Design/Analysis | Outcomes |
|------------------|--|--|---------------------|---|
| Bower (1984) | Examine workload of nursing faculty in two BS programs | 25 full-time and 5 part-time faculty in 2 nursing programs | Quantitative Survey | 70% teaching, 15% research, 15% service Faculty preferred to spend less time teaching and more in research Clinical method of instruction = 40% of total workload |
| O'Shea (1986) | Determine workload policies of nursing schools | 333 administrators with membership in AACN | Quantitative Survey | Teaching components are more important to workload than other factors |

Table 3 (continued)

Major Research Studies: Faculty Workload Studies in Nursing, a Practice Discipline

| Study | Purpose | Participants | Design/Analysis | Outcomes |
|--------------|---|---|---------------------|---|
| Adams (1995) | Investigate whether full-time nursing workload perception was affected by the proportion of part-time faculty | 180 full-time undergraduate faculty at 30 schools of nursing (6 faculty in each school) | Quantitative Survey | There were no differences in workload components. Collegial support did not differ in these institutions. |

Table 4

Major Research Studies: Dental Hygiene Education Programs and Faculty

| Study | Purpose | Participants | Design/Analysis | Outcomes |
|-----------------|--|---|---------------------|---|
| Glick (1990) | Determine level of educational preparation required for initial employment, rank, promotion, tenure, and average teaching load | Program administrators of 35 baccalaureate programs | Quantitative Survey | 60% in dental school setting, 40% are not 3-8 faculty per program 92%, 11-25 teaching contact hours Master's was minimum degree for job and promotion 80% assistant or associate professor, 13% below, 5% full professors |

Table 4 (continued)

Major Research Studies: Dental Hygiene Education Programs and Faculty

| Study | Purpose | Participants | Design/Analysis | Outcomes |
|---------------------------|--|---|------------------------|---|
| Huntley & Minneman (1994) | Determine number of minority faculty in dental hygiene programs and examine academic preparation | 126 dental hygiene program administrators | Quantitative Survey | 32% reported 1 or more minority faculty 66% reported no minorities 71% had master's degree No significant Difference between ethnicity and educational preparation |
| Faust (1999) | Explore experiences of male hygienists | 14 male dental hygienists | Qualitative Interviews | No job search difficulty, gender discrimination, mixed feelings of acceptance by profession |

Table 4 (continued)

Major Research Studies: Dental Hygiene Education Programs and Faculty

| Study | Purpose | Participants | Design/Analysis | Outcomes |
|-----------------------|---|--|------------------------|---|
| Nunn et al. (2004) | Investigate current status of dental hygiene faculty | 188 dental hygiene program administrators | Quantitative Survey | 92% female/white Average age 46 21% of programs need faculty 68% of faculty will retire in 5 years |

professional growth and academic success, in a paper by Schrubbe (2004). Schrubbe encouraged the mentoring of individuals who gravitate toward scholarship and research.

Nunn et al. (2004) also cited the importance of more research related to dental hygiene faculty demographics, working conditions, and needs. These recommendations further support the importance and purpose of this study to assess dental hygiene faculty characteristics and workload.

Summary

The current chapter provided a review of the literature as it related to faculty workloads in higher education, in the nursing practice discipline, and in the dental hygiene practice discipline. There were numerous studies of faculty workload in higher education and quite a few in the nursing profession. However, current studies related directly to dental hygiene faculty characteristics and non-teaching workload remain scarce. It is imperative that dental hygiene educators gain a better understanding of workload as faculty shortages and baccalaureate program closings threaten the existence of the profession. In the next chapter, the methodology used to answer the research questions posed this study is outlined.

CHAPTER 3

METHODOLOGY

Chapter 1 provided the logic that framed the problem and significance of this study. Chapter 2 expanded on that framework by providing a review of the literature regarding faculty workload in higher education, in academic disciplines, and in practice disciplines. A historical overview of the dental hygiene discipline was presented and followed by a discussion of dental hygiene education programs and educators. The relevance of dental hygiene faculty workload studies was emphasized. The current Chapter 3 will describe the methodology used to assess full-time baccalaureate dental hygiene faculty characteristics and workload. These procedures included selecting participants, developing a data collection instrument, establishing measurement variables, collecting, processing, and analyzing data. Finally, the protocol that the researcher followed to ensure confidentiality and ethical treatment of human subjects will be discussed.

Research Questions

As initially stated in Chapter 1, the overarching research question is: What are the characteristics and workload of faculty in baccalaureate dental hygiene programs? Specifically, the researcher surveyed full-time baccalaureate dental hygiene faculty to answer the following research questions:

1. What are the characteristics of baccalaureate dental hygiene faculty in regards to employment, academic background, demographics, job satisfaction, and opinions?

2. What are the institutional responsibilities and workload of baccalaureate dental hygiene faculty?
3. To what extent are there differences between the percent of work time spent and the percent of work time preferred in various institutional activities?
4. To what extent are there differences between the Carnegie institution types when considering baccalaureate dental hygiene faculty workload?

Population

The theoretical population of interest for this study was all full-time faculty in U.S. accredited dental hygiene programs. The accessible population for this study consisted of full-time faculty in accredited U.S. baccalaureate dental hygiene programs with workload commitments of teaching, research, service, and clinical practice during the 2005 fall term. Further sampling procedures were not warranted since it is feasible and logical for the researcher to study the entire accessible population.

The low number of baccalaureate dental hygiene programs in the U.S. heightened feasibility of studying the accessible population. The most current and accurate program information was readily obtained from the American Dental Association's (n.d.) website of accredited dental hygiene programs, which is periodically updated when existing programs renew accreditation, new programs obtain accreditation status, and discontinued programs phase out. The final program response rate in this study of faculty workload and characteristics was 89.7%. Twenty-six programs responded out of the 29 programs whose program administrators agreed to participate.

Participants

A total of 35 baccalaureate dental hygiene programs were surveyed in 2003/2004 by the American Dental Association (2005). However, three of these baccalaureate programs were excluded in this current study of faculty characteristics and workload due to the closure of two programs and the moratorium on enrollment in another program (see notes in Table 1). Program administrators of the remaining active programs (32), were invited to participate this study of full-time dental hygiene faculty.

The number of full-time faculty, per program, ranged from 6-11. It was acknowledged that this maldistribution would provide a higher number of participants from some programs than others. Taking into account the non-experiment descriptive design of this study, the researcher disregarded this selection bias. All full-time faculty, as identified by the program administrator in each active baccalaureate dental hygiene education program, were invited to participate in this study.

To obtain the most current count of full-time faculty, the researcher contacted each program administrator, by telephone, before the mail questionnaire was sent (see script in Appendix C). The final faculty response rate in this study of faculty characteristics and workload was 68.3% (114/167).

Instrumentation

The instrument used for collecting data in this study included selected items from the *1999 National Study of Postsecondary Faculty: Faculty Instrument* (National Center of Educational Statistics [NCES], 1999). The *National Study of Postsecondary Faculty (NSOPF)* was designed to provide data about faculty to various postsecondary education stakeholders including researchers, planners, and policymakers. The *NSOPF* is the most

comprehensive study of faculty in postsecondary educational institutions ever undertaken (NCES, n.d.). The *NSOPF:99* was mailed to 28,600 faculty from 960 degree-granting postsecondary institutions. The final sample size was 18,000 participants. The NCES reported an 83% response rate for the faculty survey.

Prior to conducting the *NSOPF:99*, a field test was completed and reported in a document by Abraham et al. (2000). The topics and content of the *NSOPF:99* built upon the previously cycled *NSOPF:93* instrument. The overarching objective in developing the *NSOPF:99* was to preserve as many of the 1993 items as were relevant and feasible. There were some changes to address recent policy issue that had emerged since the 1993 study. As a result of the Abraham et al. field test, some questionnaire items were identified, revised, or eliminated if they were considered to be problematic or if they were no longer relevant to the current issues.

The final *NSOPF:99* instrument contained 93 items (Abraham et al., 2002). Forty-four items were revised from the 1993 questionnaire, and 32 new items were added to the *NSOPF:99*. After the *NSOPF:99* cycle, Abraham et al. provided a complete methodology report. The methodology reported by Abraham et al. explained the purpose of the study, the data collection instruments, the sample design, data collection and data processing procedures, questionnaire item nonresponse, and an assessment of discrepancies in faculty counts.

Validity and Reliability of the NSOPF:99

For the purposes of this study, the researcher used the same definitions of validity and reliability as the *NSOPF* authors (Selfa et al., 1997). In preparing the methodology report for the *NSOPF:93* (foundation for *NSOPF:99* instrument), Selfa et al. defined

‘validity’ as the correlation or association between the measured and true values of a characteristic or attribute and defined ‘reliability’ as the correlation or association between repeated measurements of the same item.

Abraham et al. (2000) reported validity and reliability conclusions for the field test of the *NSOPF:93*, which was the point of departure in determining which items should initially be preserved, expanded, revised, or deleted for the *NSOPF:99* field test. Selfa et al. (1997) summarized the *NSOPF:93* field test validity evaluation as (1) for gender, race/ethnicity, and employment status, the faculty questionnaire data were consistent in more than 90% of the sample cases and (2) for principal discipline or field, the percentage of consistent cases for the field test was slightly below 70%.

Conclusions of the field test reliability evaluation are (1) for each of 8 categorical variables that were evaluated, the interview and re-interview responses are consistent in more than 70% of the cases and (2) most of the 19 continuous variables that were evaluated have correlations greater than .70 between the original and re-interview responses (Selfa et al., 1997). The pre-testing and post-testing of the instrument, the use of various research designs, the repeated cycling, and the council from a variety of experts assures the validity and reliability of the *NSOPF* (Selfa et al.).

Survey of Full-Time Baccalaureate Dental Hygiene Faculty

The data collection instrument for the current study contained 25 items. Twenty-three items were extrapolated from the *NSOPF:99* (NCES, 1999) and two open-ended items were created by the researcher. The researcher selected items from the *NSOPF:99* that are most appropriate for collecting data to answer research questions stated at the beginning of this chapter. The *NSOPF:99* survey contains 93 items which would require

a substantial amount of time for dental hygiene faculty to complete (NCES). Lengthy surveys may create fatigue or respondent burden for the participants. Abraham et al. (2000) found that the average time that respondents reported it took to complete the questionnaire across all disciplines was 57.5 minutes with a low of 50.6 minutes and a high of 59.11 minutes. The researcher anticipated that the condensed instrument, *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*, would take a considerably less amount of time to complete.

Most of the items on the *Survey of Full-Time Baccalaureate Dental Hygiene Faculty* contained the exact wording as the corresponding *NSOPF:99* item. Table 5 provides cross reference of each item from the original *NSOPF:99* and the condensed instrument for the current study. Exceptions were revisions to *NSOPF:99* items 31 and 82. Item 31 did not specifically address clinical practice of postsecondary faculty, which is sometimes an expected role of faculty in practice disciplines, like dental hygiene. Accordingly, Item 31 from the *NSOPF:99* was revised by adding faculty clinical practice to the list of workload components. A second exception was Item 82 which asked for month and year of birth. With the high occurrences of privacy violation and identity fraud cases, the researcher decided to ask for year of birth only.

The modified instrument, *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*, is located in Appendix F. Two additional open-ended questions were created by the researcher regarding altering overall workload (Item 24) and comparing associate dental hygiene program workload to baccalaureate dental hygiene workload for faculty who previously held positions in both program types (Item 25).

Table 5

Cross Reference of Each Item on the Survey of Full-Time Baccalaureate Dental Hygiene Faculty with the NSOPF:99

| <i>Survey of Full-Time Baccalaureate Dental Hygiene Faculty</i> | | Status of item | <i>NSOPF:99</i> source number |
|---|---|----------------------------|----------------------------------|
| Item | Label | | |
| 1 | Employed part-time or full-time | Unchanged | 5 |
| 2 | Academic rank, title, position | Unchanged | 8 |
| 3 | Tenure status | Unchanged | 10 |
| 4 | Highest degree | Unchanged | 16 |
| 5 | Working toward degree | Unchanged | 17 |
| 6 | Degree working toward | Unchanged | 18 |
| 7 | Gender | Unchanged | 81 |
| 8 | Age, year of birth | Deleted month of birth | 82 |
| 9 | Ethnicity, Hispanic or Latino | Unchanged | 83 |
| 10 | Race | Unchanged | 84 |
| 11 | Hours per week on paid and unpaid activities | Unchanged | 30 |
| 12 | Percent of work time spent and preferred | Added clinical practice | 31 |

Table 5 (continued)

Cross Reference of Each Item on the Survey of Full-Time Baccalaureate Dental Hygiene Faculty with the NSOPF:99

| <i>Survey of Full-Time Baccalaureate Dental Hygiene Faculty</i> | | Status of item | <i>NSOPF:99</i> source number |
|---|--|----------------|----------------------------------|
| Item | Label | | |
| 13 | Total number of classes or sections taught | Unchanged | 33 |
| 14 | Scholarly activity, description | Unchanged | 53 |
| 15 | Scholarly activity, any funded | Unchanged | 54 |
| 16 | Career presentations/publications | Unchanged | 29 |
| 17 | Satisfaction with instructional duties | Unchanged | 65 |
| 18 | Satisfaction with job | Unchanged | 66 |
| 19 | Likelihood to leave job | Unchanged | 67 |
| 20 | Age to stop working at postsecondary institution | Unchanged | 68 |
| 21 | Importance in decision to leave institution | Unchanged | 69 |
| 22 | Opinions | Unchanged | 92 |
| 23 | Opinions | Unchanged | 93 |

Table 5 (continued)

Cross Reference of Each Item on the Survey of Full-Time Baccalaureate Dental Hygiene Faculty with the NSOPF:99

| <i>Survey of Full-Time Baccalaureate Dental Hygiene Faculty</i> | | Status of item | <i>NSOPF:99</i> source number |
|---|--|----------------|----------------------------------|
| Item | Label | | |
| 24 | Alter overall workload | New | Not applicable |
| 25 | Comparison of associate and baccalaureate workload | New | Not applicable |

Panel Review

A formal pilot testing of the *Survey of Full-Time Baccalaureate Dental Hygiene Faculty* was not conducted due to previous validation of the *NSOPF* items during the 1993 and 1999 cycles by Abraham et al. (2002) and Selfa et al. (1997). Instead, feedback on the modified instrument was gathered from a panel review including three full-time dental hygiene faculty in associate degree programs. Appendix H contains information about each member of the panel review. The panel review assisted the researcher in determining the face and content validity of the modified survey, in establishing the time necessary to complete the survey, and in documenting problems with obtaining responses.

Members of the researcher's dissertation committee also reviewed the questionnaire items, providing many suggestions for wording, order of items, and instructions that will be incorporated into the mail survey. The modified instrument, *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*, in the current study was not meant to be diagnostic. Instead, it was meant to provide a descriptive assessment of baccalaureate dental hygiene faculty workload. The next section will explain how the each item on the *Survey of Full-Time Baccalaureate Dental Hygiene Faculty* was used to obtain this observational data.

Measurement

The self-administered print version of the *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*, shown in Appendix F, was used to collect data. A detailed quantitative item analysis is presented in Table 6, which contains a listing of all items on the instrument, the literature that supported the inclusion of the item, and the research

question that each item answered. An overview of each section of the *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*, as it related to each research question, is discussed in the next section.

Characteristics of Baccalaureate Dental Hygiene Faculty

Research Question 1 asks, “What are the characteristics of baccalaureate dental hygiene faculty in regards to employment, academic background, demographics, job satisfaction, and opinions?” Employment information in Items 1-3, and 20 enabled the researcher to assess full-time or part-time employment, rank, and tenure status. Part-time faculty were not included in this study so Item 1 assured that this exclusion criterion was met.

The academic degrees earned by faculty and the degrees they are currently working toward were reported in Items 4-6. Faculty demographics including gender, age, ethnicity, and race were reported in Items 7-10. Job satisfaction and likelihood of leaving their current job were ranked using a Likert scale format in Items 17-19. Faculty entered the age that they plan to stop working in Item 20. The importance of several factors in the decision to leave their current job and accept another position was reported in Item 21.

Items 22 and 23 solicited faculty opinions regarding rewards and fair treatment of minorities at their institution. Item 23 solicited faculty opinions about institutional climate related to funding, workload, and quality of students.

All items in this section assisted the researcher in describing the participants and also permitted the researcher to compare baccalaureate dental hygiene faculty demographics and academic background with national faculty data and other published literature.

Table 6

Quantitative Analysis of Each Item Included on the Instrument, Survey of Full-Time
Baccalaureate Dental Hygiene Faculty

| Item | Label | Research | Research question |
|------|------------------------------------|---|----------------------|
| 1 | Employed part-time or full-time | Glick, 1990; Huntley & Minneman, 1994; Nunn et al., 2004; Wilder, Mann, & Tishk, 1999 | 1 |
| 2 | Academic rank, title, position | Glick, 1990; Huntley & Minneman, 1994; Nunn et al., 2004; Wilder, Mann, & Tishk, 1999 | 1 |
| 3 | Tenure status | Glick, 1990; Huntley & Minneman, 1994; Nunn et al., 2004; Wilder, Mann, & Tishk, 1999 | 1 |
| 4 | Degrees received | Glick, 1990; Huntley & Minneman, 1994; Nunn et al., 2004; Wilder, Mann, & Tishk, 1999 | 1 |
| 5 | Working toward degree | Nunn et al., 2004; Wilder, Mann, & Tishk, 1999 | 1 |
| 6 | Degree working toward | Nunn et al., 2004; Wilder, Mann, & Tishk, 1999 | 1 |
| 7 | Gender | Faust, 1999; Holt, 1998; Nunn et al., 2004 | 1 |

Table 6 (continued)

Quantitative analysis of each item included on the instrument, Survey of Full-Time
Baccalaureate Dental Hygiene Faculty

| Item | Label | Research | Research question |
|------|--|---|-------------------|
| 8 | Year of birth | Dominick, 2004; Haden et al., 2001; Holt, 1998; Nunn et al., 2004 | 1 |
| 9 | Ethnicity, Hispanic or Latino | Nunn et al., 2004 | 1 |
| 10 | Race | Holt, 1998; Huntley & Minneman, 1994; Nunn et al., 2004 | 1 |
| 11 | Hours per week on paid and unpaid activities | Glick, 1990; AAUP, 2000; Nunn et al., 2004 | 2, 4 |
| 12 | Percent of work time spent and preferred | Glick, 1990; AAUP, 2000; Nunn et al., 2004 | 2, 3, 4 |
| 13 | Total number of classes or sections taught | Glick, 1990; AAUP, 2000; Nunn et al., 2004 | 2 |
| 14 | Scholarly activity, description | Gadbury-Amyot et al., 2001; Holt, 1998; Nunn et al., 2004; Schrubbe, 2004 | 2 |

Table 6 (continued)

Quantitative analysis of each item included on the instrument, Survey of Full-Time
Baccalaureate Dental Hygiene Faculty

| Item | Label | Research | Research question |
|------|--|--|-------------------|
| 15 | Scholarly activity, any funded | Gadbury-Amyot et al., 2001; Holt, 1998; Nunn et al., 2004, Schrubbe, 2004 | 2 |
| 16 | Career presentations/ publications/etc. | Gadbury-Amyot et al., 2001; Holt, 1998; Nunn et al., 2004; Schrubbe, 2004 | 2 |
| 17 | Satisfaction with instructional duties | Nunn et al., 2004 | 1 |
| 18 | Satisfaction with job | Nunn et al., 2004 | 1 |
| 19 | Likelihood to leave job | Nunn et al., 2004 | 1 |
| 20 | Age to stop working at postsecondary institution | Dominick, 2004; Haden et al., 2001; Holt, 1998; Nunn et al., 2004 | 1 |
| 21 | Importance in decision to leave institution | Dominick, 2004; Haden et al., 2001; Holt, 1998; Nunn et al., 2004 | 1 |
| 22 | Opinions | Nunn et al., 2004 | 1 |

Table 6 (continued)

Quantitative analysis of each item included on the instrument, Survey of Full-Time
Baccalaureate Dental Hygiene Faculty

| Item | Label | Research | Research question |
|------|---|--|-------------------|
| 23 | Opinions | Nunn et al., 2004 | 1 |
| 24 | Alter workload | Nunn et al., 2004 | 3 |
| 25 | Comparison of associate's and baccalaureate | Nunn et al.; Pattison, 2004; Rowe, 2004; Stolberg, 2004; ADHA, 2005 | 4 |

Institutional Responsibilities and Workload

Research Question 2 asks, “What are the institutional responsibilities and workload of baccalaureate dental hygiene faculty?” Items 11, 12 (column A), and 13 operationalized the institutional responsibilities and workload of faculty related to hours spent on paid and unpaid tasks and percent of time spent on various components of work. The scholarly activities of baccalaureate faculty were reported in Items 14-16.

For each faculty workload component, an operational definition, with examples, was provided on the mail questionnaire. Participants recorded estimates of their workload as percentage of *time spent* and percentage of *time preferred* for each of the following activities:

1. Teaching (Undergraduate, Graduate, First Professional)
2. Research/Scholarship
3. Professional Growth
4. Institutional Service
5. Public Service
6. Faculty Clinical Practice
7. Other Activities

Items 12 (column A and column B) and 24 provided data to answer Research Question 3, “Are there differences between the percent of work time *spent* and the percent of work time *preferred* in various institutional activities?” Free response Item 24 asks faculty what changes they would make to their overall workload if they had the power to do so.

Information collected in Items 11, 12 (column A), and 25 were helpful in determining comparative workload trends which helped to answer Research Question 4, “Are there differences between the Carnegie institution types when considering baccalaureate dental hygiene faculty workload?” Mean hours spent per week in work activities (Item 11) and mean percent of time spent in various components of workload (Item 12, column A) were grouped and compared between the different institution types. Free response Item 25 asked faculty, who have held faculty positions at associate degree institutions, to compare their workload then to their workload now in a baccalaureate dental program.

Research Design and Data Collection Procedures

This design of this study is quantitative descriptive self-report research. The type of self-report research used in this study will be survey research, using a mail questionnaire. Descriptive statistics, as described by Gay, Mills, and Airasian (2005), permit the researcher to meaningfully describe many scores with a small number of indices. In this study, descriptive statistics (frequency and percent) were used to summarize nominal and ordinal level data. Descriptive statistics (mean, median, standard deviation, and range) were also used to summarize interval and ratio level data.

Inferential statistics, *t* test and analysis of variance (ANOVA), were also used in this study. Inferential statistics allow inferences of judgments about a population based on the behavior of samples. Gay et al. (2005) summarized that inferential statistics are concerned with determining how likely it is that the results based on a sample or samples are the same results that would have been obtained from the entire population.

Gay et al. (2005) explained that the t test is useful to see if the means on two normally distributed interval variables differ from another. Within the same chapter, Gay et al. stated that ANOVA is used to determine whether there is a significant difference between two or more means at a selected probability level.

The mail questionnaire was chosen since it is ideal for collecting perceptual and value data. The mail survey is also feasible for a small population since postage will be inexpensive. The mailing address, office telephone number, and electronic mail address of all program administrators are publicly and readily accessible from the American Dental Association (ADA, 2005).

The published results of the *2003/04 Survey of Allied Dental Education* provided pertinent baseline demographic and dental hygiene education program information (ADA, 2005). However, it was necessary to confirm all published data using the ADA (n.d.) online database. This website is updated periodically as existing programs renew accreditation, new programs obtain accreditation status, and discontinued programs phase out (ADA). Homepages of the dental hygiene programs were also used to confirm program administrator contact information, such as electronic mail address, telephone number, and mailing address.

Pertinent raw data from the published ADA (2005) survey were entered onto a Microsoft Excel spreadsheet. It included institutional data, dental hygiene program information, available faculty, and program administrator information. This was the only program-identifying information included in the study. In all reports of results, descriptive statistics were used to summarize data and to protect the identity of all dental hygiene programs and participants.

Mail questionnaires were coded with program identifiers to assist the researcher in data collection and participation monitoring. Neither individual faculty nor individual program data are reported in the study. All data were summarized in the study and the researcher discarded program identifiers.

The researcher made initial contact with each baccalaureate dental hygiene program administrator through an electronic mail message as shown in Appendix B. The message included a brief description of the study and an announcement that the researcher would contact the program administrator, by telephone, within one week. Within one week, the researcher contacted each program administrator by telephone using the script in Appendix C. One purpose of this call was to verify institutional and program data printed in the *2003/04 Survey of Allied Dental Education* published by the ADA (2005). This included verification of the degree awarded, current number of full-time, and current number of part-time faculty.

Another purpose of this call was to solicit support and permission from the program administrators to distribute the survey to each full-time faculty member. After support was obtained, surveys and envelopes were mailed to each program administrator. Directions for survey distribution and collection were outlined in an explanatory letter to the program administrators shown in Appendix D. The survey cover letter and survey instrument for faculty are shown in Appendices E and F. The program administrator was responsible for distributing, collecting, and returning completed mail questionnaires. Upon completion of the survey, each faculty was instructed to seal it in the envelope provided and return it to their program administrator for bulk mailing. After two weeks, a follow-up electronic mail message, shown in Appendix G, was sent to program

administrators thanking them for their participation and reminding them to send surveys if they had not already done so.

Based on the average response rate (86%) from three cycles of NCES (n.d.) surveys of faculty and the most recently published response rate (71%) to the survey of dental hygiene faculty by Nunn et al. (2004), the researcher accepted 60% as a favorable response rate for this study.

Treatment of Data

As mail questionnaires were received from each program, the researcher treated the data using the program confidentiality and faculty anonymity measures, outlined in the research proposal. Raw data from each survey were entered using SPSS 14.0 (2005) statistical software. Hard copies of the surveys were locked and stored in the researcher's faculty office where they will remain secure until completion of dissertation and manuscript publication. The surveys do not contain any traceable identifiers to the individual faculty. Program identifiers were used primarily to determine the institution's Carnegie classification as described by McCormick (2001).

Data Analysis and Reporting

Responses from survey items addressing Research Question 1 (What are the characteristics of baccalaureate dental hygiene faculty in regards to employment, academic background, demographics, job satisfaction, and opinions?) and Research Question 2 (What are the institutional responsibilities and workload of baccalaureate dental hygiene faculty?) were analyzed using descriptive statistics.

Descriptive statistics include frequency and percent reports of nominal and ordinal level data. Interval and ratio level data were descriptively reported using mean,

median, standard deviation, and range. Data are summarized in tables and in the text, as appropriate.

The parametric *t* test statistic was used to analyze data related to Research Question 3 (Are there differences between the percent of work time spent and the percent of work time preferred in various institutional activities?). A paired samples *t* test was used because there are two related observations per eight activity categories (percent of time *spent* and percent of time *preferred*) and the researcher wanted to test if the means on these two normally distributed interval variables differed from one another. The researcher set the level of significance at $p = .05$ for this analysis.

To address Research Question 4 (Are there differences between the Carnegie institution types when considering baccalaureate dental hygiene faculty workload?), a one-way ANOVA was used, (1) to determine if the mean number of hours in each activity, reported in Item 11, differed between the three institution types and (2) to determine if the mean percentage of time spent in each activity, reported in Item 12a, differed between the three institution types. The researcher set the level of significance at $p = .05$ for this analysis.

Baccalaureate dental hygiene programs are positioned in three different types of institutions: Doctorate-granting Institutions, Specialized Institutions, Master's Colleges and Universities, and Baccalaureate Colleges (see Table 1). There is only one baccalaureate dental hygiene program from the Baccalaureate Colleges institution (McCormick, 2001). Because this one program would not provide reliable group comparison, data collected from the two faculty respondents were not used in the ANOVA computations for Research Question 4 which compared faculty workload

between institution types. Data from this baccalaureate program was, however, included in all other analyses.

Confidentiality and Human Subjects

Applications were submitted to the institutional review boards at the researcher's institution of enrollment, Georgia Southern University, and at the researcher's institution of employment, the Medical College of Georgia. Panel review and data collection began after both approvals were granted (see Appendices I and J).

Program administrators were assured that program data would be confidential (researcher knew what programs responded and which ones did not) and that faculty data would be anonymous (researcher did not know which faculty responded and which did not). In all contact with the program administrator, the researcher emphasized that no program or individual identifying information would be published. The methods for protecting identifying information was conveyed to each program administrator in initial electronic mail contact, in telephone dialogue, in the survey explanatory letter, and in all follow-up electronic mail messages.

Faculty were also assured anonymity of their responses on the survey instrument in the survey cover letter. To maintain anonymity, the researcher assigned distribution and collection of the surveys to each program administrator and never contacted faculty directly.

Summary

Chapter 3 has presented the methodology that was used to answer research questions pertaining to full-time baccalaureate dental hygiene faculty characteristics and workload. Details about the descriptive design of this self-report survey research were

outlined. Procedures for selecting participants from the theoretical population were discussed and followed by methods to obtain a survey instrument applicable for dental hygiene faculty. Variables on the survey instrument were defined and data collection, processing, and reporting procedures were explained. Finally, the researcher described steps that were taken to assure confidentiality, anonymity, and ethical treatment of human subjects.

CHAPTER 4

RESULTS

The methodology used in this study was outlined in Chapter 3. The population was described as all full-time faculty in the 32 active baccalaureate dental hygiene programs. The instrument used for data collection was the *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*. It included 25 items. Twenty-three items were duplicated from the *1999 National Study of Postsecondary Faculty: Faculty Instrument* (National Center for Educational Statistics [NCES], 1999). Two additional free-response items were added by the researcher. After obtaining approvals from institutional review boards, data collection began.

In Chapter 3, Table 6 provided a quantitative analysis of each item included on the survey as it related to current literature and to each research question. Research questions, initially posed in Chapter 1, relate to the overarching question: What are the characteristics and workload of faculty in baccalaureate dental hygiene programs? Specifically, the researcher surveyed full-time baccalaureate dental hygiene faculty to answer the following research questions:

1. What are the characteristics of baccalaureate dental hygiene faculty in regards to employment, academic background, demographics, job satisfaction, and opinions?
2. What are the institutional responsibilities and workload of baccalaureate dental hygiene faculty?
3. To what extent are there differences between the percent of work time spent and the percent of work time preferred in various institutional activities?

4. To what extent are there differences between the Carnegie institution types when considering baccalaureate dental hygiene faculty workload?

The current chapter will begin with a summary of instrument revisions suggested by panel reviewers (see Appendix H). Next, the researcher will present data analyses and report findings of this study. Each research question will be addressed singularly.

Panel Review

A panel review was initiated after approval from Institutional Review Boards at the Medical College of Georgia (dated January 23, 2006) and Georgia Southern University (dated February 3, 2006). Documentation of these approvals is included as Appendix I and Appendix J, respectively.

Feedback from the panel reviewers confirmed the face and content validity of the modified *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*. Reviewers unanimously concurred that the items appropriated addressed the characteristics and workload of faculty. The time needed by each reviewer to complete the survey was 15, 20, and 24 minutes. As a result, the researcher chose to state the average completion time of 20 minutes on the Cover Letter to Faculty (see Appendix E).

Additional comments from the panel review included suggestions to: make the boxes larger, expand the page margins to fit more items per page, use the front and back of paper to decrease survey thickness, and close parentheses in two items. All of these suggestions were accepted and incorporated into the final mail questionnaire by the researcher.

One panel review member suggested revising survey Items 9 and 10. Item 9 asks, “What is your ethnicity?” and Item 10 asks, “What is your race?” The panel reviewer is

Hispanic, but commented that none of the options, listed for race, in Item 10 applied to her. She suggested adding an option to skip Item 10 if Hispanic was chosen in Item 9. The researcher chose not to incorporate this change since the exact wording from the previously validated original instrument, *1999 National Survey of Postsecondary Faculty* (NCES, 1999) was used.

Respondents

On February 14, 2006, all 32 baccalaureate dental hygiene program administrators were contacted by electronic mail and invited to participate in the study. This initial contact is shown in Appendix B. An electronic mail response was received from 29 of the 32 program administrators who agreed to participate in the study.

Through telephone dialogue with program administrators who agreed to participate, the number of full-time faculty per program was determined (refer to Appendix C). A total of 167 faculty surveys were mailed to the 29 program administrators who agreed to participate. Enclosed in the package was an Explanatory Letter to Program Administrators (Appendix D), Survey Cover Letter (Appendix E), and the *Survey of Full-Time Baccalaureate Dental Hygiene Faculty* (Appendix F). The number of full-time faculty per program averaged 5.76 ($SD = 2.16$) and ranged from 3 to 11.

On April 9, 2006, the follow-up electronic mail, shown in Appendix G, was sent to program administrators whose faculty surveys had not yet been received. This message served as a reminder for program administrators to submit surveys, if they had not already. On May 8, 2006, data collection ended. Faculty surveys were received from 89.7% (26/29) of baccalaureate dental hygiene programs and from 68.3% (114/167) of

full-time faculty. Dental hygiene programs and faculty participants are presented in Table 7 according to institution types, as classified by McCormick (2001).

Characteristics of Baccalaureate Dental Hygiene Faculty

What are the characteristics of full-time baccalaureate dental hygiene faculty in regards to employment, background, demographics, job satisfaction, and opinions? In this section, each aspect of this Research Question 1 will be addressed separately to provide a comprehensive demographic profile of the respondents.

Employment and Academic Background

All faculty ($N = 114$) met the inclusion criteria for the study when they reported that their institution considers them employed full-time. In Table 8, the frequency and percent of faculty employment and academic background characteristics during the 2005 fall term are described.

All faculty reported that academic rank and tenure status are designated at their institutions. Most faculty held the ranks of Associate Professor (35.1%, $n = 40$) or Assistant Professor (34.2%, $n = 39$). The number of tenured faculty (38.6%, $n = 44$) and faculty not on tenure track (40.4%, $n = 46$) were similar. The remaining faculty (21.1%, $n = 24$) were on tenure track but not yet tenured.

Information regarding academic degrees was reported by all faculty. The majority of faculty (71.1%) were master's prepared. Combined, Doctorate and First Professional degrees (Doctor of Dental Surgery or Doctor of Medicine in Dentistry) were held by 19.3% of the faculty. Twenty-four faculty reported that they are in pursuit of an additional degree. Most of those faculty ($n = 16$) are working toward a doctoral degree

Table 7

Institution Types, Baccalaureate Dental Hygiene Programs, and Faculty Represented in the Survey of Full-Time Baccalaureate Dental Hygiene Faculty

| Institution type | Dental hygiene program (<i>N</i> = 26) | | Faculty (<i>N</i> = 114) | |
|------------------------------------|--|---------|------------------------------|---------|
| | <i>n</i> | Percent | <i>n</i> | Percent |
| Doctorate-granting Institutions | 17 | 65.4 | 79 | 69.3 |
| Specialized Institutions | 5 | 19.2 | 16 | 14.0 |
| Master's Colleges and Universities | 3 | 11.5 | 17 | 14.9 |
| Baccalaureate Colleges | 1 | 3.8 | 2 | 1.8 |

Table 8

Employment and Academic Background of Full-Time Baccalaureate Dental Hygiene

Faculty

| | <i>n</i> | Percent |
|---------------------------------|----------|---------|
| Academic rank | | |
| Professor | 15 | 13.2 |
| Associate Professor | 40 | 35.1 |
| Assistant Professor | 39 | 34.2 |
| Instructor | 8 | 7.0 |
| Lecturer | 2 | 1.8 |
| Other Title | 10 | 8.8 |
| Tenure status | | |
| Tenured | 44 | 38.6 |
| On tenure track but not tenured | 24 | 21.1 |
| Not on tenure track | 46 | 40.4 |
| Highest degree | | |
| Bachelor's degree | 11 | 9.6 |
| Master's degree | 81 | 71.1 |
| Doctorate degree | 15 | 13.2 |
| First Professional (DMD/DDS) | 7 | 6.1 |

Table 8 (continued)

Employment and Academic Background of Full-Time Baccalaureate Dental Hygiene

Faculty

| | <i>n</i> | Percent |
|------------------------------------|----------|---------|
| Working toward a degree | | |
| No | 90 | 78.9 |
| Yes | 24 | 21.1 |
| Degree working toward ^a | | |
| Certificate or Diploma | 1 | 0.9 |
| Master's degree | 7 | 6.1 |
| Doctoral degree | 16 | 14.0 |

Note. *N* = 114.

^aOf the 24 faculty working toward a degree, 1 is working toward a certificate or diploma, 7 are working toward a Master's degree, and 16 are working toward a Doctorate degree.

and seven others are working toward a master's degree. Only one faculty reported working toward a certificate.

In Item 20, faculty reported the age that they are most likely to stop working at a postsecondary institution. Almost 39% (44/114) of the faculty selected 'Don't Know' for this item. The remaining 61% (70/114) of the faculty responded to this item, providing an age. Age was recoded into *years until stop working* using the difference of their *age to stop working* and their *current age*. Almost 56% (39/70) of full-time baccalaureate faculty plan to stop working at a postsecondary institution in ten years or less. The average number of years that faculty plan to stop working at a postsecondary institution was 10.8 years ($SD = 7.19$). Twenty-seven percent (19/70) of the faculty plan to stop working at a postsecondary institution in five years or less.

Demographics

In Table 9, the demographics characteristics of the respondents including gender, ethnicity and race are summarized. Full-time baccalaureate dental hygiene faculty were most likely to be female (95.6%), not Hispanic (95.6%), and White (93.9%).

The year of birth, reported in survey Item 8, was recoded into *age* using the difference of the current year 2006 and the year of birth. The average age of faculty was 50.2 years ($SD = 8.4$). Faculty ages ranged from 28 to 70 years. Fifty-six percent (63/112) of faculty were age 50 or more, 30% (34/112) were between 40-50 years, and 13% (15/112) were under 40 years.

Table 9

Demographics of Full-Time Baccalaureate Dental Hygiene Faculty

| Demographic | <i>n</i> | Percent |
|---|----------|---------|
| Gender | | |
| Male | 5 | 4.4 |
| Female | 109 | 95.6 |
| Ethnicity | | |
| Hispanic | 5 | 4.4 |
| Not Hispanic/No Answer | 109 | 95.6 |
| Race | | |
| American Indian or Alaska Native | 1 | 0.9 |
| Black or African American | 2 | 1.8 |
| Native Hawaiian or Other Pacific Islander | 1 | 0.9 |
| White | 107 | 93.9 |
| Multiracial/No Answer | 3 | 2.7 |

Note. *N* = 114.

Job Satisfaction

Faculty reported their level of satisfaction with several aspects of their job in survey Items 17, 18, 19, and 21. Over 80% of the faculty reported that they are *Somewhat Satisfied* or *Very Satisfied* with their authority to make decisions about content and methods in the courses they teach (88.6%), with the quality of undergraduate students whom they have taught (84.2%), and with their benefits (84.2%). Between 75-80% of faculty also reported that they are *Somewhat Satisfied* or *Very Satisfied* with the authority they have to make decisions about what courses they teach (79.8%), with the authority they have to make decisions about other (non-traditional) aspects of their job (76.4%), with their job security (79.8%), with freedom to do outside consulting (75.4%), and with their job, overall (79%). Faculty responses are summarized in Table 10.

The same proportion of faculty was *Somewhat Satisfied* or *Very Satisfied* with their opportunity for advancement in rank and with the effectiveness of faculty leadership (69.3%). Over half (58.8%) of the faculty selected *Not Applicable* when responding to their level of satisfaction with graduate students they have taught while 34.2% were *Somewhat Satisfied* or *Very Satisfied* with the quality of graduate students if they have taught these students. Half (50%) of the faculty were *Somewhat Satisfied* or *Very Satisfied* with spouse or partner employment while 41.2% selected that this item was *Not Applicable*.

Table 10

Satisfaction of Full-Time Baccalaureate Dental Hygiene Faculty with Aspects of Job

| Aspect of job | Very Dissatisfied | Somewhat Dissatisfied | Somewhat Satisfied | Very Satisfied | Not Applicable |
|--|----------------------|--------------------------|-----------------------|-------------------|-------------------|
| The authority I have to make decisions about content and methods in the courses I teach _a | 4.4 (5) | 3.5 (4) | 18.4 (21) | 70.2 (80) | |
| The authority I have to make decisions about what courses I teach _a | 7.0 (8) | 8.8 (10) | 27.2 (31) | 52.6 (60) | |
| The authority I have to make decisions about other (non-traditional) aspects of my job _a | 5.3 (6) | 15.8 (18) | 40.4 (46) | 36.0 (41) | |
| Time available for working with students as advisor | 3.5 (4) | 29.8 (34) | 38.6 (44) | 25.4 (29) | |

Table 10 (continued)

Satisfaction of Full-Time Baccalaureate Dental Hygiene Faculty with Aspects of Job

| Aspect of job | Very Dissatisfied | Somewhat Dissatisfied | Somewhat Satisfied | Very Satisfied | Not Applicable |
|---|----------------------|--------------------------|-----------------------|-------------------|-------------------|
| Time available for class preparation _a | 9.6 (11) | 28.9 (33) | 33.3 (38) | 24.6 (28) | |
| Quality of under- graduate students whom I have taught here _a | 2.6 (3) | 10.5 (12) | 42.1 (48) | 42.1 (48) | |
| Quality of graduate students whom I have taught _a | 1.8 (2) | 2.6 (3) | 10.5 (12) | 23.7 (27) | 58.8 (67) |
| My workload _a | 8.8 (10) | 30.7 (35) | 35.1 (40) | 22.8 (26) | |
| My job security _b | 8.8 (10) | 10.5 (12) | 33.3 (38) | 46.5 (53) | |
| Opportunity for advancement in rank _b | 9.6 (11) | 19.3 (22) | 38.6 (44) | 30.7 (35) | |

Table 10 (continued)

Satisfaction of Full-Time Baccalaureate Dental Hygiene Faculty with Aspects of Job

| Aspect of job | Very Dissatisfied | Somewhat Dissatisfied | Somewhat Satisfied | Very Satisfied | Not Applicable |
|---|----------------------|--------------------------|-----------------------|-------------------|-------------------|
| Time available for keeping current in my field ^b | 6.1 (7) | 33.3 (38) | 36.8 (42) | 22.8 (26) | |
| The effectiveness of faculty leadership ^c | 8.8 (10) | 18.4 (21) | 50.0 (57) | 19.3 (22) | |
| Freedom to do outside consulting ^a | 6.1 (7) | 14.0 (16) | 38.6 (44) | 36.8 (42) | |
| My salary ^d | 20.2 (23) | 31.6 (36) | 32.5 (37) | 14.0 (16) | |
| My benefits, generally ^b | 6.1 (7) | 8.8 (10) | 39.5 (45) | 44.7 (51) | |
| Spouse or partner employment ^b | 4.4 (5) | 3.5 (4) | 11.4 (13) | 38.6 (44) | 41.2 (47) |
| My job here, overall ^a | 4.4 (5) | 14.0 (16) | 43.0 (49) | 36.0 (41) | |

Note. The values represent percentages. The values enclosed in parentheses represent frequency.

^a*n* = 111. ^b*n* = 113. ^c*n* = 110. ^d*n* = 112.

Most faculty were *Somewhat Satisfied* (38.6%) or *Somewhat Dissatisfied* (29.8%) with their time available for working with students as an advisor followed by 25.4% percent of faculty who were *Very Satisfied* with this aspect of their job. Most faculty were *Somewhat Satisfied* (33.3%) or *Somewhat Dissatisfied* (28.9%) with their time available for class preparation followed by 24.6% percent of faculty who were *Very Satisfied* with this aspect of their job.

Most faculty were *Somewhat Satisfied* (35.1%) or *Somewhat Dissatisfied* (30.7%) with their workload followed by 22.8% percent of faculty who were *Very Satisfied* with this aspect of their job. Most faculty were *Somewhat Satisfied* (36.8%) or *Somewhat Dissatisfied* (33.3%) with their time available for keeping current in their field followed by 22.8% percent of faculty who were *Very Satisfied* with this aspect of their job.

Salary was the only aspect of the job for which faculty had more dissatisfaction (51.8%) than satisfaction (46.5%). Most faculty were *Somewhat Satisfied* (32.5%) or *Somewhat Dissatisfied* (31.6%) with their salary followed by 20.2% percent of faculty who were *Very Dissatisfied* with this aspect of their job. Only 14% of faculty were *Very Satisfied* with their salary.

During the next three years, most faculty responded that they were *not at all likely* to leave their job to accept part-time (91.2%) or full-time (72.8%) employment *at a different* postsecondary institution (refer to Table 11). Similarly, most faculty were *not at all likely* to leave their job to accept part-time (84.2%) or full-time (80.7%) employment *not at a* postsecondary institution. Also during the next three years, 75.4% of faculty are *not at all likely* to retire while 22.8% of faculty reported that they are *very likely* or *somewhat likely* to retire from the labor force.

Table 11

Likelihood of Full-Time Baccalaureate Dental Hygiene Faculty Leaving their Job During the Next Three Years

| Likelihood of leaving job to accept a: | Not at All Likely | Somewhat Likely | Very Likely |
|---|----------------------|--------------------|-------------|
| <i>Part-time job at a different postsecondary institution^a</i> | 91.2 (104) | 4.4 (5) | 1.8 (2) |
| <i>Full-time job at a different postsecondary institution^b</i> | 72.8 (83) | 18.4 (21) | 5.3 (6) |
| <i>Part-time job not at a postsecondary institution^a</i> | 84.2 (96) | 9.6 (11) | 3.5 (4) |
| <i>Full-time job not at a postsecondary institution^c</i> | 80.7 (92) | 11.4 (13) | 6.1 (7) |
| Retirement from the labor force ^c | 75.4 (86) | 14.9 (17) | 7.9 (9) |

Note. The values represent percentages. The values enclosed in parentheses represent frequency.

^a*n* = 111. ^b*n* = 110. ^c*n* = 112.

Between 93.9% and 97.4% of faculty ranked *salary level, job security, opportunities for advancement, benefits, good instructional facilities, and good geographic location* as *Very Important* or *Somewhat Important* factors in leaving their current position to accept another position (see Table 12). *Good job opportunities for their spouse/partner* and *good environment/schools for their children* were *Very Important* factors for faculty when considering another position (38.6% and 29.8%, respectively). These same factors, related to spouse and environment for kids, were *Not Applicable* for other faculty (36.8% and 56.1%, respectively).

Faculty responses were divided on the importance of a *tenure-track/tenured position* when accepting another position. More faculty (43%) considered a *tenure-track/tenured position* as *Very Important*, 30.7% considered it *Somewhat Important*, and 24.6% considered it *Not Important* in their decision. The factor, *no pressure to publish*, was almost evenly divided as a *Very Important* (41.2%) or *Somewhat Important* (43%) factor in considering another position. Fourteen percent of the faculty ranked *no pressure to publish* as *Not Important* in their decision.

Over half (50.9%) of the faculty ranked *good research facilities* as a *Somewhat Important* factor while the remaining half of faculty listed this factor as *Not Important* (21.1%) and *Very Important* (26.3%) in their decision to consider another position. Over half (50.9%) of the faculty ranked *greater opportunity to teach* as a *Very Important* factor while 29.8% ranked it as *Somewhat Important* and 17.5% rank it as *Not Important*.

Table 12

Importance of Factors in Decision to Leave Current Position to Accept Another Position

| Factors | Not Important | Somewhat Important | Very Important | Not Applicable |
|--|------------------|-----------------------|-------------------|-------------------|
| Salary level | 0.9 (1) | 18.4 (21) | 78.9 (90) | |
| Tenure-track/tenured position | 24.6 (28) | 30.7 (35) | 43.0 (49) | |
| Job security | 3.5 (4) | 16.7 (19) | 78.1 (89) | |
| Opportunities for advancement | 4.4 (5) | 35.1 (40) | 58.8 (67) | |
| Benefits | 0.9 (1) | 7.9 (9) | 89.5 (102) | |
| No pressure to publish | 14.0 (16) | 43.0 (49) | 41.2 (47) | |
| Good research facilities and equipment | 21.1 (24) | 50.9 (58) | 26.3 (30) | |
| Good instructional facilities/equipment | 1.8 (2) | 17.5 (20) | 78.9 (90) | |

Table 12 (continued)

Importance of Factors in Decision to Leave Current Position to Accept another Position

| Factors | Not Important | Somewhat Important | Very Important | Not Applicable |
|---|------------------|-----------------------|-------------------|-------------------|
| Good job or job opportunities for my spouse or partner | 11.4 (13) | 11.4 (13) | 38.6 (44) | 36.8 (42) |
| Good geographic location | 2.6 (3) | 25.4 (29) | 70.2 (80) | |
| Good environment/schools for my children | 9.6 (11) | 2.6 (3) | 29.8 (34) | 56.1 (64) |
| Greater opportunity to teach | 17.5 (20) | 29.8 (34) | 50.9 (58) | |
| Greater opportunity to do research | 41.2 (47) | 44.7 (51) | 12.3 (14) | |

Note. $N = 112$. The values represent percentages. The values enclosed in parentheses represent frequency.

Greater opportunity to do research was almost evenly ranked between *Somewhat Important* (44.7%) and *Not Important* (41.2%). Only 12.3% of the faculty ranked *greater opportunity to do research* as a *Very Important* factor in their decision to leave their current position and accept another position.

Opinions

Most faculty (86.9%) *Agreed* or *Strongly Agreed* that teaching effectiveness should be the primary criterion for promotion of faculty at their institutions while most *Strongly Disagreed* or *Disagreed* (81%) that research/publications should be the primary criterion for promotion. Most faculty *Agreed* or *Strongly Agreed* that: research is rewarded more than teaching at their institution (66%), post-tenure review improves the quality of education (77%), their institution should have a tenure system (75%), and female and minority faculty are treated fairly (86%). If they had to do it over again, most faculty *Strongly Agreed* (49%) or *Agreed* (38%) that they would choose a career in academics.

Most faculty *Strongly Agreed* or *Agreed* that it has become more difficult for faculty to obtain external funding and that faculty work load has increased (87%). Most faculty *Disagreed* with statements that the quality of undergraduate education has declined, the atmosphere is less conducive to free expression of ideas, and the quality of research has declined. Almost half of the faculty *Disagreed* (43.8%) while the other half (53.5%) *Agreed* that too many full-time faculty have been replaced by part-time faculty. Faculty opinions on the extent they agree or disagree with statements pertaining to recent years at their institution are summarized in Table 13.

Table 13

Opinions of Full-Time Baccalaureate Dental Hygiene Faculty

| Items | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|----------------------|--------------|--------------|-------------------|
| Teaching effectiveness should be the primary criterion for promotion of faculty/instructional staff at this institution _a | 3.5 (4) | 7.9 (9) | 51.8 (59) | 35.1 (40) |
| Research/publications should be the primary criterion for promotion of faculty instructional staff at this institution _a | 21.1 (24) | 59.6 (68) | 16.7 (19) | 0.9 (1) |
| At this institution, research is rewarded more than teaching _b | 4.4 (5) | 25.4 (29) | 36 (41) | 29.8 (34) |
| Post-tenure review of faculty will improve the quality of higher education _c | 1.8 (2) | 17.5 (20) | 57 (65) | 20.2 (23) |
| This institution should have a tenure system _d | 3.5 (4) | 13.2 (15) | 45.6 (52) | 29.8 (34) |
| Female faculty are treated fairly at this institution _e | 1.8 (2) | 18.4 (21) | 57.9 (66) | 20.2 (23) |
| Faculty who are members of racial or ethnic minorities are treated fairly at this institution _b | 0 (0) | 8.8 (10) | 53.5 (61) | 33.3 (38) |

Table 13 (continued)

Opinions of Full-Time Baccalaureate Dental Hygiene Faculty

| Items | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|----------------------|--------------|--------------|-------------------|
| If I had it to do over again, I would still choose an academic career _c | 0.9 (1) | 8.8 (10) | 37.7 (43) | 49.1 (56) |
| It has become more difficult for faculty to obtain external funding _d | 1.8 (2) | 23.7 (27) | 46.5 (53) | 20.2 (23) |
| Faculty work load has increased _c | 0.9 (1) | 8.8 (10) | 30.7 (35) | 56.1 (64) |
| The quality of undergraduate education has declined _c | 21.9 (25) | 28.9 (33) | 28.1 (32) | 17.5 (20) |
| The atmosphere is less conducive to free expression of ideas _e | 17.5 (20) | 37.7 (43) | 29.8 (34) | 12.3 (14) |
| The quality of research has declined _f | 19.3 (22) | 50 (57) | 18.4 (21) | 2.6 (3) |
| Too many full-time faculty have been replaced by part-time faculty _e | 7 (8) | 36.8 (42) | 35.1 (40) | 18.4 (21) |

Note. The values represent percentages. The values enclosed in parentheses represent frequency.

^a*n* = 112. ^b*n* = 109. ^c*n* = 110. ^d*n* = 105. ^e*n* = 111. ^f*n* = 103.

Institutional Responsibilities and Workload

What are the institutional responsibilities and workload of baccalaureate dental hygiene faculty? The results of Research Question 2, as they relate to teaching, research, service, clinical practice, scholarly activity, and publications, are presented in the next section.

Institutional Activities

The average work week of dental hygiene faculty was 50.5 hours, which includes 46.9 hours spent on paid activities and 3.6 hours spent on unpaid activities (see Table 14). The average number of hours spent on paid activities at the institution is 43.4 ($SD = 9.3$), which exceeds all other types of paid and unpaid activities. The average time spent on paid activities outside of the institution was 3.5 ($SD = 8.8$) hours.

Another way to capture faculty activities was to gather the total number of *for credit* courses/sections taught by faculty during the fall 2005 term. The average number of courses/sections taught by faculty was 3.1 ($SD = 1.9$). The lower 95% confidence limit for the mean was 2.7 courses/sections and the upper 95% confidence limit for the mean was 3.4 courses/sections.

Scholarly Activity and Publications

Almost half (47.4%) of the faculty described their primary professional research as program/curriculum design and development. The next highest category of research was basic research (19.3%). When asked if they were engaged in funded research, the majority of the faculty answered *No* (78.1%).

The average number of professional presentations at conferences was 26 ($SD = 60.9$), outnumbering all other types of scholarly publications. The lower 95% and upper

Table 14

Descriptive Statistics for the Number of Hours Spent per Week on Paid and Unpaid

Activities

| Activity | <i>M</i> | <i>Mdn</i> | <i>SD</i> | Maximum | Minimum |
|---|----------|------------|-----------|---------|---------|
| Paid activities at institution | 43.4 | 40 | 9.3 | 80 | 19 |
| Unpaid activities at institution | 2.2 | 1 | 4.8 | 30 | 0 |
| Paid activities outside institution | 3.5 | 0 | 8.8 | 80 | 0 |
| Unpaid professional service activities outside institution | 1.4 | 0 | 2.5 | 10 | 0 |

Note. $N = 113$. The work week of faculty averaged 50.5 hours per week.

95% confidence limit for the mean number of presentations at conferences was 14.3 and 37.6, respectively. The average number of articles published in refereed professional journals was 6.8 ($SD = 9.8$). The lower 95% and upper 95% confidence limit for the mean number of referred publications was 4.9 and 8.6, respectively. Descriptive statistics for each type of scholarly activity presented, published, or created during the faculty's career are shown in Table 15.

Time Spent and Time Preferred

To what extent are there differences between the percent of work time spent and the percent of work time preferred in various institutional activities? The results of Research Question 3 were analyzed using a t test for dependent (paired) samples. Eight activities in survey Item 12, column A (percent of time spent) and column B (percent of time preferred) were paired. If faculty did not respond in both columns, their responses were not included in the computations. Only responses in both columns ($N = 96$) were included in the computations.

As shown in Table 16, most faculty time was spent teaching undergraduate students (56.8% spent, 48.3% preferred) followed by participation in institutional service activities (14.9% spent, 11.7% preferred). Less time was spent on research/scholarship (9.5%) than preferred (14.3%) by faculty. About the same amount of faculty time was spent on faculty clinical practice as preferred (5.3% and 5.8%, respectively). Faculty spent about the same amount of time on teaching graduate students (4.6%) as they did on professional growth activities (4.7%); similarly, faculty preferred to spend more time in each activity (7.5% and 7.8%, respectively).

Table 15

Number of Presentations and Publications During Career

| Presentations/publications | <i>M</i> | <i>Mdn</i> | <i>SD</i> | Maximum | Minimum |
|--|----------|------------|-----------|---------|---------|
| Articles published in refereed professional sources | 6.8 | 2 | 9.8 | 50 | 0 |
| Articles published in non-refereed professional sources | 3.1 | 0 | 6.8 | 40 | 0 |
| Published reviews of books, articles, or chapters | 2.1 | 0 | 4.5 | 26 | 0 |
| Textbooks, other books | 1.1 | 0 | 2.8 | 15 | 0 |
| Presentations at conferences, workshops, etc. | 26 | 8 | 60.9 | 500 | 0 |
| Other, such as patents or computer software products | 0.4 | 0 | 2 | 20 | 0 |

Note. $N = 108$.

Table 16

Mean, Standard Deviation, and t Tests for the Time Spent and Time Preferred on
Institutional Activities

| Activity | Group | | <i>t</i> |
|--|------------|----------------|----------|
| | Time spent | Time preferred | |
| Teaching undergraduate students _a | | | |
| <i>M</i> | 56.8 | 48.3 | 5.30** |
| <i>SD</i> | 23.8 | 22.3 | |
| Teaching graduate students _b | | | |
| <i>M</i> | 4.6 | 7.5 | -2.38* |
| <i>SD</i> | 10.4 | 13.9 | |
| Research/scholarship _c | | | |
| <i>M</i> | 9.5 | 14.3 | -4.96** |
| <i>SD</i> | 10 | 12.5 | |
| Professional growth _d | | | |
| <i>M</i> | 4.7 | 7.8 | -5.27** |
| <i>SD</i> | 5.2 | 5.8 | |
| Institutional service _e | | | |
| <i>M</i> | 14.9 | 11.7 | 3.31** |
| <i>SD</i> | 16.8 | 14.8 | |

Table 16 (continued)

Mean, Standard Deviation, and t Tests for the Time Spent and Time Preferred on Institutional Activities

| Activity | Group | | <i>t</i> |
|--|------------|----------------|----------|
| | Time spent | Time preferred | |
| Public service _e | | | |
| <i>M</i> | 4.5 | 6.2 | -3.45** |
| <i>SD</i> | 4.3 | 5.4 | |
| Faculty clinical practice _c | | | |
| <i>M</i> | 5.3 | 5.8 | -0.64 |
| <i>SD</i> | 8.3 | 7.7 | |
| Outside consulting _d | | | |
| <i>M</i> | 1.4 | 2 | -1.08 |
| <i>SD</i> | 4.5 | 3.4 | |

^a*n* = 110. ^b*n* = 104. ^c*n* = 107. ^d*n* = 106. ^e*n* = 108.

**p* < .05

***p* < .01

As shown in Table 16, faculty would prefer to spend significantly more time, than they currently spend, on the following activities: teaching graduate/first professional students ($t = -2.38, p = .019$), research/scholarship ($t = -4.96, p = .000$), professional growth ($t = -5.27, p = .000$), and public service ($t = -3.45, p = .000$). In contrast, faculty would prefer to spend significantly less time, than they currently spend, on teaching undergraduate students ($t = 5.30, p = .000$) and on institutional service ($t = 3.31, p = .001$).

No significant differences ($p > .05$) were found between the time faculty spent and the time they preferred to spend in faculty clinical practice and outside consulting activities. However, negative t values in the computations indicate that faculty would prefer to spend more time in clinical practice and outside consulting activities than they currently spend.

Free response Item 24 asked faculty how they would alter their overall workload, if they could. Almost all faculty provided comments to this item (90%, 104/114). Only seven faculty stated that they would not make any changes to their current workload.

The most frequent suggestions to alter workload included: increasing course preparation time ($n = 54$), decreasing the number of lecture courses per semester ($n = 44$), giving credit for actual contact hours in the measures of clinical workload ($n = 41$), and balancing faculty workload/advising among all tenured, tenure-track, and term faculty ($n = 40$).

Other frequent suggestions to alter workload included: increasing time for scholarly activity ($n = 34$), increasing time for professional growth/mentoring of junior faculty ($n = 30$), decreasing time on administrative tasks/after-hour meetings/recruitment

activities ($n = 27$), and increasing administrative/classroom support ($n = 24$). Less frequently cited changes in workload include increasing the ability to take more time off work ($n = 6$) and increasing full-time and part-time faculty salaries to reflect work done ($n = 6$). Only one suggestion was made to alter workload by improving leadership and decreasing the number of students in clinics.

Carnegie Institution Types and Faculty Workload

To what extent are there differences between the Carnegie institution types when considering baccalaureate dental hygiene faculty workload? In Research Question 4, relationships between institution types and faculty workload were statistically examined using a univariate ANOVA. Since only one program from the Baccalaureate Colleges institution type was represented, it was excluded from this analysis. Dental hygiene programs in the Doctorate-granting Institutions, Specialized Institutions, and Master's Colleges and Universities were included in this analysis.

Faculty workload was operationalized as hours per week spent on paid and unpaid activities. A univariate ANOVA (see Table 17) was used to determine if the mean number of hours spent per week in each activity differed between the three institution types. There were no statistically significant differences ($p > .05$) in the mean number of hours (spent on paid and unpaid activities) in the three institutional types.

A univariate ANOVA was also used to determine if the percent of work time spent in each component of faculty workload differed between the three Carnegie institution types. There were no statistically significant differences ($p > .05$) in the percent of time spent on seven of the eight workload activities: teaching undergraduate students, teaching graduate students, research/scholarship, professional growth,

Table 17

Mean, Standard Deviation, and ANOVA for the Hours Spent per Week on Paid and Unpaid Activities

| Activity | Group | | | <i>F</i> |
|---------------------------------------|---------------------------------|--------------------------|-----------------------|----------|
| | Doctorate-granting ^a | Specialized ^b | Master's ^c | |
| Paid activities at institution | | | | |
| <i>M</i> | 43.1 | 45.1 | 41.9 | 0.51 |
| <i>SD</i> | 9.7 | 7.7 | 6.7 | |
| Unpaid activities at institution | | | | |
| <i>M</i> | 3.1 | 1.7 | 1.9 | 0.88 |
| <i>SD</i> | 5.4 | 2.3 | 2.8 | |
| Paid activities outside institution | | | | |
| <i>M</i> | 4.1 | 1.3 | 2 | 0.87 |
| <i>SD</i> | 10.1 | 2 | 2.4 | |
| Unpaid activities outside institution | | | | |
| <i>M</i> | 1.4 | 1.8 | 1.1 | 0.23 |
| <i>SD</i> | 2.6 | 3 | 1.5 | |

^a*n* = 79. ^b*n* = 16. ^c*n* = 16. *df* = 2.

institutional service, faculty clinical practice, and outside consulting. There was, however, a significant difference among the group means in the public service workload activity, $F(2, 69) = 4.16, p = 0.02$. Faculty at Master's Colleges and Universities reported a higher percent of work time spent on public service ($M = 6.5, SD = 3.4$) than faculty at Doctorate-granting ($M = 3.5, SD = 3.2$) and Specialized ($M = 3.9, SD = 3.2$) Institutions. Results of the ANOVA analysis are presented in Table 18.

In free response Item 25, faculty were asked to comment on the difference (related to workload) between working in an associate's degree program and in a baccalaureate degree program. Most faculty (77%, 88/114) commented *Not Applicable* and indicated that they have never worked in an associate's degree program.

The remaining 23% (26/114) of faculty provided comparisons which related to four common themes comparing workload in associate's and baccalaureate degree programs. The first common theme noted was *institutional differences between associate's and baccalaureate programs* ($n = 19$). Faculty commented that associate's institutions offered better pay, newer facilities, more collaboration among faculty, fewer number of students, fewer research expectations, and more time to teach and mentor students. Faculty also stated that "it is easier to change ways of doing things in the less bureaucratic environment of associate's programs."

In comparison, faculty noted fewer student contact hours, less course preparation time, longer work hours, more committee time, and greater research expectations in baccalaureate institutions. One faculty wrote, "now research is expected [at the baccalaureate institution] but no time is available to focus on that aspect of my job."

Table 18

Mean, Standard Deviation, and ANOVA for the Time Spent on Workload Activities

| Activity | Group | | | <i>F</i> |
|---------------------------------|-------------------------------------|--------------------------|-----------------------|----------|
| | Doctorate- granting ^a | Specialized ^b | Master's ^c | |
| Teaching undergraduate students | | | | |
| <i>M</i> | 56.7 | 55.7 | 41.3 | 2.34 |
| <i>SD</i> | 22.8 | 14.4 | 25.2 | |
| Teaching graduate students | | | | |
| <i>M</i> | 4.3 | 8 | 8.1 | 0.76 |
| <i>SD</i> | 6.7 | 10.8 | 24.3 | |
| Research/scholarship | | | | |
| <i>M</i> | 11 | 8.3 | 8.9 | 0.35 |
| <i>SD</i> | 12 | 7.4 | 8.1 | |
| Professional growth | | | | |
| <i>M</i> | 4.1 | 5.6 | 4.6 | 0.45 |
| <i>SD</i> | 3.7 | 6.2 | 5 | |
| Institutional service | | | | |
| <i>M</i> | 13.3 | 11.4 | 21.5 | 1.37 |
| <i>SD</i> | 14.2 | 15.5 | 24.4 | |

Table 18 (continued)

Mean, Standard Deviation, and ANOVA for the Time Spent on Workload Activities

| Activity | Group | | | <i>F</i> |
|-----------------------------|-------------------------------------|--------------------------|-----------------------|----------|
| | Doctorate- granting ^a | Specialized ^b | Master's ^c | |
| Public service ^d | | | | |
| <i>M</i> | 3.5 | 3.9 | 6.5 | 4.16* |
| <i>SD</i> | 3.2 | 3.2 | 3.4 | |
| Faculty clinical practice | | | | |
| <i>M</i> | 5.5 | 6.2 | 7.6 | 0.26 |
| <i>SD</i> | 8.7 | 7.7 | 12 | |
| Outside consulting | | | | |
| <i>M</i> | 1.5 | 0.9 | 1.6 | 0.06 |
| <i>SD</i> | 5.8 | 1.8 | 3.2 | |

^a*n* = 51. ^b*n* = 9. ^c*n* = 12. *df* = 2.**p* < .05.

The second common theme noted was a *heavier workload in the associate's degree program* ($n = 11$). A greater teaching workload and more committee assignments are specifically noted. One faculty wrote that the workload at associate's programs is "harder and heavier due to the didactic teaching load in both dental hygiene and dental assisting programs." Another faculty cited a "70 – 80 hour work week" in the associate's program.

In contrast, the third common theme was a *lighter workload in the associate's degree program* ($n = 6$). One faculty distinguished that "full-time faculty workload is greater in the baccalaureate program." Another faculty noted that "associate's workload was not as heavy [as baccalaureate program workload] but there aren't the other demands, like research, admissions, and service commitments."

The fourth and less frequent theme was *there are no differences in the workload at associate's and baccalaureate dental hygiene programs* ($n = 4$). One faculty stated the workloads are "comparable although responsibilities differ due to setting." Another faculty replied, "I spent 32 years at a community college and 5 years at a university – it's [workload] about the same."

An additional section for comments was provided at the end of the survey. Most faculty left this section blank (104/114). Ten faculty provided comments which relate to workload. Comments regarding workload included, "load is immense, faculty are stretched so far thin, and faculty are on overload."

Regarding promotion and tenure, faculty commented that "it has become more difficult to obtain tenure" and further noted that "faculty in other departments are changing to the, now available, non-tenure track." Regarding the quality of students, one

faculty commented that the quality of the students is good while another faculty felt there is “too much emphasis on maintaining students who can not uphold standards.”

Summary

In this chapter, the results of the data collected by the *Survey of Full-Time Baccalaureate Dental Hygiene Faculty* were provided. The data was presented as it related to each research question. Characteristics of full-time baccalaureate dental hygiene faculty were reported. Faculty were most often tenured or not on tenure track and most often held the Associate or Assistant Professor rank. The master’s degree was the highest degree reported for the majority of faculty.

About 56% (39/70) of full-time baccalaureate faculty reported that they plan to stop working at a postsecondary institution in ten years or less. Twenty-seven percent (19/70) of faculty reported that they plan to stop working at a postsecondary institution in five years or less. Full-time baccalaureate dental hygiene faculty were most often White and female. The average age of faculty was 50.2 years.

Most faculty reported that they are *Somewhat Satisfied* or *Very Satisfied* with most aspects of their jobs such as their authority to make decisions about courses they teach and course content, the quality of undergraduate students, job security, benefits, opportunity for advancement, effectiveness of faculty leadership, and their job, overall. Most faculty reported that they are *Somewhat Satisfied* or *Somewhat Dissatisfied* with other aspects of their job such as time available for working with students as an advisor, time available for classroom preparation, workload, and time available for keeping current in field. More faculty were dissatisfied than satisfied with their salary.

Most faculty reported that they are *not at all likely* to leave their job to retire from the labor force and *not at all likely* to accept another full-time or part-time position within the next three years. If they decided to leave their current job and pursue another position, faculty reported the following factors as *very important* or *somewhat important* in that decision: salary level, job security, opportunities for advancement, benefits, good instructional facilities, and good geographic location.

Most faculty agreed that teaching effectiveness should be the primary criterion for promotion and disagreed that research/publications should be the primary criterion for promotion. Most faculty agreed that the institution should have a tenure system, that female and minority faculty are treated fairly, and that they would choose a career in academics if they had to do it over again.

The average work week reported by faculty was 50.5 hours. An average of 46.9 hours per week was spent on paid activities and an average of 3.6 hours was spent on unpaid activities. The percent of time faculty spent on institutional activities varied. Faculty reported that the majority of their time is spent on teaching undergraduate students, followed by participation in institution service activities. The average number of courses/sections taught by faculty was 3.1.

Almost half of the faculty described their primary professional research as program/curriculum design and development. Basic research was the next most common type of research. Most faculty were not engaged in funded research. Professional presentations at conferences outnumbered all other types of scholarly activities and publications.

Based on *t* test computations, faculty would prefer to spend significantly more time, than they currently spend, in teaching graduate/first professional students, research/scholarship, professional growth, and public service activities. In contrast, faculty would prefer to spend significantly less time, than they currently spend, in teaching undergraduate students and institutional service activities.

When asked how they would alter their workload, if they could, faculty most frequently responded that they would increase course preparation time, decrease the number of lecture courses per semester, award credit for actual contact hours, increase time for scholarly activity, and increase time for professional growth/mentoring junior faculty.

There were no statistical differences in the mean number of hours (spent on paid and unpaid activities) in the three institutional types. However, there was a significant difference among the group means in the public service workload activity. Faculty in Master's Colleges and Universities reported a higher percent of work time in public service than those in Doctorate-granting and Specialized Institutions. No other significant differences were found between institution types and the remaining workload activities.

When asked to compare the workload in an associate's program to the workload in baccalaureate program, most faculty reported that they have never worked in an associate's degree program. Those that have worked in both program types provided comments that related to four common themes: institutional differences, heavier workload in the associate's degree program, lighter workload in the associate's degree program, and no differences in the workload at associate's and baccalaureate programs.

In the next and final chapter, a summary of the research project and a brief analysis of major research findings are presented. Findings of this study are discussed as they relate to the original review of the literature, detailed in Chapter 2. Conclusions of the research findings and implications of this study for the field of dental hygiene are also presented in the next chapter. The researcher provided recommendations for further research and explained how the results of this study will be disseminated. Finally, the researcher culminated the dissertation with personal reflections of the research.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

This study began after approvals from institutional review boards were obtained and after gathering panel review feedback regarding the instrument. A 25-item mail questionnaire, *Survey of Full-Time Baccalaureate Dental Hygiene Faculty*, was sent to program administrators at the 29 baccalaureate dental hygiene programs. The program administrators were responsible for the distribution, bulk collection, and return of faculty surveys. Total program response rate was 89.6% (26/29) and total faculty response rate was 68.3% (114/167).

The overarching research question was, “What are the characteristics and workload of full-time faculty in baccalaureate dental hygiene programs?” Four specific research questions addressed faculty characteristics and workload. The next section presents the major findings of each research question.

Major Research Findings

Characteristics of full-time baccalaureate dental hygiene faculty were reported in response to Research Question 1. Faculty were most often tenured or not on tenure track and most often held the Associate or Assistant Professor rank. The master’s degree was the highest degree reported for the majority of faculty.

About 56% (39/70) of full-time baccalaureate faculty reported that they plan to stop working at a postsecondary institution in ten years or less. Twenty-seven percent (19/70) of faculty reported that they plan to stop working at a postsecondary institution in five years or less. Full-time baccalaureate dental hygiene faculty were most often White and female. The average age of faculty was 50.2 years.

Most faculty reported that they are *Somewhat Satisfied* or *Very Satisfied* with most aspects of their jobs such as their authority to make decisions about courses they teach and course content, the quality of undergraduate students, job security, benefits, opportunity for advancement, effectiveness of faculty leadership, and their job, overall. Most faculty reported that they are *Somewhat Satisfied* or *Somewhat Dissatisfied* with other aspects of their job such as time available for working with students as an advisor, time available for classroom preparation, workload, and time available for keeping current in field. Faculty were more dissatisfied than satisfied with their salary.

Most faculty reported that they are *not at all likely* to leave their job to retire from the labor force and *not at all likely* to accept another full-time or part-time position within the next three years. If they decided to leave their current job and pursue another position, faculty reported the following factors as *very important* or *somewhat important* in that decision: salary level, job security, opportunities for advancement, benefits, good instructional facilities, and good geographic location.

Most faculty *agreed* that teaching effectiveness should be the primary criterion for promotion and *disagreed* that research/publications should be the primary criterion for promotion. Most faculty *agreed* that the institution should have a tenure system, that female and minority faculty are treated fairly, and that they would choose a career in academics if they had to do it over again.

The institutional responsibilities and workload of faculty were reported in response to Research Question 2. The average work week reported by faculty was 50.5 hours. An average of 46.9 hours per week was spent on paid activities and an average of 3.6 hours was spent on unpaid activities. Faculty reported that the majority of their time

is spent on teaching undergraduate students, followed by participation in institution service activities. The average number of courses/sections taught by faculty was 3.1.

Almost half of the faculty described their primary professional research as program/curriculum design and development. Basic research was the next most common type of research. Most faculty were not engaged in funded research. Professional presentations at conferences outnumbered all other types of scholarly activities and publications.

A comparison of the amount of time faculty spent and the amount of time faculty preferred to spend on various activities was reported in response to Research Question 3. Based on *t* test computations, faculty would prefer to spend significantly more time, than they currently spend, in teaching graduate/first professional students, research/scholarship, professional growth, and public service activities. In contrast, faculty would prefer to spend significantly less time, than they currently spend, in teaching undergraduate students and institutional service activities.

When asked how they would alter their workload, if they could, faculty most frequently responded that they would increase course preparation time, decrease the number of lecture courses per semester, award credit for actual contact hours, increase time for scholarly activity, and increase time for professional growth/mentoring junior faculty.

The differences in faculty workload, when considering institution types, were reported in response to Research Question 4. There were no statistical differences in the average number of hours (spent on paid and unpaid activities) in the three institutional types. However, there was a significant difference among the group means in the public

service workload activity. Faculty in Master's Colleges and Universities reported a higher percent of work time in public service than those in Doctorate-granting and Specialized Institutions. No other significant differences were found between institution types and the remaining workload activities.

When asked to compare the workload in an associate's program to the workload in baccalaureate program, most faculty reported that they have never worked in an associate's degree program. Those that have worked in both program types provided comments that related to four common themes: institutional differences, heavier workload in the associate's degree program, lighter workload in the associate's degree program, and no differences in the workload at associate's and baccalaureate programs.

Discussion of Research Findings: Faculty Characteristics

To date, only one study (Glick, 1990) has been published that specifically assessed the rank and tenure status of full-time baccalaureate dental hygiene faculty. Glick reported that 10% of faculty held the instructor rank and 37% of faculty held the assistant professor rank. The findings in this current study were similar to those, reported by Glick, for the instructor and assistant professor ranks (7% and 34%, respectively). The researcher speculates that the stagnation of instructor and assistant professor ranks, from 1990 to 2005, is either due to the scarcity of new faculty entering dental hygiene education and/or due to the short duration of new faculty careers in dental hygiene education. Junior faculty may not remain in their positions long enough to earn promotions to higher ranks.

In Glick's (1990) survey of full-time baccalaureate dental hygiene faculty, 43% of the faculty were associate professors and 5% were full professors. Fifteen years later, this

current study of full-time baccalaureate dental hygiene faculty found the exact combined percent of associate and full professors (48%). However, a contrast is noted. The current study found fewer associate professors (35%) and more full professors (13%) than Glick did. The researcher speculates that the promotion of existing faculty from associate to full professor, since Glick's study, is the reason for the shift to more full professors and less associate professors in this current study.

The researcher's speculation is further supported by faculty responses to the item which asked faculty to compare their workload in associate's degree programs to their workload in baccalaureate degree program. Only 10 of the 114 faculty reported a difference in the programs and provided comments to this item. The remaining 104 faculty responded that they have never worked in an associate's degree program. This leads the researcher to think that many of the full-time baccalaureate dental hygiene faculty, surveyed by Glick (1990), may be the same faculty surveyed in the current study.

In both the Glick (1990) and the current study, about 60% of the faculty reported that they were either tenured or on tenure track. However, in the Glick study, 12% of the faculty were not on tenure track and 28% had no tenure designation at their institution. In this current study, 40.4% of the faculty are not on tenure track and 100% of the faculty indicated that their institution has tenure designation. The researcher believes the threefold increase in the number of faculty not on tenure track, from 1990 to 2005, is due to barriers experienced by faculty in meeting the requirements for tenure.

Barriers to tenure, found in the current study, were large teaching loads/contact hours and heavy institutional service commitments. Although faculty reported levels of satisfaction with most aspects of their job, they were divided between *somewhat satisfied*

and *somewhat dissatisfied* with the time they had for advising students, preparing for courses, and with keeping current in the field. Dental hygiene faculty reported having little time available for research/scholarship and professional growth activities, which are often deciding factors in tenure decisions. Results of Research Question 3, which assessed faculty time spent and faculty time preferred on institutional activities (see Table 15), support this assumption. One faculty specifically commented, “It has become more difficult to obtain tenure at our institution. Most of the clinical faculty in other departments have changed to the, now available, non-tenure track.”

Minimal requirements for baccalaureate dental hygiene faculty appointment were discussed in the Glick (1990) study but an assessment of degrees held by faculty was not included. There is no comparative data available which describes the actual academic preparation of baccalaureate dental hygiene faculty. The current study provides a foundation for gathering this information.

The gender demographic of dental hygiene faculty has changed very little since the inception of the profession. In 1902, Dr. Wright was the first to suggest that *women* be trained to clean teeth as a subspecialty of dentistry. In 1994, Huntley and Minneman reported that 87% of dental hygiene faculty were female and in 1998, Haden reported that dental hygiene faculty were over 95% female.

In the most recently published study of dental hygiene faculty, Nunn et al. (2004) reported that 93% of dental hygiene faculty are female. All of these reports included faculty in associate’s degree and baccalaureate degree programs. In the current study of full-time baccalaureate dental hygiene faculty, the percent of female faculty (96%) is even greater than percents previously reported. To date, only one study has been

published (Faust, 1999) that discusses the experiences of male dental hygienists in the female dominated profession. The researcher believes the paucity of literature regarding male dental hygienists is because there are so few male faculty available to share their experiences and perceptions through publication.

Similar to gender, ethnicity and race of dental hygiene faculty has changed very little since the birth of the discipline. Holt (1998) and Nunn et al. (2004) found that over 90% of dental hygiene faculty are White (96% and 92%, respectively). The current study, limited to full-time baccalaureate dental hygiene faculty, found that 94% of faculty are White. In this study and in previous studies mentioned, other non-White races are underrepresented (less than 10% combined) in the dental hygiene profession. There are several studies which provide numerical counts of non-White faculty and students. However, there is a paucity of literature regarding the experiences of non-White dental hygienists. Again, the researcher speculates that the reason for this is because there are so few faculty, from racial minority groups, available to share their experiences and perceptions through publication.

The average age of dental hygiene faculty in this study, 50.2 years, was greater than the average faculty age, 46 years, reported by both Haden et al. (2001) and Nunn et al. (2004). Over half of the faculty (56%) are over age 50. Consequently, 56% of full-time baccalaureate faculty reported that they plan to stop working at a postsecondary institution in ten years or less. In a survey of dental hygiene faculty from all degree programs, Nunn et al. (2004) reported a smaller number (33%) of faculty over age 50. These findings suggest that faculty in baccalaureate dental hygiene programs may be older than those in associate's degree programs.

Regional accreditation standards for Doctorate-granting Institutions, Specialized Institutions, and Master's Colleges and Universities often require at least a master's degree for full-time faculty appointments. In Associate's Colleges, a baccalaureate degree is often acceptable for full-time faculty appointment. In the current study of full-time baccalaureate faculty, 90.4% of faculty have earned a master's degree, doctorate degree, or a first professional degree. Only 9.6% of full-time baccalaureate dental hygiene faculty reported the bachelor's as their highest degree. The researcher thinks this distinction may be the reason why faculty in baccalaureate programs are older than faculty in associate's degree programs. The combination of aging and retiring faculty creates a quagmire for the future of dental hygiene education, especially in baccalaureate programs.

The researcher thinks the scarcity of younger faculty entering dental hygiene education is reflective of the public perception of dental hygiene. Many people are not aware of the vast opportunities available in dental hygiene, beyond clinical practice. This sentiment is echoed by Dominick (2004) who suggested that dental hygiene educators must provide baccalaureate and master's level education programs, create appropriate specializations in dental hygiene education, public health, and expanded function.

The researcher also hypothesizes that the lack of diversity and aging of full-time baccalaureate dental hygiene faculty is reflective of the generation. Baccalaureate education programs in dental hygiene did not materialize until 1939. The second generation of baccalaureate dental hygiene education is just beginning. Results from this study will assist the profession in projecting faculty needs for the second generation of baccalaureate dental hygiene programs.

Discussion of Research Findings: Institutional Responsibilities and Workload

In Glick's (1990) survey of baccalaureate dental hygiene faculty, only the teaching component of workload was documented. No other studies related to dental hygiene faculty exist in the literature. Therefore, the instructional responsibilities and workload reported in this study will provide comparative data for future studies of baccalaureate dental hygiene faculty.

In this study, baccalaureate dental hygiene faculty reported working 50.5 hours per week in paid and unpaid institutional activities which are similar to those reported in national studies: 48-52 hours by the American Association of University Professors (AAUP, 2000) and 49-53 hours by Allen (1996). On the *1999 National Study of Postsecondary Faculty (NSOPF:99)*, faculty reported that they spent 57% (30.4 hours out of a 53.4 hour work week) on teaching activities. In comparison, full-time dental hygiene faculty reported that they spent 61% (30.8 hours out of a 50.5 hour work week) of their time on teaching activities.

However, when teaching activities were stratified according to institution type, *NSOPF:99* faculty at Doctorate-granting Institutions spent less time teaching (47%) than did faculty at other types of institutions (63-73%). This is not, however, the case for dental hygiene faculty in this study. The teaching workload of full-time baccalaureate dental hygiene faculty in Doctorate-granting Institutions (61%) and Specialized Institutions (56.5%) was higher than that reported by faculty in Master's Colleges and Universities (49.4%).

The average teaching contact hours, reported by baccalaureate dental hygiene faculty in this study, far exceeds the recommendations posed by the AAUP (2000). The

AAUP specified maximum and preferred teaching hours at the undergraduate level as 12 hours per week maximum, and 9 hours per week preferred. Full-time dental hygiene faculty, in this study, averaged 28.7 hours per week teaching undergraduate students.

In this study, dental hygiene faculty reported that they spent 4.6% of their time (4.8 hours out of a 50.5 hour work week) on research/scholarly activities which is less than half of the time reported by *NSOPF:99* faculty (15%, 8 hours out of a 53.4 hour work week). When stratified by institution type, *NSOPF:99* faculty in Doctorate-granting Institutions spent 19.7% of their time on research, compared to *NSOPF:99* faculty who worked in other institution types (4-10% research time).

Braxton and Favero (2002) described difficulties in assessing faculty scholarship performance because traditional methods often relied on the number of publications, the form of publication, and the prestige of the publication source. Boyer's (1990) description of the domains of scholarship also relies on faculty publications. However, the scholarly activity of baccalaureate dental hygiene faculty in this study showed a greater average of professional presentations (26) than publications (6.8). Tolle-Watts and Shuman (1991) suggested a research model to increase the research productivity of dental hygiene faculty and hypothesized that recent closings of dental hygiene schools within universities might be linked to the low research productivity of dental hygiene faculty.

Discussion of Research Findings: Time Spent and Time Preferred

Favero (2002) and Fairweather (2002b, 2004) noted that faculty reward systems are heavily based on research productivity and faculty are often confused about expectations for research. This sentiment is echoed in this study. Dental hygiene faculty

reported that they would prefer to spend more time on teaching graduate students, research/scholarship, and professional growth. Dental hygiene faculty preferred to spend less time on teaching undergraduate students and on institutional service activities. Several comments were made by faculty that these activities (teaching and institutional services) are often not rewarded in considerations for promotion and tenure.

In some research intensive institutions, AAUP noted that a greater reduction in teaching workload has occurred to accommodate the time required for faculty research activities. Although 69.3% (79/114) of the baccalaureate dental hygiene faculty surveyed in this study work in Doctorate-granting Institutions, the results of this study do not indicate a decrease in their workloads to accommodate their research productivity. As mentioned before, a heavy teaching workload creates barriers to promotion and tenure of faculty when research time is not adequately allocated.

Discussion of Research Findings: Workload in Different Institution Types

Dental hygiene faculty in Master's Colleges and Universities reported a significantly higher percent of time in public service activities than faculty in Doctorate-granting and Specialized Institutions. Faculty time spent on public service activities was significantly less in Doctorate-granting Institutions than in Master's Colleges and Universities. These results closely mirror those reported nationally by Boyer (1990) and on the *NSOPF:99*. In less research intensive institution types, a greater expectation for public service is typical of institutional mission.

On the *NSOPF:99* and in other studies of faculty workload, the researcher noted there were more significant differences in workload when considering the type of institution. The researcher believes the indifference between institutional types when

considering components of dental hygiene faculty workload is directly related to the accreditation standards for dental hygiene programs.

The American Dental Hygienists' Association (ADHA, 2005) has compiled a report called *Focus on Advancing the Profession*. In the report, the ADHA recommends the baccalaureate degree as the entry level degree. The focus of the report is the development of an advanced dental hygiene practitioner. However, the report does not address how enough baccalaureate programs, to support the workforce demand for dental hygienists, can evolve out of the paucity of advanced education (baccalaureate, master's, and doctorate) that currently exist. The missions and degrees awarded, according to the institution type, seem to be overlooked in the ADHA report.

As mentioned in the review of the literature, all dental hygiene degree programs (certificate, associate's, and bachelor's) must meet the same accreditation standards, outlined by the Commission on Dental Accreditation (1998). Although not intentionally prescriptive, the accreditation standards for dental hygiene education programs outline student instructional time in clinics and in laboratory sessions. Accreditation standards also outline faculty to student ratios for these sessions. For dental hygiene education programs and faculty, these strict standards result in heavy clinical teaching/student instructional time/contact hours in all dental hygiene degree programs. In associate's degree programs, faculty may experience a heavier teaching workload but they do not have the research expectations that baccalaureate dental faculty do.

The researcher believes that the lack of distinction between dental hygiene degrees have forced baccalaureate faculty into overload as they try to balance a demanding teaching load, along with research, service, and clinical practice activities.

Decreasing the teaching load of dental hygiene faculty to allow ample time for scholarship and professional growth would require substantial support from senior administration. Additional teaching faculty would need to be hired to relieve full-time faculty. This poses a dilemma when budgetary constraints are already being faced by institutions throughout the United States.

Grams and Christ (1992) explained that the unquestioning acceptance of institutional norms may not be in the best interest of the nursing discipline and that the contributions and values unique to nursing, such as caring and service, contrast with institutional values of production. The researcher wholeheartedly agrees that this statement by Grams and Christ is also related to the dental hygiene discipline. However, the researcher realizes that the closure of baccalaureate dental hygiene programs has often been the 'fix' for programs which required more resources than the institution was willing to provide.

Conclusions

Four broad conclusions were made by the researcher, which relate to the findings of this study:

1. There is a lack of diversity within the dental hygiene profession in regards to underrepresented minorities and males.
2. There will be a noticeable shortage of dental hygiene faculty as current faculty age and retire.
3. There is a lack of information (for administrators, current and prospective faculty), regarding dental hygiene faculty characteristics, workload, working conditions and needs.

4. There is a lack of information (for administrators, current and prospective faculty), regarding institutional responsibilities and reward systems at various types of institutions.

Implications

Results of this study yield several implications for dental hygiene education. Knowledge of these results is especially useful for the American Dental Education Association (ADEA), which nationally represents dental and allied dental education, for the American Dental Hygienists' Association (ADHA), which nationally represents the interests of all dental hygienists, and for the American Dental Association (ADA), which annually surveys dental hygiene education programs and provides accreditation standards for dental hygiene education through their Commission on Dental Accreditation (1998).

The ADHA and the ADEA are the national voices for dental hygiene and dental hygiene education. Previous studies discussed the shortage and aging of dental hygiene faculty. Based on the demographic results of this current study, which confirmed the aging and retirement plans of full-time dental hygiene faculty, national organizations can assist the profession. The ADEA and ADHA can co-sponsor recruitment campaigns for prospective dental hygienists that include dental hygienists, from diverse ethnic and racial groups, working in non-traditional/non-clinical roles such as education and research. Television, radio, and print media could be used to get this message to a larger diverse population.

The researcher has contacted the ADHA's Director of Dental Hygiene Education and requested that associate's degree programs and baccalaureate degree programs be listed separately in the *Education and Careers* section on the website. During this study,

the researcher found that if a prospective student desired to specifically earn a baccalaureate degree in dental hygiene, the ADHA website would not be helpful in distinguishing baccalaureate programs from associate's programs.

This is an important implication because advanced degrees (baccalaureate and master's) are required by the Commission on Dental Accreditation (1998) for all full-time dental hygiene faculty. Published information about the pipeline leading from entry-level to graduate dental hygiene education should be clear and distinguished for prospective students. The researcher was assured, by the ADHA director, that this suggestion would take effect within a month.

Another short-term implication of this study can be implemented by the American Dental Association (ADA). The researcher will suggest that the ADA include more data on dental hygiene faculty characteristics and workload in their annual assessment of accredited dental hygiene programs. As noted in the introduction of the current study, to maintain accreditation, 100% percent of dental hygiene programs must complete and submit the annual ADA survey.

Results of this study will provide baseline data for new ADA survey items that does not currently exist in the literature. Although creation of an annual database does not guarantee action, it would provide a foundation and a mechanism for more closely monitoring the current dynamics of dental hygiene faculty which includes faculty characteristics and workload.

The results of this study also have useful implications for program administrators of all dental hygiene program types (entry level associate's and baccalaureate degree programs, baccalaureate degree completion programs, master's degree programs). As

mentioned in Chapter 1, program administrators are directly responsible for ensuring the professional development and career growth of faculty, as well as assigning institutional activities and balancing faculty workload.

Program administrators can use items from the *Survey of Full-Time Dental Hygiene Faculty* to create templates for the annual evaluation of faculty. Objective measures related to faculty activities in teaching, research, service, and clinical practice can be obtained as well as a comparison of faculty time spent and time preferred in each of these activities. The job satisfaction and opinions items may also be used by program administrators to objectively and consistently evaluate the working conditions and needs of dental hygiene faculty.

The results of this research are useful to all current dental hygiene faculty, who might consider accepting another full-time or part-time employment opportunity in a different program or institution type. Faculty can generate thoughtful interview questions through review of the institutional responsibilities and workload of full-time faculty in this study.

In graduate dental hygiene education programs and in the mentoring of junior faculty, it is critical that the connection between faculty workload and institution type and mission is acknowledged. From their own experiences as students, new dental hygiene faculty will often have an accurate perception of the didactic and clinical teaching workload required in dental hygiene programs. However, they may not be as aware of the additional institution responsibilities and reward system for promotion and tenure.

Findings of this study related to institutional responsibilities and percent of time spent and preferred in various workload components, will guide faculty in the interview

process. In the interview process, new dental hygiene faculty will often have limited experiences within only one or two programs where they were educated.

Finally, the results of this study are useful to other administrators in the institution, including deans, presidents, chancellors, etc. Institution administrators, who do not have experience in dental education, often do not fully understand the dynamics of dental hygiene education. This lack of understanding is echoed in this research where faculty commented on how they would alter their workload, if they could. For instance, workload formulae and teaching credits/units are often implemented without consideration of the clinical contact hours and student instructional time required in dental hygiene clinics and laboratory exercises.

In institutions with Schools of Medicine, the faculty workload and activities of the School of Medicine faculty often set the tone for faculty who work in other health disciplines. However, it is important for senior administrators to realize that dental hygiene students do not get their basic clinical education through lengthy extramural clinical rotations the way that medical students do (outside the institution and supervised by hospital/medical center staff). In contrast, dental hygiene students receive their basic clinical education at the institution and are directly supervised by faculty who are employed by the institution.

Recommendations

The following recommendations are suggested, based on the findings of this study:

1. The American Dental Association should include dental hygiene faculty information in their annual surveys to keep the discipline abreast of future trends such as the aging and retiring of faculty and institutional expectations in

the areas of research, teaching, service, and clinical practice. A real time database is needed to closely monitor trends that directly affect dental hygiene education: closing and opening of new programs, new degree offerings, faculty status, needs, and working conditions.

2. Increase the number of baccalaureate prepared dental hygiene graduates by: converting all associate's degree programs that are currently in institutions that grant the baccalaureate degree, into entry level baccalaureate programs.
3. Increase the number of baccalaureate prepared dental hygiene graduates by creating articulation agreements between baccalaureate and associate's degree programs for degree completion for registered dental hygienists who are graduates of associate's degree programs.
4. Create master's degree, national curriculum guidelines, to prepare dental hygienists for faculty roles in all institutional types, which include: educational methodology, service learning, healthcare administration, biostatistics, research design, and grant writing.
5. Implement a national media campaign, showing dental hygienists working in non-clinical roles such as research, education, etc.
6. Create and enforce objective workload measures for dental hygiene faculty which takes student instructional time/contact hours into account. This can serve as an objective tool for presenting dental hygiene faculty personnel needs to university administrators.

Future Studies

For future studies, the researcher recommends the following investigations of dental hygiene faculty:

1. A comparison of dental hygiene faculty workloads in associate's degree and baccalaureate degree programs.
2. An accounting of scholarly contributions by dental hygiene faculty.
3. A survey of dental hygiene clinical practice models for determining dental hygiene faculty involvement in patient service roles.
4. A longitudinal assessment of the characteristics and workload of baccalaureate dental hygiene faculty, especially within the next ten years when many of the current faculty will retire from the labor force.

Dissemination

The researcher disseminated research findings in a Lunch and Learn format at the 39th Annual Allied Dental Program Directors' Conference: A Summit on Allied Dental Education. The program proposal was accepted as a 'work in progress' for this national meeting sponsored by the American Dental Education Association.

The researcher also plans to generate at least three original journal articles from the dissertation. One publication will focus on faculty characteristics. The second one will focus on the research productivity of faculty. The final study will focus on the institutional responsibilities and workload of dental hygiene faculty. All three articles will be submitted to the *Journal of Dental Education*, a national refereed publication of the American Dental Education Association.

Concluding Thoughts

The current study has begun to address the recommendation by Nunn et al. (2004) to obtain a clearer idea of the allied dental faculty demographics, working conditions, and needs. This study has helped the researcher to think beyond the discipline when addressing issues related to dental hygiene education. The role of the institution in the dynamics of faculty activities is more evident to the researcher than it was before this study.

Faculty at the American Dental Education Association conference were extremely interested in the results of this study and agreed with the researcher that this information is critical for assessing the needs and working conditions of dental hygiene faculty. Similarly, in conversations with ADEA senior administrators, the researcher has been invited to promptly submit the results of this study for publication. The researcher feels fortunate to have produced a dissertation that can truly have an impact on the educational administration of dental hygiene.

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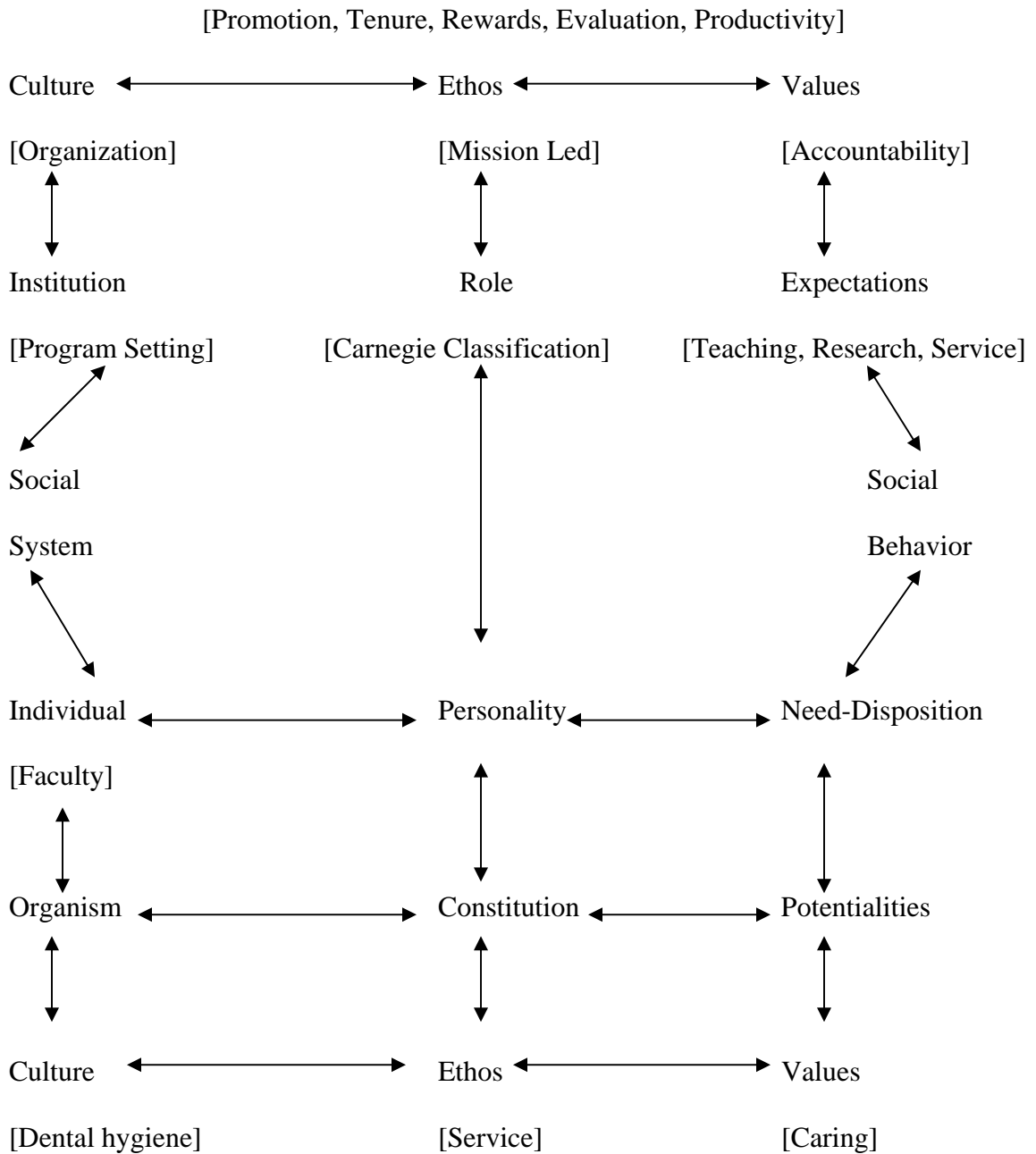
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APPENDICES

APPENDIX A

GUBA AND GETZELS (1957) *MODEL OF BEHAVIOR IN SOCIAL SYSTEMS* WITH
COMPARISONS TO THE DENTAL HYGIENE DISCIPLINE

NOMOTHETIC DIMENSION



IDIOGRAPHIC DIMENSION

[Discipline-Specific]

APPENDIX B

INITIAL ELECTRONIC MAIL TO PROGRAM ADMINISTRATORS

Dear <Program Administrator>,

I am a doctoral candidate in the College of Education at Georgia Southern University and an Associate Professor and Chair at the Medical College of Georgia, Department of Dental Hygiene. I am conducting research which will assess the characteristics and workload of full-time faculty in baccalaureate dental hygiene programs.

The last survey of baccalaureate dental hygiene faculty was conducted by Glick in 1990. Glick assessed the teaching loads of faculty but did not document allocation of time to other roles such as research, service, and clinical practice. This study can provide some current empirical data for future studies and administrative assessment of baccalaureate dental hygiene faculty workload.

I am interested in obtaining the participation of full-time faculty in all baccalaureate dental hygiene programs. Participation of your faculty would require answering a 25-item questionnaire which will take about 20 minutes to complete. Faculty responses to the study will be confidential and data will be reported in ways that will not identify individuals or specific schools.

I will call you within the week to solicit your dental hygiene program's participation in the study. I look forward to talking with you.

Sincerely,

<E-signature>

APPENDIX C

TELEPHONE DIALOGUE WITH PROGRAM ADMINISTRATORS

Hello <Program Administrator>,

My name is Marie Collins and I am conducting research which will assess the workload of full-time baccalaureate dental hygiene faculty. I sent you an email on Monday describing the study and its significance. I am calling to follow up on that email. May I have a few minutes of your time?

Your program is one of only 32 active baccalaureate dental hygiene programs. I am calling to see if you would be willing to assist me in distributing the questionnaire to the appropriate faculty. I am interested in getting responses from all full-time faculty that hold primary teaching assignments in your undergraduate entry level dental hygiene program. I will send you a package with the questionnaires and directions for distribution. I will also include a prepaid return envelope so the surveys may be submitted in bulk.

Thanks so much for your help with this study. I plan to share the findings of this study through presentation and publication.

APPENDIX D

EXPLANATORY LETTER TO PROGRAM ADMINISTRATORS

<Date>

Dear <Program Administrator>,

As you are aware from our telephone conversation, I am conducting research which will assess the workload of full-time faculty in baccalaureate dental hygiene programs.

Thank you for your willingness to assist me with the distribution of the enclosed cover letters, questionnaires, and envelopes to each full-time faculty in your program. For this study, full-time faculty are defined as persons with faculty appointments in the dental hygiene program even though their salaries may be paid from a number of funds. These full-time faculty should hold primary teaching assignments in your entry level baccalaureate dental hygiene program.

Faculty participation in the study is voluntary. There are no direct benefits or risks associated with your faculty's participation. The 25-item questionnaire should take about 20 minutes to complete. The cover letter attached to each questionnaire directs willing participants to complete the instrument and seal it in the envelope provided. Faculty should return their survey to you for bulk return. Faculty responses to the study will be confidential and data will be reported in ways that will not permit identifying individuals, specific schools, or specific programs.

Again, thank you for your participation and willingness to assist me. If you have questions or concerns about this research, or need additional questionnaires, please do not hesitate to email me at mcollins@mcg.edu or call me at (706)721-2938.

Sincerely,

Marie A. Collins, RDH, MS
Associate Professor & Chair

APPENDIX E
COVER LETTER TO FACULTY

<Date>

Dear Dental Hygiene Faculty,

I am conducting research which will address the characteristics and workload of full-time faculty in baccalaureate dental hygiene programs. In 1990, Glick reported teaching loads but this research has not found a recent analysis of dental hygiene faculty characteristics or total workload.

Attached, you will find a survey that I have sent to all full-time faculty in the 32 active baccalaureate dental hygiene programs. I have asked each program administrator to assist me in the distribution and return of the surveys.

I would very much appreciate your participation since an adequate response is crucial to the validity of this research. If you are willing to participate, please complete the 25-item survey which will take about 20 minutes to complete. Seal your completed survey in the envelope provided and return to your program administrator for bulk mailing. Please return the questionnaire within 1 week of receipt.

Please do not sign the survey. No personal identifiers will be used. Your response to the study will be confidential and data will be reported in ways that will not permit identification of individual faculty, schools, or programs.

There are no risks or benefits associated with your participation. Completion and return of the survey implies that you agree to participate and your data may be used in this research. I plan to share the findings of this study through presentation and publication.

Thank you in advance for your participation and willingness to help. If you have questions or concerns about this research, or need a new questionnaire, please do not hesitate to email me at mcollins@mcg.edu or call me at (706)721-2938.

Sincerely,

Marie A. Collins
Associate Professor & Chair

APPENDIX F

SURVEY OF FULL-TIME BACCALAUREATE DENTAL HYGIENE FACULTY

1. **During the 2005 Fall Term, did this institution consider you to be employed part-time or full-time?**

Part-time

Full-time

2. **Which of the following best describes your academic rank, title, or position at this institution during the 2005 Fall Term? (Mark one.)**

N/A. Not applicable: no ranks designated at this institution.

Professor

Associate Professor

Assistant Professor

Instructor

Lecturer

Other title. *Please specify:* _____

3. **What was your tenure status at this institution during the 2005 Fall Term?**

Tenured.

On tenure track but not tenured

Not on tenure track/although institution has a tenure system

No tenure system at this institution

4. **Please list below information about the degrees you have received.** Do not list honorary degrees. If you have more than one degree at the same level, please list the most recent degree.

Certificate or Diploma (*Specify major.*)

Associate's degree (*Specify major.*)

Bachelor's degree (*Specify major.*)

Master's degree (*Specify major.*)

Doctoral degree (*Specify major.*)

First professional degree (*Specify major.*)

5. Are you currently working toward a degree?

Yes

No (**SKIP** Question 6, **GO TO** Question 7.)

6. Indicate the type of degree and major you are currently working toward.

Certificate or Diploma (*Specify major.*)

Associate's degree (*Specify major.*)

Bachelor's degree (*Specify major.*)

Master's degree (*Specify major.*)

Doctoral degree (*Specify major.*)

First professional degree (*Specify major.*)

7. Are you...

Male

Female

8. In what year were you born? (*Write in year.*)

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

9. What is your ethnicity? (*Mark one.*)

Hispanic or Latino

Not Hispanic or Latino

10. What is your race? (Mark one or more.)

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White

11. On average, how many hours per week did you spend at each of the following kinds of activities during the 2005 Fall Term? (Write in average number of hours. If not sure, give your best estimates. If none, write in "0".)

| | Average number of hours per week |
|---|---|
| a. All paid activities at this institution (e.g., teaching, clinical, service, class preparation, research, administration) | <input type="text"/> <input type="text"/> |
| b. All unpaid activities at this institution | <input type="text"/> <input type="text"/> |
| c. Any other paid activities outside this institution (e.g., consulting, working on other jobs) | <input type="text"/> <input type="text"/> |
| d. Unpaid (pro bono) professional service activities outside this institution | <input type="text"/> <input type="text"/> |

12. **In column A, please indicate the percentage of your work time spent in the 2005 Fall Term into several categories. I realize the categories are not mutually exclusive (e.g., research may include teaching; preparing a course may be part of professional growth). I ask, however, that you allocate as best you can the percentage of your time spent in activities whose primary focus falls within the indicated categories. In column B, indicate the percentage of your work time preferred in each of the listed categories. Time spent with colleagues should be allocated to a specific activity.**

Please be sure that the percentages you provide add up to 100%

| | A. % of Work Time SPENT | B. % of Work Time PREFERRED |
|---|--|--|
| a. <u>Teaching Undergraduate Students</u> (including teaching; evaluation; course preparation; developing new curricula; advising or supervising students; student clinical supervising; working with student organizations) | <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> |
| b. <u>Teaching Graduate or First Professional Students</u> (including teaching; evaluation; course preparation; developing new curricula; advising or supervising students; supervising student teachers and interns; student clinical supervising; working with student organizations) | <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> |
| c. <u>Research/Scholarship</u> (including research; reviewing or preparing articles or books; attending or preparing for professional meetings or conferences; reviewing proposals; seeking outside funding; presenting continuing education courses) | <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> |
| d. <u>Professional Growth</u> (including taking courses; pursuing an advanced degree; other professional development activities; such as academic activities to remain current in discipline) | <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> |
| e. <u>Institutional Service</u> (administration including departmental or institution-wide meetings or committee work) | <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> |
| f. <u>Public Service</u> (including services or consulting to prospective students, clients, or patients; paid or unpaid community or public service; service to professional societies/associations) | <input type="text"/> <input type="text"/> <input type="text"/> | <input type="text"/> <input type="text"/> <input type="text"/> |

- g. Faculty Clinical Practice (including clinical/patient care activities to remain current in discipline)
- h. Outside Consulting, Freelance Work, Other Outside Work, Other Non-Teaching Professional Activities (other activities or work not listed in above categories)
- 100% 100%

13. During the 2005 Fall Term, what was the total number of classes you taught at this institution?

NA. Not applicable; no classes taught.

Number of classes/sections (i.e., credit and non-credit)

14. How would you describe your primary professional research, writing, or creative work during the 2005 Fall Term?

Basic research

Applied or policy-oriented research or analysis

Literary, performance, or exhibitions

Program/Curriculum design and development

Other: _____

15. During the 2005 Fall Term were you engaged in any funded research or funded creative work? Include any grants, contracts, or institutional awards. Do not include consulting services.

Yes

No

16. How many of each have you presented/published/etc. during your entire career? *For publications, please include only works that have been accepted for publication. Count multiple presentations/publications of the same work only once. Include electronic publications that are not published elsewhere in the appropriate categories.*

a. Articles published in refereed professional or trade journals; creative works published in juried media

b. Articles published in non-refereed professional or trade journals; creative works published in nonjuried media or in-house newsletters

c. Published reviews of books, articles, or creative works; chapters in edited volumes

d. Textbooks, other books; monographs; research or technical reports disseminated internally or to clients

e. Presentations at conferences, workshops, etc.; exhibitions or performances in the fine or applied arts

f. Other, such as patents or computer software products

17. How satisfied or dissatisfied are you with each of the following aspects of your instructional duties at this institution?

| | Very Dissatisfied | Somewhat Dissatisfied | Somewhat Satisfied | Very Satisfied | Not Applicable |
|--|--------------------------|--------------------------|--------------------------|--------------------------|-------------------|
| a. The authority I have to make decisions about content and methods in the courses I teach | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| b. The authority I have to make decisions about what courses I teach | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

- | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| c. The authority I have to make decisions about other (non-traditional) aspects of my job | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| d. Time available for working with students as an advisor, mentor, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| e. Time available for class preparation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| f. Quality of undergraduate students whom I have taught here | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Quality of graduate students whom I have taught here | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

18. How satisfied or dissatisfied are you with the following aspects of your job at this institution?

- | | Very Dissatisfied | Somewhat Dissatisfied | Somewhat Satisfied | Very Satisfied | Not Applicable |
|--|--------------------------|--------------------------|--------------------------|--------------------------|----------------|
| a. My workload | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| b. My job security | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| c. Opportunity for advancement in rank at this institution | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| d. Time available for keeping current in my field | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

- e. The effectiveness of faculty leadership at this institution (e.g., academic senate, faculty councils, etc.)
- f. Freedom to do outside consulting
- g. My salary
- h. My benefits, generally
- i. Spouse or partner employment opportunities in this geographic area
- j. My job here, overall

19. During the next three years, how likely is it that you will leave this job to:

- | | Not at All
Likely | Somewhat
Likely | Very
Likely |
|---|--------------------------|--------------------------|--------------------------|
| a. Accept a <i>part-time</i> job at a <i>different</i> postsecondary institution? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Accept a <i>full-time</i> job at a <i>different</i> postsecondary institution? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Accept a <i>part-time</i> job <i>not at a</i> postsecondary institution? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Accept a <i>full-time</i> job <i>not at a</i> postsecondary institution? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Retire from the labor force? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

20. At what age do you think you are most likely to stop working at a postsecondary institution?

Years of age

Don't Know

21. If you were to leave your current position at this institution to accept another position inside or outside of academia, how important would each of the following be in your decision?

| | Not Important | Somewhat Important | Very Important | Not Applicable |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Salary level | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| b. Tenure-track/tenured position | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| c. Job security | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| d. Opportunities for advancement | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| e. Benefits | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| f. No pressure to publish | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| g. Good research facilities and equipment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| h. Good instructional facilities and equipment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| i. Good job or job opportunities for my spouse or partner | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Good geographic location | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| k. Good environment/schools for my children | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. Greater opportunity to teach | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| m. Greater opportunity to do research | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

22. Please indicate the extent to which you agree or disagree with each of the following statements.

| | Strongly Disagree | Disagree | Agree | Strongly Agree |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Teaching effectiveness should be the primary criterion for promotion of faculty instructional staff at this institution | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Research/publications should be the primary criterion for promotion of faculty/instructional staff at this institution | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. At this institution, research is rewarded more than teaching | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| d. Post-tenure review of faculty will improve the quality of higher education | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. This institution should have a tenure system | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Female faculty are treated fairly at this institution | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Faculty who are members of racial or ethnic minorities are treated fairly at this institution | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. If I had it to do over again, I would still choose an academic career | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

23. Please indicate the extent to which you agree or disagree with each of the following statements. Over recent years at this institution...

- | | Strongly
Disagree | Disagree | Agree | Strongly
Agree |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a. It has become more difficult for faculty to obtain external funding | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Faculty work load has increased | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. The quality of undergraduate education has declined | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. The atmosphere is less conducive to free expression of ideas | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. The quality of research has declined | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Too many full-time faculty have been replaced by part-time faculty | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

24. If you could alter your overall workload at this institution, what changes would you make, if any?

25. If you have previously held a faculty position in an associate's degree dental hygiene program, how does it compare to your current position in a baccalaureate degree dental hygiene program (in regards to your overall workload)?

COMMENTS:

Thank You Very Much for Your Participation in this Research!

APPENDIX G

FOLLOW-UP ELECTRONIC MAIL TO PROGRAM ADMINISTRATORS

<Date>

Dear <Program Administrator>,

Two weeks ago, I mailed you several surveys as part of my dissertation research assessing the workload of baccalaureate dental hygiene faculty. If you have collected and mailed these already, thank you for your assistance. If you have not had the opportunity to return your faculty surveys, I would like to again invite you to participate in the study. As you know, there is a paucity of baccalaureate dental hygiene programs so an adequate response is crucial to the validity of this research. Your participation would be greatly appreciated. If you should need more surveys or another bulk return envelope, please feel free to email me at mcollins@mcg.edu or call me at (706)721-2938.

Sincerely,

<E-signature>

APPENDIX H
PANEL REVIEW

Panel Review Members

Toni M. Bland, RDH, MEd
Faculty, Dental Hygiene and Dental Assisting Program
Wake Technical Community College
9101 Fayetteville Road
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APPENDIX I

GEORGIA SOUTHERN UNIVERSITY INSTITUTIONAL REVIEW BOARD

APPROVAL

Georgia Southern University
Office of Research Services & Sponsored Programs

Institutional Review Board (IRB)

Phone: 912-681-5465

Administrative Annex

P.O. Box 8005

Statesboro, GA 30460

Fax: 912-681-0719

OvrSight@GeorgiaSouthern.edu

To: Marie A. Collins
1189 Rivershyre Drive
Evans, GA 30809

CC: Dr. Michael Richardson, Faculty Advisor
P. O. Box 8131

From: Office of Research Services and Sponsored Programs
Administrative Support Office for Research Oversight Committees
(IACUC/IBC/IRB)

Date: February 3, 2006

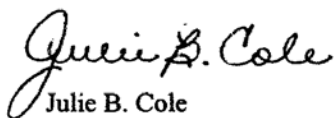
Subject: Status of Application for Approval to Utilize Human Subjects in Research

After a review of your proposed research project numbered: **H06124**, and titled "**Survey of Full-Time Baccalaureate Dental Hygiene Faculty**", it appears that (1) the research subjects are at minimal risk, (2) appropriate safeguards are planned, and (3) the research activities involve only procedures which are allowable.

Therefore, as authorized in the Federal Policy for the Protection of Human Subjects, I am pleased to notify you that the Institutional Review Board has approved your proposed research.

This IRB approval is in effect for one year from the date of this letter. If at the end of that time, there have been no changes to the research protocol, you may request an extension of the approval period for an additional year. In the interim, please provide the IRB with any information concerning any significant adverse event, **whether or not it is believed to be related to the study**, within five working days of the event. In addition, if a change or modification of the approved methodology becomes necessary, you must notify the IRB Coordinator **prior** to initiating any such changes or modifications. At that time, an amended application for IRB approval may be submitted. Upon completion of your data collection, you are required to complete a *Research Study Termination* form to notify the IRB Coordinator, so your file may be closed.

Sincerely,



Julie B. Cole
Director of Research Services and Sponsored Programs

APPENDIX J

MEDICAL COLLEGE OF GEORGIA INSTITUTIONAL REVIEW BOARD

APPROVAL



Human Assurance Committee (HAC)
Institutional Review Board (IRB)
Marie A Collins, RDH, MS
AD 3103 Associated Dental Sciences

January 23, 2006

RE: Survey of Full-Time Baccalaureate Dental Hygiene Faculty

HAC File Number: 06-01-180

Approval Date: 01/23/2006

Expiration Date: 01/22/2007

Dear Dr. Collins:

The referenced protocol was examined and found to be exempt from review by the Human Assurance Committee (HAC) chairperson or designee in accordance with the Department of Health and Human Services (DHHS) policy and the institutional assurance on file with the DHHS under the following

3. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) The human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

If the study will continue beyond the initial approval term, review by the HAC Chairman is required, with a progress report constituting an important part of the review. The Committee will send a HAC Form 107 form [Clinical Study Status Report] for completion. Failure to return this report by its due date will result in an automatic termination of this study. Reinstatement will only be granted following resubmission of the study to the HAC.

The HAC has determined that the interval of continuing review as noted by the approval and approval expiration dates above is appropriate to the degree of risk for this protocol.

If Veterans Affairs (VA) facilities will be involved in this study, you must also obtain a letter of approval from the VA Research Development Committee prior to involvement of VA facilities.

Sincerely,

George S. Schuster, D.D.S., Ph.D.
Chairman, Human Assurance Committee
CJ-2103

C: HAC file, chron