IMPACT OF A REGULATORY QUALITY ASSURANCE PROGRAM:
PERCEPTIONS OF DENTAL HYGIENISTS IN BRITISH COLUMBIA

by

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Abstract

Dental hygienists in British Columbia must participate in a Quality Assurance Program (QAP) to support their professional competence. The College of Dental Hygienists of British Columbia launched a new quality assurance program in 2013 and has now enrolled all practicing registrants into the program. This study explored dental hygienists’ perceptions of the QAP from the perspective of its impact on practice.

Based on a critical realism framework, this mixed methods study used a quantitative component nested within a predominantly qualitative design. The study employed an exploratory sequential design in which participants completed an online survey with some participating in telephone interviews. The online survey (n=451; 12.7% response rate) collected data regarding perceptions of practitioners and the impact of the program related to safe and competent care. It included quantitative data about potential barriers to implementing regulatory standards, conditions of work, and professional identity along with qualitative data from open-ended questions. Phase 2 involved 11 respondent interviews to gain a deeper understanding of the impact of the program on care.

Analysis of the data sets revealed several themes. Respondents discussed how the regulatory practice standards, a key component of the QAP quality assurance program, related to patient safety, competence, professional agency, autonomy, and professional confidence within the current workplace culture.

Respondents viewed themselves as healthcare professionals. They generally felt valued for their abilities and enjoyed maintaining currency through continuing education activities. They revealed that the QAP generally had little influence on the delivery of care. The business culture within dental offices appeared to negatively affect participants’ professional agency thus
affecting their ability to implement their regulatory practice standards. Failure to implement these standards may negatively affect client safety and result in reduced health outcomes. This study will be of interest to healthcare regulatory bodies and others in the profession.
Lay Summary

The goal of this work was to understand dental hygienists’ perceptions of a new Quality Assurance Program required by the regulatory body governing dental hygienists in British Columbia. A gap exists in the literature about the impact of the quality assurance program on the delivery of dental hygiene care. This study used the results from 451 online surveys and 11 telephone interviews to gather information about how dental hygienists felt about the program and its impact on their practice. The study concluded that the program had little impact on dental hygiene care. It also revealed that participants generally felt that the business culture within dental offices created barriers to following regulatory standards that define safe and competent practice. The stressful work environment negatively impacted job satisfaction. This study will be of interest to healthcare regulatory bodies and those involved in the profession.
Preface

The research in this dissertation received a Behavioral Research Ethics Board (BREB) Certificate of Approval, H18-01566, October 12, 2018. This dissertation is an original, unpublished, and independent work by the author, M. Soth.
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<th>Description</th>
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<tbody>
<tr>
<td>BCDHA</td>
<td>British Columbia Dental Hygienists' Association</td>
</tr>
<tr>
<td>CAPHD</td>
<td>Canadian Association of Public Health Dentistry</td>
</tr>
<tr>
<td>CC</td>
<td>Continuing competence</td>
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<tr>
<td>CCP</td>
<td>Continuing Competence Program</td>
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<tr>
<td>CDA</td>
<td>Canadian Dental Association</td>
</tr>
<tr>
<td>CDHA</td>
<td>Canadian Dental Hygienists' Association</td>
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<tr>
<td>CDHBC</td>
<td>College of Dental Hygienists of British Columbia</td>
</tr>
<tr>
<td>CDSBC</td>
<td>College of Dental Surgeons of British Columbia</td>
</tr>
<tr>
<td>CE</td>
<td>Continuing Education</td>
</tr>
<tr>
<td>COTBC</td>
<td>College of Occupational Therapists of British Columbia</td>
</tr>
<tr>
<td>CPTBC</td>
<td>College of Physical Therapists of British Columbia</td>
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<tr>
<td>CR</td>
<td>Critical realism</td>
</tr>
<tr>
<td>EBP</td>
<td>Evidence-based practice</td>
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<tr>
<td>ETP</td>
<td>Entry-to-practice</td>
</tr>
<tr>
<td>GLP</td>
<td>Guided Learning Plan</td>
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<tr>
<td>HCP-CPR</td>
<td>Health Care Providers Cardiopulmonary Resuscitation</td>
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<tr>
<td>HPA</td>
<td>Health Professions Act</td>
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<tr>
<td>HPC</td>
<td>Health Professions Council</td>
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<tr>
<td>IPE</td>
<td>Interprofessional education</td>
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<td>JEM</td>
<td>Jurisprudence Education Module</td>
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<tr>
<td>LP</td>
<td>Learning Plan</td>
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<tr>
<td>MSD</td>
<td>Musculoskeletal disorders</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>NDHCB</td>
<td>National Dental Hygiene Certification Board</td>
</tr>
<tr>
<td>NDHCE</td>
<td>National Dental Hygiene Certification Exam</td>
</tr>
<tr>
<td>OC</td>
<td>Organizational culture</td>
</tr>
<tr>
<td>OW</td>
<td>Organization of work</td>
</tr>
<tr>
<td>PHAC</td>
<td>Public Health Agency of Canada</td>
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<tr>
<td>PSA</td>
<td>Professional Standards Authority</td>
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<tr>
<td>QA</td>
<td>Quality Assurance</td>
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<tr>
<td>QAP</td>
<td>Quality Assurance Program</td>
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<tr>
<td>RTR</td>
<td>Right-touch Regulation</td>
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<tr>
<td>UBC</td>
<td>University of British Columbia</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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My gratitude also goes out to the dental hygienists who participated in this research study. Your time and trust made this study possible. You shared stories of forming strong connections with your patients to help them improve their health. You also shared troubling stories of challenges faced in the workplace. I hope that by making your experiences visible, this study will lead to improvements affecting both dental hygienists and their patients.

This adventure could not have been possible without the encouragement of friends, family, and the 2011 UBC ‘Eddie’ cohort. Thank you to everyone who nurtured and supported me during this quest.
Dedication

This dissertation is dedicated to my mom. She was with me at the beginning of this journey. I wish she was here to celebrate its completion. Always loved.
Chapter 1: Introduction

The College of Dental Hygienists of British Columbia\(^1\) (CDHBC) is the regulatory body for dental hygienists in B.C. It was established on March 1, 1995, under the Health Professions Act (HPA), with a mandate to protect the public by monitoring and enforcing “standards of practice and professional ethics” for dental hygiene practitioners (College of Dental Hygienists of BC, 2017a). In 2013, in accordance with the HPA, the College introduced a Quality Assurance Program (QAP) to reduce “incompetent, impaired or unethical practice” and ensure safe and competent practice by its registrants (College of Dental Hygienists of BC, 2019e). The new program (now in its sixth year of a phased, seven-year implementation process) has been controversial among dental hygienists, primarily because of the introduction of a mandatory, online exam that must be completed every five years to maintain ongoing professional registration. Prior to this study, anecdotal reporting suggested that dental hygienists were not supportive of the new QAP and continue to question its value. Dental hygienists in BC are now the only health professionals in the province and the only dental hygienists in the country required to take an exam as part of a quality assurance program.

This study investigated the impact of the College’s new QAP on the delivery of safe and competent dental hygiene services, as perceived by dental hygienists in British Columbia. The purpose of the study was to document and assess the effects of the QAP on dental hygienists in their role as health care providers in diverse practice settings across the province. In this chapter, I provided an overview of QAP implementation—along with the rationale for exploring its

\(^1\) The College of Dental Hygienists of British Columbia will be referred to as the CDHBC or the College for readability throughout this dissertation.
impacts and effectiveness from the perspective of practicing dental hygienists—followed by an outline of my research design, methods of data collection, and overall dissertation structure.

1.1 Background

The regulation of dentists and dental hygienists has changed significantly over the last 20 years. In British Columbia, dentists and dental hygienists are regulated under the College of Dental Surgeons of BC and the College of Dental Hygienists of BC, respectively. The creation of independent regulatory bodies for dentists and hygienists began in 1991 when the Province established the Health Professions Council (HPC) to advise the Minister of Health about the regulation of health professions. From 1992 to 2002, the HPC reviewed applications from 21 health professions that sought designation as self-regulated professions under the Health Professions Act (HPA).

A self-regulating profession has the right to create an independent regulatory college that determines professional standards and procedures, such as educational requirements, licensing criteria, scope of practice, and code of ethics. The regulatory college, which ensures the provision of safe and competent health care services, also investigates complaints against registrants and enforces legally binding penalties. Its responsibility is, first and foremost, to the public and not to individual practitioners. In 1995, as a result of the HPC application assessment and recommendations, dental hygiene was removed from the Dentist’s Act and placed under the HPA as a self-regulating profession; the College of Dental Hygienists of British Columbia was then established as its independent regulatory body (Province of British Columbia, 2017).

Dental hygiene is one of 26 self-regulating health professions regulated under the British Columbia Health Professions Act (HPA). Twenty-five professions are governed under 20 regulatory colleges with emergency medical assisting being regulated under a separate statute
(Government of British Columbia, 2019). See Appendix A for a list of regulated health professions in British Columbia. Interestingly, although dentistry and dental hygiene are separate self-regulating professions, some procedures within the scope of practice for dental hygienists are still controlled or restricted by dentists. For example, dental hygienists are not able to administer local anesthetic (freezing) unless a dentist is on the premises, and many are not able to provide care for patients unless a dentist has performed a dental examination within the last 365 days (College of Dental Hygienists of BC, 2019c). At the time of its establishment in 1995, the College created a Continuing Competency Program (CCP), in accordance with the HPA, to ensure high standards of practice for dental hygiene care (Province of British Columbia, 2005). The CCP emphasized lifelong learning and required registrants to complete ongoing educational courses—75 “continuing competency hours” in a 3-year cycle—targeted at improving their specific knowledge set, skills, and abilities (College of Dental Hygienists of BC, 2015b, 2017a, 2017c).

In 2005, the HPA replaced its requirement for a Continuing Competency Program (CCP) with a Quality Assurance Program (QAP), which includes ongoing professional assessment. Between 2005 and 2012, the College’s board, staff, and Quality Assurance Committee developed the Quality Assurance Program (which launched in 2013) with stated objectives to

- establish and maintain a Quality Assurance Program to promote high practice standards among registrants;
- establish, monitor and enforce standards of practice to enhance the quality of practice and reduce incompetent, impaired or unethical practice among registrants;
- establish, monitor and enforce standards of professional ethics among registrants;

2 For the purposes of this dissertation, people attending dental and dental hygiene practices will be referred to as patients wherever possible. This aligns with medical literature; dental hygiene literature may refer to patients as clients.
promote and enhance the ability of registrants to respond and adapt to changes in practice environments, advances in technology and other emerging issues (College of Dental Hygienists of BC, 2019e).

The purpose of the QAP is to ensure safe and competent dental hygiene care for the public following the College’s eight Practice Standards. These standards, which are part of the College’s bylaws, outline the following duties, responsibilities, and tasks that a dental hygienist must perform and adhere to (College of Dental Hygienists of BC, 2018d). See Appendix B for a complete copy of the College’s Practice Standards.

1. Obtain informed consent from the client or the client’s representative before initiating dental hygiene care
2. Practice safely
3. Assess the client’s needs
4. Analyze the assessment information and make a dental hygiene diagnosis
5. Plan for the dental hygiene care to be provided, based on the assessment data and dental hygiene diagnosis
6. Implement the plan consented to or adjust the plan in consultation with the client or the client’s representative
7. Evaluate while dental hygiene care is being provided, and at the completion of care, to determine if the desired outcome has been achieved
8. Document the dental hygiene care provided, following protocols and practice setting

The QAP includes a timed, online examination (open-book style with 75 multiple-choice questions) to be completed by practicing registrants every five years, regardless of their area of practice. The examination, also known as the QAP ‘Tool’, is graded as pass/fail. The incorrect responses automatically populate an online Guided Learning Plan (GLP) in the form of dental hygiene competencies. The registrant is directed to complete continuing education requirements directed at the missed competencies. Before QAP implementation in 2013, registrants were able to self-assess their practice and choose relevant continuing education opportunities to address any gaps in knowledge or skillset. Under the new QAP, registrants must also complete an online Jurisprudence Education Module (JEM), which the College describes as a “learning module
organized into 4 broad categories or sub-modules of learning including the College Role, Registrant Responsibilities, Scope of Practice and Practice Resources. Each module contains relevant sub-topics covered through reading, videos, ‘drag and drop’ type interactive activities, and quizzes” (College of Dental Hygienists of BC, 2019d).

Dental hygienists in British Columbia are required to take and pay for the mandatory QAP exam, access mandatory continuing education opportunities (often at additional cost) that are prescribed by an automatically generated Guided Learning Plan, and complete the online JEM, all while delivering safe and competent dental hygiene services (as defined by the College’s eight Practice Standards). In other Canadian dental hygiene jurisdictions, examinations are not a requirement of ongoing professional registration. Ontario’s QAP includes an optional examination for registrants that serves as a self-assessment tool, while other provinces have continuing education requirements only (and no examination). The Yukon, Northwest Territories, and Nunavut have no formal quality assessment or continuing competency programs (Canadian Dental Hygienists Association, 2014).

Of the 26 regulated health professions in the province most include one or more of the following activities as part of their respective quality assurance programs: continuing education hours, self- and peer-assessment, minimal practice hours or other practice requirements, or jurisprudence reviews. The College of Dental Surgeons (CDSBC) has only two requirements for dentists: to obtain 90 continuing education hours over a 3-year cycle; and to maintain a minimum number of practice hours. As an example of quality assurance programs for other provincial health professions, the College of Nursing Professionals (BCCNP) requires self- and peer-assessment, practice hours, and continuing education requirements.
Three regulatory colleges in the province do include some form of examination in their quality assessment programs. The College of Physical Therapists (CPTBC) and the College of Occupational Therapists (COTBC) both require a proctored examination every six years, comprised of approximately 100 questions and graded as pass/fail. While the CPTBC offers only one exam option, the COTBC offers a choice of four different exam forms specific to an area of practice. The College of Opticians (COBC) introduced a timed, online, open-book and multiple-choice style “assessment” in 2018. Unlike the College exam, this assessment is free for registrants and “not a test or exam” (College of Opticians of BC, 2019). The purpose of the assessment is to provide registrants with suggestions or categorized valuation of their current skills and knowledge (e.g., ‘exemplary’, ‘moderate’, or ‘need to address’). Registrants are also provided with exam options based on their practice specialty (they are not required to answer questions for non-practicing areas).

Recently, the regulatory college system in British Columbia has experienced increased scrutiny. In 2018, the Honourable Adrian Dix, Minister of Health, appointed Harry Cayton of the Professional Standards Authority in the United Kingdom to conduct an inquiry into the governance and operational practices of the College of Dental Surgeons of BC (CDSBC), and to conduct an independent review of the Health Professions Act (HPA). The review was precipitated by complaints regarding the operation of the CDSBC Board of Directors in their duty to act in the public interest.

Cayton’s findings were published in the 2018 report “An Inquiry into the Performance of the College of Dental Surgeons of British Columbia and the Health Professions Act,” which highlights several ongoing issues that have the potential to impact the regulation of dental hygiene in the province (Cayton, 2018). The report suggests reducing the overall number of
regulatory colleges governing dental professions in British Columbia. There are currently four: College of Dental Surgeons (which also regulates Certified Dental Assistants and Dental Therapists), College of Dental Hygienists, College of Dental Technicians, and College of Denturists. It also describes the potential power imbalance that can occur when professionals from one regulatory college (dentists) employ and/or supervise members of other regulatory colleges (dental hygienists). Cayton also suggests that the HPA should undergo significant revision, potentially impacting all the self-regulating health professions in the province.

As a dental hygiene practitioner, educator, and past College committee member, I have experienced first-hand how the dental hygiene profession has transitioned during the last 30 years. The UBC Doctor of Education (EdD) degree provides an opportunity for practitioners to understand and improve their practice. This study has identified and named problems found within dental hygiene practice settings. The implications arising from this study emphasize the various roles that organizations play in the delivery of safe and competent dental hygiene care in British Columbia.

The dental hygiene profession in British Columbia has transitioned from governance and supervision by dentists to self-regulation and independence (or from “dental auxiliary” and “dentist helper” to full-fledged healthcare professional). Dental hygienists can now readily access Baccalaureate education in most provinces (in dental hygiene or related fields), and a master’s degree in dental hygiene can be obtained from the University of Alberta’s School of Dentistry. Post-diploma education (including many online options) provides dental hygienists with increased opportunities to work in diverse practice settings.

Of respondents to a 2019 Canadian dental hygiene employment survey, 91% reported working in a private clinical practice settings with an average wage of $43.40 per hour for their
primary work location (Canadian Dental Hygienists Association, 2019a). Respondents who obtained a dental hygiene baccalaureate degree reported an hourly wage of $49.79; $6.39 per hour higher than the average dental hygiene wage (Canadian Dental Hygienists Association, 2019a). The number of dental hygienists who operate private dental hygiene clinics is 5%, down from 6% in 2017 (Canadian Dental Hygienists Association, 2019a). Dental hygiene clinics can be established in several formats including ‘store-front’ clinics or mobile clinics supporting the delivery of care to underserved populations, such as those living in remote communities or those living in managed care facilities. Employment opportunities for dental hygiene clinicians are also available through health agencies, cancer clinics, and clinics within educational facilities. All practicing dental hygienists in British Columbia, regardless of practice setting, participate in the QAP.

As a dental hygienist with over 30 years of experience across a variety of practice settings, I have participated in the previous CDHBC Continuing Competence Program (CCP) and the new Quality Assessment Program (QAP). Some of my colleagues have expressed concerns or misgivings about the QAP and its impact on increased patient safety and improved oral health care services. Some have wondered whether the QAP is a ‘solution in search of a problem’ (cases involving harm to patients by dental hygiene services are very rare). Others are concerned that professional autonomy will be further eroded by the exam requirements and associated Guided Learning Plan.

The College claims that the QAP will “ensure that all registrants are practicing dental hygiene at a safe and acceptable level of competence” (College of Dental Hygienists of BC, 2018b, p. 5). With all dental hygienists in the province now participating in the QAP, this is an opportune time to undertake a study to determine the QAP’s perceived impact on the delivery of
dental hygiene care and the effect on dental hygiene practice. The College’s QAP is unique to dental hygienists in the province – no other jurisdiction in Canada has adopted this format for their assessment programs. No data exists on the perceived impact of the QAP on dental hygiene care in British Columbia; this study addresses the gap.

1.2 Research Problem

The dental hygiene profession needs to ensure that quality assurance activities are resulting in safe and competent care for the public (Bilawka, 2003a, 2003b). The College has a mandate to protect the public by enforcing professional standards (College of Dental Hygienists of BC, 2017a). As noted by Harry Cayton in his 2018 investigation summary, the framework for health professions regulation in British Columbia, under the HPA since 1979, needs significant change:

*The risks and benefits of healthcare practices have changed hugely since then [1979]. The status and diversity of health professions has changed, public expectations and requirements have changed, the health needs of our populations have changed….significant change is needed if it is to meet future requirements for the safety of patients and the protection of the public of British Columbia* (Cayton, 2018, p. 70).

There are approximately 3,600 registered dental hygienists in British Columbia practicing in a variety of settings and experiencing differing workplace conditions. All registrants of the College currently participate in the new Quality Assessment Program (QAP). All dental hygienists registered in practicing categories were invited to participant in this study.

The College had provided registrants with the opportunity to provide feedback around the online exam and the platform used to manage the continuing education activities. It has not assessed the impact of the QAP on dental hygiene practice.
The purpose of this study is to examine what impact, if any, the College’s Quality Assurance Program has on practice, as perceived by dental hygienists in British Columbia. Dental hygienists working across various practice settings and locations were asked to share their ‘real world’ experiences and perceptions of the QAP and its impact on the delivery of dental hygiene care, public safety, and the practice of dental hygiene. This study provides insight into dental hygienists’ lived clinical experiences under the QAP.

1.3 Research Questions

This study is primarily directed by the following research question: *What are dental hygienists’ perceptions of the impact, if any, of the College of Dental Hygienists of British Columbia ‘Quality Assurance Program’ on their dental hygiene practice?*

These secondary research questions also inform this study: *How do dental hygienists articulate the notion of safe and competent care in relation to the QAP?* Dental hygienists will be asked to define what the provision of safe and competent care means to them in relation to the QAP.

*What influences dental hygienists’ ability to implement their practice standards?* Dental hygienists will be asked to share whether they are influenced to follow / not follow the practice standards, as a component of the QAP, in practice. They will be asked to share what barriers, if any, influence their ability to follow the practice standards.

1.4 Design and Methods

Using a critical realism theoretical lens, this mixed methods study explored the impact and tensions surrounding the delivery of safe and competent dental hygiene care (as outlined in the QAP and related practice standards) through the experiences and perceptions of dental
hygienists in clinical practice. It also provided a ‘snapshot’ of the current experiences of self-regulating dental hygienists as they navigate their professional practice and the QAP. Research was conducted in two stages. Data were first gathered through an online survey offered to approximately 3,600 practicing dental hygienists in the province; then survey data were refined or augmented through telephone interviews with eleven individuals practicing in a variety of settings across British Columbia.

1.5 Outline of the Dissertation

My goal in conducting this study was to engage with dental hygienists across the province who practice in a variety of settings, and under diverse workplace conditions, to understand how they navigate and experience the new QAP. For the approximately 3,600 participating practitioners, this study was their first opportunity to provide feedback on the impact on the QAP on their practice and the delivery of safe, competent dental hygiene services to their patients.

Following this introductory chapter, I provide a review of relevant literature in Chapter 2. In Chapter 3, I lay out the details of my research methodology, including research design and methods of data collection and analysis. I present the results of my survey data and interview data in Chapters 4 and 5, respectively, and discuss data results and implications in Chapter 6. My conclusions and recommendations concerning the implementation of the new QAP are provided in Chapter 7.
Chapter 2: Review of the Literature

This chapter provides an overview of the literature supporting the research question exploring the perceived impact of a quality assurance program (QAP) on dental hygiene practice in British Columbia. Literature related to dental hygiene including professions, agency, regulation, self-assessment, continuing education, and dental hygiene competencies are explored and related to the QAP. The literature includes an exploration of the topic of healthcare quality including safety and competence. The chapter concludes with a presentation of the critical realism framework used to position this study.

2.1 Background

Dental hygienists are primary oral healthcare providers specializing in clinical therapy, oral health education, and health promotion for individuals and communities (Canadian Dental Hygienists Association, 2010).

The practice of dental hygiene can be defined as a collaborative relationship, with dental hygienists working with patients (either individuals or communities) and other health professionals to promote and maintain optimal oral health. Oral health is a vital component of overall health (World Health Organization, 2016). Poor oral health is associated with an increased risk of systemic disease including, but not limited to, cardiovascular disease, diabetes, and adverse pregnancy outcomes (Chapple & Genco, 2013; Hein & Williams, 2017; Romandini, Laforí, Romandini, Baima, & Cordaro, 2018; Sanz et al., 2018; Tonetti & Van Dyke, 2013).

Dental hygienists’ primary function continues to be the prevention and treatment of oral disease and the promotion of overall health and wellness (Monajem, 2006). Examples of health promotion includes the provision of patient education and counselling services for smoking cessation, healthy eating, and oral disease prevention. Dental hygienists provide oral health
screenings in community settings to detect persons with periodontal disease, oral lesions, high blood pressure, and elevated blood glucose (Deep, 2000; Hein, 2016; Laronde & Corbett, 2017; Laronde et al., 2014; Ohrn, 2004). Dental hygienists also promote oral health through advocacy activities such as helping patients navigate the public health system or lobbying government for increased access to dental hygiene services.

At a national level, the Canadian Dental Hygienists Association (CDHA), a national non-profit organization, and the Canadian Health Action Lobby (HEAL) partnered to create an ‘Oral Health Call to Action’ submission calling on the Canadian House of Commons Standing Committee on Finance to expand oral health promotion and disease prevention activities for indigenous communities and to fund additional provincial public health positions for dental hygienists across Canada (Canadian Dental Hygienists Association, 2011).

The majority of dental hygienists in British Columbia work in clinical private practices. However, those with additional education may find employment in research, education, or administration. According to a 2017 national CDHA survey of dental hygienists, 92% of respondents reported working in clinical private practice settings, matching the responses from dental hygienists in British Columbia. Nationally, 72% of respondents reported working for a single employer with 22% reporting working for two employers. The responses from British Columbia indicated that 67% work for one employer, while 33% indicated working for 2 or more employers. Nationally, 6% of respondents reported owning their own practices; this figure was up from 3% in 2015. In British Columbia, 2% of respondents reported owning their own practice. An equal percentage (97%) of national and respondents from British Columbia identified with being female (Canadian Dental Hygienists Association, 2017). According to the CDHA Manager of Policy, Research, and Government Relations, the 2017 Employment survey
was distributed to 16,737 members with a response rate of 38% (n=6,315) (Juliana Jackson, CDHA Manager of Policy, Research, and Government Relations, personal communication, August 2, 2019). The 2019 survey changed its reporting categories so results from both reports are referenced in this dissertation. The 2019 employment survey was distributed to 16,206 CDHA members and had a response rate of 33% with 5,347 respondents (Canadian Dental Hygienists Association, 2019a) Some provinces have voluntary membership in CDHA, so not all of the approximately 30,000 dental hygienists in Canada had the opportunity to respond to the survey (Canadian Institute for Health Information, 2017). There are approximately 4,100 dental hygienists in British Columbia registered in various practicing and non-practicing categories (College of Dental Hygienists of BC, 2019a).

### 2.2 Professional Status

The term ‘profession’ is claimed by many occupations, but no single definition is found in the literature. Professions share some attributes, although the literature does not agree on a definitive list (Kellogg, 2014; Kleiner, 2005; Welie, 2004). Some of the attributes of a profession include having a specialized body of knowledge and education, ethical codes of behaviour, ongoing education and/or training, standards of practice, practice autonomy, formal regulation and governance, and public recognition (Brownstone, 1999; Clovis, 1999; Welie, 2004). In opposition to the public-facing, altruistic ideals of a profession, some suggest ulterior motives by which professionals act in a self-serving manner to control their scope of work, pay, and status through the use of regulatory bodies and restrictive regulation (Cayton, 2018; Cayton & Webb, 2014; Freidson, 1970).

Professionalization is a series of stages or processes by which the members of an occupation collect a body of skills and knowledge, develop a culture and code of ethics, and seek
public approval to move their occupational status to that of a profession (Clovis, 1999; Silva, 2000). The attainment of professional status is the outcome of successful mobilization, lobbying, and political action to legitimate certain privileges (Brownstone, 1999). The label of professional is valued as it suggests special “social, moral and political status” (Welie, 2004, p. 529).

Dental hygiene has been described as a being in a “transformation” stage, with its members moving from technicians to emerging professional status (Cobban, Edgington, & Compton, 2007). The process of becoming recognized and regulated as a profession often occurs in stages over time. Some occupations only attain a few of the hallmarks of a profession and may be labelled as semi-professional or paraprofessional. The literature describes occupations labelled professional, semi-professional, or paraprofessional as being placed on a continuum, having no firm or distinct boundaries from an occupation to a profession (Abbott, 1988; Volti, 2012). Brownstone described dental hygiene as a semi-profession, moving towards professional status due to its lack of practice autonomy and shared scope of practice with dentistry (Brownstone, 1999). Although dental hygiene has made strides toward being recognized as a profession, ongoing practice restrictions in North America continue to slow its progression.

A profession, Cobban states, “privileges a group that possesses specialized knowledge to enable this group to make and monitor its own decisions relative to its practice” (2004, p. 156). In 1995 dental hygienists in British Columbia achieved some autonomy through the process of becoming self-regulating under the Health Professions Act (HPA), satisfying one of the requirements for a profession as espoused by Cobban. Despite obtaining the privilege of self-regulation ongoing supervision requirements negatively impact professional autonomy. In 2019, the College proposed bylaw changes to the BC Ministry of Health requesting the removal of supervision requirements for dental hygienists in the province. In August 2019, the proposed
legislative revisions were posted to the BC Ministry of Health webpage for the mandatory minimum 3-month public consultation period. At the time of writing, no government decision has been made regarding the proposed legislative changes.

Historically, professions such as dentistry and medicine were gendered male, meaning that the profession was defined by men for men “to embody and demonstrate the characteristics and traits idealized for white, middle-class men” (Adams, 2010, p. 455). In recent years, dentistry has attracted more female practitioners. The College of Dental Surgeons reports that of the 3,652 dentists registered in British Columbia, 1,570 are males over the age of 45 (43%) with 585 (16%) being females over the age of 45 (College of Dental Surgeons of BC, 2017). Dentists over the age of 45 tend to be those who own the practice ‘business’ and hire predominantly female dental hygienists.

Brownstone suggested that men in professional occupations were expected to be “distinguished, rational, unemotional, authoritative, physically robust, committed to their jobs, highly educated and broad minded” (Brownstone, 1999, p. 455). These traits marginalized women and indeed, women during the 19th and early 20th century were deemed too frail, subordinate, and unable to cope with the demands of a profession (Adams, 2003, 2010; Bond, 2011). Women were recognized in support roles within health care, often as nurses, dental hygienists, or dental assistants. The work performed by women in patriarchal dental environments has been traditionally undervalued, forming negative stereotypes where dental hygienists are deemed to be passive income earners for the dental office (Adams, 2010; Brownstone, 1999).

Power and dominance of one professional group over another has been explored for many years (Abbott, 1988; Adams, 2010; Bond, 2011; Brownstone, 1999; Hodges & Lingard,
Abbott (1988) posited a theory that suggested professions produce, protect and defend their authority and dominance in a system tailored to ensure continuing control over rights to similar work (Abbott, 1988). When one profession is strongly organized and affluent with social and economic capital, minor professions such as dental hygiene will have a difficult time gaining a legal entry into what is basically a closed profession (Adams, 2010; Bond, 2011; McGregor, 2010). This was the case with the dental hygiene profession in Canada. Province by province, dental hygienists lobbied for the right to be self-regulating. Some provinces also removed restrictions around the public accessing a dental hygienist directly without accessing a dentist first. Dental hygienists argued that the public had a right to choose their care provider and should not be denied access to care by another profession’s ‘gate-keeping’ actions. Obtaining self-regulation was a significant step towards professional autonomy; however, restrictive regulation remains in place for some provinces.

2.3 Dental Hygiene Education

In the 1880’s, dental nurses in the United States began removing the hard and soft deposits from teeth in an attempt to prevent periodontal diseases (Milling, 2010). The term ‘dental hygienist’ is attributed to Dr. Alfred Fones (1869-1938), who practiced dentistry in Connecticut in the early 1900’s (Risom, 2013). In 1907 he trained his cousin, Irene Newman who was his dental assistant, to remove dental biofilm in an attempt to reverse inflammation associated with what is now known as gingivitis and periodontitis (Lehman, 2019). Fones believed that dental hygienists could be valuable members operating within dental clinics as well as active in the community providing treatment and education for those with limited access to care (Marsh, 2013). By 1913, Fones and Newman were teaching other dental hygienists in the provision of oral care and patient education. Connecticut became the first state to regulate dental
hygienists in 1915 under the Dental Practice Act (Milling, 2010). Irene Newman was given the honour of receiving the first license to practice dental hygiene in the state. The first school of dental hygiene in the world was established in 1949 at, what is now, the University of Bridgeport (Lehman, 2019).

In Canada, the Royal College of Dental Surgeons of Ontario asked the Canadian Dental Association Council on Dental Education to support standardization of education for dental hygienists in 1947. In 1950, Saskatchewan became the first province to regulate dental hygienists in Canada (Canadian Dental Association, 2019). The profession obtained legal recognition across Canada from 1947 - 1968. The first dental hygiene program was established at the University of Toronto in 1951 and by 1960 there were 98 dental hygienists in Canada (Canadian Dental Association, 2019). Approximately 60 years later, the number of dental hygienists in Canada had grown to approximately 30,000 (Canadian Dental Hygienists Association, 2019b) compared to approximately 24,000 dentists (Canadian Institute for Health Information, 2017).

Each Canadian dental hygiene regulatory body sets the educational requirements and the scope of practice for the profession in their area. Dental hygiene educational programs can be found in universities, colleges, technical institutes and for-profit private schools across Canada. Programs award a variety of credentials including diplomas and baccalaureate degrees. A master degree in dental hygiene is available through the University of Alberta; the Master of Science in Medical Sciences (Dental Hygiene) is offered through the Faculty of Medicine and Dentistry (University of Alberta, 2019). Dental hygiene students in British Columbia graduate with either the minimal entry-to-practice credential of a diploma (consisting of one year of university transfer courses plus a 2-year dental hygiene diploma) or they graduate with a four-year baccalaureate degree. The dental hygiene programs available in Canada are shown in Table 2.1.
As British Columbia requires a diploma as the minimum entry to practice (ETP) credential for dental hygienists, diploma programs develop their curricula around nationally adopted ETP competencies. The University of British Columbia is the only program in the province that offers a 4-year baccalaureate degree in dental hygiene; it uses published baccalaureate competencies to guide their program.

### 2.4 Dental Hygiene Regulation

Near the end of the 20th century, the dental hygiene profession in Canada began obtaining self-regulation as a move towards being recognized as a profession. The responsibility for health and education rests within provincial legislative jurisdictions requiring each province and territory to change the laws governing dental hygiene to permit self-regulation.

As of 2019, in all provinces except for Prince Edward Island, dental hygienists were self-regulating. In the Yukon, Northwest Territories, and Nunavut, dental hygienists, like other oral health professionals, are governed under their territorial government. Of the approximately 30,000 registered dental hygienists in Canada, approximately 99.5% are self-regulating.

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Table 2.1 Dental hygiene programs in Canada

Adapted from: (Sunell, Wright, Udahl, & Benbow, 2019)
Although the vast majority of dental hygienists in Canada enjoy the privilege of self-regulation, only Alberta and Newfoundland practice without restrictions or dentist supervision requirements. Dental hygienists in Ontario, Nova Scotia, and New Brunswick may apply for a ‘self-initiating’ or ‘specific practice’ designation permitting them to practice without the supervision of a dentist based on fulfilling additional requirements such as practice hours and additional education. Dental hygienists in Manitoba with less than 3,000 hours of practice must be supervised by a dentist (College of Dental Hygienists of Manitoba, 2019). The supervision may be ‘direct’ with the dentist physically present, or ‘indirect’ where the dentist is not present. The type of supervision required is decided collaboratively between the dentist and the dental hygienist. If indirect supervision is appropriate, a written agreement must be in place. A dental hygienist who has obtained 3,000 may practice without supervision.

Dental hygienists in British Columbia who have obtained additional education or equivalent experience in four abilities and have completed a minimum of 3,500 clinical practice hours may apply to register into the Full 365-Day-Exempt category which exempts them from requiring their patients to have a dental exam within the previous 365 days. However, all dental hygienists in British Columbia must have direct on-site dental supervision whenever the administration of local anesthetic is provided for patients.

Dental hygienists in British Columbia became self-regulating in 1995. The move to self-regulation, under the College, was pivotal in the journey to become recognized as a profession. The College determines professional standards and procedures, such as educational requirements, licensing criteria, scope of practice, and code of ethics. It also investigates complaints against registrants and enforces legally binding penalties.
Dental hygienists in British Columbia can obtain registration in one of six classifications: Full, Full 365-Day Rule Exempt, Conditional, Non-practicing, Temporary, and Student. Full registration is available to individuals who have graduated from an approved dental hygiene educational program, successfully passed a written national examination, and completed a local anesthetic course. Applicants must have completed an online jurisprudence module (JEM) and have completed a required amount of continuing competency education courses (CE).

Registrants in the Full Registration/365-Day Rule Exempt category met the qualifications of a Full registrant with the additional qualifications of a (1) degree in dental hygiene, (2) minimum of 3500 practice hours over the past five years, and (3) cardiopulmonary resuscitation course specifically for health care providers (HCP-CPR). Options are available to attain registration in the Full Registration/365-Day Rule Exempt category through ‘Substantial Equivalency Streams’ that include prior learning and assessment elements. The Conditional category is for registrants who are missing either the successful completion of a local anesthesia course and/or are missing some continuing competency requirements. Temporary registration is granted to dental hygienists who are registered in another jurisdiction and are in the province for the purposes of participating in an educational program. Non-practicing registration is available to dental hygienists who do not wish to be active practitioners (College of Dental Hygienists of BC, 2019f).

According to the College website, it is responsible for establishing, monitoring, and enforcing its published standards to “assure safe, ethical, and competent dental hygiene care” is provided by its registrants (College of Dental Hygienists of BC, 2017a). While standards of practice may inform registrants in their work, it is not reasonable to believe that the mere existence of standards and quality assurance programs enables the College to ‘assure’ the public
of receiving safe and competent care. Lingard describes competence as primarily an individual characteristic where knowledge, skills, and abilities are applied to inform practice behaviours (Lingard in Hodges & Lingard, 2012). Individual dental hygienists make the choice to adhere to practice standards; however, failure to adhere to practice standards may also be influenced by the context or conditions in the workplace (p. 50).

Similarly, the ‘right-touch regulatory’ (RTR) approach states that quality care is more than the establishment of standards and regulation (Professional Standards Authority (UK), 2015). The premise of right-touch regulation is matching the risk of harm to the public with the level of regulation enacted (Bilton & Cayton, 2013; Professional Standards Authority (UK), 2018). A key principle of the RTR approach is the concept that every health care intervention has some inherent risk; ‘no risk’ or completely safe interventions do not exist (Cayton & Webb, 2014). For example, even ‘over the counter’, readily available medicine may cause adverse reactions or side-effects in some people. Since no-risk health care is unrealistic, regulation needs to be appropriate to the risk of harm. Appropriate regulation is described as:

- Proportionate: Use the minimal amount of regulation or regulatory force needed. Interventions (regulation or other interventions) should be appropriate given the level of risk.
- Consistent: Implemented fairly.
- Targeted: Regulation should focus on the problem and minimize side effects.
- Transparent: Regulation should be simple and user friendly. Regulators should be open and transparent with their communication.
- Accountable: Regulators must be able to justify regulations and decisions. Should be subject to public scrutiny.
- Agile: Processes including regulation should be able to adapt when necessary and anticipate changes. (Professional Standards Authority (UK), 2018)

The RTR approach supports options to solving problems; increased regulatory intervention is not always the solution. It may be more effective to focus on changing
employment practices or promoting professionalism rather than adding additional regulation (Professional Standards Authority (UK), 2015). The RTR approach promotes effective problem-solving solutions that are ‘local’ or close to the problem (e.g., close to the practitioner) with the least amount of regulatory force necessary to address the problem.

Although relatively new, the RTR approach has been adopted by several health regulators in Canada such as the regulatory colleges for nurses in Alberta and British Columbia, and the College of Registered Psychotherapists of Ontario (CRPO). In addition, the Nova Scotia Regulated Health Professions Network (NSRHPN) whose members include the College of Dental Hygienists of Nova Scotia (CDHNS) and various nursing regulatory colleges, promote the use of the RTR approach by its members. To date, the College has not adopted the RTR approach.

2.5 Healthcare Quality

Finding a single definition of health care quality is complex. The literature cites over 100 definitions, many of which include embedded notions of safety and competence (Institute of Medicine (US) Committee to Design a Strategy for Quality Review and Assurance in Medicare, 1990). The World Health Organization (WHO) defines quality care as “the extent to which health care services provided to individuals and patient populations improve desired health outcomes. In order to achieve this, health care must be safe, effective, timely, efficient, equitable and people-centered” (World Health Organization, 2018). Patient safety is a key factor of quality care (Okuyama, Martowirono, & Bijnen, 2011). Safety or safe practice is defined as “delivering health care that minimizes risks and harm to service users, including avoiding preventable injuries and reducing medical errors” (World Health Organization, 2018). The literature provides various definitions of patient safety including the reduction of unsafe acts as well the use of best
practices or practice standards (King & Anderson, 2012). It also suggests the implicit or explicit culture of a profession has a profound impact on patient safety (Canadian Patient Safety Institute, 2009; King & Anderson, 2012; Okuyama et al., 2011; Waring, Allen, Braithwaite, & Sandall, 2016).

Early notions of healthcare safety may be attributed to Hippocrates when he famously stated “first, do no harm.” Through modern times the problems arising in healthcare have generally remained the responsibility of each healthcare profession (Freidson, 1970). From the 1950’s to the late 1980’s healthcare underwent expansions in research, technology, and treatment modalities. It was during this time that concerns over medical errors and costs of litigation were made public (Waring et al., 2016). In the early 1990’s risk and safety were recognized as problems at the service-provider level. In the early 2000’s healthcare safety attained international recognition. During this time Donabedian established healthcare quality and safety as a new area of research and policy in her 2003 book entitled “An Introduction to Quality Assurance in Healthcare” (Donabedian, 2003).

During the 1990’s research into healthcare safety and practice, primarily lead by medicine, developed in two streams. One stream was focused at the provider level. It addressed issues related to measuring safety and quality including interventions to reduce adverse incidents. Human error was recognized as a significant source of the adverse incidents. This led to a surge in research aimed at understanding clinical practice with an emphasis on developing guidelines and standards that would contribute to safer practice (Waring et al., 2016). An emphasis on regulation and accreditation occurred during this time. The research about safety suggested that preventable errors were largely responsible for patient injury and death, and that guidelines for safe practice could help. Increased patient safety and improved health outcomes
are also related to the attainment of baccalaureate education (Blegen, Blegen, Goode, Park, & Vaughn, 2013; O'Brien, Knowlton, & Whichello, 2018; Sunell, McFarlane, & Biggar, 2017). Abilities attained through baccalaureate education are positively related to collaboration, communication, use of evidence, and leadership (King & Anderson, 2012; Okuyama et al., 2011; Weaver et al., 2013).

Safe practice also encompasses part of the College Code of Ethics. The Code of Ethics directs hygienists to “provide competent and appropriate care to clients” including providing “dental hygiene services in a legal and safe environment utilizing current knowledge and skills,” and to “maintain a high level of skill by participating in programs of continued study to update and advance their body of knowledge” (College of Dental Hygienists of BC, 2018c). The Code of Ethics illustrates how concepts of safety and competence overlap; maintaining distinct categories is problematic.

Safe practice also depends on the practitioners’ ability to exercise professional autonomy and agency around providing client-centered healthcare (Jackson, Purdy, & Cooper-Thomas, 2019; Yu, Ghoneim, Lawrence, Glogauer, & Quiñonez, 2019). Role ambiguity and an inability to follow professional standards may lead to a loss of professional confidence (Jackson et al., 2019), which is linked to frustration, stress, and a loss of professional identity (Holland, Middleton, & Uys, 2012; Storaker, Nåden, & Sæteren, 2019).

The second stream of research drew attention to the larger systems or environments underpinning clinical practice (Churruca, Ellis, & Braithwaite, 2018; Waring et al., 2016). The research suggested that practice errors occurred, in part, due to issues outside of the clinicians’ control. The goal of this research was to understand the cultural, socio-technical, and political
forces that influence safe and quality care by investigating forces influencing care at an organizational level (Waring et al., 2016).

A third stream of inquiry into improving patient safety and health outcomes began in the early 2000’s. Interprofessional education (IPE) explored whether education and collaboration between professions could build capacity in the workforce, thereby improving health outcomes and patient safety while still being cost effective. IPE targeted the reduction of professional ‘silos’ to promote a multidisciplinary approach to healthcare. According to the WHO, healthcare workers are coping with patients who present with increasingly complex health issues (Gilbert, Yan, & Hoffman, 2010; World Health Organization, 2010). Managing these complex patients in a collaborative manner may lead to improved health outcomes (Gilbert et al., 2010).

These streams of inquiry have led to a rise of research aimed at healthcare quality and safety conducted through a sociologically informed lens. These investigations incorporated the context, culture, political, and institutional forces influencing the delivery of safe care. This research broadened the notions of safety as a service-provider issue that can be ‘controlled’ and safety as a systems management issue, to a focus on improving safety and healthcare outcomes through the delivery of care through multidisciplinary healthcare teams.

Focusing specifically on patient safety as a component of quality care, the Canadian Patient Safety Institute (CPSI), in collaboration with the Royal College of Physicians and Surgeons of Canada (CPSC), published *The Safety Competencies: Enhancing Patient Safety Across the Health Professions* (Canadian Patient Safety Institute, 2009). This document provides a framework that is “interprofessional, practical and useful” (pg. iv) for healthcare professionals in any setting. The competencies include actions for individuals as well as broader competencies aimed at interprofessional healthcare teams. The framework included details supporting six
domains of safety; descriptions below summarize aspects of the framework pertinent to this study:

**Domain 1: Contribute to a culture of patient safety through knowledge, skills, and attitudes.** This domain includes a commitment to ethical values and continuing learning with its focus on self- and peer-assessment to create an environment consistent with best practice standards of care.

**Domain 2: Work in teams for patient safety and quality care as measured by patient outcomes.** Team members benefit from clear roles and responsibilities and are held responsible for their work. Patients are the center of care and participate in decision-making.

**Domain 3: Communicate clearly and effectively with patients and team members for patient safety.** Obtain informed consent from patients for any procedures. Provide accurate documentation.

**Domain 4: Manage safety risks by anticipating, recognizing, and managing situations.** Use current infection control techniques and safety procedures to reduce the risk of harm. Consider the impact of individual procedures including unintended consequences.

**Domain 5: Optimize individual and environmental factors.** Individual factors include one’s knowledge, skills and experience. Understands the role of professional culture, workplace norms, and policies and procedures on clinical practice and understands where processes can be challenged and corrected.

**Domain 6: Recognize, respond to and disclose adverse events to mitigate harm and prevent recurrence.** Prevent, recognize, and address any occurrence of patient adverse reactions. Follow emergency safety protocols.

(Canadian Patient Safety Institute, 2009)

Around the same time as the Canadian safety competencies were published, the Public Health Agency of Canada (PHAC) published a document outlining interdisciplinary core competencies for those working in public health (Public Health Agency of Canada, 2008).

PHAC was created in 2004 to respond to a call for increasing the capacity of the health workforce after the Severe Acute Respiratory Syndrome (SARS) event (Public Health Agency of Canada, 2017). Its initial project involved the articulation of competencies needed by all health
providers to support increased patient safety and better health outcomes (Public Health Agency of Canada, 2008). The safety abilities centered on collaboration, advocacy, communication and evidence-based decision making as well as including competencies important for the development of public policy, and health programs and interventions. The next phase involved the development of discipline specific public health competencies and this included funding for dentistry as well as other professions. The Canadian Association of Public Health Dentistry (CAPHD) worked collaborative with the health professions and PHAC to generate discipline competencies for oral health professionals essentially using the domains of the PHAC core competencies (Canadian Association of Public Health Dentistry, 2008). More recently the leadership abilities embedded in the PHAC document have been expanded to highlight the importance of leadership in supporting patient safety and better health outcomes (Community Health Nurses of Canada, Canadian Institute of Public Health Inspectors, & Manitoba Public Health Managers Network, 2015).

Themes drawn from the literature around quality health care are not distinct, rather, they overlap and only artificially can be separated for unpacking individual factors. Quality care is described as being:

1. Safe: Does no harm, avoids preventable injuries and reduces medical/dental errors;
2. Appropriate: Treatment is based on the patient’s individual needs and abilities e.g.: ‘rational care’ opposed to the best care available;
3. Competent: Practices within the law, according to current regulations governing scope of practice (including practice standards and competencies);
4. Effective: Uses current science and evidence-based practices. Incorporates current knowledge in the field. Treatment does what it promises (e.g., improves outcomes, improves health and/or patient well-being);

5. Ethical: Care provided does not differ in quality according to gender, race, ethnicity, geographical location, or socioeconomic status;

6. People-centred: Provides care that is culturally appropriate, takes into consideration patient preferences;

7. Efficient: Maximizes available resources, minimizes waste. Acts in a timely manner;

8. Professional: Maintains confidentiality, practices according to a professional code of ethics, engages in continuing education, has professional qualifications, utilizes professional interpersonal (verbal/written) communication skills. Ensures informed consent prior to any treatment.

(Adapted from Okuyama et al., 2011; World Health Organization, 2018).

The eight points describing quality care include an emphasis on patient needs and concerns while emphasizing that care needs to be rationale, but not necessarily the best care available. For example, the best care available may include a ‘full-mouth reconstruction’ replacing missing teeth and restoring remaining teeth to create a ‘perfect’ smile with an associated cost equivalent to a new small car. This treatment may be the best available but not appropriate for someone in later life who demonstrates an inability to maintain the extensive dental work.

As a regulatory body, the College has defined safe and competent care through 8 practice standards and a Code of Ethics. The College defines safe practice in Practice Standard #2 A
dental hygienist must practice safely. The associated policy defines safe practice as (1) practicing recognized infection control, (2) protecting the patient by utilizing safety equipment including lead aprons, safety glasses, and hearing protection if needed, (3) safely using potentially hazardous materials according to manufacturers and government regulations, (4) safely store and dispose of any hazardous materials in accordance with government guidelines, and (5) comply with all aspects of government regulation around radiation protection (College of Dental Hygienists of BC, 2018d).

Competent care is also defined through the College Practice Standards. The standards include associated policies providing detailed information regarding procedures that must be performed as part of patient care. The practice standards that define and describe competent care are as follows:

- A dental hygienist must obtain informed consent from the client or the client’s representative before initiating dental hygiene care.
- A dental hygienist must assess the client’s needs.
- A dental hygienist must analyze the assessment information and make a dental hygiene diagnosis.
- A dental hygienist must plan for the dental hygiene care to be provided, based on the assessment data and dental hygiene diagnosis.
- A dental hygienist must implement the plan consented to or adjust the plan in consultation with the client or the client’s representative.
- A dental hygienist must evaluate while dental hygiene care is being provided, and at the completion of care, to determine if the desired outcome has been achieved.
- A dental hygienist must document the dental hygiene care provided, following protocols of the practice setting. (College of Dental Hygienists of BC, 2018d).

Concepts of safe and competent health care are intertwined; the provision of high quality competent care is dependent on the integration of safe practices throughout the provision of patient treatment (Canadian Patient Safety Institute, 2009; de Jonge, Nicolaas, van Leerham, & Kuipers, 2011; Okuyama et al., 2011). The College practice standards support the code of ethics and further describe quality care as the “minimum, competent, safe level of care provided by dental hygienists when they apply dental hygiene knowledge, skills and attitudes to their practice” in ways that ensure the public is protected from harm (College of Dental Hygienists of BC, 2018d). Ensuring that registrants have demonstrated the minimum knowledge and skills to provide safe and competent care is the stated focus of the Quality Assurance Program (QAP).

Safe practice includes incorporating current evidence and standards when choosing treatment options (Asadoorian, Hearson, Satyanarayana, & Ursel, 2010). Evidence-based practice (EBP) means integrating the most current research to provide care (Asadoorian et al., 2010; Sackett, 1996). A newer approach, evidence-informed care or evidence-informed decision-making highlight the role that patients’ values, believes, and abilities play in determining the most appropriate treatment (Sackett, 1996; World Health Organization, 2010). While the College practice standards and code of ethics does not specifically refer to evidence-based or evidence-informed care, they note that care should be consultative and consider patient need (College of Dental Hygienists of BC, 2019b).

2.6 Quality Assurance

Quality assurance is a concept (or a system) with the purpose to incorporate professional practice standards and codes of ethics to ensure that high quality, safe, competent, ethical, and
appropriate care is provided by members of a profession (Bilawka, 2003a, 2003b; de Jonge et al., 2011). Quality assurance programs are critical components of a regulatory approach whereby the public is assured of safe, competent care and recourse if such care is not provided (College of Dental Hygienists of BC, 2017a). As mentioned previously, the notion of a regulatory approach that can ‘assure’ the public of safe and competent care is problematic.

Interest in health care quality and public safety has increased, in part, due to greater fiscal accountability and demands by both the public and funding institutes for measurable healthcare outcomes and improved patient experiences (Bilawka, 2003b; de Jonge et al., 2011). The focus of quality assurance programs “is on the consumer of health care,” namely the public (Bilawka, 2003b).

The concepts of dental hygiene quality assurance (QA) and continuing competence (CC) was investigated by Asadoorian and Locker (2006). Their study compared the Ontario QA model with the previous British Columbia continuing competence model. The continuing competence model in British Columbia required 75 hours of continuing education over a 3-year cycle. The Ontario model included the requirement for a portfolio including self-assessment of their practice, setting learning goals and plans for ongoing learning. After the learning activity, registrants self-assess their attainment of previously determined learning goals (Asadoorian & Locker, 2006). The previous continuing competence model in British Columbia was deemed inferior to the portfolio-based Ontario model for learning activities completed, with the latter yielding more “change opportunities and generating appropriate change implementation” than those participated in the previous British Columbia model (2006, p. 970). Attending continuing education courses (as in the previous continuing competence model) show limited sustained practice change as compared with other approaches (Alsop, 2013; Barnes, Bullock, Bailey,
Cowpe, & Karaharju-Suvanto, 2013; Hopcraft et al., 2010). Approaches that incorporate self-assessment, reflection, and goal setting yield more change in practice than attending learning activities alone (Armson, Elmslie, Roder, & Wakefield, 2015; Barnes et al., 2013; Dowling, Last, Finnegan, O'Connor, & Cullen, 2019). Learning that incorporates hands-on or experiential learning within small groups are shown to enhance learning over lecture-style presentations (Dowling et al., 2019; Hopcraft et al., 2010), with small group learning with opportunities for follow-up after the learning activity are shown to positively influence practice change (Dowling et al., 2019).

Maintenance of competency and quality assurance models have some similarities. Most models are based more on cost and ease of implementation, and maintenance than on demonstrated effectiveness (Eva et al., 2016; Lau et al., 2015). Regulatory organizations balance public expectations for the delivery of safe and competent care with the practicality of implementing and maintaining programs required by government.

In the early 2000’s governments involved with healthcare became concerned with accountability and the measurement of outcomes. In 2005, the BC Ministry of Health implemented changes to the HPA requiring regulatory Colleges change from continuing competency (CC) models to quality assurance (QA) models (Province of British Columbia, 2005). The new QA program needed to contain a measurable assessment component. The current CC program was not deemed sufficient to protect the public from incompetent practitioners as it did not contain any objective measure of competence or practice knowledge.

During the period from 2005 to 2009, the College investigated options for QA programs. They determined that no one model of QA was deemed to be proven effective. The College worked with stakeholders to develop a model to meet the “unique attributes of the dental hygiene
profession” (College of Dental Hygienists of BC, 2019e, p. 2). The guiding principles used to develop the QA program included the need to protect the public through an evidence-based program that was cost-effective for both the College to administer and reasonable for the registrants to manage. The College stated that the new QAP model was based on feasibility, sustainability, and cost to its registrants. It suggested that the QAP:

…strikes a satisfactory balance between the requirement to provide public protection and assurance, and the needs of CDHBC registrants (College of Dental Hygienists of BC, 2019e, p. 2).

Except for a survey of registrants, the evidence used by the College as the basis for the new QAP was not made public (College of Dental Hygienists of BC, 2018b). Some models of QA were rejected as unrealistic such as direct observation of dental hygienists in practice as it would be too expensive and not practical for the approximately 3,600 practicing registrants. The use of chart audits where patient records would be reviewed to determine if competent care was delivered was also deemed too difficult to implement. Although some options for the QAP were presented and rejected, a comprehensive review of possible options was not presented to registrants for their review and feedback.

The QAP consists of three components: (1) online multiple-choice examination also known as the ‘Tool’, (2) completion of an online learning module (JEM) focusing on regulation, bylaws, practice standards, scope of practice, professional ethics, and (3) continuing education requirements. The QAP operates on a five-year cycle. The exam consists of a 75-item, online, open-book, multiple-choice exam. The exam draws its questions from a pool of 125 items covering aspects of clinical practice. The multiple-choice questions in the exam were obtained from the larger pool of exam questions used in the National Dental Hygiene Certification Exam (NDHCE). The exam questions in the 125-item pool were selected by a panel of dental
hygienists established by the College for this purpose. The criteria for panel selection is not known.

At the completion of the online exam, any missed questions (in the form of competencies) are automatically populated into the registrant’s online profile. The missed competencies comprise the Guided Learning Plan (GLP) whereby registrants must develop learning goals and plan continuing education activities to address the missed competencies. Registrants must obtain 75 hours of continuing education (CE) in a five-year cycle. The CE consists of educational activities that address the missed competencies arising from the exam (as contained within a registrant’s Guided Learning Plan). Multiple-choice questions in the exam are not specific to the individual registrant’s practice setting, therefore registrants may have competencies within their GLP that are not relevant to their practice setting. As such, registrants may be required to take CE in topics not relevant to their practice setting – using some of their 75 hours of CE for courses in areas unrelated to their practice. If all the 75 hours of CE are not needed to address the items in the GLP, the registrant is free to choose learning activities based on their area of interest (College of Dental Hygienists of BC, 2019e). After completing the learning activity, the registrant performs a self-assessment or reflection of the learning in relation to the missed competency.

After the QA process was developed it was pilot tested with a group of registrants in 2012. The first cohort of dental hygienists entered the QAP in 2013. From 2013 to 2018 cohorts of approximately 600 dental hygienists entered the QAP each year. All dental hygienists in British Columbia are now enrolled in the new QA program.

The effectiveness of quality assurance programs is often unclear because of the difficulty in evaluating them (Chassin & Baker, 2015). Questions arise around how best to determine the
impact of quality assurance programs on patient care. The literature does not provide clear direction as to the most effective way to determine if people are receiving competent care but suggests that direct observation of clinical practice or measuring treatment outcomes could be utilized. In their systematic review of competence relating to patient safety, Okuyama et al., suggest that safe and competent care is ideally assessed in the workplace using standardized methods of evaluation (2011); the use of written exams to measure continuing competence is not supported. Recommendations include assessments of safe and competent practice be measured via direct observation of simulated procedures or within patient-based clinical settings (Okuyama et al., 2011).

Oral health treatment outcomes can be difficult to measure in part due to the wide spectrum of oral disease compounded by systemic complications seen in clinical practice (Bilawka, 2003b; de Jonge et al., 2011). In order to measure dental hygiene clinical outcomes a large number of patients would need to be followed over time to “detect differences between interventions and evaluate if improvements have been effective” (de Jonge et al., 2011). The longitudinal approach would not provide information as to the effectiveness of the new QAP for many years. In addition, in larger practices patients may receive care from various dental hygienists over time; it would be difficult to determine if health outcomes were attributed to a particular dental hygienist. This option also ignores the impact of patient participation as a partner in care. The outcome of care is not only dependent on the clinical services provided, but also on the oral care performed by the patient between appointments. The logistics and cost of this option renders it unusable.

In contrast to measuring treatment outcomes, assessing practice behaviours is an option for determining if practitioners are providing competent care (de Jonge et al., 2011). The extent
to which dental hygienists are providing competent care could be determined by questioning dental hygienists about their practice behaviours after their interaction with the QAP. Unfortunately, individuals who are underperforming tend to overestimate their abilities during self-assessment activities (Eva & Regehr, 2005).

Combined peer- and self-evaluation could be utilized to ensure the integration of standards of care (Crosson, 2015). An example of this might include dental hygienists reviewing patient charts, and comparing dental record keeping and treatment performed against stated standards. Self-assessment tends to be more accurate when using established criteria (Eva & Regehr, 2005). Alternatively, direct observation of clinical practice has been shown to provide the most accurate assessment (Okuyama et al., 2011), but the cost to implement such an approach would be prohibitive.

Effectiveness of a QAP depends on the tool used to measure effectiveness. The College’s evaluation of the QAP targeted registrants’ perceptions of the software that supports the online exam and the registrants’ CE activities rather than the impact of the QAP on practice. A report released by the College in March 2018, deemed the QA exam a success in several areas (College of Dental Hygienists of BC, 2018b). Based on feedback from dental hygienists who completed the exam, the online platform was seen to be user-friendly and the exam length was determined to be of an appropriate length (at 75 questions) with questions representing the “fundamentals of dental hygiene practice” (p. 3). Some feedback from registrants included concerns over the clarity of questions and the mismatch of question with practice setting. Most dental hygienists work in private practice settings, but others work in public health, education or educational administration and corporations. The questions contained in the tool are concentrated on clinical
services in a private practice setting with minimal questions for registrants working in other settings.

Success of the QAP was also measured by the number of complaints handled by the College’s inquiry and discipline committees. While careful to not depict this as a ‘cause and effect’ scenario, the College highlights that while the number of registrants in British Columbia increased by 9%, during the time of the QAP, the number of investigations (complaints) did not increase proportionally (College of Dental Hygienists of BC, 2018b). The low number of complaints make the use of inferential statistics to explore trends ineffective. A summary of reported complaints and investigations conducted by the College are published in their annual reports (College of Dental Hygienists of BC, 2015a, 2016, 2017b, 2018a, 2019a). A review of the complaints related to patient care are listed in the College’s Annual Reports and are summarized in Table 2.2.

<table>
<thead>
<tr>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Regarding client care</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Complaints that went to discipline</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total Number of Registrants</td>
<td>4,012</td>
<td>3,874</td>
<td>3,699</td>
<td>3,698</td>
<td>3,550</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.2 Client care complaints related to registrants of the CDHBC between 2014 to 2018

Of the 6 complaints lodged with the College from 2014 to 2018, none were deemed serious enough to proceed to disciplinary action. As a comparison, Table 2.2 illustrates the total number of complaints about client / patient care that were made to Canadian dental hygiene regulatory agencies between 2014 and 2018.
As Table 2.2 illustrates, there were between 1 and 3 complaints per year that were deemed serious enough to proceed to a disciplinary action from a population of approximately 30,000 Canadian dental hygienists. One registrant in Canada had their license to practice dental hygiene revoked for improper patient care during this period.

Regulatory Colleges are tasked with creating quality assurance programs that support registrants in the provision of safe and competent care. Cayton, in his recommendations to the regulatory college for dentistry in British Columbia, advised that the impact of quality assurance programs be measured rather than focusing on inputs such as registrants’ perceptions of the software programs, exam questions, and learning activities (Cayton, 2018). In part, this research study explored respondents’ perceptions of the impact of the QAP on practice through questions on the survey and interview.

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### Table 2.3 Client care complaints against Canadian dental hygienists 2014 - 2018

<table>
<thead>
<tr>
<th>Complaint Data Related to Self-initiation / Independent Practice Category (n=13)</th>
<th>Year</th>
<th>2018</th>
<th>2017</th>
<th>2016</th>
<th>2015</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td># of complaints regarding client care</td>
<td>2</td>
<td>44</td>
<td>31</td>
<td>27</td>
<td>27</td>
<td>21</td>
</tr>
<tr>
<td># of complaints that went to discipline</td>
<td></td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Outcome of discipline hearings – Note: the shaded area includes data that involves several actions related to one person; it does not reflect individual data.

- No further action | 1
- Reprimands | 2 | 1
- Specific activities | 3 | 2
- Fines | 1
- Revocations of registration | 1
- Other 3  | 1 | 2 | 6 | 11

**Total # of registrants in this category** 4  
30,716 30,082 29,703 29,113 28,436

1 This represents a 100% response rate.
2 Some data also included other types of complaints so the number for client care are slightly elevated. Some of the complaints for 2018 (n=3) were identified as being in process.
3 Other category included continuing education, costs associated with discipline hearing, publication of decision and privacy assessment.
4 based on practicing registrants
(Adapted from Sunell & Richardson, 2019)
During the first 5-year cycle of the QAP (2013 to 2018), 11 hygienists failed the multiple-choice exam after the allotted two attempts. The 11 hygienists then entered the remediation phase of the QA process. To date, no dental hygienists have lost their registration with the College based on the QA process. This raises the question as to the effectiveness of the QA process. Are all 3,600 dental hygienists in British Columbia practicing in a competent manner or is the QA process not successfully identifying those who are incompetent?

2.7 Continuing Education and Dental Hygiene Competencies

The need to stay current with emerging literature is a professional responsibility of healthcare professionals. Incorporating new evidence into practice is challenging given the volume of information that is published. The dental hygienist must continually adapt care based on emerging research, new evidence, and changing practice standards (Cobban, 2004).

Dental hygienists in British Columbia must target their CE activities to address missed competencies from incorrect responses identified on the multiple-choice exam. The missed competencies are automatically populated into a registrant’s Guided Learning Plan (GLP). Registrants must take CE targeted at the items in their GLPs. After completing learning activities directed at the competencies contained in their GLP, registrants are free to self-assess their knowledge and abilities to determine what additional learning would benefit their practice.

Dental hygienists can stay current with emerging research through a variety of vehicles. Young and Newell (2008) describe an assortment of professional continuing education interventions available to dental hygienists. They include many passive models of learning, such as attending lectures or reading journal articles. The authors researched professional education interventions and determined that “interactive learning with clinical participation and the opportunity to practice is one of the most effective educational interventions” (Young & Newell,
The majority of respondents in the study reported changes in their professional practice after attending interactive continuing education courses. Self-reported, follow-up surveys (up to five years after the event) reported statistically significant “moderate to high gains in knowledge and skills as well as application to patients in practice” (p. 1).

While interactive ‘hands-on’ professional continuing education courses may translate to significant change in practice, barriers to accessing these types of courses are substantial. Clinical courses are significantly more expensive to host, given the setting and supplies needed. Also, it is unlikely that clinical based courses would be readily available in rural areas of the country due to the expense necessary for a relatively small group of individuals. Many dental hygienists attend conferences in order to attain continuing education. In Vancouver, the Pacific Dental Conference attracts approximately 15,000 attendees annually. The ‘hands-on’ courses available are often sold out within hours of registration, even with a premium being charged in comparison to lecture-style courses.

A competent health care practitioner has the ability to self-assess their own practice strengths and weaknesses (Mould, Bray, & Gadbury-Amyot, 2011)). Unfortunately, the ability to accurately self-assess is generally weak among health professionals (Lee, Asher, Chutinan, Gallucci, & Ohyama, 2017; Regehr, 2013). Studies show that students in the lowest performing quartile consistently overestimate their abilities and do not recognize their areas of weakness (Gadbury-Amyot, Woldt, & Siruta-Austin, 2015; Lee et al., 2017; Mays & Branch-Mays, 2016; Metz et al., 2017). Since weak performers lack awareness and have less ability to self-assess, it is recommended that they seek valid and reliable outside feedback rather than rely on their own self-assessment skills (Gadbury-Amyot et al., 2015). High performing students tend to underestimate their abilities but are more effective at utilizing feedback on competency
assessments to improve their clinical performance than lower performing students (Mays & Branch-Mays, 2016).

The ability to self-assess can be enhanced by providing educational experiences for students throughout their time in formal educational programs and to practicing clinicians throughout their careers (Gadbury-Amyot et al., 2015; Jackson & Murff, 2011; Mays & Branch-Mays, 2016; Metz et al., 2017; Mould et al., 2011; Sargeant et al., 2010; Sargeant et al., 2011). To combat a lack of self-awareness, the inclusion of content around metacognition (awareness of own learning or thinking process) results in improvement to individuals’ self-regulation, self-awareness, and autonomy (Gadbury-Amyot et al., 2015).

Literature on self-assessment suggests it would be helpful to include evidence on the value of self-assessment, the ‘why’ of self-assessment (Jackson & Murff, 2011), along with knowledge, skills, and the attitude needed to accurately self-evaluate one’s own abilities and weaknesses (the ‘how’ of self-assessment). Clinical self-assessment skills benefit from the inclusion of ‘soft-skills’ such as preparedness, clinical judgment, critical thinking, professionalism to obtain a full picture of a clinician’s abilities and weaknesses (Metz et al., 2017).

Self-assessment skills develop and improve over time through consistent practice opportunities. Obtaining thoughtful and accurate formative and summative feedback from supportive faculty, workplace coaches, or peers improves self-assessment ability (Jackson & Murff, 2011; Mays & Branch-Mays, 2016; Metz et al., 2017; Mould et al., 2011; Sargeant et al., 2011). While learning to self-assess, adding a value (or grading) to students’ work may increase motivation and improve the overall quality of their work (Gadbury-Amyot et al., 2015; Mays & Branch-Mays, 2016; Metz et al., 2017).
Ongoing mentoring with feedback from credible, valid, supportive sources along with clear objective criteria for measuring and comparing ones’ practice leads to improved self-assessment abilities (Eva et al., 2016; Gadbury-Amyot et al., 2015; Mays & Branch-Mays, 2016; Sargeant et al., 2010; Sargeant et al., 2011).

Transitioning self-assessment skills from student to practitioner creates new challenges. Despite education and practice opportunities as a student, practitioners face internal and external barriers to achieving accurate self-assessment. Internal barriers include fear of judgement by others, fear of appearing less knowledgeable than peers, and lack of awareness of ones’ own strengths and weaknesses (Sargeant et al., 2010). In addition, ones’ anxiety, lack of confidence, or discomfort when spending time reflecting on an adverse patient outcome create a cognitive dissonance that may conflict with the practitioner’s identity creating an aversion to self-assessment (Eva et al., 2016; Sargeant et al., 2010). The main external barrier preventing the incorporation of self-assessment into practice is the perceived lack of time due to busy practice schedules (Sargeant et al., 2010).

In contrast, a strong sense of motivation, self-directedness, curiosity, and confidence equates to more frequent and accurate self-assessment (Sargeant et al., 2010). Formal reflection or introspection, using a professional portfolio or similar vehicle, improves self-assessment skills (Gadbury-Amyot et al., 2015).

Accurate self-assessment by dental hygienists enables the appropriate selection of continuing education opportunities. As the literature illustrates, self-assessment education along with opportunities for practice and feedback is necessary to improve skills. The QAP, in part, uses a combination of directed and self-directed learning activities that require accurate self-assessment. Directed learning is derived from the incorrect responses from the multiple-choice
exam; the Guided Learning Plan (GLP) lists the missed competencies to be addressed through CE activities. The GLP provides an objective assessment of the registrant’s strength and weaknesses around knowledge supporting clinical dental hygiene. However, as the questions in the exam are not practice specific, the ‘assessment’ may not be accurate. Registrants may also participate in self-directed learning activities, requiring registrants to self-assess their knowledge and abilities before selecting learning that aligns with their practice.

An understanding of dental hygiene competencies and competency-based education underpins the main components of the QAP: the exam, GLP and LP in the form of learning goals, plans, and self-assessments, and continuing education activities. Competence can be described as a group of related skills, knowledge, and attributes. Some authors interchange attributes with aptitudes or judgements (Beckett, 2015; Sunell, Richardson, Udahl, Jamieson, & Landry, 2008).

A skill is defined as a learned behaviour that can be developed and repeated with efficiency (Beckett, 2015). Skill is the ability to choose and demonstrate the correct technique at the appropriate time. Developed through training and practice with feedback, skills provide the ‘what’; they tell us what types of behaviour a person needs to perform a specific activity or job. Knowledge is the information including theories, facts, and protocols that underpin a skill, the ‘why’ of the behaviour being observed. A person’s attribute is a characteristic or quality that is often expressed as what you think and feel. Other definitions of a competency include ‘abilities’ or ‘aptitudes’ as elements of competence (Beckett, 2015; Eva & Regehr, 2008). Abilities can be personal, methodological, and social. Personal abilities include motivation, organizational ability, and decision-making. Social abilities include communication, negotiation, and
leadership. Methodological abilities include such things as being efficient. Some abilities and aptitudes can be taught but are more often thought of as personality traits (Beckett, 2015).

Competencies are described in ways that are observable, measurable, and based on performance (Lejonqvist, Eriksson, & Meretoja, 2012). They are often linked to workplace or academic environments. Descriptions of competencies bring structure to observable performance providing both the clinician and the observer with clear criteria from which to judge ‘how’ a person performs the action. Competencies can be structured in a way to observe beginner through to expert level of practice (Touchie & Cate, 2016).

The notions of competence emerged in the literature in the mid-20th century. In the early 1960s, the USA government felt that education was falling behind the pace of global knowledge acquisition. In response, the USA directed large pools of monies into education and training. The roots of outcomes-based education (or competency-based education as it will come to be known) are contained within the behaviourist theories of learning with strong links to training, assessment and regulation of skills (Morcke, Dornan, & Eika, 2013). Behaviourism (as represented in works by psychologists such as Watson, Pavlov, Thorndike, and Skinner) emphasized observable behaviours as measurements of attainment of educational objectives. Curricula was revised to align with explicit objectives that illustrated the observable change that learners would demonstrate. Bloom developed a taxonomy for classifying learning outcomes/goals utilizing categories of knowledge, skill, and attitudes. In the early 1970’s, Mager, Bloom, and Gagne’s work on instructional design provided the framework for early continuing education (CE) efforts (Morcke et al., 2013).

By the mid-1970’s critics of the behaviourist curriculum were gaining traction. The value of learning objectives that measured knowledge and basic skills were apparent; however, the
measurement of ‘judgement’ and other ‘attributes’ was not accommodated in a model that focused strictly on behavioural objectives. Valuable knowledge attained by students in the affective, social, and ethical realm could not be assessed by observation using learning outcomes structured in the behaviourist model (Morcke et al., 2013). By the early 1980’s, backlash against training and measured outputs (as opposed to education) was occurring. However, by the late 1980’s, Spady accommodated the non-observable affective domain by calling them ‘goals’ and categorized them as ‘preconditions’, not outcomes (Morcke et al., 2013).

In 1999, Harden published a report outlining how outcome-based education offered “a powerful and appealing way of reforming and managing medical education” by emphasizing the product versus the educational process (Harden, 1999, p. 7). Harden made strong arguments for using CE to provide accountability in a complex healthcare system. Public safety and accountability were purported to be products of producing a better doctor through the implementation of CE. Around the same time, three influential medical groups (Association of American Medical Colleges, the Accreditation Council for Graduate Medical Education, and the American Board of Medical Specialties) developed a competency framework and agreed on core medical competencies (Morcke et al., 2013).

The development of dental hygiene competencies began in the 1980’s with the development of national competency profiles specific to clinical abilities. These national competencies were developed by the Canadian Dental Association, Council on Education and Accreditation (CDA) to support national accreditation standards.

During the 1990’s the learning outcomes approach gained popularity in post-secondary education and dental hygiene programs in Ontario and British Columbia adopted the new approach (Sunell et al., 2008). In 1998, the CDHA revised the practice standards and developed
a Policy Framework for Dental Hygiene Education. Subsequently, a Task Force on Dental Hygiene developed draft generic learning outcomes for diploma, baccalaureate, masters and doctoral dental hygiene education. Dental Hygiene Educators Canada (DHEC) validated the CDHA draft diploma and baccalaureate learning outcomes. Dental hygiene educators found the generic learning outcomes of limited value. As a result, in 2006, national dental hygiene stakeholders came together to identify competencies to support the “knowledge, skills, attitudes, and judgments” required for the profession (Sunell et al., 2008, p. 28). The competency document articulated entry-to-practice (ETP) competencies only.

The ETP competencies were developed through a study grounded in national and international health care research (Sunell et al., 2008) including various ability documents such as the core competencies for the Public Health Agency of Canada (PHAC) and the Canadian Association of Public Health Dentistry (CAPHD). The competency framework was selected as it provided a more detailed articulation of ETP abilities when compared to a learning outcomes approach with its more general statements.

The ETP competencies formed the basis for the National Dental Hygiene Certification Board exam blueprint (NDHCE) and were adapted by the Federation of Dental Hygiene Regulatory Authorities (FDHRA) into practice standards with both the ETP competencies and the related practice standards being published within one document (Dental Hygiene Educators Canada, Canadian Dental Hygienists Association, National Dental Hygiene Certification Board, Commission on Dental Accreditation of Canada, & Federation of Dental Hygiene Regulatory Authorities, 2008). The development of national dental hygiene ETP standards was considered important for mobility and licensing purposes.
In 2010, after consultation with stakeholders, the document “Entry-To-Practice Competencies and Standards for Canadian Dental Hygienists” was accepted by national dental hygiene organizations and regulatory bodies across the country as the definitive standard for dental hygienists. This document was then utilized to develop curriculum, examine graduates, inform regulatory standards, and to create continuing competency programs for dental hygienists (Sunell et al., 2008).

The national dental hygiene competencies informed the development of the exam component of the QAP. The QAP is based on competency-based education but fails to follow some of its tenets. The ‘guided’ portion of registrants learning plans are based on missed competencies. This assumes that all other competencies are deemed ‘competent’. As described by Eva et al., learners may be dissuaded from accessing additional learning once they achieve competency (Eva et al., 2016). Individuals often overestimate their ability; self-assessment skills are inaccurate with less competent performers overestimating their abilities. Determining competence based on answering a multiple-choice question correctly may promote a false sense of competence among practitioners (Eva et al., 2016).

The QAP exam utilizes a ‘moment in time’ assessment with a pass/fail outcome. It uses a multiple-choice format that may provide an incomplete determination of clinical competence. Decisions in practice are not always clear-cut, the best answer depending on evidence, patient preferences, and other factors such as diagnosis and expected disease progression. Written tests have minimal value in the assessment of clinical learning (Okuyama et al., 2011; Teirstein & Topol, 2015). Registrants take the exam and analyze their results in a solidary manner; the literature supports communities of practice, sharing knowledge and learning from each other
(Eva et al., 2016; Sargeant et al., 2010). In contrast to working as part of a team in the dental office, the QAP promotes a solitary interaction with the exam and the online tracking platform.

2.8 Workplace Conditions

Workplace conditions include both the physical nature of the work (including the workplace equipment and supplies) as well as the psychosocial aspects of the workplace (Candell & Engström, 2010; Lindmark, Wagman, Wåhlin, & Rolander, 2018; Lopresti, 2014). Psychosocial characteristics of the workplace include the association between mental and emotional wellbeing and one’s environment. It includes emotional distress (also known as workplace stress) and notions of feeling valued and part of the work community. Conditions of work may influence the dental hygienists’ ability to adhere to standards of practice. Although emotional stress can manifest in physical symptoms, this portion of the literature review will artificially separate the physical surroundings and conditions of work from the psychosocial aspects of dental hygiene labour.

2.8.1 Physical Workplace Factors

The literature presented here reflects the clinical private practice environment as it continues to be the primary location of dental hygiene work (Canadian Dental Hygienists Association, 2019a). Musculoskeletal disorders (MSD) are a significant occupational health risk in oral health professionals with between 64-93% of reporting symptoms such as pain, numbness, or tingling (Gupta, Ankola, & Hebbal, 2013; Hayes, Smith, & Cockrell, 2010; Hayes, Smith, & Taylor, 2013; Mulimani et al., 2018). MSD is a term used to describe a multitude of disorders including but not limited to carpal tunnel syndrome, trigger thumb, thoracic outlet compression syndrome, tension neck syndrome, tendonitis, and vibration induced neuropathy.
MSDs often result from overuse, misuse, and trauma affecting muscles, nerves, tendons, cartilage, and joints resulting in pain.

Dental hygienists report diffuse MSD and pain involving the neck, shoulders, and upper limbs. Back or shoulder and pain is often diagnosed as shoulder tendonitis, various neuropathies, tension neck syndrome, and trapezius myalgia (Warren, 2010). High rates of pain or other symptoms involving hands, wrists, and hips resulting in early departure from the profession have been reported (Warren, 2010). Dental hygienists report pain in the neck, shoulder, and hand/wrist more often than other dental professionals with some reports indicating that dental hygienists displayed the highest rates of MSD among dental personnel (Hayes et al., 2010; Leggat & Smith, 2006). Hayes describes the results as ‘alarming’ for the dental hygiene profession (Hayes et al., 2010).

Of respondents to a 2019 national employment survey, dental hygienists reported work-related issues in the neck region (93%). An equal number (93%) reported issues with their back (Canadian Dental Hygienists Association, 2019a). Only 6% of respondents reported never having physical issues with their back, neck, or wrists (Canadian Dental Hygienists Association, 2019a). When pain prompts dental hygienists to seek medical care, the most common concerns are back and neck injuries (42% each). In the majority of these cases (75%), the injuries result in a reduction of the dental hygienists’ ability to work (Canadian Dental Hygienists Association, 2017).

In an international review of MSD, dental hygienists have been identified at increased risk of MSD due to performing repeated, fine-tuned actions (Hayes et al., 2010). Of interest, the review points out that physical pain and discomfort associated with MSDs is linked to increased risk of psychosocial issues such as elevated stress levels (Gorter, 2005; Hayes et al., 2010). Risk
factors for MSDs include working in static postures and using repetitive and precise hand, finger, and wrist movement (Candell & Engström, 2010; Humann & Rowe, 2015; Morse, Bruneau, & Dussetschleger, 2010). The risk of MSDs positively correlates to the number of hours worked each day, lack of breaks during the work day, and years worked (Hayes et al., 2010). MSDs cause dental hygienists to leave the profession early or continue to work with pain/injury negatively impacting their job satisfaction and performance (Hayes et al., 2010; Mulimani et al., 2018; Ng, Hayes, & Polster, 2016).

The literature suggests that, while the cause of MSDs is complex and multifactorial, some actions can help prevent its onset. Action is centralized around education and change in the dental hygienists’ working environment. Research suggests several ways that dental hygienists can reduce the risk of MSDs during the provision of patient care. The adoption of surgical magnification (with or without the use of additional illumination) can help prevent or reduced the impact of MSDs. Surgical magnification (loupes) have been shown to improve vision and posture. Improved posture limits neck and trunk forward flexion associated with MSD and is associated with a reduction in shoulder, arm, and hand pain (Eichenberger, Perrin, Sieber, & Lussi, 2018; Gupta et al., 2013; Hayes, Taylor, & Smith, 2016; Plessas & Bernardes Delgado, 2018; Sunell & Rucker, 2004; Wen, Kanji, Laronde, Shariati, & Rucker, 2019).

Appointment scheduling including sufficient time per patient to provide care and alternating between easy and difficult patients is recommended (Mulimani et al., 2018). Also the provision of buffer periods and breaks for rest, stretching, and nutrition also improves the symptoms of MSDs (Gupta et al., 2013; Mulimani et al., 2018). The importance of overall physical fitness as decreasing risk factors for MSDs was deemed valuable (Gupta et al., 2013; Hayes et al., 2010; Mulimani et al., 2018). Working under constant time pressure negatively
impacts the ability to maintain an ergonomically balanced position. Clinicians do not take the time to adjust the patient or operator position to a neutral position if they are feeling rushed or under time pressure (Hayes et al., 2010). Psychosocial stress from the number of patients seen per day, hours worked, and lack of job control is associated with increased MSDs (Mulimani et al., 2018). Studies show that longer working hours (in excess of 8 hours per day) and excess of 4 days per week increase the risk of MSD (Humann & Rowe, 2015). There are conflicting reports that MSD increases with years of practice. Some reports have a spike in MSD before the 5-year mark, with less incidence after 5 years. Research links this to dental hygienists improving ergonomics after some time in practice (Humann & Rowe, 2015).

2.8.2 Psychosocial Workplace Factors

The psychosocial aspects of the work environment includes issues of organizational culture and the organization of work (Canadian Centre for Occupational Health and Safety, 2018). Organizational culture (OC) is the “attitudes, values and beliefs” that influence behaviours in the workplace on a daily basis impacting the “mental and physical well-being” of workers. OC draws attention to the interactions between “people, their work and the organization.” Examples of OC include workplace respect, fairness, appreciation, honesty, and trust. In contrast, organization of work (OW) includes matters of workload, communication, control over decision-making, division of work, clear roles and expectations, management of organizational change, and opportunities for growth and advancement (Canadian Centre for Occupational Health and Safety, 2018). If the organization of work or the workplace culture (such as little control over work, high job demands, lack of support from co-workers or boss) employees may experience increased workplace stress (Humann & Rowe, 2015; Lopresti, 2014; Sanders & Turcotte, 2010).
The Organizational Culture (OC) of dentistry has changed the role of dental hygienists. The OC of dental hygiene and dentistry clash; dentistry being the dominant profession and is often in a position of power as the employer of dental hygienists. The OC of dental hygiene is often reduced in decision-making influence. The range of patient services or procedures offered has increased in both scope and number over the last 30 years. Research around the interaction between psychosocial workplace factors and MSD has grown in the last two decades (Warren, 2010). Literature indicates that a lack of emotional support in the workplace (e.g.; respect, honesty) coupled with an unorganized workplace can create a multiplicative effect resulting in two to three times greater risk for employee injury, pain, depression, and anxiety (Canadian Centre for Occupational Health and Safety, 2018; Humann & Rowe, 2015; Lopresti, 2014; Warren, 2010). This indicates that dental hygienists experiencing both work-related MSD and workplace psychosocial stressors endure effects that are more profound than experiencing either condition in isolation. Chronic, high workplace stress leads to emotional and physical effects which may lead to emotional burnout and cause early departures of skilled practitioners (Houston, 2018; Lopresti, 2014; Sanders & Turcotte, 2010).

Recently, the Executive Director of the British Columbia Dental Hygienists Association reported that dentists in British Columbia are having trouble attracting and retaining dental hygienists (C. Fletcher, BCDHA Executive Director, personal communication, April 9, 2018). Interestingly, a recent survey of Canadian Dental hygienists report that only 61% of respondents (64% of respondents in British Columbia) felt valued by their employer (Canadian Dental Hygienists Association, 2017).

In order to combat workplace stressors, literature suggests that dental hygienists maintain a positive attitude, get regular exercise, maintain healthy diets, and focus on the positive aspects
of dental hygiene practice (Guignon, 2018; Houston, 2018; Sheffler, 2018). While there are positive aspects of providing care to patients such as the ability to make a difference to individuals, suggesting that simple lifestyle changes can combat the organizational culture of dentistry and the organization of work is simplistic at best.

Dentists, as practice owners, exert some control over the work of the dental hygienist by setting hours and establishing office policies and practice ‘norms’. In some provinces, dentists have a degree of supervisory control over the scope of dental hygiene practice. For instance, dental hygienists in British Columbia are in a subordinate position, unable to provide care for patients unless the patient has received a dental examination within the last year. Despite being self-regulating, dentists have control over dental hygiene decisions. Dental hygiene regulators are working to remove these practice restrictions in the province but are meeting with resistance from organized dentistry. The by-laws removing the local anesthetic and yearly examination restrictions have been in front of government since 2016, and only recently have legislative changes been proposed to remove restrictions. Since the creation of the College and the enactment of self-regulation in 1995, clinical dental hygiene practice has remained largely unchanged as dentistry continues to exert control over access to care and procedures performed (McKeown, Sunell, & Wickstrom, 2003). Dental hygienists’ inability to practice their full scope of care negatively impacts practice autonomy.

2.9 Critical Realism Framework

Critical realism (CR) in the social sciences emerged in the latter part of the 20th century in response to social theorists who were investigating options from the positivism and post-positivism standpoints. Critical realism takes a middle ground between the positivist paradigm that assumes knowledge or truth is obtained from empirically studying the world through the
testing of hypotheses and the postmodernist paradigm that understands truth through understanding relationships between “language, subjectivity, social organization and power” (DeForge & Shaw, 2012, p. 85). It brings voices to those groups who are oppressed and marginalized (Creswell & Creswell, 2018). A critical realist worldview assumes the world cannot be reduced to a positivist order nor can objective truth be obtained without the influence of the human perspective.

Critical realism has been labelled a metatheory, framework, or worldview. First proposed by Bhaskar in 1978, critical realism confronts the understanding of what can be known (Bhaskar, 1978). He proposed that the nature of knowing must include an understanding that knowing is complex and that multiple realities can exist at the same time (Connelly, 2001). Bhaskar’s work highlights the interaction between structure and agency and seeks mechanisms that can explain the social world. He was interested in human emancipation and his work advanced understanding of complex social situations. CR takes a middle ground between the positivist and relativist philosophical assumptions. Healthcare research began to adopt CR to study complex problems involving health care interventions and patient care relatively recently (Trevo, 2009; Williams, Rycroft-Malone, & Burton, 2016).

As a framework for health research, CR is well positioned as it includes notions of personal agency and structural factors to understand a complex world. Personal agency (an individual’s choice and capacity to act) interacts with social structures that enable or constrain choice. Individual agency is developed over a lifetime of experiences and includes factors such as personal beliefs and attitudes; structural factors take into consideration social, cultural, or workplace norms (Clark, Lissel, & Davis, 2008). By separating agency and structure, CR can make visible and critique mechanisms that constrain personal or professional freedoms. The
notion of emancipation underpins the axiology, or the notions of worth, inherent in CR. Emancipation in the case of CR reflects transformation from oppressive sources with the domain of the ‘real’, of those rules, regulations, or power structures that often go unexplored as a ‘taken for granted’ lived experience.

Individuals exist in complex social structures that may impact their agency. CR views events as products of many factors or layers coming together in combinations with different individuals influencing different outcomes (Clark et al., 2008). Clark (et al.) posits that in order to explain why a phenomena occurs researchers “need to go beyond the surface of observable factors (the actual) to explore what is happening underneath (the real) (Clark et al., 2008, p. 70). Under CR, a causal explanation for a phenomenon is understood by identifying which structural entities and contexts interact to generate an event (Wynn & Williams, 2012).

The domains utilized in CR fall within three interrelated domains: empirical, actual, and caused. The domains are:

- “…the domain of the **empirical** (which includes ‘science’) is constituted by our quite fallible human perceptions and experiences of…
- …the domain of the **actual** – constituted as it is by the events and actions that transpire moment-to-moment – …
- …which is in turn caused by the countless, often unseen or taken-for-granted mechanisms and conditions that form the constellation of the domain of the **real**” (DeForge & Shaw, 2012, p. 85).

The acknowledgement that the world is complex, where events (the actual) and the experiences of individuals (the empirical) take place within situations where mechanisms such as policies impact events. CR therefore “concerns itself with uncovering the domain of the real, that
is, those underlying generative mechanisms that give rise to the demi-regularities we observe and experience daily (DeForge & Shaw, 2012, p. 85).

The ideal practice is represented by the regulatory standards of dental hygiene care. When dental hygienists use the standards in their workplace they may be subjected to unknown influences. This is described as the ‘real’ domain. It includes the variables that influence dental hygienists in the workplace. The variables may include notions of power, autonomy, financial pressures, psychosocial and physical stress. The domain of the ‘actual’ is what dental hygienists are choosing to do in daily practice as a result of the interactions of the workplace influencing their ability to follow the practice standards. The ‘empirical’ domain is where the research is located with a goal of exploring and naming dental hygienists’ perceptions of their interactions with the QAP in practice.

In the case of this study, the experiences of clinical dental hygienists (empirical results of this study) who provide safe and competent clinical dental hygiene care to patients (actual), while governed by policies in the form of the QAP including the Practice Standards, while navigating a variety of workplace condition (real) were studied.

The results of a study using a CR worldview does not claim direct causation; rather, it relies on generative causation whereby the interplay of conditions of the real “give rise to the events we observe in the domain of the actual” (DeForge & Shaw, 2012, p. 85). In other words, this study can be understood as investigating the tensions at the intersection of the actual (dental hygienists’ providing care to public patients) in relation to the real (the situation and workplace conditions impacting the delivery of care). The results of this study (the empirical) are the dental hygienists’ perceptions of the QAP and its components on the delivery of safe and competent of
care to the public. In the case of this study, the *real* is not being observed, rather it relies on dental hygienists’ self-reporting.

The epistemology, or the nature of knowing, espoused by critical realism is that knowledge is created through the exploration of generative causality with the goal or task of explaining an event or phenomenon (Morgan, 2014). The goal of this research was to shed light on the complexities that occur when dental hygienists attempt to provide safe and competent care according to the standards published by the College.

Other theories, frameworks and models were reviewed before selecting critical realism. Social cognitive theory (Bandura), social construction of reality (Berger), professional identity crisis (Costello), agency and culture (Cote), feminist and emancipation theories all provided some structures supporting this type of study. However, only critical realism contained the structure needed to address the complex issues inherent in the workplace that affect the provision of safe and competent dental hygiene care.

### 2.10 Conclusion

The CDHBC Quality Assurance Program is touted as an instrument whereby the public can be assured of receiving safe and competent care from dental hygienists in British Columbia. The QAP is based on a framework including a 75-item multiple choice assessment taken once every 5 years, a jurisprudence module, and continuing education requirements. The multiple-choice questions are based on national entry-to-practice competencies which have been tested for validity by an independent organization (College of Dental Hygienists of BC, 2018b). The College has deemed the QAP program successful in that the: (1) online exam platform is user-friendly, (2) exam is of appropriate length, and (3) questions represents fundamental dental
hygiene practice (College of Dental Hygienists of BC, 2018b). The College has not measured the impact of the QAP on the delivery of care.

Quality assurance programs have been developed to support dental hygiene registrants in remaining competent and current in their skills and knowledge during their occupational lifetime. This study investigated the perceptions of dental hygienists about the quality assurance program. The complex nature of the investigation lends itself to a critical realist perspective which acknowledges factors within the workplace and the impact of personal agency on the provision of safe and competent dental hygiene care.
Chapter 3: Research Design and Methodology

This chapter provides an overview of the mixed-methods research approach used to investigate my primary research question: *What are dental hygienists’ perceptions of the impact, if any, of the CDHBC Quality Assurance Program (QAP) on their dental hygiene practice?* I begin with a discussion of the research design and overall study approach, followed by target population and sample; survey and interview instruments; and finally, data analysis and limitations.

### 3.1 Research Design

The challenges of implementing and evaluating healthcare quality assurance programs across varied and multiple practice settings guided my study approach. Quality assurance programs are operationalized by health care practitioners and do not exist in isolation (as evidenced in my examination of relevant literature).

My investigation evolved through an iterative process that began with a focus on quality assurance programs alone (the various formats, requirements, parameters, etc.) and ended with a consideration of the dental hygiene workplace in relation to current QAP.

Dental hygienists in British Columbia work within a variety of settings and employment models. Some have their own practices while others work in dental offices as contractors and / or employees. Individual workplace conditions may affect a dental hygienist’s perception of the QAP. My research question developed in response to recent critical reports about health care regulation in British Columbia and the current research gap around the impact of the new QAP on the provision of safe and competent dental hygiene care.

My study investigated the various ways that dental hygienists, who work in diverse clinical practice settings across the province, experience components of the QAP while providing
safe, competent professional services to patients. Given the complex nature of my research, I chose critical realism as my theoretical approach and framework for this study. Critical realism (CR) combines the philosophies of science and social science to investigate causality across three overlapping domains of knowledge (real, actual and empirical). It informed the research design and the development of my data collection tools.

Consistent with a CR stance, this study used a mixed methods research design involving both qualitative and quantitative data collection, a separate analysis of both sets of data, and then a combination of the results for interpretation (Creswell & Plano Clark, 2011). While the mixed methods approach has gained popularity since the 1990’s, it is still controversial among some academics because it combines diverse perspectives that have complex ontological and epistemological differences (Arthur, 2012; McEvoy & Richards, 2006).

As early as the late 19th century, methodological disputes (quantitative vs. qualitative) pitted scholars who viewed research as positivist, analytical, and quantitative against those who viewed it as humanistic, interpretive, and qualitative (Babones, 2016). Quantitative, numeric data is often viewed as more certain, ‘scientific’ and persuasive than information obtained from dialogue or text (Babones, 2016; Jerrim, 2017). However, in a complex social context, frequency data, statistical significance, or a null hypothesis are often insufficient to fully describe a human phenomenon or experience (Arthur, 2012; Babones, 2016; Jerrim, 2017).

Arthur suggests that each design and method is valid; and rather than engaging in a “paradigm war,” the researcher should chose the methodology that best suites the study objectives (Arthur, 2012, p. 147). Creswell and Creswell (2018) view qualitative and quantitative approaches as points along a continuum rather than distinct categories, and Merriam and Tisdell
(2016) explain that the division of quantitative and qualitative data in a mixed methods design is often necessarily unequal—it’s weighted according to the type of knowledge sought.

Mixed methods are best used when a single type of data would be insufficient to explain a phenomenon (Creswell & Creswell, 2018; Creswell & Plano Clark, 2011). In my study, the quantitative component is nested within a predominantly qualitative design: the quantitative data provides a general overview of the problem, while the qualitative data provides a more in-depth, nuanced understanding from the perspective of a few individuals. Qualitative research originated in the study of natural phenomenon but is now conducted in the social sciences using surveys, interviews, and document analysis (Javidroozi, Shah, & Feldman, 2018). It often seeks to answer the question ‘why’, linking research to the human experience. In the 2010 research article on qualitative inquiry, Lincoln uses qualitative research as a term to describe a community of research practitioners from diverse disciplines who subscribe to a “porous, permeable, and highly assimilative” stance, celebrating the richness of the human experience, and collecting “knowledge of a different sort” (Lincoln, 2010, p. 6). Lincoln believes that robust data is dependent on both qualitative and quantitative methods (Lincoln, 2010).

This study used a two-part data collection process, including a survey questionnaire (primarily quantitative) and individual participant interviews (qualitative), because quantitative surveys alone would not have provided sufficient depth of information around the impact of the QAP on dental hygiene practice. Qualitative interviews provided an opportunity for dental hygienists to describe their experiences with the QAP, along with their work environment and practices (e.g. professional autonomy, clinical decision-making processes, working conditions, etc.). The survey and interviews were designed to compliment each other. The combined results
created a rich mix of demographic and dental hygiene practice data, along with descriptive data, for analysis.

This study focuses on understanding phenomena (the influence of the QAP on dental hygiene practice) from the subjects’ perspectives. It recognizes that reality is socially constructed and includes notions of an individual’s agency in social constructs (Shannon-Baker, 2016). The overall purpose of this study’s design is to use the qualitative data to understand initial quantitative results obtained from the surveys.

3.2 Participants

The target population for this study was dental hygiene registrants of the College of Dental Hygienists of British Columbia (CDHBC). Dental hygienists in the province can hold registration in one of six categories: 1) Full; 2) Conditional; 3) Full 365-Day Exempt; 4) Non-practicing; 5) Temporary; or 6) Student (a full description of the registration categories is contained in Chapter 2.)

The inclusion criteria used for this study comprised dental hygienists who 1) were actively practicing in a clinical setting and 2) held one of the following College registration practice classifications at the time of data collection: Full, Conditional, or Full 365-Day Exempt. At the time of data collection, a total of 3,549 dental hygienists met the inclusion criteria. Dental hygienists who held Non-practicing, Temporary or Student registration with the College were excluded as their practice was restricted or limited in scope.

3.3 Data Collection Instruments

To explore the impact of the QAP on dental hygienists’ practice, this study used a two-stage approach:
• Stage One: A web-based, online survey was distributed to dental hygienists in British Columbia who held registration in practicing categories with the College.

• Stage Two: Semi-structured telephone interviews were conducted with eleven participants who self-identified their willingness to participate by providing contact information within the web-based survey.

3.3.1 Stage One: Online Survey

A survey instrument was used to elicit data from research participants regarding their perceived experiences with the QAP in relation to their ability to provide safe and competent care to patients. The survey also included questions about workplace conditions and professional identity. While primarily quantitative, the survey also gathered qualitative data in the form of open-ended comments at the conclusion of each section of the survey. A copy of the survey instrument is included in Appendix C.

The introductory section of the survey contained information on informed consent (the full process of obtaining informed consent is described in the next section of this chapter) and included six sections: 1) Registration Category and Practice Setting; 2) Client Care; 3) Professional Practice; 4) Physical Environment; 5) Quality Assurance Program (QAP); and 6) Demographics.

Section 1, Registration Category and Practice Setting contained two questions about registration type and asked respondents to confirm their current status as practicing dental hygienists. Both questions included exclusionary responses, which directed non-qualifying participants such as those who held registration in non-practicing, temporary, or student categories, to a survey exit script.
Sections 2 through 5 of the survey related directly to the research question. Section 2, *Client Care*, directed participants to a summary of the eight College Practice Standards and asked them to consider how their practice is similar/different to the standards. The Practice Standards are published regulations that guide the prescribed activities to be performed during dental hygiene care. Points of comparison include the participant’s familiarity with (and adherence to) the contents of the standards, treatment scope (what activities may be performed during dental hygiene appointments), along with record keeping requirements. The nine items in this section were formulated to elicit information on how dental hygienists perceive their adherence to published standards while providing care to the public, and whether they experience barriers that impede the delivery of safe and competent care (as outlined in the Practice Standards).

Section 3, *Professional Practice*, contained 16 items that asked respondents to reflect upon various aspects of their professional environment and employment model, including professional autonomy, leadership, decision-making capacity, level of workplace stress, and professional identity.

Section 4, *Physical Environment*, asked respondents to identify elements of the physical workspace (dental operatory) that impact their overall health and wellness. The six questions in this section explored whether dental hygienists have the instruments, equipment, physical space, and working conditions necessary to support the provision of care. Other items sought to determine the participants’ level of career satisfaction.

Section 5, *Quality Assurance Program*, asked respondents to share their experiences with and perceptions of the QAP: any perceived impact the QAP has had on their practice specifically in relation to changes made in the delivery of care after participating in the QAP; how they’ve
experienced the assessment process and program requirements; and whether the QAP has enhanced their learning. The eleven items in this section also asked participants to consider and respond to statements about the QAP (e.g., “The score I received on the QAP Tool accurately reflects my knowledge and skills” or “I found the QA Guided Learning Plan to be relevant to my practice”).

Section 6, Demographics, collected data on age, gender, practice type and location, years in practice, hours worked per week, and level of education obtained by the participant.

The survey used a five-point Likert rating scale (strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, and strongly disagree). A ‘not applicable’ option was also included. At the end of each section, respondents were offered an open-ended question through which they could provide additional relevant information or feedback. At the conclusion of the survey, participants were given the opportunity to self-identify their interest in participating in a 30-minute follow-up interview.

The survey was hosted online through Qualtrics, a Canadian cloud-based survey company that meets the “BC privacy legislations and the functional requirements of the UBC community” (University of British Columbia, 2018). The survey data, which is secured using encryption techniques, is stored in Toronto, Ontario with backups in Montreal, Quebec.

The survey was distributed to dental hygienists by email via the British Columbia Dental Hygienists’ Association (BCDHA), a member services association for dental hygienists. Email recipients received an anonymous link to the survey website, generated by Qualtrics. The survey did not ask participants for personal identifiers.
3.3.2 Stage Two: Telephone Interview

The aim of the interviews was to achieve saturation of themes or concepts that emerged from the survey tool and not to extract new subject matter or phenomena (Merriam & Tisdell, 2016). My semi-structured interview approach provided an opportunity to delve deeper into the experiences of dental hygienist with the new QAP and included discussions around the potential impact of practice setting and workplace conditions on the delivery of care. The narrative accounts from the interview provided a means by which to gather the feelings, perceptions, and opinions of the participants. This information corroborated or questioned the data arising from survey results. The telephone interview instrument is included in Appendix D.

Interviews with participants also served to collect demographic data and included an anchor question for each of the four following areas: practice standards, the provision of dental hygiene care, the QAP, and professional satisfaction. An open-ended question was offered at the end of the interview process, which gave respondents with the opportunity to share any additional relevant information.

Given the geographical distribution of the interviewees, telephone interviews were the most efficient option. The 30-minute interviews were digitally recorded and transcribed before being returned to participants for comments and/or corrections.

3.3.3 Combining Stages One and Two

The two-stage design of this study allowed for the identification of broad themes through the preliminary analysis of survey data and the deeper exploration of those themes through the interview questions. Another benefit of this two-stage sequential approach was ease of data analysis: the survey and interview data could be analyzed separately prior to being compared (Creswell & Plano Clark, 2011). And finally, the use of two different methods of data collection
provided multiple strategies of validity that helped to support the accuracy of my findings (Creswell & Plano Clark, 2011). Both methods have their limitations and strengths, but when used together in a mixed methods design, the methods can be complementary.

3.4 Recruitment and Informed Consent

Recruitment of survey participants occurred via a broadcast email delivered by the British Columbia Dental Hygienists’ Association (BCDHA), a provincial member services organization for dental hygienists that actively supports professional research and advancement. Because the association and the College membership and registration fees are collected simultaneously by the College, all registered dental hygienists were members of the association at the time of data collection. All College registrants received an email invitation to participate in the electronic survey from the BCDHA (M. Angelova, CDHBC Quality Assurance Program Coordinator, personal communication, February 25, 2019).

The survey was available for four weeks (from October 18, 2018 until November 8, 2018), and a total of three broadcast emails were sent to elicit responses. The initial BCDHA broadcast email (sent on October 18, 2018) contained an invitation and link to the survey along with the consent form. Two reminder emails were sent, at the two-week mark and one day before the survey closed. See Appendices E through G for survey recruitment and reminder emails.

Survey participation was promoted through an incentive prize (an Apple iPad Mini). All participants were offered a chance to win the prize by entering their email contact as part of the survey, and the winning email was randomly and automatically chosen via computer software number generating program. The winner was notified by email, and delivery of the prize was successfully arranged and accepted.
Interview participants were recruited via the electronic survey, which asked them to self-identify their willingness to participate in a 30-minute follow-up interview (and to confirm their willingness by providing an email contact). Interview questions were emailed to participants in advance of the interview to give them ample time to prepare. Informed consent was reviewed and verbal consent was obtained at the start of each interview. See Appendix H for the Interview Appointment and Consent script.

3.5 Data Collection Process

Ethics approval was provided by the University of British Columbia (UBC) Office of Research Ethics Board prior to the data collection process (UBC BREB # H18-01566). Before releasing the online survey and commencing interviews, the data collection tools were pilot tested with three participants: two practicing clinical dental hygienists who were also dental hygiene educators and one researcher with experience in survey and interview research methods. While small, the pilot group provided valuable insights into how the participants might experience the instruments and suggested the addition of two questions to improve interview clarity. The first question addressed the physical challenges of providing dental hygiene care while the second question asked participants whether they would recommend dental hygiene as a career choice and why. The results of the pilot test were incorporated into the final versions of the survey and interview instruments.

Of the 451 survey respondents, 100 participants indicated their willingness to participate in a telephone interview. To ensure a balanced geographic representation of dental hygienists from across the province, interview participants were purposefully sampled from the five provincial regions (Cariboo North, Kootenays, Okanagan, Vancouver Island/Coast, and the
Lower Mainland). Participants were also chosen to represent a balance of four levels of experience, or ‘years in practice’ (1–5 years, 5–10 years, 10–15 years, and 15+ years).

3.6 Data Analysis

Sets of quantitative and qualitative data were analyzed separately to identify emergent themes and codes. Quantitative data from the survey were processed using SPSS software, version 25.0 for Windows (IBM, 2017), and qualitative data from the survey and interviews were coded separately using QSR International's NVivo 12 Plus.

3.6.1 Survey Analysis

The quantitative data were entered into SPSS, Version 22 (IBM, 2017). Descriptive analysis for frequency and percentages were computed to provide an overview of the responses. Comparisons of the frequencies of responses were analyzed with Pearson chi square tests. Pearson correlation coefficients were computed to determine the relationships between the ordinal and nominal frequencies. A p-value of p<0.05 was used as the level of significance.

The open-ended survey responses were coded for themes using QSR International's NVivo 12 Plus qualitative data analysis software (QSR International Pty Ltd, 2018). Qualitative data obtained as part of the web-based survey was coded for themes and analyzed separately from the interview data.

The purpose of this study was not to find causation or test a hypothesis, but rather to gather information regarding the perceptions of dental hygienists around the impact of the QAP on dental hygiene practice.

3.6.2 Interview Analysis

Coding for themes was the main process used for qualitative data analysis in this study. Coding involves a query of the data and a categorization and labelling of similar themes (Kaefer,
Roper, & Sinha, 2015). My process of coding was emergent and iterative; it involved repeatedly reviewing the transcription of texts to further refine and re-code sections of data as additional themes were uncovered.

In contrast to positivist models in which the researcher maintains distance from the data, the role of the researcher in the coding process is active and direct—the researcher teases forth the subtleties hidden in the text by revisiting the material over time (Maher, Hadfield, Hutchings, & de Eyto, 2018). As themes emerged from the texts, I used a multi-level coding approach that allowed me to alternate between analytical levels, adjust as new themes emerged, or re-code as issues arose (Kaefer et al., 2015).

Following the initial coding process, a thematic analysis was completed, and coded material was grouped according to comparable themes. The coding and grouping of themes became an increasingly interpretive process, with an associated, evolving search and review of literature as themes emerged. Themes and subthemes were identified and described.

A primary, level one theme, ‘Impact of the QAP’, captures the perceptions of dental hygienists around the QAP in relation to the provision of safe and competent care (as specified in the College Practice Standards). This theme includes respondents’ opinions of the QAP process as well as the impact of the QAP on their practice. Level two themes include ‘Professional Agency’ which includes topics about self-regulation, professional agency and autonomy. A second level two theme includes ‘Professional Practice’ including topics supporting professional identity, clinical application of practice standards, and perceptions of the physical working environment. The theme of ‘Stress’, which is related to both Professional Agency and Professional Practice, was also identified as a Level 2 theme. Some overlap occurs between the themes as the topics are not discrete.
3.7 Study Limitations

The goal of this study was to investigate perceptions of dental hygienists in British Columbia; therefore, the scope of findings is limited to this target group and not applicable to other populations such as other health professions or dental hygienists outside of the province. The data are based on individuals’ perceptions and influenced by their worldviews and experiences. However, this limitation is embedded and assumed within a critical realism framework, which acknowledges reality as socially constructed and includes notions of an individual’s agency within this construct (Shannon-Baker, 2016).

The relatively small survey response rate (12.7%, n=451) is a limitation that may weaken the impact of the study’s results. However, the use of two different complementary research methodologies did support data validity and accuracy, thereby strengthening research outcomes (Creswell & Plano Clark, 2011). The use of two different data collection instruments also enhanced triangulation (Creswell & Creswell, 2018); the supplementary use of qualitative, open-ended survey and interview questions minimized the bias inherent in any single, quantitative methodology.

Response bias, where respondents are influenced to select a socially desirable answer may create under- or over-reporting attitudes or behaviours (Winter, 2010). The ‘voluntary response’ bias, which occurs when respondents self-select their engagement with a survey or interview, can often skew results because of strong opinions by self-selecting participants. To address this bias, the survey and interview tools used varied wording and framing of questions to account for respondents with strong opinions (Winter, 2010). The survey items were created to draw from dental hygienists’ experiences with the QAP, and the interview questions sought deeper, more thoughtful responses. Probing interview questions that were phrased in multiple
ways sought to reduce ‘venting’ responses while encouraging respondents to articulate detailed, reflective answers.

This study drew from a population of dental hygienists who provided clinical care in British Columbia. People who had left the profession or who had changed to non-practicing categories in the years following QAP implemented were not represented. It would have been challenging to determine and locate the members who were removed from the register, and their inclusion was beyond the scope of this study. Furthermore, because the study drew from the perceptions of a specific population, replication of the study may not yield the same results (Freese & Peterson, 2017).

As a dental hygienist with approximately 30 years of experience, I may have been known to some of the research participants prior to this study. Although it was likely impossible to eliminate my bias of identity as I conducted phone interviews directly with participants, the deliberate choice of the research design including both quantitative and qualitative methods may have enriched my findings and increased the accuracy of the data analysis. To ensure accountability, accuracy and validity, the interviews were digitally recorded, transcribed, and returned to the individual interviewees so they could make changes or provide additional clarification (Mould et al., 2011).

3.8 Summary

This goal of this study was to investigate and understand the impact of the new CDHBC QAP on dental hygiene practice from the perspective of dental hygienists in British Columbia. A critical realism theoretical approach, using a mixed quantitative and qualitative methodology was selected. This method accommodated the complexity of the research which required objective, numerical data, as well as experiential data from the subjects’ perspective. In Chapters 4 and 5 I
present the data from the online survey and the semi-structured interviews. In Chapter 6, I discuss the results in light of the primary research questions guiding this study.
Chapter 4: Survey Results

This chapter presents data collected from the online surveys administered to dental hygienists practicing in British Columbia. Qualitative data from the open-ended survey questions were coded and analysed for themes. Merriam and Tisdell (2016) explain that while both quantitative and qualitative data is collected in a mixed methods design, one type of data can predominate. This study uses qualitative data to delve into the quantitative results. The results from the qualitative data analysis are reported with the associated quantitative survey data.

An invitation to participate in the survey was sent to 3,549 practicing dental hygienists in the province. Of the 497 who responded, 46 did not meet the inclusion criteria including active registration with the College in a practicing category and currently providing clinical dental hygiene care for individuals. The remaining respondents (n=451) completed some or all items in the electronic survey for a response rate of 12.7%. All data collected were used regardless of whether the survey was completed in full. A data collection flowchart for the survey is shown in Figure 4.1.

This chapter commences with a summary of the demographic data. It is followed by three sections describing the results of the survey: (1) Impact of the QAP; (2) Managing Practice Environment; and (3) Professional Practice. A summary of the key findings concludes this chapter.
Figure 4.1 Flowchart illustrating data collection process
4.1 Demographic Characteristics

Survey respondents represented the three College practicing categories of Full, Full Registration/365-Day Rule Exempt, and Conditional. Full registrants met the requirements to practice dental hygiene in British Columbia. Registrants in the Full Registration/365-Day Rule Exempt category met the qualifications of a Full registrant with the additional qualifications of a (1) degree in dental hygiene, (2) minimum of 3,500 practice hours over the past five years, and (3) a cardiopulmonary resuscitation course specifically for health care providers (HCP-CPR). Options are available to attain registration in the Full Registration/365-Day Rule Exempt category through ‘Substantial Equivalency Streams’. The Conditional category is for registrants that are missing either the successful completion of a local anesthesia course and/or are missing some continuing competency requirements (College of Dental Hygienists of BC, 2019f).

The sample is representative of the total population of practicing hygienists registered with the College as of November 2018 as reported by the CDHBC Communications and QAP Coordinator (C. Beauvoir, personal communication July 10, 2019). The majority of respondents (371), were registered in the Full category with 75 registered in the Full 365-Day Rule Exempt category. It is reasonable to expect that the number of registrants in the Full category would be larger as this category represents dental hygienists who graduate with the minimal entry-to-practice credential of a diploma. Five participants reported being registered in the Conditional category. Table 4.1 lists the research sample as compared to the total population.
<table>
<thead>
<tr>
<th>Registration Category</th>
<th>Study Sample n (%)</th>
<th>Target Population in BC / CDHBC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Full</td>
<td>371</td>
<td>82.3</td>
</tr>
<tr>
<td>Full/365 Day Exempt</td>
<td>75</td>
<td>16.6</td>
</tr>
<tr>
<td>Conditional</td>
<td>5</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>451</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Registrant Location</th>
<th>Study Sample n (%)</th>
<th>Target Population in BC / CDHBC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Lower Mainland</td>
<td>194</td>
<td>50.5</td>
</tr>
<tr>
<td>Vancouver Island/Coast</td>
<td>90</td>
<td>23.4</td>
</tr>
<tr>
<td>Okanagan</td>
<td>55</td>
<td>14.3</td>
</tr>
<tr>
<td>Kootenays</td>
<td>18</td>
<td>4.7</td>
</tr>
<tr>
<td>Cariboo North</td>
<td>27</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>384</td>
<td>100</td>
</tr>
</tbody>
</table>

*Not all the respondents provided a location

**Table 4.1 Comparison of sample and target populations**

The geographic distribution of the dental hygiene population in the province is shown in Table 4.1. The majority (55.4%) of dental hygienists in British Columbia practice in the Lower Mainland, a similar proportion of survey respondents (50.5%) reported practicing in this region. The Vancouver Island/Coast region represented 23.4% of the respondents, while the Okanagan represented 14.3% of respondents. Cariboo North (7.0%) and the Kootenays (4.7%) together represented the remaining 11.7% of the respondents.

Respondents’ age and gender breakdown is shown in Table 4.2. Of the 384 respondents, the majority were 30-59 years of age. The largest proportion (81.5%) were aged 30-39 years (29.7%), closely followed by those aged 50-59 (27.3%) and those aged 40-49 (24.5%). Younger respondents aged 20-29 made up 12% of the sample while only 6.5% were over 60 years of age. The results from this study align with the 2017 CDHA Employment Survey where respondents from British Columbia reported being aged 30-39 were the largest category at 29% (Canadian Dental Hygienists Association, 2017). As expected in a female dominated profession, 96.9% of
respondents in this study were female, aligning with respondents to the national employment survey where 97% indicated their gender as female (Canadian Dental Hygienists Association, 2019a).

<table>
<thead>
<tr>
<th>Age Group</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 – 29</td>
<td>46</td>
<td>12.0</td>
</tr>
<tr>
<td>30 – 39</td>
<td>114</td>
<td>29.7</td>
</tr>
<tr>
<td>40 – 49</td>
<td>94</td>
<td>24.5</td>
</tr>
<tr>
<td>50 – 59</td>
<td>105</td>
<td>27.3</td>
</tr>
<tr>
<td>60+</td>
<td>25</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>384</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>372</td>
<td>96.9</td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>2.6</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>384</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.2 Age and gender of survey respondents

Table 4.3 shows the number of hours per week respondents worked and the number of years they have been practicing. Of the 384 respondents, most (43.2%) work over 30 hours per week in their primary practice setting, which is often considered full-time. Those working 21-30 hours per week comprise 36.2% of respondents while those working up to 20 hours/week equate to 20.6% of respondents. The survey did not ask whether respondents worked in a secondary office. Almost half (49.5%) of respondents reported practicing as a dental hygienist for over 15 years. Those working from 6-10 years represent 23.4% of respondents. Early practitioners under 5 years (12.2%) and those working 11-15 years (14.8) made up 27.0% of respondents.
<table>
<thead>
<tr>
<th>Hours Worked Per Week</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 10</td>
<td>16</td>
<td>4.2</td>
</tr>
<tr>
<td>11 - 20</td>
<td>63</td>
<td>16.4</td>
</tr>
<tr>
<td>21 – 30</td>
<td>139</td>
<td>36.2</td>
</tr>
<tr>
<td>Over 30</td>
<td>166</td>
<td>43.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>384</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years in Practice</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 5</td>
<td>47</td>
<td>12.2</td>
</tr>
<tr>
<td>6 – 10</td>
<td>90</td>
<td>23.4</td>
</tr>
<tr>
<td>11 – 15</td>
<td>57</td>
<td>14.8</td>
</tr>
<tr>
<td>Over 15</td>
<td>190</td>
<td>49.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>384</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.3 Survey respondents’ hours worked and years in practice

The most common workplace for dental hygienists is a dentist-owned dental clinic, also known as a private practice; these may involve general or specialty practices. In recent years, a corporate model of dentistry has gained popularity. While single dentist-owned private practices may be run as a corporation, the term ‘corporate dentistry’ has come to mean a multi-location, multi-doctor dental practice, often involving the merger of small practices within a larger entity. Dental hygienists may own dental hygiene clinics. Respondents also work in practice settings such as long-term care facilities, hospitals, and a variety of other agencies. Degree-prepared dental hygienists find employment in public health agencies, operate preventive and educational programs for schools, daycares, and health units. Those with further education work as educators and researchers in both public and commercial settings.

The majority of respondents (approximately 92%) practice within a general, dentist-owned setting (76%), a corporate dental practice (11.5%), or a periodontal specialty practice (4%). The remaining 8% of respondents practice in a variety of settings including hygiene-owned practices (2%), public health (2%), education (2%) and other settings (2%) such as
research, First Nations community settings and a combination of previously mentioned practice settings.

Respondents reported obtaining a variety of dental hygiene educational credentials (see Table 4.4). The majority (43%) obtained a 2-year diploma; 37.5% reported obtaining a diploma consisting of 1 year of university transfer courses followed by a 2-year diploma in dental hygiene. Approximately 12% reported obtaining a bachelor’s degree in dental hygiene. Of the remaining 8% of respondents, 4.4% received a 3-year diploma while the remaining 3.3% reported a variety of credentials including 4-year Bachelor of Health Science degree, master’s degree, doctoral degree, or associate degrees.

As mentioned in Chapter 2, dental hygiene students in British Columbia graduate with either the minimal entry-to-practice credential of a diploma (consisting of one year of university transfer courses plus a 2-year dental hygiene diploma) or they graduate with a four-year baccalaureate degree in dental hygiene, currently only available through the University of British Columbia. Various degree completion options are available in Canada to diploma graduates and include baccalaureate degrees in health sciences, dental sciences, or dental hygiene.

The relatively large number of respondents (43%) reported attaining a 2-year diploma (never available in British Columbia) can be explained from a historical perspective. Many individuals from British Columbia who sought a dental hygiene credential chose to attend schools outside of the province, with Ontario being popular. Programs in Ontario did not require one year of university transfer courses nor did they have lengthy waitlists. The Ontario schools often had the option of attending school ‘year-round’, therefore finishing in as little as 18 months. The percentage of survey respondents reporting the attainment of a 2-year diploma aligns with the CDHA Employment Survey which reported that a combined 42% of respondents
completed 2 years of post-secondary education (Canadian Dental Hygienists Association, 2017). In addition, migration across provinces occur for personal, family, or work reasons.

4.2 Impact of the Quality Assurance Program

The primary research question in this study was the perceived impact, if any, of the QAP on the delivery of safe and competent dental hygiene care. The College Practice Standards underpin the QAP; therefore, the results and the responses from the open-ended questions related to the Practice Standards will be presented first. It is followed by dental hygienists’ perceptions of the impact of the QAP on their practice and data describing opinions of the QAP process.

4.2.1 Practice Standards

The following section reports the data related to the College Practice Standards and the delivery of dental hygiene care. A summary of the eight Practice Standards was included in the survey; an abridged version is included here as it provides a reference and framework for the results. The Practice Standards outline the expectations of the College around the delivery of safe and competent dental hygiene care.

**Overall.** A DH must practice in a way that ensures not only their own safety but also the safety of the client and other dental team members. *(Practice Standard #2)*

**Assessment.** Collect baseline information including demographics, client concerns, health and dental history, and a range of extra-oral and intra-oral assessments. *(Practice Standard #3)*

**Diagnosis.** Analyze the assessments and make a dental hygiene diagnosis. *(Practice Standard #4)*

**Planning.** Develop a care plan based on the assessment data and gain informed consent for the client selected option. *(Practice Standard #1 and #5)*

**Implementation.** Perform all the services agreed upon in the care plan or adjust the plan in consultation with the client. *(Practice Standard #6)*

**Evaluation.** Evaluate during and after care to determine if the treatment has been successful. Discuss the need for any follow-up, next hygiene appointment, referrals, and post care instructions. *(Practice Standard #7)*

**Record keeping.** Record all assessment data and treatment provided including follow-up information and referrals. *(Practice Standard #8).*

*(College of Dental Hygienists of BC, 2018d).*
Table 4.4 includes the survey responses for the statements exploring College Practice Standards. Of the 408 respondents, 98.5% of dental hygienists suggested they were familiar with the procedures and guidelines contained in the Practice Standards. Almost all of the respondents (99.5%) believe they provide safe and competent care and 80% suggested that they followed the practice standards.

Respondents were asked about their ability to practice their full scope of practice. More than 92% of respondents stated they provide all the clinical procedures mentioned in the practice standards summary; however, less than 68% agreed that, while they would like to include all the clinical procedures mentioned in the practice standards, they do not have enough time to do so. Almost 40% of respondents (37.8%) agreed with the statement “I experience barriers to practicing my full scope of abilities within my workplace.” These responses are not congruent; however, further insights are revealed through an analysis of the comments.

An analysis of the respondents’ survey comments illustrated the ongoing challenges experienced by dental hygienists in their attempt to deliver safe and competent care as described in the practice standards. These quotes highlight the issues around appointment length and delivery of the clinical interventions (procedures).

Not enough time for all the guidelines is the biggest problem, it is unrealistic to do everything required in the allotted time. ID# 19

There is never enough time in the hour provided to assess, take and record probing depths, provide the highest quality treatment and record exact and precise notes in this time. It is not possible in one hour. ID# 184

I really wish dentists would be more on board with allowing hygienists the time they need to complete all that is needed to provide proper care to their patients. ID# 134
Respondents reported that they failed to provide all care as outlined in the standards when insufficient time was perceived to be an issue.

*One hour is not enough time to get everything done. I often cut corners.* ID# 229

*Time is absolutely a limiting factor within each appointment. That means not EVERY visit contains ALL aspects of the guidelines, but every visit contains some of them.* ID# 233

Failing to provide the care indicated in the practice standards shows a lack of compliance to the standards.

Respondents reported that many offices book standard one-hour appointments for adult patients. They suggested that standard one-hour appointments do not provide sufficient time to provide individualized, safe and competent care.

*Any and all known shortfalls in providing comprehensive patient care arise due to time shortages/scheduling.* ID# 50

*Dental offices don’t give the hygienist enough time to complete all the tasks. All patients are booked the same amount of time regardless of their medical/dental needs. This is not true for the dentist, who has tailored appointments based on procedures!* ID# 97

*Dentists have a preconceived notion that “cleaning” appointments are booked for one hour. I struggle to meet the requirements of the practice standards in this time frame. As much as I’d like to check blood pressure and do head and neck exams, I can’t squeeze any more into an hour appointment and still do a thorough debridement.* ID# 226

One respondent suggested that patient expectations also drive the one-hour standard appointment as summarized in the following quote:

*With patients’ expectations of starting and completing “a cleaning” in one appointment, a new approach and re-education is needed.* ID# 207

This respondent suggested that the public needs to be educated to expect individualized dental hygiene appointments.
Most of the respondents’ comments in this section expressed frustration around the lack of control over the length of patient appointments and cited this as the major issue preventing them from following the practice standards.

Time pressure often results in a stressful work environment. Given the challenges reported around time, it is not surprising that over half (52.5%) of the respondents’ reported feeling high levels of stress in their workplace. In response to the statement, “I often experience time pressure because of the way patients are scheduled,” 67.8% of respondents agreed. However, in response to the statement, “I am able to determine the length of appointments based on client needs,” 85.6% agreed. The two responses are not congruent. The respondents’ comments suggested that while dental hygienists can determine the appropriate length of time or the interventions required, respondents reported not receiving support to schedule patients based on the time requested to complete the interventions.

*Conflict arises when the receptionist books the appointments and won’t consider the length of time I require for my treatments.* ID# 113

*I have tried to implement this in our office but there is such a resistance especially by [the] receptionists. They say it’s too hard to book hygienists this way.* ID# 235

Time was not a barrier to following the standards for those respondents with the autonomy to schedule individualized appointments.

*I am in a rare setting that schedules patients for their needs, not as a robot/number for one hour at a time. My employers and patients see the benefit of this style of care.* ID# 16

*I am fortunate that the dentist provides me the power to run the dental hygiene aspect of the clinic. I am allowed the time to properly schedule my clients and provide the best care I can for each individual.* ID# 49

*Time is definitely a factor in providing care for clients in a dental office setting. However, in my mobile practice, time is not an issue which changes the time/detail given to clients based on their care plan.* ID# 167
These quotes highlight the importance of practice autonomy in meeting the CDHBC practice standards.

Some respondents suggested that the inability to follow the standards stems not from time, but from dentists/employers not agreeing with the standards.

*I would like to follow the CDHBC standards, [but I can’t] as my boss disagrees with some of them.* ID# 104

*Expectations of the owner/dentist often do not coincide with what the protocols and standards set out by the CDHBC are.* ID# 111

*I am fully aware of practice standard but some of the employers are either unaware or turn a blind eye and instruct [me] to do it their way.* ID# 206

These quotes suggest some tensions between two professions whose practice may be guided by differing practice standards or expectations.

Most of the respondents agreed that the practice standards are followed, but comments suggested that workplace barriers prevented full integration of the standards. Workplace stress results when respondents experience challenges in following the standards, either directly from their dentist/employers who do not support the standards or from ‘office norms’ that deny the respondents the autonomy to schedule individualized patient appointments. Some hygienists attributed the tensions or stress inherent in dental offices to, in part, their employment by a dentist (member of a different regulatory College) who may have different beliefs and goals that may be in conflict with the College Practice Standards.
<table>
<thead>
<tr>
<th>CDHBC Practice Standards (n=408)</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>I am familiar with the Practice Standards and Interpretation Guidelines that describe the procedures to be included in each client appointment.</td>
<td>302</td>
<td>74.0</td>
<td>100</td>
<td>24.5</td>
<td>2</td>
<td>&lt;1.0*</td>
</tr>
<tr>
<td>The care provided at each appointment is decided collaboratively by my client and myself.</td>
<td>291</td>
<td>71.3</td>
<td>106</td>
<td>26.0</td>
<td>2</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>I provide care in a safe and competent way with every client.</td>
<td>395</td>
<td>96.8</td>
<td>11</td>
<td>2.7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I follow the practice standards with each client in my practice.</td>
<td>307</td>
<td>61.8</td>
<td>89</td>
<td>17.9</td>
<td>4</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>I perform all the clinical procedures mentioned in the practice standards summary when providing care.</td>
<td>183</td>
<td>44.9</td>
<td>194</td>
<td>47.5</td>
<td>14</td>
<td>3.4</td>
</tr>
<tr>
<td>I would like to include all the clinical procedures mentioned in the practice standards summary, but I don’t have enough time to do this.</td>
<td>134</td>
<td>32.8</td>
<td>143</td>
<td>35.0</td>
<td>40</td>
<td>9.8</td>
</tr>
<tr>
<td>I follow the CDHBC record keeping guidelines.</td>
<td>207</td>
<td>50.7</td>
<td>185</td>
<td>45.3</td>
<td>9</td>
<td>2.2</td>
</tr>
<tr>
<td>I would like to follow the CDHBC record keeping guidelines, but I didn’t know what to include.</td>
<td>27</td>
<td>6.6</td>
<td>91</td>
<td>22.3</td>
<td>64</td>
<td>15.7</td>
</tr>
<tr>
<td>I would like to follow the CDHBC record keeping guidelines, but I don’t have enough time to do this.</td>
<td>63</td>
<td>15.4</td>
<td>124</td>
<td>30.4</td>
<td>58</td>
<td>14.2</td>
</tr>
</tbody>
</table>

*Results less than 1% are reported as <1.0

Table 4.4 Survey responses - CDHBC practice standards
Table 4.5 includes the survey responses for the statements exploring topics underpinning professional practice. The dental hygiene department within private practices may be subject to pressure to generate revenue for the dental office; 30.3% of respondents reported that employers discussed dental hygiene production (billing) goals that should be attained. Respondents reported that while 77.1% of the dental hygienist respondents reported having input into the services provided to their patients, 14.3% reported having little ability to influence the dental hygiene care provided.

_The CDHBC is not my employer. I am in a conflict with the ideal care I would like to provide for the client and the work my dentist employer wants me to do._ ID# 148

_Expectations of the owner/dentist often do not coincide with the protocols and standards set out by the CDHBC._ ID# 111

Respondents’ shared how production expectations may interfere with providing patient-centred care.

_Production quotas can be dictated by office policy. This can limit the hygienist’s ability to provide comprehensive care._ ID# 69

_Production goal expectations are major barriers to dental hygiene practice._ ID# 52

_I work for my employer. Sometimes it feels that production counteracts anything else._ ID# 142

The pressure to generate revenue for the dental practice may negatively affect respondents’ ability to deliver patient-centered care as reflected in the College Practice Standards.

Dental hygienists are responsible for recording relevant patient data according to the Practice Standards. Most of the respondents (96%) reported following the College recordkeeping guidelines. However, 45.8% of respondents reported failing to follow the guidelines due to time constraints. In addition, 28.9% of respondents stated that they were unclear as to what should be included in patient records.
Unfortunately, time is of the essence and there is often not adequate time to detail treatment as thoroughly as I would want. ID# 70

Documenting is a very important part of my practice, but I have time constraints that limit the extent to which I can do this. ID# 190

Completing [other procedures] keeps me from performing accurate record keeping. ID# 114

As with comments around appointment time earlier in this chapter, respondents reported challenges with maintaining patient records during the scheduled appointment time. Some indicated that they did not adhere to recordkeeping guidelines due to time constraints.

Interestingly, one respondent shared that their office was under investigation around the lack of appropriate recordkeeping, and notes that:

Our office is under scrutiny for record keeping since we had a complaint and it is quite intense keeping up with the volume of writing required! We need 10 minutes just for charting! ID# 55

Respondents revealed their challenges balancing the need to generate revenue with maintaining patient records (a non-billable activity) during the scheduled appointment time. They indicated that they are forgoing recordkeeping during the appointment time to maximize time performing billable clinical procedures.

Billable time is often a factor when treating a patient. Far too often documentation suffers within the time and billing constraints of dental hygiene treatment. ID# 81

Charging a patient for time spent writing up in the detail outlined in the standards is difficult to justify. ID# 190

Some respondents chose to leave the recordkeeping until after the patient appointment has finished, often completing the work outside of regular paid work hours.

Often most of my documentation is done at the end of the day or during my lunch and I am not paid to be doing it at these times. ID# 176
My notes from each appointment reflect what is required according to CDHBC standards...I usually complete these notes outside of the client’s time in my chair. I usually donate up to an hour of work per day. ID# 122

Some respondents reported that the recordkeeping standards are not supported by the dentist/employer.

Keeping good records also involves the dental practice supporting the documentation needed or suggested. Sometimes, the employer doesn't want or feel the need for detailed reporting. ID# 17

Some dentists do not support the time required for thorough documentation, nor do some, see the value in this. ID# 172

Respondents reported some challenges in following the College Practice Standards. Responses highlighted the competing goals of adhering to standards while meeting dental practice production expectations.
<table>
<thead>
<tr>
<th>Professional Practice (n=400)</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>I feel valued and appreciated for my dental hygiene knowledge and education.</td>
<td>179</td>
<td>44.8</td>
<td>151</td>
<td>37.8</td>
<td>21</td>
<td>5.3</td>
</tr>
<tr>
<td>I am able to determine the length of appointments based on client needs.</td>
<td>225</td>
<td>56.3</td>
<td>117</td>
<td>29.3</td>
<td>9</td>
<td>2.3</td>
</tr>
<tr>
<td>I often experience time pressure because of the way clients are scheduled.</td>
<td>121</td>
<td>30.3</td>
<td>150</td>
<td>37.5</td>
<td>25</td>
<td>6.3</td>
</tr>
<tr>
<td>I have a respectful relationship with my employer.</td>
<td>227</td>
<td>56.8</td>
<td>119</td>
<td>29.8</td>
<td>14</td>
<td>3.5</td>
</tr>
<tr>
<td>I have little say or input into the services I provide my clients.</td>
<td>12</td>
<td>3.0</td>
<td>45</td>
<td>11.3</td>
<td>31</td>
<td>7.8</td>
</tr>
<tr>
<td>My employer discusses dental hygiene production goals that I should attain.</td>
<td>35</td>
<td>8.8</td>
<td>86</td>
<td>21.5</td>
<td>49</td>
<td>12.3</td>
</tr>
<tr>
<td>I am encouraged to bring my ideas forward to the team.</td>
<td>164</td>
<td>41.0</td>
<td>121</td>
<td>30.3</td>
<td>48</td>
<td>12.0</td>
</tr>
<tr>
<td>I feel that my co-workers function as a team.</td>
<td>172</td>
<td>43.0</td>
<td>144</td>
<td>36.0</td>
<td>20</td>
<td>5.0</td>
</tr>
<tr>
<td>The need for the client to have a dental examination every 365 days limits the way I practice.</td>
<td>93</td>
<td>23.3</td>
<td>79</td>
<td>29.8</td>
<td>51</td>
<td>12.8</td>
</tr>
<tr>
<td>The need for dentist supervision for local anesthetic limits the way I practice.</td>
<td>100</td>
<td>25.0</td>
<td>95</td>
<td>23.8</td>
<td>60</td>
<td>15.0</td>
</tr>
<tr>
<td>I feel that I can change the way I practice (e.g., I can incorporate new procedures if I find new evidence or information).</td>
<td>148</td>
<td>37.0</td>
<td>167</td>
<td>41.8</td>
<td>41</td>
<td>10.3</td>
</tr>
<tr>
<td>Statement</td>
<td>N</td>
<td>53.5</td>
<td>129</td>
<td>32.3</td>
<td>14</td>
<td>3.5</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-----</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>I can refer clients to other professionals when I feel it is necessary (e.g., oral surgeon or periodontist).</td>
<td>214</td>
<td>53.5</td>
<td>129</td>
<td>32.3</td>
<td>14</td>
<td>3.5</td>
</tr>
<tr>
<td>I feel like a leader in my practice.</td>
<td>123</td>
<td>30.8</td>
<td>138</td>
<td>34.5</td>
<td>76</td>
<td>19.0</td>
</tr>
<tr>
<td>I experience barriers to practicing my full scope of abilities within my workplace.</td>
<td>43</td>
<td>10.8</td>
<td>108</td>
<td>27.0</td>
<td>64</td>
<td>16.0</td>
</tr>
<tr>
<td>I feel high levels of stress in my workplace.</td>
<td>92</td>
<td>23.0</td>
<td>118</td>
<td>29.5</td>
<td>56</td>
<td>14.0</td>
</tr>
<tr>
<td>I believe I am a health care professional.</td>
<td>367</td>
<td>91.8</td>
<td>26</td>
<td>6.5</td>
<td>3</td>
<td>&lt;1.0</td>
</tr>
</tbody>
</table>

Table 4.5 Survey responses - professional practice
4.2.2 Quality Assurance Program

This section contains the respondents’ perceptions of the impact of the QAP on dental hygiene practice.

The majority of respondents reported completing the QAP cycle once (84.2%). Most of the respondents reported passing the examination component (97.45%). Most of the respondents reported having completed the exam portion of the QAP recently, with 49.1% writing the exam within the last two years. See Table 4.6 for survey respondents’ QAP experience.

<table>
<thead>
<tr>
<th>QAP Experience</th>
<th>Study Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Most Recent Year Exam Taken</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>22</td>
</tr>
<tr>
<td>2014</td>
<td>51</td>
</tr>
<tr>
<td>2015</td>
<td>69</td>
</tr>
<tr>
<td>2016</td>
<td>58</td>
</tr>
<tr>
<td>2017</td>
<td>87</td>
</tr>
<tr>
<td>2018</td>
<td>106</td>
</tr>
<tr>
<td>TOTAL</td>
<td>393</td>
</tr>
<tr>
<td>QAP Cycles</td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>330</td>
</tr>
<tr>
<td>Two</td>
<td>62</td>
</tr>
<tr>
<td>TOTAL</td>
<td>392</td>
</tr>
<tr>
<td>Unsuccessful QAP</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
</tr>
<tr>
<td>No</td>
<td>380</td>
</tr>
<tr>
<td>TOTAL</td>
<td>390</td>
</tr>
</tbody>
</table>

Table 4.6 QAP experience

Table 4.7 includes the survey responses for the statements exploring the QAP. Survey data shows that few respondents (15.9%) agreed with the statement “The QAP positively influenced the services I provide,” while 70.3% shared that the QAP had no influence on services provided. Additionally, 62.5% of respondents disagreed that the QAP was a positive experience for their professional practice. Respondents’ comments illustrated their perceptions around the QAP.
I don’t find the QAP beneficial in my clinical practice. ID# 154

I do not agree that the QAP in any way helps me provide better client care. ID# 186

I don't think the QAP changes or improves the quality of practice. ID# 216

Respondents questioned the value of the QAP as a tool for ensuring the public is receiving safe and competent dental hygiene care.

Because a hygienist gets a correct answer on the QAP doesn’t mean they are a competent and diligent hygienist. ID# 195

A multiple-choice exam is a poor choice for assessing a person's competencies. ID# 163

It is not an accurate way to assess the quality of treatment the hygienist provides or their competence. ID# 152

In response to the statement, “Overall, I found the QAP to be a positive experience for my learning,” 22.4% of respondents agreed. Some respondents did value the learning that occurred while preparing for the exam.

The studying preparation was beneficial as an overall review of dental hygiene. ID# 232

Studying for the QAP had a positive influence on my services. ID# 220

The result of the cross-tabulation using the Pearson Chi Square demonstrated significant association (p=0.026) between respondents who were registered in the 365-Day-Exempt category and their experience of the QAP as positively impacting their learning.

In response to the statement that multiple-choice questions in the exam aligned with the respondent’s practice, 50.8% disagreed. Comments further illustrated that respondents felt that questions were not aligned with practice settings.

The questions were focused on community health - most of us work in private practices. ID# 158

Not all questions seemed relevant to dental hygiene practice. ID# 146
When asked whether the exam accurately reflected their knowledge and skills, 47.9% disagreed. Respondents’ shared their perceptions that some exam questions were vague or inaccurate, or failed to reflect recent changes to practice protocols.

The questions were vague and not related to my practice. ID# 158

The questions on the QAP were very ambiguous. ID# 162

Questions were not updated to reflect current standards of practice (e.g., premedication guidelines). ID# 215

Many respondents questioned the value of an open-book, multiple-choice style of exam as a tool for evaluating clinical competence.

I don’t believe it assessed my knowledge of dental hygiene, but rather it assessed how good I was at "looking up information.” ID# 161

I do not believe that studying and answering multiple choice questions correctly "protects the public." ID# 227

Does 75 multiple choice questions really assess a hygienist’s competency? I don’t believe it does! ID #211

Only shows how well you test, as it’s open book and multiple choice. ID#180

When asked whether the Guided Learning Plan (GLP) was relevant, 25.5% agreed. Respondents commented that the Learning Plan (LP) and the GLP were cumbersome to use and the time commitment required to maintain their account was too onerous.

Although the on-line method of entering items to the OLP is great, there is lots of time needed to enter each item. ID# 147

The Guided Learning Plan [is] cumbersome. ID# 220

The learning tool is far too time consuming and confusing. ID# 198

This suggests that the online platform is not user-friendly, and respondents believe the time needed to maintain their account is challenging.
The GLP directs registrants to obtain continuing education in topics that the registrant answered incorrectly in the exam. Few respondents (35.4%) felt it was easy to find relevant continuing education opportunities that aligned with their GLP competencies.

*I did not feel that it was easy to find courses that related to my learning outcome.*  
ID# 158

*It's a burden to find "specific" courses to meet the QAP guided learning plan.* ID# 156

*I live in an isolated area that does not offer any CE credits, so I have to travel over 12 hours to the [Vancouver dental convention] yearly to get credits.* ID# 240

Respondents volunteered their perceptions around alternatives to the QAP.

*I do believe that something is needed for dental professionals to be accountable. I'm not sure if [it is] the QAP.* ID# 151

*I can’t come up with another way to accurately assess the quality and competency of our profession.* ID# 235

Some suggested mandatory refresher programs or modules instead of the QAP.

*Would prefer to do a 5-year refresher program to update and refresh hygiene skills as opposed to current testing.* ID# 155

*Mandatory review modules and or webinars?* ID# 211

The comments suggest a willingness to participate in QAP activities, but the current type and format of the activities are viewed as problematic.

The College purports that the QAP ensures the public of receiving safe and competent dental hygiene care, but few respondents felt it made any impact on their practice. Respondents were critical of the exam questions’ quality and currency and felt that an open-book, multiple-choice exam was ineffective in measuring clinical competence. The GLP and LP were deemed not-user friendly, requiring significant time commitment to maintain.
<table>
<thead>
<tr>
<th>Quality Assurance Program (n=384)</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>The score I received on the QA Tool accurately reflects my knowledge and skills.</td>
<td>52 13.5</td>
<td>102 26.6</td>
<td>38 9.9</td>
<td>80 20.8</td>
<td>104 27.1</td>
<td>8 2.1</td>
</tr>
<tr>
<td>The multiple-choice questions in the QA Tool aligned well with my practice.</td>
<td>25 6.5</td>
<td>103 26.8</td>
<td>54 14.1</td>
<td>108 28.1</td>
<td>87 22.7</td>
<td>7 1.8</td>
</tr>
<tr>
<td>I found the QA Guided Learning Plan to be relevant to my practice.</td>
<td>13 3.4</td>
<td>85 22.1</td>
<td>52 13.5</td>
<td>105 27.3</td>
<td>121 31.5</td>
<td>8 2.1</td>
</tr>
<tr>
<td>It was easy to find relevant continuing education opportunities that aligned with my QA Guided Learning Plan.</td>
<td>37 9.6</td>
<td>99 25.8</td>
<td>58 15.1</td>
<td>95 24.7</td>
<td>83 21.6</td>
<td>12 3.1</td>
</tr>
<tr>
<td>The QAP positively influenced the services I provide.</td>
<td>11 2.9</td>
<td>50 13.0</td>
<td>70 18.2</td>
<td>58 15.1</td>
<td>187 48.7</td>
<td>8 2.1</td>
</tr>
<tr>
<td>The QAP had no influence on the services I provide.</td>
<td>194 50.5</td>
<td>76 19.8</td>
<td>51 13.3</td>
<td>29 7.6</td>
<td>23 6.0</td>
<td>11 2.9</td>
</tr>
<tr>
<td>Overall, I found the QAP to be a positive experience for my learning.</td>
<td>18 4.7</td>
<td>68 17.7</td>
<td>54 14.1</td>
<td>71 18.5</td>
<td>167 43.5</td>
<td>6 1.6</td>
</tr>
<tr>
<td>Overall, I found the QAP to be a positive experience for my professional practice.</td>
<td>19 4.9</td>
<td>53 13.8</td>
<td>63 16.4</td>
<td>71 18.5</td>
<td>169 44.0</td>
<td>9 2.3</td>
</tr>
</tbody>
</table>

Table 4.7 Survey responses - Quality Assurance Program (QAP)
4.2.3 Managing Practice Environment

This section includes the findings related to the management of the practice environment. It contains three sections. The first section discusses the respondents’ views around supervision and the ability to introduce new research or clinical procedures into clinical practice.

4.2.3.1 Supervision

Respondents drew attention to the challenge of working as a self-regulating dental hygiene professional who must still have the supervision of a dentist for some procedures. Over half of the respondents (53.1%) reported the need for a patient to have a dental examination every 365 days limits the way they practice. The result of the cross-tabulation using the Pearson Chi Square demonstrated significant association (p=0.000) between respondents who were registered in the 365-Day-Exempt category and their experience with the 365-Day rule limiting their practice. This is to be expected as registrants in the 365-Day-Exempt category do not need to have a dentist perform a patient examination prior to providing dental hygiene care. Other respondents reported the 365-day rule to be a barrier to providing care and described it as an access to care issue affecting patients.

The need for my clients to have a dental examination "by a dentist" every 365 days does limit the way I practice. ID# 30

The 365-day rule is a barrier to care. My delivery of [care] is no different than when no exam is required. I must submit to some arbitrary rule which does not reflect autonomy. ID# 51

I feel that by limiting our scope of practice based on the 365-rule reinforces to the public and others that we are not educated enough to practice on our own. ID# 241

Some respondents reported the regulation around the provision of local anesthesia as a barrier to providing care. A dentist must be physically present in the office for dental hygienists to be able
to administer local anesthetic. Almost half (48.8%) of respondents reported the need for dentist to be onsite during the administration of local anesthetic limits their practice.

If I start at 8 and the dentist does not arrive until 9, that patient will not be eligible to receive local anesthetic if they need it. ID# 28

I have at times needed to reschedule my patients that require local anesthetic if the dentist is not able to be present in the office. ID# 66

Despite dental hygienists being self-regulating in British Columbia since 1995, regulations still exist that limit both the ability of dental hygienists to practice their full scope of practice, but also negatively impact patients’ access to care.

While not strictly a ‘supervision’ issue, dental hygienists reported barriers purchasing dental hygiene instruments. Comments suggested that some practice owners or their delegates restrict purchasing of supplies and instrument. Dental hygienists use a variety of powered and hand instruments in the provision of care. Dental tools wear and need to be replaced. Over 75% of respondents reported being able to purchase dental hygiene instruments as needed.

I was able to order any instruments that I needed. ID# 19

My request for instruments/supplies are well-received [although] the amount ordered depends on the overall clinic budget. ID# 56

Very fortunate to work in an office where I have the excellent work conditions... I’m able to purchase necessary supplies when needed. ID# 110

Approximately 25% of respondents experienced challenges when trying to replace worn or broken instruments. Finances were often cited as the reason for not replacing instruments.

Instruments are not ordered as frequently as desired so as not to cause "extra" expense for the employer. ID# 50

As hygienists, we usually have all the second-hand equipment...it is a constant struggle to have the tools refurbished. ID# 118
A few hygienists reported purchasing their own instruments as the dental office would not supply them.

*Instruments are not often provided, so I have to get my own. ID# 49*

*Ordering of instruments is usually not an issue as long as I am not "experimenting" with new instruments just to try them out. I have bought my own instruments and tools when there is something I am looking at trying. ID# 79*

Dental hygienists use specialized instruments in the provision of care. The inability to replace worn or broken instruments may pose a barrier to the provision of safe dental hygiene care.

### 4.2.3.2 Incorporating New Research

Dental hygienists must maintain currency through ongoing continuing education requirements. Most respondents (72.3%) reported being encouraged to bring new ideas forward to the dental team. Additionally, 78.8% of respondents agreed with the statement “I feel that I can change the way I practice if I find new evidence or information.” Respondents’ comments illustrated that ideas may be rejected if there is an associated cost to incorporating new ideas in practice.

*Whenever I suggest new products or need new equipment it is never favourably acknowledged especially if there is a cost to it. ID# 142*

*It can sometimes be difficult to implement new ideas/treatment protocol due to the inability to order new equipment/products. ID# 63*

*While my practice encourages and supports the use of new products/incorporating new procedures within the dental hygiene scope of practice, I feel that ultimately it comes down to cost. ID# 57*

The College mandates that registrants keep their knowledge current. While the majority of respondents reported being encouraged to bring ideas forward, some indicated that ideas are not implemented if they come with a cost.
4.2.3.3 Functioning as Part of an Oral Health Team

Most respondents (82.6%) agreed with the statement “I feel valued and appreciated for my dental hygiene knowledge and education.” Also, 86.6% of respondents agreed with the statement “I have a respectful relationship with their employer.”

*I am asked regularly to give my perspective on cases and collaborate with the periodontist as to how the client’s treatment is progressing.* ID# 110

*I have lots of autonomy with a very supportive boss who values my experience and skills both clinically and diagnostically.* ID# 129

*I am valued as a professional at my practice. My opinions are valued by my employer and we discuss our ideas as a team.* ID# 186

While 79% of respondents agreed that co-workers’ function as a team, some reported an environment that is unsupportive or lacks teamwork.

*I work in a large practice where leadership and communication is lacking from our employer. This is a challenge!* ID# 42

*I feel dental hygienists are disrespected by many other team members.* ID# 92

*Dental staff don’t appreciate nor see dental hygienists as professionals.* ID# 97

Over half of respondents (65.3%) agreed with the statement, “I feel like a leader in my practice.” They shared the following comments about their roles as leaders including the public perception of the profession.

*I believe we still live in archaic world where patients view us as “cleaners” not as educated professionals.* ID# 141

*We just scrape teeth. Once you have the technical skill down you’re good to go. I do believe we just scrape teeth and the college makes way too big of deal over what we need to do. It’s an important job but a monkey could do it.* ID# 59

Occasionally, respondents felt a need to refer patients to other health care providers including physicians, nutritionists or dietitians, or dental specialists such as periodontists, oral
medicine specialists, or oral surgeons. The majority of respondents (85.8%) reported being able to refer patients to other professionals when needed. A few respondents reported that the practice owner (dentist) prevented the dental hygienist from referring to other professionals.

Some of the employers I've worked for [are] ...disregarding the need for patients to be referred to a periodontist. ID# 206

Referrals to periodontists are not always encouraged. Possibly not in the best interest of client. More autonomy in this area would be beneficial for both hygienist and client. ID# 232

Although some respondents reported not being respected as members of interprofessional teams and did not view themselves as leaders, the majority of respondents reported positive experiences around being valued. Respondents indicated the need for greater autonomy around ordering dental instruments and implementing new ideas in practice.

4.2.4 Professional Practice

This section includes findings associated with professional practice. Respondents shared their views of their professional identity and spoke of their experiences regarding their physical work environment.

4.2.4.1 Professional Identity

Almost all the respondents believed they are health care professionals (98.3%). However, some respondents commented that the lack of professional autonomy negatively impacted their career satisfaction.

I feel exhausted at the end of the day as I’m trying to squish so much into each appointment. I fear I will burn out or just end up hating my job cause it’s sucking the enjoyment out of practicing. ID# 226

There is no real autonomy working in a general practice owned by a dentist. ID# 214

How can I be autonomous and accountable for the care I provide when I do not bill under my own [billing] number as a care provider? ID# 212
4.2.4.2 Work Environment

Most clinical dental hygienists work in a dental operatory within a dental practice. Dental hygienists reported challenges with maintaining a healthy musculoskeletal system due to the physical challenges of working with repetitive, small movements. See Table 4.8 for statements exploring respondents’ physical work environment. Over half of the respondents (61.6%) reported using an operatory that supports their physical needs. Others reported challenges with their workspace. Some respondents (13.5%) reported that their working conditions made it ‘impossible’ to provide safe and competent dental hygiene care.

*The operatory is not set up to be ergonomically correct.* ID# 193

*I experience difficulties daily with a dental cart that keeps rolling away, high volume suction that disconnects from the unit, an overhead light that gives my right arm so much strain that I choose to work in a nonilluminated environment.* ID# 148

*It is also difficult to properly execute dental hygiene treatment while working on/around/with equipment from the 60’s. This severely compromises our ability to properly see/access our patients without crippling ourselves.* ID# 121

Respondents shared their experiences managing chronic injuries or discomfort while continuing to provide dental hygiene care.

*I find dental hygiene very taxing on body. I hoped to have a long career but, after just 10 years, I have tendinitis in both wrists and pain in neck, back, and shoulders.* ID# 151

*Long hours with only a lunch break are not enough of a break to rest the lower back.* ID# 28

While not specifically related to operatory equipment, dental hygienists reported other challenges with their environment and with dental practice expectations (norms) around breaks and hours of work. Only 35.6% of respondents reported being able to take breaks (other than a lunch break) during the day.
Appointment scheduling is based on production and consequently there is no break time built in other than a lunch break. ID# 50

Lunch is the only scheduled break. There are often no other times to use the restroom due to tightly scheduled patients. ID# 237

The professional itself is demanding. I get bladder infections since I forget to take bathroom breaks. I rarely can sit down with down time the way a receptionist would. ID# 75

Given the respondents’ comments, it is not surprising that approximately one third (31.6%) of respondents agreed with the statement “I often regret becoming a dental hygienist because of my working conditions.”
### Physical Environment (n=393)

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am able to purchase dental hygiene instruments or other supplies as I need them.</td>
<td>161 41.0</td>
<td>136 34.6</td>
<td>13 3.3</td>
<td>54 13.7</td>
<td>28 7.1</td>
<td>1 &lt; 1.0</td>
</tr>
<tr>
<td>The physical workspace allows me to provide client care comfortably.</td>
<td>174 44.3</td>
<td>133 33.8</td>
<td>13 3.3</td>
<td>52 13.2</td>
<td>20 5.1</td>
<td>1 &lt; 1.0</td>
</tr>
<tr>
<td>I often regret becoming a dental hygienist because of my working conditions.</td>
<td>34 8.7</td>
<td>90 22.9</td>
<td>46 11.7</td>
<td>52 13.2</td>
<td>168 42.7</td>
<td>3 &lt; 1.0</td>
</tr>
<tr>
<td>I am able to take breaks during my day.</td>
<td>55 14.0</td>
<td>85 21.6</td>
<td>34 8.7</td>
<td>88 22.4</td>
<td>127 32.3</td>
<td>4 1.0</td>
</tr>
<tr>
<td>My operatory supports my physical needs.</td>
<td>82 20.9</td>
<td>160 40.7</td>
<td>26 6.6</td>
<td>85 21.6</td>
<td>37 9.4</td>
<td>3 &lt; 1.0</td>
</tr>
<tr>
<td>My working conditions make it impossible to provide safe and competent care.</td>
<td>26 6.6</td>
<td>27 6.9</td>
<td>21 5.3</td>
<td>55 14.0</td>
<td>258 65.6</td>
<td>6 1.5</td>
</tr>
</tbody>
</table>

Table 4.8 Survey responses – physical environment
4.3 Summary of Key Results

The stated mandate of the College of Dental Hygienists of British Columbia is to act in the interest of the public; the goal of the QAP is to have a program whereby the public is ensured of receiving safe and competent care by dental hygienists in the province. The survey respondents do not perceive the QAP as an effective mechanism to protect the public from unsafe or incompetent care. Respondents experienced multiple barriers to providing their full scope of practice including the autonomy to schedule appointments based on patient need and dental supervision requirements that limit access to care. The lack of a dental operatory supporting ergonomic positioning was reported to contribute to physical discomfort. Practice barriers coupled with the pressure to generate revenue created workplace stress for respondents.
Chapter 5: Interview Results

This chapter presents the results of the data collected from the semi-structured telephone interviews held with eleven practicing dental hygienists in British Columbia. The interview respondents helped to provide insights into the survey data, allowing for a deeper understanding of the findings. This chapter commences with the demographic data. This is followed by the presentation of the interview findings. Several main themes dominated the interviews: (1) Perceptions of the QAP - including its impact on the delivery of care and respondents’ views of the QAP process (2) Professional autonomy as manifested through dental hygienists’ ability to control the delivery of services, and (3) Physical work environment and its impact on physical injury or discomfort. A summary of the key findings concludes this chapter.

5.1 Demographics

One hundred survey respondents indicated their willingness to participate in a 30-minute follow-up interview. A purposeful sampling technique was employed to select participants for individual semi-structured telephone interviews. The sample was based on registration category, practice setting, years in practice, and geographical region. Seventeen interview candidates were contacted; 11 confirmed their willingness to participate and made time to be interviewed for a response rate of 64.7%.

Of the 11 interview participants, 8 were registered with the College in the “Full” category, while 3 were registered in the “Full 365-Day Rule Exempt” category. See Chapter 2 for a description of the College registration categories. Interview participants were selected from five provincial regions areas; 4 from the Lower Mainland, 3 from the Thompson Okanagan, 2 each from Vancouver Island/Coast and the Kootenays, with one from Cariboo North. See Table 5.1 for the geographic regions represented by the interview participants.
### Table 5.1 Location of interview participants

Interview participants practiced in a variety of settings including 9 who practice in a general practice, 2 from a specialty practice, 1 from public health, and 2 that owned their dental hygiene clinics. See Table 5.2 for the practice settings represented by the interview participants.

*Total is higher than number of interview participants because some dental hygienists reported living and working in more than one region.

<table>
<thead>
<tr>
<th>Location</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Mainland</td>
<td>4</td>
</tr>
<tr>
<td>Thompson Okanagan</td>
<td>3</td>
</tr>
<tr>
<td>Vancouver Island/Coast</td>
<td>2</td>
</tr>
<tr>
<td>Kootenays</td>
<td>2</td>
</tr>
<tr>
<td>Cariboo North</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

### Table 5.2 Interview participants’ practice setting

The interview participants include dental hygienists whose years in practice ranged from 7 to 29 years. See Table 5.3 for the years in practice represented by the interview participants.

*Total is higher than number of interview participants because some dental hygienists work in more than one practice setting.

<table>
<thead>
<tr>
<th>Practice Setting</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General dental office</td>
<td>9</td>
</tr>
<tr>
<td>Periodontist (Dental Specialist)</td>
<td>2</td>
</tr>
<tr>
<td>Dental Hygiene Practice Owner</td>
<td>2</td>
</tr>
<tr>
<td>Public Health</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

### Table 5.3 Interview participants’ years in practice

<table>
<thead>
<tr>
<th>Years in Practice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 5 years *(low response rate)</td>
<td>0</td>
</tr>
<tr>
<td>6 to 10 years (range 7-10 years)</td>
<td>7</td>
</tr>
<tr>
<td>11 to 15 years (range 11 – 15)</td>
<td>1</td>
</tr>
<tr>
<td>Over 15 years (range 19 - 29 years)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>
5.2 Perceptions of the QAP

The primary research question in this study was centered around discovering the perceived impact, if any, of the QAP on the delivery of safe and competent dental hygiene care. This section is divided into three subsections: (a) utilization and understanding of the practice standards underpinning the QAP (b) impact of the QAP on dental hygiene practice and (c) perceptions of the QAP process.

5.2.1 Dental Hygiene Practice Standards

The College Practice Standards are the published criteria underpinning the QAP; adherence to them is purported to ensure the public that they are receiving safe and competent dental hygiene care. Interview participants generally viewed the standards favourably and used them as a guide to provide dental hygiene services.

*I think they’re the guiding standards of what you’re supposed to do as a hygienist. It’s the base on which I practice.* ID# P3

*I feel like they’re definitely part of my everyday working environment and practicing safely.* ID# P2

*Well I certainly take them with high regard. I understand the reason they are there, to protect our clients and to protect the public.* ID# P9

Participants suggested that the standards should better reflect the ‘humanistic’ nature of the work dental hygienists do, rather than the heavy emphasis placed on the completion of clinical procedures.

*... the one aspect that’s not communicated well enough is dealing with people as humans not as a bunch of procedures.... somehow the practice standards leave out that quality of the healing part.* ID# P6

*I practice how I would like to be treated.* ID# P9
Participants indicated that while the standards represent clinical practice well, they do not address other practice settings in a meaningful way. The College does not differentiate standards for registrants working in public health or educational settings. In comparison, the College of Dental Hygienists of Ontario has separate ‘Standards of Practice’ for registrants working as educators (College of Dental Hygienists of Ontario, 2009). This quote explains that public health hygienists use community screening models which do not follow the College Practice Standards.

*In public health...we were doing screening kind of models which weren’t really individual patients.* ID# P6

Respondents described how they used the Practice Standards to guide the provision of clinical dental hygiene care. They shared that the standards do not address the variety of workplace settings in an equal manner.

### 5.2.2 Impact of the QAP on Dental Hygiene Practice

The College purports that the public is assured of receiving safe and competent dental hygiene care from practitioners who are part of the QAP. Participants in this study shared that the QAP made little to no difference in the way they deliver care.

*No, not really, I don’t feel like the QAP has had a huge influence on my practice.* ID# P2

*This QA program does [expletive, ‘nothing’] for safety or competence.* ID# P5

Some reflected that the QAP was not relevant to the provision of safe and competent care; rather, it measures how well registrants take multiple-choice exams.

*If anyone is scholastically smart you could pass that exam in a heartbeat because you can look up all the answers...there were no actual critical thinking skills involved.* ID# P2

*People can do really good at tests and then be really [poor] clinically.* ID# P5
One could take these responses as indicating that dental hygienists already feel that they practice according to the standards and that no changes are required. However, based on the perspectives shared during the interviews, many of the participants felt that they were unable to fully implement the practice standards because of the structures inherent within the business model of many dental practices.

Participants talked about the fact that they continued to attend CE courses to remain current with new research as they did before the QAP was initiated.

Well I try to stay up on top of my continuing education as much as possible. I go to different lectures and seminars, and read different journals and articles. ID# P10

Am I considering any changes in my practice? Not necessarily based on my quality assurance program. Definitely on my continuing education. ID# P8

When asked about how they provided safe dental hygiene services, respondents tended to focus on care procedures rather than an overall approach to practicing in a safe and competent manner. The following quotes reflect this.

I purge the waterlines in the beginning of the day and in-between patients. ID# P8

I’m very diligent wearing PPE’s [personal protective equipment] as well as having my patient wear safety glasses. I review medical history so if there were any concerns, I’m very aware of it. ID# P4

I read a lot about diabetes because there’s a higher risk of medical complications in that population. I’ve also been focusing on medical emergencies because of our older practice demographics. I’m making sure that we all are aware of how to react in a medical emergency, not only for the clients but staff as well. ID# P7

If there was a question about whether or not the procedure was within our scope of practice, we would research it through the College website. (ID# P9).

Respondents focused on various dental office processes geared to protect patients along with ensuring that they work within their legal scope. Only a few described going into the
literature to access current research to update emergency protocols or to ensure currency of their treatment protocols.

Few linked the QAP to the provision of safe and competent care; rather, they saw the exam and the GLP/LP as irrelevant to their profession, thinking of it as something they ‘survive’ rather than a means of ensuring the public is safe.

*Every time I go take a course, I tend to make changes. But the QAP wasn’t really a learning tool for me in [that] I could apply it with my clients, it just was like ‘I survived that one!’* ID# P6

In summary, there was an overall tone of uncertainty in the participant responses around the impact of the QAP on practice. Most stated that there was no/little impact on the provision of dental hygiene care as a result of the QAP. Respondents described their efforts to practice in a safe manner. They also shared that the 75-item multiple-choice exam did not measure their ability to practice in a safe manner; it tested their ability to take an open-book exam.

### 5.2.3 Perceptions of the QAP Process

The findings in this section reflect the participants perceptions around preparing for and writing the online examination, navigating the online learning tracking and reporting system, and perceptions around accessing appropriate continuing education learning opportunities.

Several participants commented on the cost of the QAP examination. The online exam is open-book and contains 75 multiple-choice questions. It has a set fee of $125.00 for each attempt which is paid directly to the National Dental Hygiene Certification Board (NDHCB). Registrants also pay an annual renewal fee of approximately $535.00 and are required to obtain professional liability insurance. They must also pay for 75 hours of continuing education over the course of 5 years (College of Dental Hygienists of BC, 2019e).

*I think it’s way too expensive. I think it’s ridiculous.* ID# P9
I think the QAP is a good idea, but it's going to add more cost to everything too. ID# P1

Some of the respondents felt that studying and participating in learning activities prior to taking the exam had a positive impact on the currency of their overall knowledge. The participants prepared for the exam by obtaining and reading current editions of dental hygiene textbooks, purchasing self-study modules, and taking practice exams.

*We were four hygienists and we all got together and studied...so that everybody in the office is learning the same things at the same time.* ID# P9

*I acquired new versions of textbooks and I learnt a lot from studying and preparing for the exam.* ID# P9

Participants undertook the preparation either individually or in small group settings. Several of the participants reported enjoying and learning through small group settings where dental hygienists discussed and debated topics, often learning from each other.

*A group of two or three [dental hygienists] try to help each other answer questions. They learn from each other’s stories and it helps them to remember [the answers]. It is a non-threatening environment.* ID# P6

Respondents reported mixed feelings about the relevancy and accuracy of the multiple-choice questions. It is relevant to recall that the exam involves a random selection of 75 of the 125 questions. It is, therefore, unlikely that any two dental hygienists experienced identical exam questions.

*...some of them are just plain horribly written so they’re not clear.* ID# P6

*...obscure microbiology questions* ID# P3

*I felt it [exam questions] didn’t really relate to what you would see in the majority of patients in actual practice. I thought some of the things [exam questions] were silly.* ID# P1
Even though they had different questions on their exam, they were critical of the wording, accuracy, and relevance of some of the exam questions.

At the conclusion of the online examination, before registrants exit the program, they have an opportunity to view the questions they answered incorrectly. Interview participants appreciated this opportunity. Some dental hygienists with advanced knowledge or expertise in a subject area admitted to overthinking some questions; others shared that they felt some of the questions were incorrect as the questions did not reflect current research.

And I know exactly why it [GLP] told me to take perio courses. There were a few questions in there I couldn’t agree with and I knew what answers they wanted but I just couldn’t agree with them. ID# P7

Some questions are a bit suspect. I think that it would be nice to have a conversation about the questions because I think you could argue for a few correct answers. ID# P3

Participants would have appreciated an opportunity to discuss or provide feedback about what they perceived to be poorly worded questions or be able to inform someone of questions they felt had errors. It might be helpful for the examiners to provide an opportunity for people to share their feedback at the end of the exam.

Due to the ‘luck of the draw’, participants reported that the questions on their exam did not reflect their practice setting. One participant expected to have missed questions around pharmacology, but instead missed a question about managing a child’s behaviour which she felt was more appropriate for a hygienist working in public health or in a family practice.

The exam identified things I don’t use such as public health. ID# P8

... I remember at least one question; it’s like would a kid behave better if you turn a TV on or if you give them peer pressure? ID# P11
Participants with advanced subject matter expertise who obtained wrong answers in the exam also felt that the examination did not accurately reflect their self-assessment. The ‘mismatch’ between exam questions and practice settings appeared to influence whether participants felt that the exam accurately reflected their own areas of practice weakness.

After dental hygienists complete the online exam, their incorrect responses are populated in the College’s online tracking system and become part of the Guided Learning Plan (GLP). Registrants then address the missed items by creating learning goals and finding continuing education activities to address the items. After the continuing education activity is completed, registrants write a self-assessment, addressing how the continuing education activity met the learning goal (College of Dental Hygienists of BC, 2019e).

While participants acknowledged that an overall understanding of dental hygiene knowledge is important, they felt disadvantaged to have their continuing education ‘mandated’ through their GLP. Some dental hygienists reported being frustrated when directed, through the GLP, to engage with CE activities in areas not reflective of their practice setting.

*If you are a professional ...and you see that you’re lacking somewhere, [I feel] that you would be mature enough...to learn about this. I don’t think that as professionals we need to be tested every five years. I don’t think it’s necessary. The College explains that dental hygienists are self-regulating professionals, yet registrants can’t be trusted to be able to assess our own skills? ID# P3*

Participants shared that mandated CE activities took away from their professional autonomy to choose learning activities relevant to their practice settings. As self-regulating health professionals, respondents wanted the ability to choose their own CE topics.

In contrast, some participants supported the GLP and LP system as an improvement over the continuing competence model previously used by the College. Comments reflected their comfort with some direction guiding them to undertake learning activities in topic areas.
Before [the QAP] some people were just taking continuing education in whatever topics were interesting. ID# P11

I believe that your continuing education should be based on your needs for improvement. ID# P8

Many interviewees shared their dissatisfaction with the time required to create learning goals, track continuing education activities, and provide self-reflection of completed learning activities. Some reported irritation with the cumbersome nature of the software.

It is a horrendous computer program to use. ID# P6

It’s so time consuming. ID# P1

Several participants reported not regularly updating their continuing education progress due to frustration with the system and with the time required to complete learning goals and self-reflection activity.

There’s an awful lot of work to track the courses. It’s too overwhelming. There were CE courses I didn’t report this year because of the time required. It’s too much. ID# P7

Some chose to input information only when due dates loomed or underreported the amount of continuing education taken.

I know my cycle is coming up. I just haven’t gone online and filled out anything so that’s stressful. Now I’ve really like left it to the last minute and the end of the year is coming up. ID# P1

There’s a lot of courses I didn’t report this year. I reported over the required amount, but I didn’t report everything because it was just too much work. ID# P7

One person reported enjoying the process of creating learning plans, goals, and self-reflecting on what was learned during the continuing education courses.

I like the guided learning plan. I like setting goals around what you wanted to do and how you achieved them. I think that self-reflection is good. I did find it beneficial. ID# P11
Respondents indicated that a more ‘user-friendly’ system of reporting and tracking learning activities would be an improvement over the current system.

*The current system creates an awful lot of work. It’s too overwhelming at times.* ID# P10

*They need to reassess the format [for reporting courses]!* ID# P9

Some participants shared their difficulty locating CE opportunities related to the mandated items in their GLP. Some topics, such as public health have fewer courses available, while topics such as periodontics have more.

*I only had one area that I needed to take continuing education, …it was sterilization procedures and bacteria kind of stuff...I found it difficult to find the courses.* ID# P11

*It’s difficult to find local continuing education credits in specific categories so I’m a little nervous when I take the QAP again. If [the GLP] comes up in those categories where there isn’t a lot of local courses, then you’re just paying money to go to Seattle or having to go overnight to Victoria.* ID# P11

*Living in a rural place, there’s only so many webinars you can take. It’s a barrier.*
ID# P8

The costs associated with attending out-of-town lectures, conferences, or presentations can be a barrier if travelling from outside of the Lower Mainland. Some participants found relevant online CE options, but shared that topics were limited.

Alternative approaches to the existing QAP were suggested; they included practice audits and practice visits.

*Having some sort of an audit...you can do a random chart audit.* ID# P7

*If you really want to be sure [that hygienists are practicing safety] you have to send someone in to watch. The only way to really be sure is to watch ...the skills. There’s no way to assess skills on a QAP.* ID# P3

As there are approximately 3,600 practicing dental hygienists in the province, the costs associated for members of the College to attend registrants’ practice settings may be prohibitive.
The question around dental hygienists’ ability to adhere to the practice standards brought forth strong opinions. Most of the interview participants strove to adhere to the standards but expressed concerns that they were unable to do so due to barriers inherent in the practice norms within the dental office environment including appointment time and the inability to provide the full scope of care due to lack of support by the dentist practice owners. To deliver safe and individualized patient care, dental hygienists must be able to practice with autonomy as self-regulating professionals. The theme of autonomy continues in the next section as the delivery of patient care is discussed.

5.3 Professional Agency

Within this study, the term ‘professional agency’ refers to the dental hygienists’ autonomy to practice as a self-regulating health professional, providing care according to the College practice standards. This section discusses three key areas through which dental hygienists exhibit professional agency in their work: (1) providing patient care; (2) managing patient appointments; and (3) functioning as part of an interprofessional team.

5.3.1 Providing Client Care

To provide individualized services to patients, dental hygienists perform patient assessments including a dental hygiene diagnosis, and from those findings, develop and implement a treatment plan, followed by the evaluation of treatment outcomes. While a few participants reported having autonomy to schedule appointments based on their patients’ oral condition, most dental hygienists reported working in offices that use pre-determined appointment times of between 50 and 60 minutes. Such standard appointments do not take into consideration the variety of patients seen by dental hygienists, from young healthy individuals to those with advanced periodontal disease coupled with complex medical conditions. The
autonomy to schedule appointments according to patient need was one of the primary concerns expressed by respondents.

We can customize our appointment times in my current practice. In my previous practice I did not have that flexibility. The appointments started on the hour and ended on the hour. Even after discussions with the owner, nothing changed. That’s one of the reasons I left that practice. ID# P11

Everyday, all day, you’re driven by the clock. ID# P1

Time constraint. My blood pressure goes up when I’m behind and it makes me ill. I also understand production and money [but] I would change the pressure to bill. We could still be productive, earn a decent wage, and have enough time to treat clients with respect. ID# P9

I individualize more in my home-based practice than I would be able to in a clinical practice. ID# P6

Lack of time was identified as the primary barrier to providing care as outlined in the Practice Standards and was a significant contributor to overall workplace stress. Those who owned their own dental hygiene practices reported enjoying the autonomy to schedule patients according to the procedures planned, and as a result reported less time-related stress.

An interesting observation was shared by participants. They noted that patients in their practice have become accustomed to one-hour dental hygiene appointments.

It’s hard because people have this preconceived thing, that it’s an hour appointment. You get people who haven’t been in for five years and say, ‘Oh, I just need an hour right?’... We have all this catching up to do. There’s that kind of gap in their knowledge. ID# P1

I think it’s also about making it convenient for the patient because a lot of patients don’t really want to be there for more than an hour. It’s [also] a lot easier to book hour by hour than trying to puzzle in all these different pieces. ID# P10

While most of the participants reported not having enough time with patients, some participants reported having ethical issues and reported psychological stress when too much time
was scheduled for patient treatment. This most commonly occurred when a child or a healthy young adult is scheduled into a ‘standard’ 50- or 60-minute appointment.

To be honest, I’ve kind of given up on it. I tried to adjust schedules to book appointments based on what the client needs but [it] wasn’t an option. It was never something that was accepted…. It would be difficult for patients to accept too because they’re so used to getting an hour scaling every six months. I think it’s a bit of an issue with the entire profession to be honest. ID# P3

Participants suggested that the public should be ‘educated’ to expect individualized appointment times based on their oral condition.

As part of the dental hygiene process of care, dental hygienists must document services and maintain patient records as outlined in Practice Standard #8. Documentation includes summarizing or annotating the baseline dental hygiene assessment data, noting any discussions around the dental hygiene care plan, informed consent, or informed refusal to consent. Records must also include a summary of all services delivered including any general or oral health education provided along with other pertinent discussions. See Appendix B for the description of Practice Standard #8.

Many of the interview participants shared examples of the challenges experienced while attempting to accurately maintain patient records. Time constraints, lack of remuneration for the time spent maintaining patient records, and the lack of office support were main themes expressed by interviewees.

They don’t understand how much time it takes to write thorough notes. I’m constantly going into my lunch break or after work to get caught up on notes…I should get paid to write the notes – it shouldn’t be on my own time. ID# P1

I was staying one to two hours at the end of the day trying to make sure that all my charting was noted correctly. ID# P11
Some participants shared how they’ve developed templates or checklists to streamline the patient documentation requirements.

*We had all the hygienists come up with a basic outline for charting.* ID# P11

*We created shortcuts [that include] prewritten notes for different types of appointments. For example, we have one for children’s in-hospital treatment.* ID# P8

Many participants were not able to complete their required documentation within the appointment time provided. As such, some participants shared how they knowingly failed to document thoroughly, while others used their lunch hour or the time before/after the scheduled workday to complete their documentation. Several participants shared that they are not paid for maintaining patient documentation.

Most of the participants reported that the amount of time available in the appointment drove the selection of procedures performed. Those practicing in offices where standard-length appointments were used most frequently reported their inability to follow the practice standards. Those who scheduled appointments based on the patient’s oral condition generally felt they were able to follow the College’s practice standards.

### 5.3.2 Managing Client Appointments

Dental hygienists experience pressure to generate revenue for the dental office. However, activities such as record keeping and cleaning the operatory between patients may not contribute to revenue. This section explores dental hygienists’ perceptions of non-patient care stressors such as revenue generation. Also discussed are dental hygienists’ perceptions of the impact of dentist supervision requirements on patient care.

Most of the participants shared that billing and production expectations were a significant source of stress in their practice. They reported that their offices had either implicit or explicit
financial goals expected of individual dental hygienists or expectations of the dental hygiene department.

The only thing that really stresses me out would be production – there’s always an unspoken production goal or expectation. ID# P4

We have to make production goals which is hard when you can’t bill for every procedure you do. The production goal isn’t aggressively enforced, it’s more like a guideline. ID# P5

Some participants shared that they worked in offices where the tacit office policy was to bill for the entire hour regardless of whether the patient needed or received an hour’s worth of procedures. The pressure to generate revenue was reported by many of the participants and it was described as a significant source of workplace stress.

Some practices have you bill either four units or three and a half units of scaling. But, I didn’t do those [procedures], but that’s what they want you to bill. I can’t do that. I’ve had practices that bill out more than what I write in the chart. ID# P1

I think the only thing that really stresses me out would be production – there’s always kind of an unspoken production goal or expectation. ID# P4

One scenario described an experience of production expectations for patients who are appointed in one-hour increments:

[The dentist] wanted to implement standard billing for hygiene appointments. For recalls that were four units [one hour] you bill for three units of scaling, polish, fluoride, and dental exam. Well, you technically can’t fit all that into a one-hour appointment. ID# P5

They explained that a call was placed with the College to obtain guidance, as the respondent felt that this may be an illegal billing issue. The College directed her to have the dentist phone the College for clarification

I remember phoning the college and asking, ‘What do I do?’ Their response was to suggest that I have [the dentist] call the College and they can go over the scope of practice and billing. But we ignored the standard billing paper and she never brought it up again. ID# P5
In this case, the pressure to bill in a standardized manner did not get operationalized. According to the College Practice Standards, registrants must individualize their care and bill appropriately for the care provided.

One of the participants described what is known as the ‘accelerated dental hygiene’ business model that is geared towards maximizing dental hygiene production. This business model has a dental hygienist working with a dental assistant to operate two or three rooms in the dental clinic in a ‘tag team’ style. The dental assistant brings the patient into the operatory, reviews and updates the patient’s medical history, takes any radiographs required, and performs basic dental assessments. Then the dental hygienist attends and updates additional assessments (typically the pocket depth readings) and proceeds to remove the hard and soft deposits from above and below the gumline. After this procedure is completed, the dental hygienist moves to another room to repeat the process. After the dental hygienist leaves, the dental assistant provides oral health education, polishes, and applies the fluoride (if indicated) and remains in the room while the dentist performs an examination. The dental hygienist spends the day moving from room to room removing deposits from teeth, leaving most of the other care to be provided by other dental office staff. This participant describes her experience working with the accelerated dental hygiene model:

*I was the hygiene machine. I would move from op to op and do the hygiene part, [but] there was no interaction [with the patient]. There was no building of trust with the patient. Your body was physically stressed. And I remember one day it was the ninth patient…and I just went oh, I don’t think I can do this anymore. So, the dentist fired me.*

ID# P6

The accelerated dental hygiene model maximizes the amount of high-cost procedures performed and billed by the hygienist. This business model is in direct conflict with the College practice standards that state that the dental hygienist is responsible for providing the full process
of care with each patient, from collecting assessment data, to creating a treatment plan, implementing the plan, and evaluating the outcome of treatment. However, the business model still exists in some dental offices.

One participant reflected on the difference between her current practice and a previous practice with regard to production expectations. Her current practice has a ‘patient first’ philosophy while her previous office placed revenue generation at a higher priority:

...whereas in [the previous office] the motto was more ‘if you’re not billing anything, you’re not doing it’. [In my new office], I find I have total control. I can spend as much time as I need. Whereas in previous practices that was a barrier because I was told multiple times by multiple offices, that I was spending too much time on non-billable procedures. ID# P8

She goes on to explain that she was told to charge for another procedure (e.g., deposit removal) to cover the time spent providing patient education. She explains:

I was told to bill for scaling to kind of pad [my] billing, which comes back to your practice standards. Are you practicing in the best interest of your patient? Are you practicing ethically? That’s what it comes down to. ID# P8

Another participant recalled how, while working through a temporary placement agency, she worked at an office that specified the billing that was expected for each appointment. The participant only billed for procedures performed, but reported that, ultimately, the patient’s billing reflected changes from what she recorded in the patient chart:

...places that will still bill out more than what I wrote down in the chart. ID# P1

One participant shared the pressure to provide dental hygiene care for patients even if their medical condition might create an unsafe situation. Explaining the workplace pressure to provide patient care despite medical contraindications, this respondent reflected:

Things like clients’ blood pressure and how that works in a business. We’re supposed to be sending these people home but if you send three people home in a day, how happy is the business going to be? ID# P7
Participants shared different views around handling non-billable activities such as cleaning the dental operatory between patients or the time needed to prepare instruments for sterilizing. Using the example of a patient appointments scheduled at one-hour intervals, some participants felt that it was appropriate to bill for one hour of procedures (meaning that cleaning the room and sterilizing instruments was ‘embedded’ in other fees such as deposit removal). Other participants felt strongly that they should only charge for the dental hygiene procedures performed, relegating the room cleanup and sterilization to the cost of running the business.

_They’re booked for an hour and they will be billed for an hour._ ID# P3

_[For billing purposes] it doesn’t count for me to clean my room. That should be something that is expected when I go to the dentist or the doctor. I expect that room to be clean, I shouldn’t be paying someone to clean that room._ ID# P1

The following participant shared feelings of being disappointed in the profession of dentistry, feeling that it has changed from promoting health to being motivated by profit. She recalled experiences from the last dental practice she attended.

_It was very much a for-profit business. It’s not really healthcare. [Dental hygiene] is a ‘cash cow’ really. It’s wasn’t about providing a service [as much] as it is about charging people. It’s about having them come back on a regular basis. I left that office in the end. It wasn’t about how well I do my job as long as I charge for the hours._ ID# P3

Some dental practices do not support dental hygienists in their attempt to implement practice changes based on emerging research. Participants reported that they had a difficult time implementing changes if the change negatively impacted billing. For example, after research indicated a change from polishing all teeth (e.g., with the ‘gritty’ paste) to a ‘selective’ polish model, one participant shared how the office was reluctant to update their processes as the change would likely negatively affect office revenue. One participant shared her frustration attempting to bring these changes to her practice.
I really struggle with not being able to change the practice. We have these steps, assessments, and tools that we can do but at the end of the day it’s very much a cookie cutter approach. Scale, polish, fluoride. ID# P3

Interesting to note that the College Practice Standards state that dental hygiene care must be individualized for each patient; the ‘cookie cutter’ approach contradicts the standard of care.

One participant shared her experiences when one dental office made production goals explicit. Not only were production goals published for all office staff to see, but a detailed list of items dental staff was expected to ‘sell’ was included.

They had a list in the morning that said you need to sell these many toothbrushes, these many crowns – a whole list of what they wanted sold. I was like I’m not in the business of selling crowns. I will talk about it if there’s a need for it, but I’m not selling a crown so that you can meet your bottom line. ID# P3

The pressure to meet production goals or billing targets is contrary to providing individualized health care services. Many participants shared their examples of the different ways that office billing or production expectations caused workplace stress. Participants were placed in difficult ethical positions, choosing between potentially ignoring the College standards of care or generating billing as required by their employer.

There is a cost associated with providing dental hygiene care to patients. Dental hygienists require specialized tools, supplies, and equipment in the provision of care. Most of the instruments used in the provision of dental hygiene care wear out and need replacing on a regular basis. Failure to do so places both the patient and the dental hygienist at risk of physical injury.

Participants reported being able to order instruments and supplies with varying degrees of autonomy. Some participants purchased supplies ‘as needed’, within a budget parameter, or were only able to purchase with prior permission from the dentist/owner or designate.
We’re very lucky in our department to order things as we see fit such as ultrasonic tips, different instruments, or new sharpening stones. They are very open ordering whatever you need to make your practice easy and make your patients happy. ID# P11

[There is one instrument] that I use for almost every patient. It was a big issue to order six scalers. It was stressful because, if this scaler isn’t here, I don’t have something to substitute for it. ID# P1

One participant related how the senior dental hygienist in her practice is responsible for ordering instruments and supplies and has denied purchasing replacement instruments. Another participant shared how she negotiates with the dentist to obtain the dental instruments she needs to provide patient care.

One participant described how she took a temporary position with a dental office to cover a short-term absence. She found poorly maintained instruments including a two-ended instrument which had one end completely broken off. Two-ended instruments are made to be used on opposite sides of one tooth (e.g., front / back or left / right side of tooth). If one end is broken, it typically renders the instrument useless.

You reach for a universal [instrument], but one end is broken. How do you use this? You physically don’t have the other end of the instrument! Why is it on the instrument tray? It’s almost like hygienists are afraid to say I need to have the proper equipment to do my job. ID# P1

Participants shared their varied experiences when ordering dental hygiene instruments, supplies, and equipment. They shared how the inability to access well-maintained instruments negatively impacted their ability to provide safe dental hygiene care.

Dental hygienists must manage patient appointments according to the supervision requirements outlined by the College. As discussed in Chapter 2, dental hygienists in British Columbia are self-regulating but still have dentist supervision requirements in two areas of
practice: (1) the administering of local anesthetic (freezing), and (2) the provision of care to patients only after they have had a dental examination within the last 365 days.

Dental hygienists often work when the dentist is out of the office at conferences or on vacation. When this happens, the dental supervision requirements impede dental hygienists’ ability to provide services.

_The ‘365’ might be a problem once or twice a year, but outside of that it’s probably the anesthetic._ ID# P7

_The 365- day-rule certainly can be limiting. For instance, right now with spring break, both the dentists are off. So scheduling clients for four of us [dental hygienists] over the next two weeks has been very complicated._ ID# P9

A scenario was shared that illustrated the challenges around maintaining the legal supervision requirements in practice. A participant shared how she was pressured by the dentist/employer to administer local anesthetic to a patient when the dentist was out of the office.

_It was a situation where I stood up for my principles and regulation. I’d treated a patient multiple times, always with anesthetic... It happened the day the dentist needed to leave early which means I couldn’t give anesthetic. The dentist said just go ahead and do it. If I could legally, I would – but I can’t. The dentist told me not to cancel that production. The patient arrived and I explained [the situation] and the patient agreed to reschedule the appointment. I got reprimanded by my boss for not doing what she said. [I couldn’t quit] and just leave if there’s no other jobs out there._ ID# P8

Another participant reiterated about the vulnerability experienced by dental hygienists / employees when they’ve attempted to initiate changes in the workplace to better support their adherence to the CDHBC Practice Standards.

_We are practicing in a business environment. And when you work in a small town, you don’t want to put a flag on yourself for future employment. If you hold onto your high standards, you may be flagged as a problem._ ID# P7

Asked if she felt at risk of losing her job if she spoke up, the participant replied, “_Yeah, I think so. About things like that, for sure._” ID# P7
Some participants shared examples of how practice norms create a barrier to providing the full scope of dental hygiene care. The inability to provide care according to the standards creates a potentially unsafe situation for patients and/or dental hygienists. The potential competing interests of the dental practice as a business with dental hygienists’ requirement to deliver safe and competent care, may place dental hygienists in a difficult position. As the interview participants have shared, dental hygienists experienced ethical dilemmas in the workplace. Often there is no easy resolution to the dilemma; some dental hygienists continue to struggle with complex workplace issues.

5.3.3 **Functioning as Part of an Oral Health Team**

This section included participants’ perception of their value as members of an oral health team. Participants shared their experiences in relation to being respected for their knowledge and abilities. In contrast to some quotes shared earlier in this chapter, these show examples of participants’ ideas being valued and incorporated within the workplace setting.

*I’m lucky that I have bosses who have a lot of respect for their employees and a lot of respect for the education that I have. They’ve been very flexible in whatever you need to do to keep our patients healthy and keep them happy. We’re really lucky in this office.* ID# P11

*I will probably say this a million times! I work in an amazing practice. We all work as a very good team.* ID# P2

A participant shared her success with incorporating a new preventive fluoride regime into dental hygiene care. ‘Silver diamide fluoride’ is a new product in Canada, and while expensive, has proved to be successful in stopping the progression of early dental caries (cavities).

*One of the things we have been using for over a year is silver diamide fluoride. I brought this product into the office based on my continuing education. That’s an example of the type of progressive office I’m in!* ID# P8
Dental hygienists have the knowledge and abilities to be valued members of the dental team. The next section of this chapter explores the participants’ view of their professional identity and career satisfaction.

5.4 Professional Practice

Professional practice includes a range of topics including participants’ view of themselves as health professionals along with their level of career satisfaction. Discussions around the physical nature of providing dental hygiene services concludes this section.

5.4.1 Professional Identity

The participants shared various opinions about their professional identity and how it may change over time. One of the participants owned her own dental hygiene practice and shared how her identity as a health care professional is shaped by building trust through her relationships with patients.

*When you have clients that come back every three months and they came for the very first time at sixty. They’d never had their teeth cleaned. It took three or four two-hour sessions to coax them through that. You learn so much from those people – about trust. That’s what I like about my career.* ID# P6

The following participant shared how her professional identity was derived from the impact she has on her patients.

*The patient relationship - making connections is one of the reasons I’m still in it. I had a patient in today that hadn’t been to see a hygienist in 10+ years. He hates coming to the dental office. Seeing him change is my goal. I want to see healthy gums, but I want to see someone who’s excited about coming to the dentist, when ten years ago he was not. I love seeing people taking ownership, of their mouth and health.* ID# P9

Another participant felt the high level of standards and ethical behaviour displayed in her office contributed to her sense of professional identity.

*It’s just their standards are so high, and their ethics are so high that’s a really important thing for me.* ID# P7
A few participants shared that the actions of other dental hygienists were negatively impacting their collective professional identity. According to the participant, not all dental hygienists are practicing to the same standard.

\[\text{I’ve worked with a few people from [province]. I’m not really clear where everybody is getting their education from, but it does not seem to be the same clinically… Their approach doesn’t seem to be science-based and there is a lack of critical thinking. That can be a little bit alarming. ID# P7}\]

One participant felt that obtaining a degree helped to give her a different perspective on her profession. She states, “I found my diploma taught me how to scale and my degree taught me how to think.” ID# P8

Overall, the participants shared diverse perspectives on their professional identity. There did not appear to be any consistent theme arising from the interviews.

Participants were asked if gender played a role in their employee/employer relationships. Interestingly, while no one reported gender as an issue with employers, one participant mentioned that the male hygienist in the practice earned more than his female counterparts.

\[\text{Somehow a man is seen as more competent and is more deserving of a bigger income. It’s really disappointing that this is still an issue. ID# P3}\]

The participant’s experience with differences in wages earned by male and female dental hygienists is supported by a recent national survey. The 2017 CDHA Employment Survey notes that, on average, male hygienists earn more than female hygienists (Canadian Dental Hygienists Association, 2017).

5.4.2 Career Satisfaction

The participants shared many examples of working with patients to educate and motivate them was one of the most rewarding aspects of their career.
I need one patient a week that comes in and is stoked at the end of the appointment. If I get that one that comes in and states, “Oh, after last time we talked I bought an electric toothbrush” or “Last time we talked about periodontal pockets – and I’ve been flossing since.” If I see that one light bulb a week, I’m stoked. ID# P11

One participant shared her sense of pride when, after several dental hygiene appointments, a patient improved their health. In contrast, a participant was disappointed when patients called her a ‘scaling machine’.

Just for that one person my whole career was worth it. Sometimes you’re just there at the right time and you don’t realize that. All the other times add up to one moment when you’re actually, the right person to make a big change for somebody. ID# P6

I’ve heard, “you’re just a scaling machine.” No, I do a lot more than that! ID# P8

One respondent shared how a profession that promoted lifelong learning and was flexible in accommodating raising a family was important to her.

I’m a very manual person and so doing something with my hands is the type of career that I needed. I’m a lifelong learner and so it’s a career that certainly promotes lifelong learning. We’ve raised two boys. My husband is a (occupation), so he’s away a lot. [My career] was flexible enough that I could work part-time. ID# P9

A few participants were not as fulfilled with dental hygiene as a career choice. They cited the lack of advancement available in clinical practice and the ‘routine’ nature of providing dental hygiene services.

I’ve always kept my dental assisting [certification] and worked with oral surgeons and specialists which kind of complements it. Hygiene alone in general practice? No, I do not find it fulfilling. ID# P4

It’s a good career, but, it’s just a little bit monotonous. It’s also a bit of a stalemate, with no advancement. ID# P10

There’s no growth. There’s no upward mobility of any kind. What you do first day out of school is the same thing you do until you retire. ID# P3

Some participants took a more pragmatic approach to career satisfaction.
I’m very lucky to do what I love, and it’s paying the bills. I always say if I won the lottery, I would still practice dental hygiene, I would just work on people who had no money, and bombed out mouths, you know, people trying to get healthy. ID# P8

Asked if participants would recommend dental hygiene as a career choice, several would but with caveats. Participants advised those interested in dental hygiene to become aware of the work conditions and the lack of benefits or potential for advancement within the clinical practice environment.

But the one thing that I recommend to people is to look at comparisons like nursing because of the variation within the job and the benefits and the retirement options.... And these days it’s really challenging to find jobs that do have all those benefits and retirement packages. ID# P7

Do not do it because you think its good money, because when you look at the grand scheme of things by the time you do your continuing education, taxes, and wear and tear on your body...it’s not as glamorous as some people make it out to be. But if you love people and you love making a difference in people’s worlds, I absolutely would recommend it. ID# P8

One participant warned that, if injured, be prepared to have another source of income or income replacement insurance.

The lack of benefits was a significant issue for me. When I was off work for six months with my shoulder injury, there was no income other than my own [resources]. ID# P3

Overall, most of the participants value the work they do and gain career satisfaction from making a difference in their patients’ health status. One participant provided a condensed view of the change that would improve the dental hygiene profession in the province. She states, “I would have to have more control of my schedule and there would be less financial pressure.” ID# P6

5.4.3 Work Environment

As described in Chapter 2, dental hygiene work is physically demanding. Dental hygienists experience back and neck pain at a higher rate than the general public. Participants
reported challenges maintaining ergonomic positioning given the equipment in their operatories. They also reported long-term, chronic physical injuries requiring regular medical interventions.

One participant reported, “I hate my operatory” (ID# P11), explaining how she often had to use the dentist’s operatory, which was arranged for restorative procedures.

I have a computer that’s behind me, my ultrasonic on the other side of me, I have an older patient chair that is not comfortable. I tend to switch between using a step dental chair, a regular chair, and standing while providing care. I mix up my position, where I put the patient. ID# P11

The participant further shared that she seeks regular chiropractor, physiotherapy, and massage therapy treatments to maintain her body. She was conscious of regularly stretching and tried to maintain a fitness regime. Another participant shared how living with chronic body pain is challenging.

As I’m approaching the latter part of my career, my body hurts. And I’m in full-time practice. I’m a regular with my chiropractor as well as my acupuncturist. They’ve been keeping me in practice for well over half of my career. ID# P9

One participant shared her struggles to stay healthy despite injuries related to her job. She decided to go back to school to pursue a different career, in part, because of the physical pain related to her work as a dental hygienist.

The driving factor for me to move out of hygiene was general back pain, wrist pains and numbness. Then a few years ago my shoulder gave out on me. And I had two surgeries on it with rehabilitation. It just makes you think that, I’ve twenty-five years to work so I probably shouldn’t be doing this full time. ID# P3

Several other participants complained about the equipment in the dental operatory. One participant shared that the patient chair would not tip back far enough, so she spent an entire year providing dental hygiene care while in a standing position.

Some of the participants shared that they experienced psychological stress as well as physical challenges in their work. They reported that psychological stress results from managing
difficult patients or dealing with patients who ‘hate’ going to the dentist. Some patients find the dental hygiene treatment uncomfortable and express their displeasure. One participant calls it “mental exhaustion” and describes typical statements heard from patients: Do you have to poke my gums; can’t you just polish like the last person? Why do you have to scrape my teeth? She recalls being called a “torturer” (ID# P2) and finding it particularly disturbing.

The participants described both psychological and physical impact of providing dental hygiene care. The physical challenges inherent due to working in static positions for long periods of time coupled with perceptions that equipment was not supporting ergonomic positioning were themes voiced by the respondents.

5.5 Summary of Key Interview Results

The ability of the dental hygienist to provide safe and competent care as outlined in the practice standards, which forms part of the QAP, is dependent on many factors. Some factors such as the conditions in the workplace may be perceived as outside the dental hygienist’s influence or control. Themes developed from the interview responses supported the survey findings. Some of the interview participants reported that physical injury and workplace stress was a significant part of their work. Respondents reported being able to adhere to the College practice standards to provide safe and competent dental hygiene care if their workplace supported their professional autonomy. Factors influencing practice autonomy hinged on power imbalances inherent between dentists as business owners/employers, and dental hygienists as employees within a dental office business structure. There is an incompatibility or inherent tension when members of one self-regulating profession attempt to supervise or control the work of other self-regulating professions. Participants reported minimal to no change in practice after
participating in the QAP; moreover, they generally see the QAP as being out of touch with the reality of their practice settings.
Chapter 6: Discussion

This chapter provides an analysis of the findings with inferences drawn from peer reviewed studies and other literature. The participants in this study were dental hygienists in British Columbia who reported providing clinical care for patients. The study sample (n=451) was representative of the total population (N=3,549) for a response rate of 12.7%. This study used a critical realism framework that supported a mixed methods approach for investigating the perceptions of practicing dental hygienists as they experience the QAP and its impact on their practices.

6.1 Further Understanding of Self-Regulation

This study suggests the further importance of a balanced approach to regulation which take into consideration public safety, optimal health outcomes, and efficiency. As previously noted, health regulators in the province have a mandate to protect the public (Government of British Columbia, 2019). Regulation exists to ensure public safety and wellbeing (Cayton, 2018; College of Dental Hygienists of BC, 2017a). Regulators achieve the mandate of public protection by establishing and monitoring registration requirements, setting practice standards, and addressing complaints lodged against their registrants (Government of British Columbia, 2019; Madara & Burkhart, 2015).

Public protection incorporates notions of patient safety (Waring et al., 2016). Studies have suggested that both improved patient safety and health outcomes can occur when an interprofessional or collaborative practice model is used (Brisolara et al., 2019; Ginsburg & Bain, 2017; King & Anderson, 2012; Reeves et al., 2016). The interest in providing cost-effective healthcare through interdisciplinary teams changed ideas around models of healthcare delivery (Berwick, Nolan, & Whittington, 2008). The “Triple Aim” approach suggests that
health care reform and innovation is best achieved by focusing on better health outcomes, improved patient experiences, and cost efficiencies (Berwick et al., 2008; Brandt, Lutfiyya, King, & Chioreso, 2014; Nelson et al., 2014). Approaches to such innovation often lie in the use of technology to connect with a specialist rather than travelling long distances, or the use of retail-based healthcare providers to support reduction in costs. In the eleven years since Berwick’s article (Berwick et al., 2008), we can see examples of innovation in the delivery of health services. For example, Telehealth, a service provided through the videoconferencing platform of Canada Health Infoway, helps to link patients with their healthcare team via videoconferencing (Canada Health Infoway, 2019). An expanded scope of practice allows pharmacists to provide the public with vaccines through retail pharmacy outlets. Legislation and policy will need to change for the dental hygiene profession to participate in the “Triple Aim” approach. Currently, there are proposed legislative changes before the BC Ministry of Health outlining the removal of the requirements for a dentist to provide an exam every 365-days and the supervision required for administering local anesthetic. If passed, these changes may encourage some registrants to explore innovative approaches to the delivery of dental hygiene services.

A new model of regulation, called the right-touch regulatory approach (RTR), suggests that regulatory force should be balanced with the risk of public harm (Cayton & Webb, 2014; Professional Standards Authority (UK), 2015). This approach acknowledges that ‘zero risk’ does not exist; all procedures have some form of risk associated with them but the risk can be managed at the level of the care provider or through regulation (Bilton & Cayton, 2013). It also recognizes that patients have a role in managing their own safety; not all risk requires regulation. The ‘right-touch’ approach recommends that regulation be proportionate, consistent, targeting,
transparent, and accountable to the public (Bilton & Cayton, 2013). It also recommends that regulation be agile, changing to meet the needs of the public and of practice settings. An RTR decision tree appears in Figure 6.1. It illustrates the types of decisions that need to be made when implementing this approach. The first step is to clearly articulate the problem. Once articulated, deliberation as to whether the problem poses a risk of harm can occur. Following the decision tree creates and stimulates discussion which may influence whether the solution to the problem is regulatory or something that can be managed at the local level (Bilton & Cayton, 2013). This model underpins and informs the analysis of the data in this study.
6.2 Quality Assurance Program

As mentioned, the QAP is comprised of 3 components to be undertaken over a 5-year cycle:

(a) an online jurisprudence educational module (JEM) including topics such as regulation, scope of practice, and the role of the College,

(b) an assessment component comprised of a 75-item, open-book, online, timed, multiple-choice exam, and

(c) 75 hours of continuing education (CE) with some topics being ‘guided’ or mandatory based on the results of the exam.
During the first 5-year cycle of the QAP, eleven dental hygienists failed the exam after the two attempts allowed (College of Dental Hygienists of BC, 2019e, p. 3). According to the Senior Dental Hygiene Advisor with the College, two of the eleven unsuccessful registrants are no longer licensed with the College due to “other factors” that contributed to their unlicensed status. It was noted that, “It was not the QAP that specifically resulted in their non-registered status” (J. Guyader, CDHBC Senior Dental Hygiene Advisor, personal communication, August 12, 2019). Nine of the eleven registrants have entered the remediation phase of the QAP which involves the registrant partnering with a peer-assessor who will conduct a practice assessment and develop learning goals. The practice assessment is determined individually and may include an on-site assessment including a clinical exam or the requirement for remedial education (College of Dental Hygienists of BC, 2019e). The peer-assessors submit their report to the College for review and the registrants completes any required activities before attempting the QAP exam again. To date, no registrant has lost their registration based on the QAP.

The College has collected feedback from its registrants about the QAP exam questions and the associated online platform. In its 2018 report entitled “CDHBC Quality Assurance Program: Feedback Reported, Evaluation and Future Trends” (College of Dental Hygienists of BC, 2018b), the College acknowledged registrant feedback around the online platform and indicated it will undergo changes to improve navigation and ease of use. The College recently upgraded the platform and relaunched the new version in August 2019.

In response to additional complaints about the exam questions, the College recently launched a committee to review the exam questions for currency and relevancy (J. Guyader, CDHBC Senior Dental Hygiene Advisor, personal communication, June 19, 2019). The committee is comprised of dental hygiene volunteers and it is not known what expertise was
required to become a committee member or how the members were selected. Volunteers will be eligible for two continuing education credits per section of questions reviewed. The volunteers will develop their feedback and submit individually. The literature suggests that groups who provide peer feedback show an increase in critical thinking abilities (Dominguez et al., 2015; Holland et al., 2012; Lynch, McNamara, & Seery, 2012). Working in small groups may increase the quality of the feedback provided by the committee volunteers. The use of volunteers to conduct the work of regulation has been questioned by Cayton (2018) in his report to government about dental regulation in British Columbia. He recommended that regulatory colleges rely less on volunteers for regulatory work, but rather seek qualified individuals and pay them for their expertise. At the time of this dissertation, no updates have been received regarding revisions to the exam questions based on the committee’s work. There are several limitations of the current College approach. The limitations include the ongoing reliance on volunteers to do the work of the College, the lack of criteria around the review of the exam questions, and the reviewers working in isolation, which may negatively influence the quality of the review.

The outcomes of the QAP in British Columbia have not been explored in a systematic manner. Cayton (2018) recommends that regulatory agencies measure the impact of quality assurance programs rather than focusing on the individual components. The lack of data around the impact of the QAP on practice lead to the central research question of the dissertation: “What are dental hygienists’ perceptions of the impact, if any, of the CDHBC Quality Assurance program on their dental hygiene practice?”

6.3 Perceptions of the Quality Assurance Program Components

The study participants reported mixed feelings regarding the three components of the QAP. They were generally positive about the content and delivery of the jurisprudence model
(JEM). They also were generally positive about the preparation for taking the online exam. Respondents reported obtaining new textbooks, completing educational modules or completing sample tests to determine areas where their knowledge had lapsed. They studied individually and in small groups; their comments reflected positive outcomes from activities undertaken to prepare for the exam. Other literature also supports the integration of new knowledge into practice through the use of social learning activities where participants work together (Moulton, Regehr, Mylopoulos, & MacRae, 2007; Myers, 2017).

The respondents articulated their process for undertaking self-reflection of their practice strengths and weaknesses before deciding on informal learning activities. Previous literature acknowledges that self-assessment abilities are generally poor but can be developed through practice and peer feedback (Gadbury-Amyot et al., 2015; Metz et al., 2017; Mould et al., 2011; Silver, Campbell, Marlow, & Sargeant, 2008; Zimmerman, 2002). Practitioners were able to identify gaps and weaknesses especially when using standards and external resources such as practice tests (Regehr & Mylopoulos, 2008; Sargeant et al., 2011; Sargeant, 2008; Zimmerman, 2002). One respondent in this study recalled incorporating the new knowledge obtained from preparing for the exam into the practice setting. Respondents also demonstrated their willingness to reflect on their practice and plan their own learning activities in preparation for taking the QAP exam. The literature suggests that individuals who practice self-reflection develop insight into their practice and tend to experience higher professional confidence (Armson et al., 2015; Holland et al., 2012; Motycka, Rose, Ried, & Brazeau, 2010).

The second component of the QAP is the online, multiple-choice exam. Study respondents identified the online exam and the guided learning plans (GLP) as controversial aspects of the QAP. The written exam was the option chosen by the College to fulfill the HPA’s
requirement to have an assessment component included as part of the QAP. Written exams have been found to be useful assessments for educators, practitioners and regulators alike. They can be used as tools to supply dental hygienists and regulatory bodies with external verification of strengths and weaknesses in knowledge and decision-making abilities (Babenko et al., 2016; College of Dental Hygienists of Ontario, 2015). Used as a formative assessment, written exams can be used to inform individual dental hygienists about their level of discipline-specific knowledge (Babenko et al., 2016; College of Dental Hygienists of Ontario, 2015). Exams can also be used as summative assessment tools. Both the regulatory dental hygiene Colleges of Ontario and British Columbia use a graded pass / fail written exam as the assessment component within their respective QA programs (College of Dental Hygienists of BC, 2019e; College of Dental Hygienists of Ontario, 2018a). Interestingly, dental hygienists in Ontario have a choice to use a written exam as either a formative or summative assessment process.

However, another body of literature suggests that it may not be possible to evaluate ongoing continuing clinical competence using a written exam (Ginsburg, McIlroy, Oulanova, Eva, & Regehr, 2010; McDermott et al., 2017; Myers, 2017; Okuyama et al., 2011; Teirstein & Topol, 2015). The determination of competence is complex, requiring discipline-specific knowledge, critical thinking, practice experience, communication, collaboration, and clinical judgement across time (Ginsburg et al., 2010; Lejonqvist et al., 2012; Regehr, Bogo, & Regehr, 2011). Written tests measure knowledge and critical thinking but lack the ability to assess whether the knowledge is applied in a competent manner within a clinical setting (Okuyama et al., 2011). A singular assessment of competence is also problematic as it is no guarantee of continued competence over time or across different practice settings (Choudhry, 2005; Young & Newell, 2008). Measuring competence also needs to include contextual variables (Okuyama et
al., 2011; Teirstein & Topol, 2015). Competence has been described as “context dependent” as it is influenced by the clinician’s abilities, specific tasks, patient’s needs, practice settings, and the larger systems governing the work (Okuyama et al., 2011, p. 991). Clinical decision-making takes into consideration multiple aspects of the patient’s values, abilities, medical and dental histories, and financial resources (Teirstein & Topol, 2015). Summative written exams can be used for evaluating knowledge. However, their use in determining ongoing clinical competence is limited.

Many of the respondents concurred with the literature, reporting their dissatisfaction with a written exam as a measure of competence stating, “Providing answers to multiple choice questions does not reflect my competency to practice dental hygiene” (ID# 116) and the exam “tests how well you can cheat and Google the questions with a laptop” (ID# 166). The literature and respondents’ perceptions do not align with the College’s decision to implement a written summative exam as the method for assessing clinical competence.

The study respondents also reported dissatisfaction with the content of the exam questions. Almost half (47.9) disagreed that the QAP accurately reflected their “knowledge and skills.” Participants’ comments suggested that they perceived the questions to be poorly structured with some questions having multiple correct responses depending on contextual variables. The questions on the exam have been tested for reliability and validity by an outside agency determined by the National Dental Hygiene Certification Board (National Dental Hygiene Certification Board, 2019) as recommended by a systematic review of competency assessment tools (Okuyama et al., 2011). However, some respondents reported that the content of the exam questions may be outdated, creating the potential for more than one correct response.
depending on the context. This suggests that the College’s exam question review committee could assess the questions for currency.

Most respondents expressed frustration with the exam questions not being aligned with their practice settings. Only one third (33.3%) of respondents agreed that the multiple-choice questions aligned with their practice. Dental hygienists in British Columbia work in a variety of practice settings including private dental and dental hygiene clinics, managed care facilities, public health, educational institutes, dental related corporations, and specialty practices such as periodontics and prosthodontics. The written exam is loosely based on national dental hygiene competencies following the Canadian National Dental Hygiene Certification Board (NDHCB) exam blueprint (National Dental Hygiene Certification Board, 2018). However, few questions on the NDHCB exam test knowledge and critical thinking abilities around health promotion, advocacy, or the ability to analyze research articles (National Dental Hygiene Certification Board, 2018). The majority (approximately 80%) of the exam questions target cognitive abilities related to clinical practice skills (National Dental Hygiene Certification Board, 2018). As the NDHCB blueprint is heavily weighted to clinical services, the QAP may be affected as well.

The exam consists of 75 items drawn from a pool of 125 questions. The format of the exam is not practice specific. Each person who sits the exam has an equal chance of receiving any of the 125 on their exam. If a registrant answers a question correctly, they are deemed to be safe and competent in the competency underpinning the question. Consequently, the registrant is not required, through the Guided Learning Plan (GLP), to take continuing education in that topic area for the next five years.

Having studied to pass an exam is no guarantee that the material will be remembered after the exam is completed; further, being deemed competent by passing an examination may
remove any incentive for continued improvement (Eva, Regehr & Gruppen in Hodges & Lingard, 2012). Rather than a written exam every five years, the literature supports an ongoing approach to peer and self-assessment that more accurately reflects day-to-day clinical care (Eva et al., 2016; Frank et al., 2010; Jackson & Murff, 2011; Sargeant et al., 2010; Sargeant et al., 2011).

Assessment of competence through a multiple-choice written exam has been critiqued as being simplistic in not recognizing the context of practice, of underestimating the role of the patient, and minimizing critical thinking and clinical judgement (Eva et al., 2016; Ginsburg et al., 2010; Lurie, 2012). The inclusion of options to address individual practice settings and the incorporation of aspects of authentic assessment may improve respondents’ perceptions of the value of the exam as part of the QAP.

Once registrants complete the exam, their results are automatically populated into the online tracking system maintained by the College. Any missed competencies are included in the registrant’s Guided Learning Plan (GLP). Registrants must create learning goals and actions plans before participating in CE activities to meet the stated goals and plans. After the activity, the registrant completes a self-reflection of the goal and CE activity.

The majority of respondents (58.8%) felt the GLP was also not relevant to their practice. Part of the reason for this high response may be attributed to the previously reported finding that the exam questions did not relate to respondents’ practice settings. If the registrant incorrectly answers a question in the exam, the associated competency appears in their GLP. This occurs regardless of whether the question is related to the registrants’ practice setting. The registrant then must undertake learning activities to address the missed competency appearing in their GLP. Some of the respondents’ comments reflected their disappointment with spending time and
money to take mandated CE activities that did not reflect their practice setting. Literature reflects that knowledge integration occurs when practitioners perceive value in their learning activities (Barnes et al., 2013; Dowling et al., 2019; Myers, 2017; Sargeant et al., 2010) As one of the respondents noted, there is a disconnect between the concept of a self-regulating professional and the need to search for mandatory continuing education experiences that are dictated by the regulatory organization based on the results of a multiple-choice exam consisting of 75 questions.

Registrants must obtain 75 hours of CE within the 5-year QAP cycle. The College’s Code of Ethics also mentions the requirement for ongoing study to remain current with advances in dental hygiene theory and practice (College of Dental Hygienists of BC, 2019b) CE is well-supported in the literature as a method of maintaining current knowledge, skills and competence (Alsop, 2013; Armson et al., 2015; Barnes et al., 2013). In general, respondents reported positive learning experiences through continuing education activities when the learning activities were relevant to their practice setting. Many studies support CE activities as methods of maintaining practice currency if the learning is applicable to their practice (Alsop, 2013; Armson et al., 2015; Barnes et al., 2013; Hopcraft et al., 2010; Lau et al., 2015).

Respondents also indicated that accessing relevant continuing education courses was challenging. They appear split between those that can find relevant CE courses (35.4%) and those who reported difficulty (46.3%). Difficulties involved the cost of courses including travel for those living outside of the lower mainland and finding courses that match with the respondents GLP. The literature suggests that CE courses be accessible where practitioners live, have relevant content and be available at a reasonable price (Dowling et al., 2019; Myers, 2017). Respondents commented that use of online continuing education courses has made access easier;
the value of online learning opportunities has also been highlighted by others (Ramos, Fullerton, Sapien, Greenberg, & Bauer-Creegan, 2014). However, finding learning activities in relevant topic areas appears to remain challenging.

Registrants in the 365-Day-Exempt category found more value in the QAP learning activities than registrants in the Full category. For dental hygienists to obtain registration in the 365-Day-Exempt category they must have achieved a baccalaureate degree in dental hygiene or related area of study. If they have not completed a baccalaureate degree, they can undergo a Prior Learning Assessment and Recognition (PLAR) process to determine if they have acquired the substantially equivalent knowledge, skills, and abilities. Outcomes associated with the attainment of a 4-year degree include an increased depth and breadth of knowledge, abilities related to the application of knowledge including critical thinking and utilization of research, communication skills, awareness of gaps in knowledge, and an increased sense of autonomy (Council of Ministers of Education Canada, 2007). It may be that those who attained additional education to obtain registration in the 365-Day-Exempt category had a better understanding of the QAP process than registrants with a diploma education. However, given the small number of respondents in the 365-Day-Exempt category (65) that responded to this survey question, the findings should be interpreted with caution.

Respondents’ comments indicated a strong dislike for the online platform housing the Guided Learning Plan (GLP) system. They reported finding the system cumbersome and perceived the time required to maintain their learning goals and to track their CE activities to be onerous. As previously described, the College has received such feedback and has made changes to the online platform. Whether these changes will align with the perceived frustrations of the registrants is currently unknown.
Some respondents noted their dislike for the self-reflection component of the learning activities. However, the literature supports participating in self-reflection activities as it is shown to improve integration of learning into practice (Armson et al., 2015; Barnes et al., 2013; Hopcraft et al., 2010; Ihm & Seo, 2016; Myers, 2017). Their dislike for self-reflection may be an illustration of how challenging it is for professionals to engage in self-reflection; individuals may not be aware of their own limitations and gaps (Metz et al., 2017; Motycka et al., 2010; Redwood, Winning, & Townsend, 2010; Sargeant et al., 2011). This also supports the need for a more interactive approach.

Respondents perceived value in some aspects of the QAP such as the jurisprudence module and continuing education activities. However, many had issues with the exam questions and online platform. The decision to use a written exam as a summative assessment tool to determine clinical competence is not supported by the literature (Eva et al., 2016; Ginsburg et al., 2010; Lurie, 2012). The literature supports the use of authentic assessment tools that more closely resemble the complexities inherent in practice with its critical thinking and clinical judgement requirements.

6.4 Perceptions of the Practice Standards

The College Code of Ethics and Practice Standards & Policies documents underpin the QAP. The standards outline the activities that must be performed to ensure the safe and competent delivery of dental hygiene care. Almost all (98.5%) respondents reported being familiar with the standards, but less (80%) indicated following them. Many (45.8%) respondents cited time constraints as the reason for failing to follow the standards. Some respondents described the standards as the ‘road map’ to dental hygiene care and perceived value in them. Upon further questioning, approximately 68% indicated their desire to follow the standards but
reported barriers that negatively influenced their ability to do so. The inability to follow standards because of workplace barriers may lead practitioners to feel confused and may negatively impact their confidence (Hudspeth & Klein, 2019; Jackson et al., 2019).

Respondents cited a variety of barriers to implementing the standards in practice. Some of the barriers focussed on the constraints around patient scheduling. Respondents indicated that some offices used standard appointment lengths for all patients regardless of their oral condition. Standard appointment lengths were reported to cause stress as some respondents perceived the appointment times as too short to provide comprehensive patient-centered care to adults with periodontal disease yet too long for the needs of some adults with healthy oral tissues. A recent literature review by Belinski and Kanji (2018), indicated that only 40% of practicing dental hygienists reported completing extra-oral exams to check for suspicious lesions, such as skin cancer, due to lack of time despite being aware of the benefits of the service.

Another barrier preventing some respondents from providing their full scope of practice as outlined in the standards were office ‘norms’. Office norms are implicit or explicit expectations directing the clinical services that dental hygienists perform. An example of this is found in ‘billing targets.’ Many (30.3%) of the respondents reported that their employer discusses financial production targets with them. The expectations around revenue generation varied from a suggested target that an average practitioner would easily generate to what was perceived as unreasonable revenue expectations. In one case, the perceived excessive dental hygiene billing targets were posted in the staff room. The respondent reported that failure to achieve the billing target would negatively affect the ‘bonuses’ paid to all members of the dental office. The literature suggests that financial incentives may influence practitioners to provide unnecessary or inappropriate services or offer services with the highest profit margins (Chalkley
& Listl, 2018; Crosson, 2015; Latham & Marshall, 2015; Yu et al., 2019). Pressure to generate revenue and achieve billing targets was perceived as contributing to a stressful work environment.

The majority of respondents reported struggling with reconciling the health promotion model common in the dental hygiene profession with the business model operating within many dental offices. The literature suggests that dentistry is increasingly implementing an approach that stems from a business approach rather than from a perspective to improve patients’ health (Han, Paron, Huetter, Murdoch-Kinch, & Inglehart, 2018; Mollica, Cain, & Callan, 2017; Yu et al., 2019). Corporate models of dentistry are gaining in popularity in North America with year over year growth expected to reach 25% versus a growth rate for solo or small practices at between 0 - 3% in the United States (Samson & Schwartz, 2019). Corporate models, where many offices are owned by one corporation, are reported to reduce costs of practice by streamlining operations including sharing costs of technology and increasing the volume of services (Han et al., 2018; Samson & Schwartz, 2019). The focus on business within dental schools is also increasing. Dental programs are increasingly including practice management courses into their dentistry programs. As of 2018, there are 16 schools in the United States that offer a joint dentistry (DDS or DMD) and Master of Business Administration (MBA) degree (Han et al., 2018; Mollica et al., 2017).

For-profit business models in dentistry may be at odds with both the British Columbia dentists’ and dental hygienists’ Code of Ethics documents that outline that professionals have a responsibility to act altruistically placing the health and wellbeing of patients above all (College of Dental Hygienists of BC, 2019b; College of Dental Surgeons of BC, 2015). In a study of Canadian dentists, those dentists who made treatment decisions based on patients’ needs and
involved those patients in treatment decisions took a more conservative approach to treatment decisions. (Yu et al., 2019). Practitioners who based treatment decisions on a business model considering the patients’ ability to pay were more likely to select procedures that were more invasive and expensive (Chalkley & Listl, 2018; Chaudhry, Gifford, & Hengerer, 2015; Yu et al., 2019).

The business model within dentistry was also found to weaken public trust and damage the image of what it means to be a healthcare professional (Chalkley & Listl, 2018; Holden, 2017, 2018; Pellegrino, 1999). Many dental hygiene respondents reported viewing themselves as health care professionals but felt that the focus on revenue generation was undermining their patient relationships and their sense of identity. Some respondents shared concerns over being viewed as ‘scaling machines’ whose primary purpose was to contribute to the office revenue stream. They felt the business culture to be at odds with the dental hygiene culture of health promotion and patient-centered delivery. The dichotomy of practice philosophies was perceived to be a source of workplace tension and stress.

Respondents reacted negatively to the business model reporting that it adversely impacted their practice autonomy by limiting their ability to follow practice standards. The literature supports the integration of practice standards in the provision of care and deems it essential for safe practice (Hudspeth & Klein, 2019). Providing safe and competent care based on individual patient needs is a required component of the practice standards embedded in the QAP.

6.5 Client Safety and Health Outcomes

The QAP sets out the minimum standards for safe and competent dental hygiene care. The assumption inherent in the QAP is that the public is assured of receiving safe and competent care if the standards are followed. The practice standards are delivered in checklist-style,
including activities that are required during each dental hygiene appointment. An overwhelming majority (99.5%) of respondents agreed that they provide safe and competent care with every patient. They provided examples of safe practice at the provider level such as following infection control procedures and placing protective lead aprons on patients when exposing radiographs. Respondents felt that they provided safe and competent care even though they reported not following the practice standards due to workplace barriers. The use of checklists and guidelines by clinicians to support safety are well-documented in the literature (de Jonge et al., 2011; Haynes et al., 2011; Okuyama et al., 2011; Waring et al., 2016).

The concepts of safety and quality care are closely linked; patient safety can only be attained through providing quality care throughout all patient interactions (de Jonge et al., 2011). High-quality care incorporates more than following safety checklists as contained in the dental hygiene standards. As described more fully in Chapter 2, the premise of quality health care includes aspects of the following eight concepts:

a. Safe to prevent harm
b. Appropriate based on patient’s individual needs
c. Competent, in part by following practice standards
d. Effective by using current evidence-based practices.
e. Ethical whereby care provided does not differ in quality according to gender, race, ethnicity, geographical location, socioeconomic status, or ability to pay.
f. People-centered where care is culturally appropriate considering patient preferences.
g. Efficient to maximize available resources.
h. Professional whereby care provider practices according to a professional code of ethics, follows other professional standards such as communication skills.

(Adapted from Okuyama et al., 2011; World Health Organization, 2018).
The College’s QAP references the practice standards, regulatory elements contained within the jurisprudence module, and the code of ethics (College of Dental Hygienists of BC, 2019e). Taken together, these elements include the eight concepts that underpin the concept of quality health care as articulated by Okuyama et al. and the World Health Organization. Hence, the concept of quality care is well embedded in the QAP.

Another body of literature describes broader notions of safe practice related to improved health outcomes; it involves the articulation of abilities important for increased patient safety (Cho & Choi, 2018; Cristancho, Lingard, & Regehr, 2017; King & Anderson, 2012; Okuyama et al., 2011; Waring et al., 2016; Weaver et al., 2013). These abilities relate to the application of knowledge, collaboration, evidence-based decision making, communication, and leadership. The majority (71.3%) of respondents indicated that they are encouraged to bring new ideas to the team and most (79%) feel that their co-workers functioned as a team. Such abilities were also discussed in the interviews. Participants reported engaging in activities related to working as a team, searching for new evidence-based or informed procedures and bringing that information forward to the team. Respondents also reported examples of leadership such as creating dental hygiene practice policies and procedures. While respondents did not specifically link these abilities to safety, the literature suggests that these broader notions of safety contribute to improved patient safety and better health outcomes across all healthcare disciplines (Cho & Choi, 2018; King & Anderson, 2012; Lusk, 2013; Waring et al., 2016). The literature indicates that the attainment of baccalaureate education is also linked to improvements in patient safety and health outcomes (Blegen et al., 2013; O'Brien et al., 2018; Sunell et al., 2017).

The College practice standards do not refer to broader notions of safe practice; they rely on a checklist style of safety aimed at the provider level. The concept of safety is more complex
than a list of activities to be performed and includes collaboration, leadership, critical thinking, and incorporating evidence into practice.

A further body of literature directs attention to the importance of practice environments on patient safety and better health outcomes (Cho & Choi, 2018; Jackson et al., 2019; Okuyama et al., 2011; Waring et al., 2016). This will be explored in a later section of this chapter. It is important to note that there are three streams of literature related to patient safety as it is a complex and multi-faceted issue. However, the College practice standards focus solely on the checklist approach while not addressing the abilities and environmental aspects of patient safety. This may account for the fact that respondents identified that they practiced safely but did not necessarily meet the practice standards. While respondents may not be able to articulate their definition of safety, they may have a sense of patient safety that is larger than the QAP approach.

### 6.6 Impact of the Quality Assurance Program

This study explored the perceptions of dental hygienists about the impact of the QAP on dental hygiene practice. Seventy percent (70.3%) of respondents agreed with the statement that the QAP had “no influence” on the services provided with 63.8% indicating that they disagree that the QAP had a positive influence on the services provided. Respondents did not indicate a relationship between the QAP and the provision of dental hygiene services; they did not believe the QAP made a positive difference to dental hygiene practice. Some respondents reported a negative impact from the QAP, specifically when they were required to take continuing education courses outside of their practice setting. Others reported that they resented having to study and pay for an exam that they perceived as having no value to their practice.

Analyzing the QAP from the perspective of the right-touch regulatory approach (RTR) raises several questions. According to the tenets of the RTR approach illustrated in Figure 6.1,
the first step in determining a response to an issue is to identify the problem (Professional Standards Authority (UK), 2015). The definition of the problem must come before possible solutions are considered. According to the College, the problem being solved through the implementation of the QAP was to ensure that registrants were practicing in a safe and competent manner thereby meeting the new requirements of the Health Professions Act (HPA).

The tenets of the RTR approach suggest that the College would have benefitted from determining whether registrants were currently practicing in a safe and competent manner before applying a regulatory approach to the problem. The College annual reports suggest that the number of complaints from the public remain low and that serious injury from dental hygiene care has not been reported, so the problem is unlikely to be related to public safety concerns. Additionally, the College has never reported data arising from any study exploring dental hygiene practice, so it is unlikely that the QAP was targeting unsafe practitioners. The problem may have been the HPA mandate to include an assessment component within the QAP. However, the HPA did not define the type of assessment, either formative or summative, to be included in the QAP. As was previously reported in this chapter, the use of a multiple choice summative exam is not supported as a method of evaluating clinical competence (Eva et al., 2016; Fleckner & Rowe, 2015; Ginsburg et al., 2010). Solutions, applied either at the regulatory or at the local level, are theoretically driven by the responses obtained via the RTR decision-tree. In the case of the QAP, it appears that a regulatory response was applied to a problem not yet thoroughly identified. Martin (1981) suggests that policy change may occur without being supported by an evidence-based systematic decision-making process. The rationale linking the ‘problem’ and the ‘solution’ may be difficult to understand.
The ‘problem’ was described by some study participants as their inability to provide care according to the standards. Respondents (67.8%) reported a desire to include all the procedures mentioned in the standards but reported not having sufficient time to do so. Their perceived inability to follow the standards may increase the risk of patient harm. According to the ‘quantify and qualify the risks’ section of the RTR approach (Figure 6.1), the risk of harm is not being managed as the respondents indicated they do not follow the practice standards. Respondents indicated multiple reasons for not following the standards, although most were associated with the business culture negatively influencing the delivery of care within dental offices. As the ‘risk’ of harm is occurring in dental offices, it would suggest that a local solution to the problem may exist. The College did not investigate local options; rather, it chose to use a regulatory response.

Respondents expressed a lack of control over the delivery of dental hygiene care in their practice settings. Literature suggests that when practitioners feel a lack of control over their work they lose confidence in their ability to provide safe and competent care (Holland et al., 2012; Jackson et al., 2019; Storaker et al., 2019). Consequently, the risk of patient harm is increased. Professional confidence is described as a:

“…dynamic, maturing personal belief held by a professional or student. This includes an understanding of and a belief in the role, scope of practice, and significance of the profession, and is based on their capacity to competently fulfil these expectations, fostered through a process of affirming experiences.” (Holland et al., 2012, p. 214)

Professional confidence is linked to concepts including self-esteem, self-efficacy, and professional identity (Holland et al., 2012; Jackson et al., 2019; Lusk, 2013). Professional confidence enables the care provider to believe in their ability, in their judgements, and to be self-aware. Having this trait is linked to less stress and anxiety in the workplace. When
professional ideals are not in harmony with the reality of practice, practitioners may experience a loss of confidence in their abilities (Holland et al., 2012; Jackson et al., 2019; Storaker et al., 2019). Professional confidence must be nurtured, or it can be damaged through environments that are perceived as having power imbalances, being unsafe, discouraging, or stressful (Jackson et al., 2019; Storaker et al., 2019). The tensions created as dental hygienists navigate between the expectations of the business culture of dentistry and their role as health promotion agents may negatively impact their professional confidence.

In contrast, some respondents reported feelings that align with higher levels of professional confidence. Higher levels of professional confidence are associated with workplaces where practitioners control their scope of practice and are respected and appreciated for the role they play in delivering care (Holland et al., 2012; Jackson et al., 2019). Some interview respondents reported being able to follow the practice standards and felt supported in providing their full scope of care. Their practice settings shared some commonalities. A few respondents reported that they experienced a sense of control over patient care and were able to provide the services indicated by their patients’ oral condition. In addition, they felt empowered to incorporate new practice modalities supported by changes in research. They reported being valued and respected for their knowledge and abilities. This may explain why some respondents reported a stronger sense of professional agency than others.

When assessing the QAP from a cost / benefit perspective of a RTR approach, some respondents reported that both the jurisprudence module and the self-study components had a positive impact on their knowledge and practice. In contrast, the exam created some unintended outcomes. As mentioned previously, most respondents reported feeling frustrated with the format of the questions and with the cumbersome nature of the online platform. They also perceived that
the exam questions were not specific to their practice setting and incorrect answers triggered the need to participate in learning activities unrelated to their practices. Therefore, some respondents reported being negatively impacted by time and effort required to locate, pay for, participate in, and self-reflect on learning activities unrelated to their practice setting. Using some of their 75 hours of continuing education hours on topics unrelated to their practice translated to less hours available for learning activities more aligned with their practice.

In addition to these unintended outcomes, some respondents perceived the mandated topics contained in their Guided Learning Plan (GLP) as reflecting a loss of professional autonomy. Some survey and interview participants reported that the change from self-selection to mandated continuing education topics negatively affected their view of themselves as self-regulating health professionals. As mentioned, the literature suggests that self-assessment of one’s own practice weaknesses and gaps is inherently flawed (Lee et al., 2017; Mays & Branch-Mays, 2016; Metz et al., 2017; Myers, 2017). However, self-assessment skills can be improved through the use of specific criteria, guidelines, practice, and feedback (Lee et al., 2017; Mays & Branch-Mays, 2016). Zimmerman (2002) reports that practitioners can regulate and control their own learning if they refine their self-assessment abilities to become aware of their strengths and weaknesses.

Some options are available to combat the challenges and unintended consequences of the exam as a measurement of safe and competent dental hygiene care. One option for determining whether patients are receiving safe and competent care is to assess the care received. A recent systematic review directed to models for measuring healthcare quality explored various clinical outcome measures (Righolt, Sidorenkov, Faggion, Listl, & Duijster, 2019). Of the 215 oral health care measures reviewed, most assessed the processes of care with some measuring the
outcomes of treatment. Few measured patient safety, patient experience, or the impact of the dental organization on health care outcomes. This systematic review suggests that significant gaps exist in the availability of tools to measure the safety and competence of oral health care. The authors suggest that it may be possible to assess the patient experience as a measure of safe and competent care (Righolt et al., 2019), but that has limits given the possible patient focus on the ‘likeability’ of the practitioner rather than the delivery of care.

If measuring the outcomes of care is not feasible or reliable, options focused at the service provider are numerous. Professional portfolios are a common tool to showcase professional competence (Hodges in Hodges & Lingard, 2012). Portfolios can encompass many different activities to show professional growth and competence. Some of the activities include the use of self- and peer-assessment, learning goals and contracts, and reflective exercises. The College of Dental Hygienists of Ontario provides three QAP options for their registrants (College of Dental Hygienists of Ontario, 2018b). Some of the options include a formative or summative written exam, development of a learning portfolio and practice portfolio, and self-directed continuing education requirements. There is also an option to request an on-site practice review to demonstrate clinical competence. Outside of the QAP, a mentorship program is available that matches less experienced dental hygienists with more experienced mentors. Hodges (2012) suggests that chart audits are also useful ways to demonstrate safe and competent care. Client charts can be peer-reviewed to check for appropriateness of services provided. Providing registrants with options to demonstrate their safety and competence would likely be more costly but could be more defensible as a way to measure the complexities of practice. As discussed, the literature and examples from another dental hygiene regulatory body provide
multiple options whereby practitioners can demonstrate practice competence. These examples may be viable options to replace the QAP exam.

The College has chosen to focus more heavily on a written exam that directs continuing education requirements. While continuing education including goal setting and self-reflection activities have been shown to contribute to practitioners’ knowledge, skills, and abilities (Armson et al., 2015; Brydges, Dubrowski, & Regehr, 2010; Henson, 2014; Hopcraft et al., 2010), the use of a written exam to determine clinical competence does not have the same support (Eva et al., 2016; Okuyama et al., 2011). While the costs of such an approach may be less, the results of this study suggest that the benefits of the process, if they exist, are questionable. Respondents indicated that the self-study component and continuing education activities appear to have the most benefit. From the perspective of RTR, this suggests that the College needs to assemble more evidence to justify the continued use of the current QAP.

6.7 Agency and Culture

While the study was directed to the impact of the QAP on dental hygiene practice, there were also some unexpected findings. These findings have important implications for the dental hygiene profession including regulators, educators, and professional associations. Dental hygienists are self-regulating oral health professionals. It might be assumed that they experience professional autonomy and agency over their practice. In reality, dental hygienists are often employees working in dentist-owned private practices that operate using a business model. The respondents in this study cited concerns about the negative impact of the business culture on their ability to provide evidence-informed, patient centered care. The literature suggests that tension is created when practitioners are prevented from following standards of practice and codes of ethics due to the realities of the workplace (Jackson et al., 2019; Storaker et al., 2019).
Due to the demands in the workplace and fear of reprisals, healthcare providers often relent and comply with workplace expectations. As a consequence, practitioners may experience frustration, ‘burnout’, and begin to question their abilities (Holland et al., 2012; Jackson et al., 2019; Storaker et al., 2019, p. 717).

In response to a perceived lack of control over their practice, healthcare providers may feel a sense of helplessness to change the conditions in their workplaces (Holland et al., 2012). Helplessness can be a ‘learned’ response, as suggested by the theory of learned helplessness (Moreland, Ewoldsen, Albert, Kosicki, & Clayton, 2015). Learned helplessness has its roots in passivity that occurs after individuals experience repeated failures or inability to change their surroundings. Feeling ineffective and passive, an individual may cease their attempts at changing their situation (Jackson et al., 2019; Moreland et al., 2015). The first step in combatting learned helplessness is to identify and name the barriers preventing change (Nuvvula, 2016).

Individual care providers and workplaces need to change to support self-regulated dental hygienists (Holland et al., 2012; Jackson et al., 2019). Dental hygienists have an ethical and legal responsibility to provide individualized, patient-centered care for their patients regardless of their practice setting (College of Dental Hygienists of BC, 2018c; Nelson et al., 2014; Storaker et al., 2019). Client-centered care is essential to providing safe and competent care and improving health outcomes (Lusk, 2013). There is a role for both dental hygiene and dental professional associations, educators, and regulatory bodies to come together to address these challenges. The literature suggests that educators could support graduates in the transition to practice and the work settings could also assist their entry-to-practice through orientation approaches and mentorship opportunities (Belinski & Kanji, 2018; Moreland et al., 2015; Motycka et al., 2010; Nelson et al., 2014). This is another area that would benefit from increased research. The current
efforts of the dental hygiene and dental associations to work towards more safe and respectful workplaces provides an example of a collaborative approach that could be emulated by others.

6.8 Summary Through the Lens of Critical Realism

The goal of critical realism (CR) is to understand the meaning and implication of complex problems (Mingers, Mutch, & Willcocks, 2013). The CR lens was critical in framing and understanding the complex challenges experienced by dental hygienists in their attempt to provide safe and competent clinical care.

The CR layered approach includes the real, actual, and empirical domains. The ‘real’ in this study was the phenomenon or mechanisms operating in the workplace that supported or hindered the ability of the respondents to adhere to the standards of practice and code of ethics. According to CR, once the phenomenon is identified and named it can be analyzed and made visible. Complicating the challenge of identifying the phenomenon active in the workplace was the CR belief that reality is socially constructed and is specific to individuals. The study respondents shared their individual realities of implementing the QAP. Respondents had differing and varied experiences in practice; however, respondents indicated that the workplace was the primary influence on whether they were able to follow the practice standards. After data analysis occurred, themes and patterns emerged indicating a complex interplay of power, dominance, practice autonomy, and decision-making themes in the workplace.

This study sought to answer the question “What was the impact, if any, of the CDHBC quality assurance program on dental hygiene practice.” It also investigated participants’ notions of safe practice and sought to determine what influences adherence to practice standards. I believe that the study answered these questions; it also identified the key role of the workplace in enabling or preventing dental hygienists from practicing as self-regulating health professionals.
Chapter 7: Summary, Implications, and Future Research

This concluding chapter provides a summary of the research including implications arising from the results of the study. The chapter begins with an exploration of my positionality within this study. I situate the research within my practice, aligning it with the goals of the UBC Doctor of Education program which are to understand and improve practice. Arising from the research findings, implications for stakeholders are presented. Areas for future research are suggested. Finally, concluding comments will reflect on the results of this study and look ahead to an imagined future of dental hygiene practice in British Columbia.

7.1 Positionality

My positionality in this study is as both an ‘insider’ and ‘outsider’. I am an outsider in my role as a researcher asking questions of the participants; inviting them to trust that I will share their stories accurately. I am also an insider. I have been a registered dental hygienist for over 30 years, working in a variety of practice settings including family practice, periodontal specialty practice, and within a managed care facility as the owner of a mobile dental hygiene practice. As a practicing clinician from the late 1980’s until the mid-2000’s I experienced similar practice barriers to those reported in this study. In my opinion, obtaining self-regulation in 1995 did not substantially change the conditions in the workplace in private dental practices. The work of dental hygienists continued to be largely controlled by dentist employers. I am saddened and disappointed to discover that in 2019, dental hygienists in British Columbia continue to face practice barriers that are perceived by hygienists to negatively influence patient care.

Why do I continue to care? As an educator of the next generation of dental hygienists, I struggle knowing the challenges that many will face as they enter private practice. New graduates enter the workplace with the latest ‘gold-standard’ education only to report being
frustrated with the inability to provide individualized, evidence-informed care within the business culture found in many dental offices. The complex issues related to dental hygiene practice discovered during this research do not lend themselves to an easy fix.

The adoption of a critical realism (CR) lens provided the framework to situate this study within the context of clinical dental hygiene practice. Evolved from the work of Bhaskar, CR supports the idea that multiple realities exist (Bhaskar & Hartwig, 2016; Zachariadis, Scott, & Barrett, 2013). In addition, CR posits that observable or reported actions can be understood only when the context is understood (Clark et al., 2008; Schiller, 2016). Within this study, the perceptions of individual practicing dental hygienists could only be understood by exploring their often-complex practice settings.

While CR provided the framework for situating the research, the Right Touch Regulation (RTR) approach (Professional Standards Authority (UK), 2015) provided me with a method to assess the QAP from a regulatory perspective. The RTR approach suggests that the amount of regulation be commensurate with the level of risk. Also, that solutions to problems be close or ‘local’ to where the problem is occurring (Bilton & Cayton, 2013; Cayton & Webb, 2014). The RTR approach provided me with a lens to view the regulatory component of the QAP.

The UBC Doctor of Education (EdD) program provided an opportunity for me, as a practitioner, to understand and improve my practice. The program’s focus on practice enabled me to investigate a topic that is important to me; a topic that is important to 3,600 dental hygienists in the province. This study has identified and named problems found within dental hygiene practice settings. Naming problems is an important first step in recognizing the tensions and competing interests found within dental hygiene practice settings in British Columbia. Once problems are clearly articulated discussions can begin with all stakeholders toward the goal of
improving the delivery of care. The implications arising from this study emphasize the various roles that organizations play in the delivery of safe and competent dental hygiene care.

7.2 Study Summary

The primary research question in this study was: “What are dental hygienists’ perceptions of the impact, if any, of the CDHBC Quality Assurance program on their dental hygiene practice.” A secondary question was: “What influenced dental hygienists’ ability to implement the QAP in practice?” Generally, respondents reported that the QAP had no impact on practice. Although most of the respondents felt that they were providing safe and competent dental hygiene care, many did not follow the College practice standards due to workplace barriers. The most commonly cited barrier was the business culture of many dental offices. Respondents reacted negatively to the business model reporting that it adversely impacted their practice autonomy by limiting their ability to provide patients with individualized, evidence-informed dental hygiene care. Providing safe and competent care based on individual patient needs is a required component of the practice standards.

A recent study of Canadian dentists indicated that those who self-identified as business people rather than as health care professionals tend to base treatment decisions on the patients’ ability to pay rather than on health needs (Yu et al., 2019). The business model within dentistry was also found to weaken the public trust and damage the image of what it means to be a healthcare professional (Holden, 2017, 2018; Pellegrino, 1999). Many of the dental hygiene respondents reported viewing themselves as health care professionals. Respondents viewed the business culture to be at odds with the dental hygiene culture of health promotion and patient-centered healthcare delivery. The dichotomy of practice philosophies was perceived to be a source of workplace tension and stress.
Respondents reported that two components of the QAP were valuable to their learning, namely completing the online jurisprudence education module (JEM) and participating in continuing education activities. While some respondents did not see value in the goal-setting and self-reflection activities related to their continuing education activities, the literature supports these activities as contributing to implementing evidence-informed change in practice (Armson et al., 2015; Barnes et al., 2013; Lau et al., 2015).

The online, multiple-choice exam was described as frustrating by the respondents for several reasons. First, the exam questions were not practice specific. Respondents reported being aggravated by the expectation that they answer questions unrelated to their practice setting. Second, the exam questions were perceived to be poorly structured. The College has recently convened a committee to review the exam questions. The composition and the qualifications of the committee is unknown. The stated purpose of the review is to gather written feedback from the committee regarding the currency and relevancy of the exam questions (J. Guyader, CDHBC Senior Dental Hygiene Advisor, personal communication, June 19, 2019). At the time of this dissertation the College has not advised of any significant changes to the exam questions or to the continued implementation of the multiple-choice exam as part of the QAP.

In addition, the committee is being asked to comment on the usability of the online platform and clarity of the exam directions. The College has collected feedback about the online platform from registrants who have completed the exam. In its 2018 report entitled “CDHBC Quality Assurance Program: Feedback Reported, Evaluation and Future Trends” (College of Dental Hygienists of BC, 2018b), the College acknowledged registrant feedback. A revised online platform was launched in August 2019. To date, it is not known whether the updates have addressed issues identified by the research participants.
Third, respondents suggested that a multiple-choice exam was an ineffective tool for determining an individuals’ competence in practice. The literature supports authentic, evidence-based assessment tools that more closely replicate conditions of practice (Frank et al., 2010; Ginsburg et al., 2010; McDermott et al., 2017; Okuyama et al., 2011). The findings suggest that other forms of individual assessment could be explored as options to the written exam.

Lastly, respondents reported being required to take courses unrelated to their practice environment. This arose as a consequence from incorrectly answering exam questions outside of an individuals’ practice setting. This unintended consequence of the exam required some respondents to plan, pay for, track, and attend learning activities mandated by the Guided Learning Plan (GLP) that were unrelated to their practice. Participating in these learning activities may mean less time was available for practice-specific courses. Respondents reported feeling hindered and less like a ‘professional’ when mandated to take continuing education courses on topics derived from an exam perceived as being poorly structured with questions unrelated to their practice.

A sub-question of this study explored the concept of safe and competent care: “How do dental hygienists articulate the notion of safe and competent care in relation to the QAP?”

Respondents indicated that following infection control and safety standards were key components in providing safe dental hygiene care. The QAP articulates safety through the lens of checklists within policies outlining components of safe practice. Checklists are an important aspect of safety and are used in a variety of healthcare settings (Haynes et al., 2011; King & Anderson, 2012; Waring et al., 2016). Respondents expressed broader notions of safety including critical thinking, incorporating new research into practice, and using evidence to inform patient care decisions. Some respondents also provided examples of how collaboration and leadership
within their practice contributed to improved patient safety (Cho & Choi, 2018; Community Health Nurses of Canada et al., 2015). The importance of leadership abilities has recently been articulated through a new national competency document in the public health area. Health professions have adopted broader notions of patient safety with some publishing interprofessional competencies that outline common abilities across disciplines that support increased patient safety and better health outcomes (Canadian Patient Safety Institute, 2009; Okuyama et al., 2011; Public Health Agency of Canada, 2008; Weaver et al., 2013).

The College Practice Standard #2 does highlight the importance of patient safety (College of Dental Hygienists of BC, 2018d). However, the related safety policy emphasizes activities to be completed during patient appointments. It does not incorporate broader abilities such as leadership, critical thinking, collaboration, and communication that are linked to improved patient safety in healthcare literature (Cho & Choi, 2018; Cristancho et al., 2017; de Jonge et al., 2011; Okuyama et al., 2011; Waring et al., 2016). This may partially account for respondents’ perceptions of providing safe care while at the same time indicating that they experienced challenges in following the practice standards.

According to the right-touch regulatory (RTR) approach (Professional Standards Authority (UK), 2015), the level of regulation should be balanced with the risk of harm. It is also important to consider that regulation can be a barrier to innovation in healthcare (Nelson et al., 2014); more regulation is not necessarily better regulation. The College created the Quality Assurance Program (QAP) to provide a regulatory mechanism through which the public could be confident of receiving safe and competent dental hygiene care. According to the RTR approach, targeted local solutions are recommended before considering regulatory intervention (Bilton & Cayton, 2013; Cayton & Webb, 2014; Professional Standards Authority (UK), 2015). The
‘problem’ being addressed by the QAP is the local provision of safe and competent care by dental hygienists. Viewing the ‘problem’ through a cost/benefit lens, the benefits of the QAP are minimal when compared to the cost of the QAP. The cost from a registrants’ viewpoint includes, in part, the time needed to study for the exam, the financial burden of the exam, any fees and time associated with taking courses outside their area of practice, and the reported frustrations with the online tracking software. There is also a cost to the College to maintain and track the infrastructure supporting the QAP. The imbalance between the cost and the benefits of the QAP would suggest that a different approach to quality assurance be explored.

7.3 Limitations

The low response rate in this study may be partially explained by the length of the online survey tool. The length of the survey may have led to instrument fatigue (Hart et al., 2014) impacting completion rates and deterring some from starting the survey. Recruitment may have been enhanced through pre-advertisement and promotion via member services newsletters prior to the survey launch (Pit, Vo, & Pyakurel, 2014). Targeted recruitment directed at dental hygiene study clubs or continuing education events may have boosted response rates. A larger response rate may have better reflected the dental hygiene population, as those who completed the survey may be those with strong opinions supporting or opposing the QAP.

7.4 Study Implications

The study participants shared their perceptions and experiences of providing dental hygiene care while navigating complex workplace conditions in British Columbia. Implications arising from this study target various stakeholders in a multi-faceted approach. Various stakeholders influence the practice of dental hygiene and include, (a) dental hygiene regulators; (b) dental regulators; (c) dental hygiene clinicians; and (d) dental hygiene educators.
7.4.1 Dental Hygiene Regulatory Body

The results of this study suggest that respondents do not consistently follow the practice standards. It is not known whether dental hygienists perceive the standards as reasonable and realistic. Despite respondents indicating that they do not follow the standards, few complaints have been lodged against dental hygienists in the province (College of Dental Hygienists of BC, 2015a, 2016, 2017b, 2018a, 2019a). There are, of course, limitations in using complaints data as the public does not necessarily understand the care provided nor the process to register a complaint. However, essentially no data are available in the public domain that suggests that dental hygiene care in Canada is not safe and competent. However, regulatory Colleges have also been encouraged to assess the outcomes of the quality assurance programs (Cayton, 2018). The results of this study suggest that further research is needed to explore the care provided by dental hygienists in relation to safety, better health outcomes, and the practice standards. The data arising from such explorations could then be used to support a quality assurance process that would support registrants in providing care to professional standards. Essentially it is important to gain a better understanding of what is happening in practice so that the QAP could then be shaped to address those specific concerns. Currently it appears a solution was developed, in the form of the QAP, to address an unknown issue in practice. The College is ideally positioned to support such research given their mandate to work in the public interest.

A recent study suggests that improved patient care and safety is enhanced by baccalaureate dental hygiene education (Sunell et al., 2017). In this study, diploma-prepared dental hygienists who went on to complete a 4th year reported improved abilities in the delivery of care, patient safety, interprofessional practice, and increased ability to critique and use research. Participants also reported an improvement in patient outcomes (Sunell et al., 2017).
Similar findings around improved patient safety and treatment outcomes have been reported with baccalaureate-prepared nurses (Blegen et al., 2013; Burton, Hays, Savage, & Hoeksel, 2017). Given the improved safety and treatment outcomes associated with degree-prepared healthcare professionals, it may be important for regulatory bodies to explore the impact of moving towards a degree as the entry-to-practice credential for dental hygienists in British Columbia.

7.4.2 Oral Health Regulators

In addition to the College of Dental Hygienists of British Columbia (CDHBC), three other colleges regulate oral health professionals in British Columbia. The College of Dental Surgeons of BC (CDSBC) regulates dentists, dental therapists, and dental assistants. The College of Denturists of BC (CDBC) regulates individuals who fabricate dentures for patients. The College of Dental Technicians of BC (CDTBC) regulates individuals who work in a lab and create dental appliances that have been prescribed by a dentist or requested by a denturist.

Given the overlapping scopes of practice among the oral health professions, Cayton (2018) suggests increased interactions between occupations to promote transparency and foster collaboration. Cayton suggests the creation of joint codes of ethics, practice standards, and continuing competence programs would benefit both the public and registrants by being consistent across the oral health professions. All oral health professionals would be guided by the same guidelines. Common practice standards regardless of practice setting would promote consistency and reduce confusion among oral care providers. In 2012, the Colleges for dental hygienists and dentists collaborated on a document entitled “Infection Prevention and Control Guidelines” outlining infection control standards for clinical practice. Building from this project, additional collaborative initiatives among the regulators may help to assist registrants in supporting patient safety and better oral health outcomes.
7.4.3 Professional Associations

The professional associations have a role to play in supporting regulatory associations in the creation of common practice standards. A recent collaboration between the Canadian Dental Hygienists Association (CDHA), the Canadian Dental Association (CDA), and the Canadian Dental Assistants Association (CDAA) resulted in the development of a “Healthy and Respectful Workplace” initiative (Canadian Dental Hygienists Association, 2019c). The initiative resulted from the findings of a 2018 national survey of dental hygienists that indicated 35% of respondents had experienced harassment, bullying, or abuse in the workplace, with 49% reporting having observed others in the workplace being mistreated (Canadian Dental Hygienists Association, 2019d). Respondents in this study reported some mistreatment by dentists and other dental office staff. The results of this study suggest, dental hygienists experience workplace challenges that may be impacting their ability to meet their practice standards. The initiative to promote a respectful work environment appears to be a positive collaborative effort. It would be helpful for these organizations to work collaboratively more often to support healthy practice environments for everyone.

7.4.4 Dental Hygiene Educators

Diploma dental hygiene education in British Columbia involves one year of general courses including science, English, and Psychology. This is followed by two years of dental hygiene courses, culminating with a diploma credential. Given the time constraints within a two-year program, broader abilities around communication, collaboration, critical thinking, leadership, and interprofessional practice are introduced, but the focus remains on developing clinical abilities. Baccalaureate dental hygiene programs have been shown to enhance these
broader abilities with graduates reporting increased job satisfaction and greater earning potential (Canadian Dental Hygienists Association, 2019a; Kanji & Laronde, 2018).

While in dental hygiene programs, students learn the ‘gold standard’ of patient care. Transitioning from an educational environment to an employment situation relies on the ability to adapt to the realities of clinical practice (Storaker et al., 2019). Respondents identified barriers in their work settings that they suggested limited their ability to implement their professional standards. This suggests that it would be helpful for educators to explore this issue of transition to help better prepare graduates to manage their practice environments in ways that can meet their obligations to the public.

Respondents’ comments suggested that a business culture presented challenges for registrants in meeting their practice standards. The need for additional curriculum with regard to practice economics was also highlighted in a 2017 study (Sunell et al., 2017) exploring the confidence of senior students in the UBC baccalaureate program. Twenty-four percent identified that they were not confident in their abilities to “integrate the basic principles of business management” into practice with a further 18% indicating that they were unsure. A better understanding of the economics of dental practices including the fiscal contributions of dental hygiene services would help to prepare registrants with the knowledge and confidence to better negotiate issues such as equipment purchases, length of patient appointments, or revenue targets. It will be important for educators to consider this issue during curriculum review and revision initiatives.

7.4.5 Clinical Practitioners

Respondents’ data suggested that some clinicians have autonomy and decision-making authority, while others lack this. In nursing literature it appears that self-confidence of registrants
may be eroded through the work environment upon entry into practice (Storaker et al., 2019). Given that this impacts registrants’ ability to implement their practice standards, it would be prudent for registrants to seek continuing education experiences that would help them to analyze how they could support the development of their agency. It is incumbent on every registrant to continue to assume the responsibilities of being a self-regulating professional.

7.5 Future Research

This section presents suggestions for future research regarding the College Quality Assurance Program (QAP), regulation, workplace conditions, and dental hygiene education.

Research Question 1: This study focused on the views of registrants working in clinical settings. Given the limited response rate it is important to gain more evidence about the impact of the current QAP in all dental hygiene practice settings. This leads to the following query: What impact, if any, does the QAP have on BC registrants across all practice settings?

Research Question 2: Respondents indicated that the current QAP had little impact on their practices; they questioned its relevance. The following question would be helpful in gaining insight into possible refinements to the QAP: How could the current QAP be shaped to have a greater impact on registrants’ practices?

Research Question 3: Respondents indicated that they did not necessarily implement all the practice standards. However, they also felt that they provided safe and competent services. This leads to the following research question: What factors are affecting registrants’ decisions to integrate some or all of the CDHBC Practice Standards?
Research Question 4: This research suggested that the workplace has an influence on whether registrants implement the practice standards. Given the limited response rate, it would be valuable to gather more data about the variety of factors that may impact the implementation of the practice standards. This leads to the research question: What are the enabling and disabling factors within the practice setting that influence the ability of registrants to implement the practice standards?

Research Question 5: Professional organizations have a role in supporting their members through educational or member services activities. The following question explores the role of member services: How could professional associations help or support dental hygienists in the transition from educational to work settings?

Research Question 6: The QAP was at least partially intended to be a mechanism whereby the public could be assured of receiving safe and competent dental hygiene care. As no outcome measurements have determined whether the QAP is effective, we are still left with the question of: What is an effective tool to best and realistically determine whether individual dental hygienists are practicing safely and competently?

7.6 Concluding Comments

This study explored the perceptions of dental hygiene clinicians around the impact of the CDHBC Quality Assurance Program (QAP) on practice. Most respondents felt the QAP had little to no impact on their practice. While small, this study was the first to investigate the impact of the QAP and the influence of the workplace on the provision of safe and competent dental hygiene care. Study participants reported valuing some aspects of the QAP such as the online
jurisprudence module, studying in preparation for the exam, and the continuing education requirements. However, most felt that the QAP exam was not an effective method for determining clinical competence.

A somewhat unexpected finding from this study was the reported substantive impact that the financial or business culture within dental offices had on respondents’ ability to implement standards of practice. Respondents cited struggles in reconciling their desire to provide patient-centered, individualized care using a health delivery model while being employed in a dental office operating within a revenue-generating business structure.

The provision of safe and competent dental hygiene care is a surprisingly complex phenomenon requiring additional study. Future research considerations include a larger study where more practitioners will contribute their insights. In addition, there is a need to investigate evidence-based, realistic options for determining whether safe care is being provided by individual dental hygienists. Results from this study have implications for regulatory agencies, member services organizations, educational programs, and clinicians. I hope this study provides the impetus for stakeholders involved in the delivery of oral healthcare to come together to discuss strategies and collaborate on moving the profession forward.
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## Appendices

### Appendix A  Regulated Health Professions in British Columbia

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<thead>
<tr>
<th>Health Profession</th>
<th>Regulatory College</th>
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<tbody>
<tr>
<td>1  Chiropractic</td>
<td>College of Chiropractors of British Columbia</td>
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<tr>
<td>2  Dental Hygiene</td>
<td>College of Dental Hygienists of British Columbia</td>
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<tr>
<td>3  Dental Technology</td>
<td>College of Dental Technicians of British Columbia</td>
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<tr>
<td>4  Dentistry</td>
<td>College of Dental Surgeons of British Columbia</td>
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<tr>
<td>5  Denturism</td>
<td>College of Denturists of British Columbia</td>
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<tr>
<td>6  Dietetics</td>
<td>College of Dietitians of British Columbia</td>
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<tr>
<td>7  Emergency Medical Assistants*</td>
<td>*Regulated by a government-appointed licensing board</td>
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<tr>
<td>8  Massage Therapy</td>
<td>College of Massage Therapists of British Columbia</td>
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<tr>
<td>9  Medicine</td>
<td>College of Physicians and Surgeons of British Columbia</td>
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<tr>
<td>10 Midwifery</td>
<td>College of Midwives of British Columbia</td>
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<tr>
<td>11 Naturopathic Medicine</td>
<td>College of Naturopathic Physicians of British Columbia</td>
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<tr>
<td>12 Nursing: Licensed Practical Nurse</td>
<td>British Columbia College of Nursing Professionals</td>
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<td>13 Nursing: Nurse Practitioner</td>
<td>British Columbia College of Nursing Professionals</td>
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<td>14 Nursing: Registered Nurse</td>
<td>British Columbia College of Nursing Professionals</td>
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<td>15 Nursing: Registered Psychiatric Nurse</td>
<td>British Columbia College of Nursing Professionals</td>
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<td>16 Occupational Therapy</td>
<td>College of Occupational Therapists of British Columbia</td>
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<td>17 Opticiany</td>
<td>College of Opticians of British Columbia</td>
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<td>18 Optometry</td>
<td>College of Optometrists of British Columbia</td>
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<td>19 Pharmacy (including Pharmacy Technicians)</td>
<td>College of Pharmacists of British Columbia</td>
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<td>20 Physical Therapy</td>
<td>College of Physical Therapists of British Columbia</td>
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<td>21 Podiatric Medicine</td>
<td>College of Podiatric Surgeons of British Columbia</td>
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<td>22 Psychology</td>
<td>College of Psychologists of British Columbia</td>
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<td>23 Speech and Hearing Health Professions:</td>
<td>College of Speech and Hearing Health Professionals of British Columbia</td>
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<td>Audiology and Speech-Language Pathogy</td>
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<td>24</td>
<td>Speech and Hearing Health Professions: Hearing Instrument Practitioners</td>
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<td>25</td>
<td>Social Work</td>
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<td>26</td>
<td>Traditional Chinese Medicine and Acupuncture</td>
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Appendix B  CDHBC Practice Standards & Policies

CDHBC Practice Standards & Policies
(Adapted from College of Dental Hygienists of BC, 2018d)

Standards and Policies
The eight Practice Standards are part of the College’s bylaws and contribute to the legal framework for dental hygiene practice in British Columbia. Dental hygienists have a legal and professional responsibility to be familiar with the Practice Standards and the Policies. By reviewing them regularly, dental hygienists may self-evaluate their practice and identify areas for continuing competency focus.

PRACTICE STANDARD POLICY #1
Practice Standard
A dental hygienist must obtain informed consent from the client or the client's representative before initiating dental hygiene care.
Policy
1.1 Dental hygienists must obtain informed consent from the client or the client's representative before providing any services, by physical indication or verbal statement, following applicable laws (see the following policies in the Interpretation Guidelines section of the website: Informed Refusal to Consent, Consent of Minors to Treatment, and the summary of BC’s Adult Guardianship Laws).

PRACTICE STANDARD POLICY #2
Practice Standard
A dental hygienist must practice safely.
Policy
2.1 When contacting blood or saliva, dental hygienists must practice recognized infection control as outlined by current resources as amended from time to time (refer to “CDC Infection Control Guidelines for Dentistry” by the Centers for Disease Control and Prevention, “Recommendations for Implementation of Infection Control Procedures” by the Canadian Dental Association,* and the CDHBC Infection Prevention and Control Guidelines).
* Publications change from time to time. Dental hygienists are encouraged to obtain a current copy of any resources noted in the Practice Standards Policies from the College office or from www.cdc.gov and www.cda-adc.ca.
2.2 Dental hygienists must protect the client. In a clinical setting this should include:
• Draping the client with a lead apron and thyroid collar during exposure to x-rays; and
• Providing safety glasses for the client if there is any danger from splatter or materials; and
• Providing hearing protection for the client if he/she is sensitive to the noise of practice setting equipment.
2.3 Dental hygienists must use potentially hazardous materials (such as radiation and disinfectants) safely, according to manufacturers' recommendations and government guidelines (refer to the Workplace Hazardous Materials Information System (WHMIS) guidelines and sections 8 and 9 of Health Canada’s “Safety Code 30” document).
2.4 When dental hygienists own their practice, dental hygienists must store and dispose of potentially hazardous wastes and materials safely, according to government guidelines (refer to the Workplace Hazardous Materials Information System (WHMIS) guidelines).

2.5 When dental hygienists are responsible for radiography equipment, dental hygienists must comply with all aspects of the Radiation Protection Program.

**PRACTICE STANDARD POLICY #3**

*Practice Standard*
A dental hygienist must assess the client’s needs.

*Policy*

3.1 Dental hygienists must collect baseline assessment data* as appropriate for the client (or supplement data collected by another health professional), and update the data as required. In a clinical setting, this should include:

- demographic information
- the client’s concerns, if any
- medical and dental history information
- vital signs, if indicated
- head and neck examination data
- intra-oral soft tissue examination data
- periodontal examination data
- dental and occlusal examination data that impacts on health
- diagnostic results/interpretations (e.g. from radiographs, bacterial and enzyme tests, etc)
- oral hygiene routines and techniques
- the client’s anxiety and pain levels.

* The extent of data collected will vary with the different practice settings and with clients who have specific needs or conditions. Professional judgment must be used to determine the data that is needed to assess each client.

**PRACTICE STANDARD POLICY #4**

*Practice Standard*
A dental hygienist must analyze the assessment information and make a dental hygiene diagnosis.

*Policy*

4.1 Dental hygienists must establish a dental hygiene diagnosis by interpreting the dental hygiene assessment findings and discussing the implications of the findings with the client or the client’s representative. In a clinical setting this should include the implications of conditions that are abnormal or unhealthy, and conditions that require special care.

4.2 Dental hygienists may determine short and long-term dental hygiene prognoses.

**PRACTICE STANDARD POLICY #5**

*Practice Standard*
A dental hygienist must plan for the dental hygiene care to be provided, based on the assessment data and dental hygiene diagnosis.

Policy

5.1 Dental hygienists must endeavor to integrate the dental hygiene treatment plan with the dentist's plan for the client’s comprehensive dental care.

5.2 When indicated, dental hygienists must consult with the client’s dentist, and may consult with other applicable health care providers, in order to integrate the plan for dental hygiene services into the client’s total health care plan.

5.3 Dental hygienists must discuss the dental hygiene plan for services with the client or the client’s representative. In a clinical setting this should include:

- oral health and wellness information and techniques
- treatment options
- pain and anxiety control options
- the number of appointments recommended
- the recommended time interval between appointments
- services to be provided at each appointment
- short-term goals that could result from the recommended services and how they will be evaluated
- risks of the recommended services
- recommendations for future referrals to dentists and other health care providers, if applicable
- risks of the client declining the recommended services.

5.4 Dental hygienists may discuss long-term goals with the client or the client’s representative including evaluation of the goals.

5.5 Dental hygienists may discuss fees associated with the plan.

PRACTICE STANDARD POLICY #6

Practice Standard
A dental hygienist must implement the plan consented to or adjust the plan in consultation with the client or the client's representative.

Policy

6.1 Dental hygienists must attempt to reduce a client's anxiety and, if indicated for the provision of clinical services, offer pain control.

6.2 Dental hygienists must discuss, as the plan is implemented, any proposed changes to the plan (based on client response or evaluation of services), and again obtain informed consent.

PRACTICE STANDARD POLICY #7

Practice Standard
A dental hygienist must evaluate while dental hygiene care is being provided, and at the completion of care, to determine if the desired outcome has been achieved.

Policy
7.1 At the completion of the planned services, dental hygienists must explain to the client the need for any follow-up or maintenance dental hygiene care and recommend a time interval to the next dental hygiene appointment or meeting.

7.2 Dental hygienists must, if indicated, recommend referral to dental and other applicable health care professional(s).

PRACTICE STANDARD POLICY #8

*Practice Standard*
A dental hygienist must document the dental hygiene care provided, following protocols of the practice setting.

*Policy*

8.1 Dental hygienists must label all client records with the client's name and the date.

8.2 Dental hygienists must record accurate details of the dental hygiene care provided, including:

- baseline assessment data
- an interpretation of dental hygiene assessment findings (or a dental hygiene diagnostic statement)
- a plan for services, particularly if the client needs or desires more than one appointment
- notes about the services provided (in a clinical setting this would include pain control method(s) used and the type and amount of any agents used)
- amount of time spent with the client, when appropriate
- evaluation findings and next appointment planning details
- precautions and instructions given (if any) • possible risks (if any) of services planned and of not receiving the recommended services

8.3 Dental hygienists must make legible and objective record entries, in ink, initial or sign entries and corrections, and make corrections so that the original entry is still legible.

8.4 Dental hygienists must record details of pertinent discussions and communications with the client and other health professionals, and maintain copies of correspondence.

8.5 Dental hygienists must document and initial the client’s informed refusal to consent to any recommended aspect of care (the client may give a physical indication or verbal statement of refusal).

8.6 When the dental hygienist owns the client's records, dental hygienists must retain records in a secure manner for no less than 16 years after the last client appointment*.

8.7 If electronic records are kept, the entries should be non erasable and secure with the registrant’s name or initials included in the entry.

* The CDHBC's policy for the retention of dental hygiene records is the same as the CDSBC's standard for the retention of dental records. Dental hygienists who own clinics or mobile practices, own their clients' records. One of the issues affecting dental hygienists is the length of time it is necessary to retain records in the event of litigation arising from treatment. The College recommends that dental hygienists who own clinics obtain legal advice regarding this issue. Special rules apply in respect to minors and adults under a disability. (For additional information see the: The Limitation Act)
Appendix C  Web-based Survey Instrument

SECTION ONE: Registration Category and Practice Setting

1. What category of registration do you hold with the CDHBC?
   a. Full Registration
   b. Full Registration/365 Day Rule Exempt
   c. Conditional Registration
   d. Non-Practicing Registration – *Thank you, no further questions script, option to enter draw, exit.*
   e. Temporary Registration – *Thank you, no further questions script, option to enter draw, exit.*
   f. Student Registration – *Thank you, no further questions script, option to enter draw, exit.*

2. Do you currently work as a dental hygienist providing clinical care for individuals in a dental clinic?
   a. Yes – proceed with survey
   b. No – *Thank you, no further questions script, option to enter draw, exit.*

Script for participants not meeting study criteria: Thank you for your interest in participating in this survey. Your views around the QAP are important but, as this survey focusses on dental hygienists in clinical practice, your input will be excluded.

SECTION TWO: Client Care

Introduction

The following is a summary of the pertinent points contained in the eight CDHBC Practice Standards. It does not contain all the detailed information in the published standards. This summary is for the purposes of this survey only. For the complete Practice Standards refer to the CDHBC website.
Please read the Summary of the CDHBC Practice Standards and reflect upon the contents with thoughts as to how your practice may be similar/different in treatment scope (e.g., what activities you perform with each client/patient) and chart entries (e.g., what notes or records you make).

Select the most appropriate response to the statements below. Base your response on your actual clinical activities.

2.1 To what extent do you agree or disagree with the following statements about your dental hygiene practice?

(6-point Likert scale). Strongly Agree, Somewhat Agree, Neither Agree Nor Disagree, Somewhat Disagree, Strongly Disagree, Not applicable.

1. I am familiar with the CDHBC Practice Standards and Interpretation Guidelines that describe the procedures to be included in each client appointment (e.g., comprehensive assessment, formulating and presenting a treatment plan, obtaining informed consent, evaluating outcomes, etc).
2. The care provided at each appointment is decided collaboratively by my client and myself.
3. I provide care in a safe and competent way with every client.
4. I follow the practice standards with each client in my practice.
5. I perform all the clinical procedures mentioned in the practice standards summary when providing care.
6. I would like to include all the clinical procedures mentioned in the practice standards summary, but I don’t have enough time to do this.
7. I follow the CDHBC record keeping guidelines.
8. I would like to follow the CDHBC record keeping guidelines, but I didn’t know what to include.
9. I would like to follow the CDHBC record keeping guidelines, but I don’t have enough time to do this.

2.2 Is there anything that you would like to add that would help us to understand your views about your dental hygiene services or client care?

Open-ended, does not require a response

SECTION THREE: Professional Practice

(6-point Likert scale). Strongly Agree, Somewhat Agree, Neither Agree Nor Disagree, Somewhat Disagree, Strongly Disagree, Not applicable.

3.1 To what extent do you agree or disagree with the following statements about your dental hygiene practice?
1. I feel valued and appreciated for my dental hygiene knowledge and education.
2. I am able to determine the length of appointments based on client needs.
3. I often experience time pressure because of the way clients are scheduled.
4. I have a respectful relationship with my employer.
5. I have little say or input into the services I provide my clients.
6. My employer discusses dental hygiene production goals that I should attain.
7. I am encouraged to bring my ideas forward to the team.
8. I feel that my co-workers function as a team.
9. The need for the client to have a dental examination every 365 days limits the way I practice.
10. The need for dentist supervision for local anesthetic limits the way I practice.
11. I feel that I can change the way I practice (e.g., I can incorporate new procedures if I find new evidence or information).
12. I can refer clients to other professionals when I feel it is necessary (e.g., oral surgeon or periodontist).
13. I feel like a leader in my practice.
14. I experience barriers to practicing my full scope of abilities within my workplace.
15. I feel high levels of stress in my workplace.
16. I believe I am a health care professional.

3.2 Is there anything that you would like to add that would help us to understand your views about your professional practice and autonomy?

Open-ended, does not require a response

SECTION FOUR: Physical Environment
(6-point Likert scale). Strongly Agree, Somewhat Agree, Neither Agree Nor Disagree, Somewhat Disagree, Strongly Disagree, Not applicable.

4.1 To what extent do you agree or disagree with the following statements about your physical practice environment?

1. I am able to purchase dental hygiene instruments or other supplies as I need them.
2. The physical work space allows me to provide client care comfortably.
3. I often regret becoming a dental hygienist because of my working conditions.
4. I am able to take breaks during my day.
5. My operatory supports my physical needs.
6. My working conditions make it impossible to provide safe and competent care.

4.2 Is there anything that you would like to add that would help us to understand your views about the physical environment, either the general office or your operatory?
SECTION FIVE: Quality Assurance Program (QAP)

This section will ask you about your experience, if any, with the QAP.

5.1 When did you most recently take the Quality Assurance Tool (75 multiple-choice questions)?
   a. 2018
   b. 2017
   c. 2016
   d. 2015
   e. 2014
   f. 2013

5.2 How many times have you gone through the new QAP process (5-year cycle)?
   Once
   Twice

5.3 Did you ever receive an ‘unsuccessful’ in your QAP Tool?
   Yes   No

5.4 To what extent do you agree or disagree with the following statements about the Quality Assurance Program (Tool, Guided Learning Plan, and Learning Plan)?
   (6-point Likert scale). Strongly Agree, Somewhat Agree, Neutral, Somewhat Disagree, Strongly Disagree, Not applicable.
   1. The score I received on the QA Tool accurately reflects my knowledge and skills.
   2. The multiple-choice questions in the QA Tool aligned well with my practice.
   3. I found the QA Guided Learning Plan to be relevant to my practice.
   4. It was easy to find relevant continuing education opportunities that aligned with my QA Guided Learning Plan.
   5. The QAP positively influenced the services I provide.
   6. The QAP had no influence on the services I provide.
   7. Overall, I found the QAP to be a positive experience for my learning.
   8. Overall, I found the QAP to be a positive experience for my professional practice

5.5 Is there anything that you would like to add that would help us to understand your views about the Quality Assurance Program?
   Open-ended, does not require a response
SECTION SIX: Demographics

1. What is your age group?
   a. 20-29
   b. 30-39
   c. 40-49
   d. 50-59
   e. 60+

2. What gender do you identify as?
   a. Female
   b. Male
   c. Other

3. In which geographical region do you primarily practice?
   a. Lower Mainland
   b. Vancouver Island/Coast
   c. Kootenays
   d. Cariboo North
   e. Okanagan

4. What is your primary practice setting? Please select one.
   a. Dentist owned private practice
   b. Hygienist owned private practice
   c. Public Health setting
   d. Periodontal specialty practice
   e. Independent practice in alternate practice setting (e.g., long term care)
   f. Education
   g. Research
   h. Other: ____________

5. If you work in a clinical practice setting, what is the gender of the primary dentist in the practice?
   a. Male
   b. Female
   c. Other
   d. Not applicable

6. How many hours a week do you work in your primary practice setting?
   a. 1-10
   b. 11-20
   c. 21-30
d. Over 30

7. How many years have you practiced as a dental hygienist?
   a. 1-5
   b. 6-10
   c. 11-15
   d. Over 15

8. What is the highest credential that you have attained in dental hygiene education?
   a. 2-year diploma in dental hygiene (also including the Ontario ‘1 plus 1’ programs and 2-year associate degrees)
   b. 3-year diploma in dental hygiene (from Ontario and Québec)
   c. 3-year diploma in dental hygiene (1-year university-transfer pre-requisites plus 2 years of dental hygiene and 3-year associate degrees)
   d. 3-year advanced program
   e. 4-year bachelor’s degree in dental hygiene
   f. Master’s degree in dental hygiene
   g. Other: please specify

9. What is the highest level of education you have obtained in a field other than dental hygiene?
   a. 2-year associate degree
   b. 3-year bachelor’s degree including 3-year associate degree
   c. 4-year bachelor’s degree
   d. Master’s Degree
   e. Doctoral Degree
   f. Other: please specify

Thank you. This concludes the online survey.

To be entered to win an iPad mini, include your email contact. You will be randomly selected from entries.

Please enter your name, email address, and evening phone number if you would be willing to participate in a further 30-minute interview about this research.

Please hit the submit button to send your completed survey.
Practice Standards Summary

The following is a summary of the pertinent points contained in the eight CDHBC Practice Standards. It does not contain the detailed information in the published standards. This summary is for reflection for the purposes of this survey only. For the complete Practice Standards refer to the CDHBC website.

**Overall.** A DH must practice in a way that ensures not only their own safety but also the safety of the client (patient) and other dental team members. Samples of safe practice includes using lead aprons, appropriate disinfection and sterilization techniques, safety glasses, barriers, and safe disposal of sharps. *(Practice Standard #2)*

**Assessment.** Collect baseline information including demographics, client concerns, medical/dental history, vital signs, head and neck, intraoral soft tissue, and periodontal examination, radiographs, oral hygiene practices given the professional judgement of the clinician and needs of the client. *(Practice Standard #3)*

**Diagnosis.** Analyze the assessments and make a DH diagnosis which may include a prognosis statement. *(Practice Standard #4)*

**Planning.** Develop a care plan based on the assessment data. Include any referrals if indicated. The care plan includes treatment options, number of appointments and what services will be provided in each appointment. Describe the type of oral hygiene education planned. Describe the anticipated outcome of treatment, risks associated with treatment or the risks if the client declines treatment. Discuss the cost of treatment if applicable. Obtain informed consent. *(Practice Standard #1 and #5)*

**Implementation.** Perform all the services agreed upon in the care plan or adjust the plan in consultation with the client. *(Practice Standard #6)*

**Evaluation.** Evaluate during and after care to determine if the treatment has been successful. Discuss the need for any follow-up and the recommended time interval between dental hygiene appointments. Discuss any referrals if needed. Provide any post care instructions (e.g., fluoride, local anesthetic). *(Practice Standard #7)*

**Record keeping.** Record all treatment provided. In addition, record relevant assessment data, the DH diagnosis, DH care plan, and any follow-up information including recommendations for next appointments. Record all pertinent discussions with client and any refusal of treatment. *(Practice Standard #8)*.
Appendix D  Telephone Interview Instrument

Interview Questions: Script

Thank you for participating in this interview (name). As I mentioned at the beginning of our conversation today, I am interested in understanding more about your experiences going through the CDHBC Quality Assurance Program.

Anchor Question 1: Demographics

Can you tell me a little about yourself and your practice?

- What category of registration do you hold with the CDHBC?
  - Full Registration
  - Full Registration/365 Day Rule Exempt
  - Conditional Registration

- How long have you practiced as a dental hygienist?
- What geographical region do you practice in?
- What type of practice do you work in?

Anchor Question 2: CDHBC Practice Standards

As a registrant you are obviously aware of our CDHBC practice standards. Can you tell me a little about how you use these standards?

- Is there anything you would change regarding the practice standards?
- Are there any barriers to following the practice standards?
- How would you describe your adherence to the practice standards?
Anchor Question 3: Safe and Competent Services

As dental hygienists we all strive to provide safe and competent services. Can you tell me how you ensure that you practice safely and competently?

- How would you describe your level of practice autonomy? Can you give examples?
- Do you feel like you are able to practice your full scope of practice and make your own decisions in practice?
- How are decisions made in your practice?
- Are there changes that you would like to implement in your practice, but have not been able to?
- Have you recently implemented changes in your practice? If yes, what were the changes and what encouraged you to make these changes?
- Do you experience barriers to implementing change in your practice?
- How well does your workplace including the environment and the people support you in providing safe and competent services?
- Do you experience physical challenges due to your work as a dental hygienist?
- Do you feel that gender issues are part of your workplace? Can you describe?

Anchor Question 4: QAP

How did you find the QAP experience?

- Can you share with me how you perceive your practice compared with the competencies that populated your Guided Learning Plan?
- How well do you feel the competencies in the Guided Learning Plan reflect your perceptions of your practice weakness?
- Have you implemented changes in your practice based on the QAP?
- Are you considering any changes in your practice? If yes, what might these be and why are you considering them?

Anchor Question 5: Professional Satisfaction

- If you had an opportunity to change something in your practice, what would that be? Why?
- How satisfied are you in your select of dental hygiene as a career? Why or why not.
- Do you find your dental hygiene career fulfilling?
- Would you recommend dental hygiene as a career choice to someone starting out?
Anchor Question 6: Overall Question

Is there anything you would like to share with me that would help me to better understand your practice and the influence of the QAP on your practice?

This concluded the questions I have for the interview. Do you have any questions for me?

I would like to thank you for your time and the thoughtful responses you’ve provided today.

Please do not hesitate to contact me should you have any questions or concerns or would like to add something to your responses. Thanks again. Goodbye.
Appendix E  Advertisement to Recruit Participants

Script for the body of the email sent by the British Columbia Dental Hygienists Association (BCDHA)

Subject: Request for Participation – Survey Regarding the Impact of a Regulatory Quality Assurance Program: Perceptions of Dental Hygienists in British Columbia

From: Monica Soth

As of 2018, all dental hygienists practicing in BC will be participating in the College of Dental Hygienists of BC Quality Assurance Program (QAP).

As part of my Doctor of Education research through the University of British Columbia, I am exploring the impact of the QAP on dental hygiene practice in the province. Currently, no research exists that explores how dental hygienists in the province perceive the impact of the QAP in their daily practice.

Hence, we are looking for dental hygienists who meet the following criteria:

• Hold registration with the CDHBC in a practicing category, and
• Are practicing as a dental hygienist

If you meet the criteria you are in a good position to share your perceptions of the CDHBC Quality Assurance Program. The attached letter provides the details of this research and provides a link to the survey. As an incentive to participate in this survey you can enter to win an iPad mini.

If you have any questions about this survey, please contact Tom Sork or me, Monica Soth. If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.
Thank you,

Monica Soth
Doctoral Student
Email
Phone

Dr. Tom Sork
Research Supervisor
Email
Phone
Appendix F  Consent Form for Recruitment Email

Project Title: Impact of a Regulatory Quality Assurance Program: Perceptions of Dental Hygienists in British Columbia

Please read this recruitment and consent form carefully.

Principal Investigator:
Dr. Tom Sork, PhD., Department of Educational Studies, University of British Columbia.

Co-Investigator:
Monica Soth, EdD Doctoral Student.

This research is in partial fulfillment for the Doctor of Education (EdD) degree and constitutes the EdD dissertation for Monica Soth, MEd, Department of Educational Studies, University of British Columbia.

Purpose:
The purpose of this research is to examine what impact, if any, the CDHBC Quality Assurance Program (QAP) has on dental hygiene practice in BC. As a registered, practicing dental hygienist in BC, you will be asked to share your views about how the QAP impacts your dental hygiene practice. As hygienists practice in various workplace settings and experience different professional workplace relationships, you will be asked to describe some aspects of your workplace including how practice decisions are made including how you understand your professional identity as a dental hygienist.

Study Procedures:
By participating in this study, you will be asked to complete an online survey that consists of approximately 50 questions. Completing the survey questionnaire will take approximately 15-20 minutes of your time. You will be asked to select a rating that best reflects your response to the question. There are no right or wrong answers. You will be given an opportunity to explain your response or to provide additional information should you wish to do so.
Clicking the SUBMIT button will be considered an indication of informed consent to have the information used as part of group data in my dissertation, professional reports, conferences, and publications.

At the end of the online survey you will be asked if you wish to participate in an optional follow up interview which would be scheduled by phone at a time convenient for you. The follow up interview should take no more than an additional 30 minutes.

This voluntary survey is administered through the UBC Qualtrics survey platform in order to keep the storage of data within Canada.

**Potential Benefits:**
By participating in this survey, you will be contributing to group data that will be used to understand the impact of the QAP on dental hygiene practice in the province.

**Confidentiality:**
All responses will be kept strictly confidential and only reported as group data. Subjects will not be identified by name in any reports of the completed study. Any and all data records kept on the Principal Investigator’s computer hard disk will be password protected, encrypted, and accessed only by the Principal and Co-Investigator.

**Remuneration/Compensation:**
Please note that there is no remuneration or compensation for participation in this online survey. However, as an incentive, you will have the opportunity to enter your email address to win an iPad mini. Your participation in the draw will not be linked to your survey responses.

**Contact for information about the study:**
If you have any questions or desire further information with respect to this study, please contact me, Monica Soth, or my research supervisor, Tom Sork.

Monica Soth  
Doctoral Student  
Email  
Phone  

Dr. Tom Sork  
Research Supervisor  
Email  
Phone

**Contact for concerns about the rights of research subjects:**
If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

**Consent:**
Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time without jeopardy. If you choose to withdraw your
participation, all your input and feedback will be removed from the research data, upon your request.

Please complete the survey as soon as possible. The survey will be available until (date). Please follow the link below to access the survey.

Selecting “Begin Survey” will be considered an indication of informed consent to have the information used in my doctoral thesis at the University of British Columbia.
Appendix G Reminder Emails

Department of Educational Studies
Faculty of Education
Education Centre at Ponderosa Commons
6445 University Boulevard
Vancouver B.C. V6T 1Z2
CANADA
Tel: 604-822-5374
Fax: 604-822-4244
Web: http://www.edst.educ.ubc.ca

Appendix G
Reminder Emails

One-week follow-up email reminder

Impact of a Regulatory Quality Assurance Program: Perceptions of Dental Hygienists in British Columbia

Thank you to those who have completed the survey related to the Quality Assurance Program (QAP) in BC. If you have not had a chance to complete it, please complete it within the next week as the survey closes on (date).

Sharing your views and perceptions of the QAP will provide valuable information that will help understand the impact, if any, of the QAP in your practice and to identify what impact, if any, your practice setting and workplace conditions have on your ability to provide dental hygiene care. Your perceptions of your professional identity in practice will provide a ‘snapshot’ of how BC dental hygienists view themselves.

As mentioned in the initial email correspondence, your participation is voluntary. Your responses are anonymous and will be reported as group data. For questions or further information about the survey please contact Monica Soth by email at (email).

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Thank you in advance for participating in this survey. Your support by (date), is appreciated.

You can access the survey through the following link:

Thank you,
Monica Soth
Doctoral Student
Email
Phone

Dr. Tom Sork
Research Supervisor
Email
Phone

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One day follow-up email reminder

Impact of a Regulatory Quality Assurance Program: Perceptions of Dental Hygienists in British Columbia

Time is running out for you to complete the survey related to the Quality Assurance Program (QAP) in BC!

You have one day left to complete the survey. It closes tomorrow, (date) at midnight!

Sharing your views and perceptions of the QAP will provide valuable information that will help understand the impact, if any, of the QAP in your practice and to identify what impact, if any, your practice setting and workplace conditions have on your ability to provide dental hygiene care. Your perceptions of your professional identity in practice will provide a ‘snapshot’ of how BC dental hygienists view themselves.

As mentioned in the initial email correspondence, your participation is voluntary. Your responses are anonymous and will be reported as group data. For questions or further information about the survey please contact Monica Soth by email at (email). If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Thank you in advance for participating in this survey. Your support by (date) is appreciated.

You can access the survey through the following link:

Thank you,
Monica Soth
Doctoral Student
Email
Phone

Dr. Tom Sork
Research Supervisor
Email
Phone
Interview Appointment Script

Hi (Participant name):

Thank you for agreeing to participate in a follow-up interview regarding the CDHBC Quality Assurance Program (QAP).

As a reminder, I am conducting research on the impact of the quality assurance program on dental hygiene practice. With this research, I want to learn about your experiences with the QAP. I also want to learn about the conditions in your workplace and how you feel about your professional identity as a dental hygienist.

The telephone interview is voluntary and will take approximately 30 minutes to complete. Should you agree to participate, you will have the right to withdraw from participating at any point in this interview.

Data gathered during this interview will be recorded and I will share a copy of the transcript of the interview with you so that you have an opportunity to review it and make changes, additions, or deletions. Your responses will be kept confidential and data will be anonymized.

In addition to reporting the findings in my dissertation, I plan to present the findings at conferences and may publish findings in scholarly journals at a later date.

I would like to schedule the telephone interview on (date/time). An alternate would be (date/time). Please let me know which option would work for you. I look forward to speaking with you soon!

Thank you,
Monica Soth
Doctoral Student
Email
Phone
Hello (Participant name):

This is Monica Soth calling. I’m phoning to follow-up regarding the online survey you recently completed about your experiences with the BC College of Dental Hygienists Quality Assurance Program. You indicated that you would be willing to participate in an interview to share additional information about your experiences.

As a reminder, I am conducting research on the impact of the quality assurance program on dental hygiene practice. With this research, I want to learn about your experiences with the QAP. I also want to learn about the conditions in your workplace and how you feel about your professional identity as a dental hygienist.

Should you agree to participate, you will have the right to withdraw from participating at any point in this interview. If you choose to withdraw your participation, all your input and feedback will be removed from the research data upon on your request.

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

If you have any questions or desire further information with respect to this study, you may contact Dr. Tom Sork at (email) or (phone).

The interview will take approximately 30 minutes to complete.

Do you have any questions about the interview or the research study at this time?

If you agree to participate, I will record the interview. Your responses will be kept confidential and data will be anonymized. I will share a copy of the transcript of the interview with you so that you have an opportunity to review it and make changes, additions, or deletions.

In addition to reporting the findings in my dissertation, I plan to present the findings at conferences and may publish findings in scholarly journals at a later date.

Are you willing to participate in this interview?
1. If “yes”: That’s great, thank you.
2. If “no”: I understand, thank you for your time.
3. If “I’ll need to think about it”: May I send you further information about the study to help you decide whether to participate? Is there a good time to contact you again?