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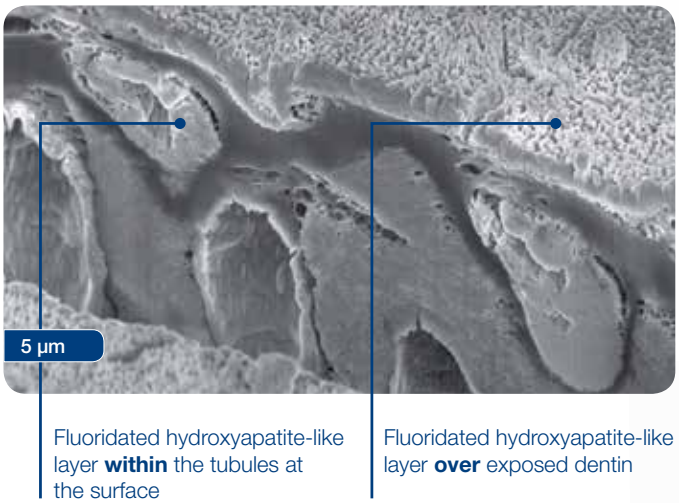

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INFORMATION

The *Canadian Journal of Dental Hygiene* is the official peer-reviewed publication of the Canadian Dental Hygienists Association (CDHA). Published in February, May, August, and November, the journal invites submissions of original research, literature reviews, case studies, and short communications of scientific and professional interest to dental hygienists and other oral health professionals. Bilingual Guidelines for Authors are available at www.cdha.ca/cjdh.

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Everything old is new again

Barbara Long, DipDT, DipDH, BGS, SDT, RDH

Barbara Long

Dental hygiene, like all health professions, is constantly on the lookout for innovative models of health care delivery. One such model, on the radar of the American Federal Trade Commission and considered by the W.K. Kellogg Foundation to be the next best approach for providing oral health care to vulnerable children, is gaining momentum in the United States. Would it surprise you to learn that this model has been active in Canada since 1972?

Dental therapy began decades ago in Saskatchewan and the Northwest Territories, and has a proven track record in private practice and public health in this country. Dental therapists provide timely, appropriate, and affordable dental care to underserved populations with overwhelming support from the public. While barriers to the spread of dental therapy throughout North America have been many and have often seemed insurmountable, momentum is now slowly building in the United States, where dental therapy has recently been introduced in Alaska and Minnesota.[1] This momentum should create exciting opportunities for both the dental hygiene and dental therapy professions and prevent dental therapy from being little more than a footnote in the history of oral health care in North America.

Several years ago when I moved from Saskatchewan to Ontario, I was struck by the fact that few dental hygienists were aware of the profession of dental therapy. I am a dental hygienist who graduated from dental therapy in 1978. At that time, I was employed by the Saskatchewan Health Dental Plan (SHDP) in two rural settings and was responsible for providing dental care to children ages 4 to 13 in several schools. I was only one of many dental therapists providing oral health care in every school across the province.

It all began in Canada in 1972 when two Canadian dental therapy programs were established. One program in Fort Smith, Northwest Territories, was utilized by the federal government to educate dental therapists to address the oral health needs in remote Inuit and First Nations communities; the other, in Regina, Saskatchewan, educated dental therapists for employment in the provincial public health dental programs in both Saskatchewan and Manitoba.[2,3] The SHDP provided dental services in school-based dental clinics by teams of licensed dental therapists and certified dental assistants with indirect supervision from dentists. The therapist–assistant team carried out routine dental services including examinations, radiographs, preventive treatments, permanent restorations in primary and permanent teeth, extractions, pulpotomies and stainless steel crowns on primary teeth, and space maintainers.

The SHDP was a particularly successful program, demonstrating the competence of the dental therapy team and its overwhelming acceptance by the public. External evaluations of the SHDP concluded that children had no fear of the dental clinic or personnel and considered their dental treatment a "routine" part of school. Dental therapists were well trained to provide prevention and treatment services.[1,4–7] Yet despite these successes, dental therapy in Canada is now at risk because of several primarily political reasons.

In 1987, a shift in the political climate in Saskatchewan led to the dismantling of the school-based service and the corresponding dental therapy education program. On March 31, 2011, the remaining dental therapy education program in Canada—the National School of Dental Therapy—which had relocated to Prince Albert, Saskatchewan, had its federal funding terminated. Alternate funding has not yet been secured, and the Saskatchewan Dental Therapists Association is focusing extensive energies on lobbying for its restoration.[3]

In addition, the practice of dental therapy has met significant resistance in Canada from organized dentistry at the national, provincial, and local levels. This resistance has negatively influenced the political will of governments to pursue the legislative reform needed for the profession to be fully established nationwide even though it is already self-regulating in Saskatchewan and has a recognized scope of practice in two provinces and the territories. To a lesser degree, dental hygiene has encountered similar resistance from organized dentistry.

Although dental therapy is struggling to maintain its place among oral health professionals in Canada, it is very much alive and thriving in many other countries, notably

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Australia, New Zealand, Great Britain, the Netherlands, and Singapore and, most recently, has developed a toehold in the United States.[1] In fact, in over 50 countries, dental therapists are utilized as oral health professionals, providing dental treatment including examinations, radiographs, preventive services, local anesthetic, permanent restorations, extractions and pulpotomies, and stainless steel crowns on primary teeth.[1]

For Canadian dental therapists, it is indeed reassuring to see that dental therapy is now being introduced in the United States (US). What sparked interest in the US for a new type of oral health provider was a report entitled *Oral health in America: A report of the surgeon general*, released in 2000, which described a national oral health care crisis.[8] The report concluded that the oral health system infrastructure was insufficient to meet the needs of many disadvantaged population groups in the United States. It also reported disproportionate access to dental care based on race, ethnicity, and socioeconomic factors within the United States populace. Rural residents, children, and the rising immigrant and senior populations were all identified as sources of pressure on the oral health system, exposing its inequalities. In response to the Surgeon General's report, the W.K. Kellogg Foundation launched a major initiative to improve access to oral health care for at-risk populations in November 2010.[9] New workforce models that include oral health professionals such as dental therapists and dental therapist–hygienists are being developed in the hopes of balancing the provider distribution across the United States to address these disparities.[7,10,11]

Over the past decade, two programs utilizing dental therapists have been created in the United States: one in Alaska, where dental therapists are known as dental health aide therapists (DHATs) and have worked exclusively on Alaska Native lands since 2005; and one in Minnesota, where dental therapists have been practicing since 2011.[1,7,10,11] DHATs are educated at the University of Washington in Seattle for the first year and in Bethel, Alaska, for the second clinical year. Upon graduation, the DHATs are certified to perform both preventive and routine restorative procedures on Alaskan children and adults. This program is based on the New Zealand dental therapy model. The University of Minnesota offers a Bachelor of Science in dental therapy, graduating dental therapists, and a Master of Dental Therapy program, graduating advanced dental therapists who have already completed a BA or BSc in dental hygiene. In Minnesota, dental therapists and advanced dental therapists perform a wider range of procedures and serve all age groups.[10,11] While the scopes of practice of dental therapists in Alaska and Minnesota differ in procedure, extent of procedure, and terminology, they generally include many preventive services, basic dental repair, and selective tooth extractions.[10,11] As community-based mid-level practitioners, these dental therapists are helping to expand the reach of the dental care team and increase access to dental care for people who routinely struggle to get the dental care they need.[1]

In many countries, dental therapy and dental hygiene have been merged into one profession.[1,10,11] This combined oral care professional is commonplace in Great Britain and Australia where they are known as oral health therapists. In Canada, when the SHDP was dismantled, many unemployed dental therapists enrolled in dental hygiene programs to obtain dental hygiene education. At that time there were many dually qualified professionals in the province, including myself. While dental therapists employed in private dental practices continue to work to their full scope of practice in Saskatchewan, most dental therapist–hygienists have shifted their focus to dental hygiene care.

The American Dental Hygienists Association (ADHA) was the first American national organization to propose a new oral health provider, and has supported the concept that preventive and restorative dental procedures can be performed by alternative dental providers. In 2008, the ADHA articulated the concept of dental hygienists providing restorative care in a document entitled "The Advanced Dental Hygiene Practitioner (ADHP)."[12,13] The description of the ADHP is very similar to the practising dental therapist–hygienist model. Minnesota's advanced dental therapist is the best approximation of the ADHP currently working in the US, and states like Maine and New Hampshire are working to implement similar models.

The need for a core set of national standards for dental therapy education and for accreditation of established programs in the US to ensure quality and promote consistency was recently addressed. Community Catalyst, an American non-profit advocacy organization building community leadership to transform the health care system, created a panel funded by the W.K. Kellogg Foundation to examine these issues. In October 2013, the panel released its proposed "Standards for Dental Therapy Education Programs in the US."[14] Canadian dental therapists were represented on the panel. According to Dr. Albert Yee of Community Catalyst, "Now is the time to expand the number of dental professionals who can offer routine, preventive care to families in need. Creating these national standards for dental therapist education programs will support the growing number of efforts in states and tribes striving to make this happen."[15]

The American Dental Association's Commission on Dental Accreditation (CODA) also recently proposed *Accreditation Standards for Dental Therapy Education Programs*.[16] Unfortunately, CODA's accreditation standards include pejorative statements and restrictions on dental therapy education, which caught the attention of the American Federal Trade Commission (FTC). FTC staff submitted a comment to CODA regarding its proposed standards, stating that, while they may encourage the development of a nationwide dental therapy profession that could improve access to, and enhance competition for, dental care services, unnecessary language on supervision and scope of practice could undermine that goal.[17] The FTC suggested that CODA consider omitting such language.

While the FTC will not champion dental therapy, it does recognize the issue of unfair competition by the American Dental Association.

Interestingly, key barriers to the spread and acceptance of dental therapy in Canada are being slowly overcome in the United States. The Kellogg Foundation is currently working with Ohio, New Mexico, Kansas, Washington, and Vermont to establish dental therapy oral health programs, and reports that more than a dozen states are considering similar programs.[9] From experience in Canada, the legislative processes necessary for the establishment of these practitioners will be onerous. Endorsement from national organizations like Kellogg and Pew has, however, increased awareness of and support for this type of oral health professional. While most of organized dentistry staunchly opposes mid-level dental providers, the American Association of Public Health Dentistry has publicly come out in support of dental therapy, and has proposed a standard curriculum. In addition, the Pew State and Consumer Initiatives has many projects supporting the creation of a mid-level provider of oral health care for underserviced populations.[18,19]

The establishment of the dental therapy programs in Alaska and Minnesota and potentially in other American states should positively impact dental hygiene education and practice in both the United States and Canada. The dispute over local anesthetic should become a non-issue in the provision of dental hygiene care, as it is essential for dental therapy. The notion of supervision will also become obsolete as dental therapists already practice in public health programs without supervision but in collaboration with dentists. As the public becomes more accepting of and familiar with the delivery of preventive and restorative treatment by this type of oral health professional, barriers to dental hygiene care should be reduced. All oral health professions work best when their scope of practice is maximized in an environment negating the need for supervision.

Former US President Bill Clinton once said, "Nearly every problem has been solved by someone, somewhere. The challenge of the 21st century is to find what works and scale it up." I am hopeful that the groundwork laid by dental therapy programs in Canada and abroad, and the creation of dually qualified dental therapist–hygienists will benefit both oral health professions as they continue to establish themselves in North America.

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Reflecting on our professional identity

Mary Bertone, BSc(DH), RDH

"I am a dental hygienist. I educate and empower Canadians to embrace their oral health for better overall health and well-being."

Mary Bertone
CDHA President/ Présidente de l'ACHD

Is that how you see yourself in your capacity as a dental hygienist? The Canadian Dental Hygienists Association (CDHA) hopes that you do. The sentences above are the newly developed CDHA Professional Identity Statement, designed in collaboration with membership to "unite and inspire the profession and express the essence and value of who we are and what we do."[1] It provides a concise vision of our identity, and when I read it, I cannot help but be proud of this wonderful profession that we have chosen.

Dedicating time and resources to furthering our professional identity is a worthwhile endeavour. We are all continuously trying to construct meaning for ourselves and for our personal and professional identities.[2] The self-reflection process promotes the integration of self to professional identity, and reaffirms the norms of our profession.[3] Furthermore, integrating interprofessional education opportunities into dental hygiene education promotes professional identity conversations which in turn can change perceptions of professional roles.[4]

We are not alone in seeking to define a professional identity. The nursing profession is also confronting the impacts on professional identity stemming from an aging population, technology advances, and evolving and increasing public expectations.[5] One consideration, from which we could learn, is to build a greater capacity for identity resiliency. We should celebrate and value our dental hygiene knowledge by furthering research and using that evidence to illustrate the impacts of dental hygiene practice on client outcomes.[5] The *Canadian Journal of Dental Hygiene* can be our hub for sharing that knowledge with other dental hygienists, as well as with other health professionals.

Réflexions sur notre identité professionnelle

« Je suis hygiéniste dentaire. Je m'engage à éduquer et responsabiliser les Canadiens à l'égard de leur santé buccale dans le but d'améliorer leur santé et leur bien-être général. »

Vous voyez-vous ainsi dans votre capacité d'hygiéniste dentaire ? L'Association canadienne des hygiénistes dentaires (ACHD) espère que c'est le cas. Les phrases ci-dessus sont le nouvel Énoncé d'identité professionnelle de l'ACHD, conçu en collaboration avec les membres pour « unir et inspirer la profession et exprimer l'essence même de ce que nous sommes et de ce que nous faisons. »[1] L'énoncé présente une vision concise de notre identité et, quand je l'ai lu, je n'ai pas pu m'empêcher d'être fière de cette profession magnifique que nous avons choisie.

Cela vaut vraiment la peine de consacrer du temps et des ressources pour étendre notre identité professionnelle. Nous nous efforçons toutes continuellement d'en élaborer le sens pour nous-mêmes et nos identités personnelles et professionnelles.[2] La réflexion personnelle encourage l'intégration de soi dans l'identité professionnelle et réaffirme les normes de notre profession.[3] En outre, l'intégration des opportunités de formation interprofessionnelle dans la formation d'hygiène dentaire favorise les entretiens sur l'identité professionnelle, ce qui peut ensuite modifier les perceptions des rôles professionnels.[4]

Nous ne sommes pas les seules à chercher à définir une identité professionnelle. La profession infirmière confronte aussi les impacts sur l'identité professionnelle résultant du vieillissement de la population, des progrès technologiques ainsi que de l'évolution et de l'accroissement des attentes du public.[5] Une préoccupation qui pourrait nous inspirer porte sur l'accroissement de notre capacité de résilience. Nous devrions célébrer et évaluer notre connaissance de l'hygiène dentaire en faisant progresser la recherche et en utilisant ses données probantes pour illustrer la portée de l'exercice de l'hygiène dentaire sur les résultats du traitement.[5] Le *Journal canadien de l'hygiène dentaire* pourrait être notre centre de partage du savoir avec les autres hygiénistes dentaires, de même que celui des autres professionnels de la santé.

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The collaborative process that led to CDHA's Professional Identity Statement was arguably as insightful as the finished product itself. The discussion and feedback was generally positive; that is, right up until a draft version of the statement contained the dreaded "C" word. I am, of course, talking about the word "cleaning," a word that some view as having particularly negative connotations unique to dental hygienists and our efforts to help our clients see that we do so much more.

Many in our profession view oral "cleaning" as the core work of dental hygienists. To them, that is our professional identity. To others, that is a problem. In 1992, Dr. Irene Woodall challenged us to rid our professional vocabulary of the "C" word.[6] She argued that the word painted us in a public perception corner and that it reinforced a common misunderstanding that the value provided by dental hygienists is essentially cosmetic—a "frill that the dentist provides in his or her office."[6]

Through the process of developing the professional identity statement, the "C" word was ultimately and rightly removed, and we now have a statement that is worthy of our pride and our professional aspirations. That's good. However, there remains a very big elephant in this room. We may have erased five letters off a page, but we did not erase the underlying perception that is prevalent among many of our colleagues and, arguably, among the majority of the general public. As much as we may want to erase the "C" word from our professional vocabulary, it is entrenched in the most important vocabulary of all: that of the clients whom we serve. As long as our clients view us in those terms, we have work to do.

Ironically, the draft statement that re-ignited the "C" word debate might have been a better tool to engage the public on this issue. The beginning of the draft statement read, "I am a dental hygienist. I do more than just clean teeth." If our clients think of us in those terms, addressing them in the terms that they understand would be particularly meaningful. Taking the "C" word out of the professional identity statement comes with a risk: we need to be careful that we are only taking the word out of the statement, and not the underlying issue out of the conversation.

It has been 22 years since Dr. Woodall's challenge, and in that time there has been a measured change in our collective professional identity. Yet the concept did not gain the traction that it needed to change this perception among the public. It has been said before that if you keep doing what you are doing, you will keep getting what you are getting. Unless we are prepared to have this same professional identity conversation in another 22 years, we cannot keep doing what we have been doing.

That is why I appreciate CDHA's Professional Identity Statement. CDHA is not just doing what it has been doing, it is doing more. By undertaking this collaborative process to articulate a professional identity to which we can

L'on pourrait soutenir que le processus coopératif qui a mené à l'Énoncé d'identité professionnelle de l'ACHD était aussi perspicace que le produit fini lui-même. La discussion et les réactions étaient généralement positives; c'est-à-dire, jusqu'à ce que l'ébauche de l'énoncé contienne un redouté mot aléatoire. Évidemment, je parle du mot « nettoyage », mot qui, selon certaines, aurait des connotations particulièrement négatives, uniques aux hygiénistes dentaires, et de nos efforts pour aider notre clientèle à voir que nous faisons beaucoup plus.

Dans notre profession, plusieurs voient le « nettoyage » buccodentaire comme étant le travail de base des hygiénistes dentaires. Pour elles, c'est notre identité professionnelle. Pour les autres, c'est un problème. En 1992, la Dre Irène Woodall nous avait lancé le défi d'éliminer le mot « nettoyage » de notre vocabulaire professionnel.[6] Son argument était que ce mot nous dépeignait dans un coin de perception publique et renforçait l'incompréhension communautaire prétendant que les hygiénistes dentaires étaient essentiellement des agents cosmétiques—un « soin d'apparence fourni par le ou la dentiste dans son cabinet ».[6]

Par le processus de développement de l'énoncé d'identité professionnelle, le mot aléatoire a finalement été retiré avec raison, et maintenant nous avons un énoncé digne de fierté et de nos aspirations professionnelles. C'est bien. Toutefois, il reste un très gros éléphant dans cette pièce. Nous avons peut-être effacé quelques lettres de la page, mais nous n'avons pas effacé la perception sous-jacente qui prévaut chez plusieurs de nos collègues et, possiblement, chez la majorité du public. Autant que nous pouvons souhaiter l'effacer de notre vocabulaire professionnel, le mot aléatoire est implanté dans le plus important vocabulaire de tous : celui de la clientèle que nous servons. Nous aurons du travail à faire aussi longtemps que notre clientèle nous considérera en ces termes.

Ironiquement, l'ébauche de l'énoncé qui a relancé le débat sur le mot aléatoire aurait pu être un meilleur outil pour engager le public dans cette question. Le début de cette ébauche se lisait : « Je suis hygiéniste dentaire. Je fais plus que seulement nettoyer les dents. » Si notre clientèle pense de nous en ces termes, nous adresser à elle dans ces termes qu'elle comprend aurait un sens tout particulier. Le retrait du mot aléatoire de notre énoncé d'identité professionnelle devient risqué : nous devons faire attention de ne retirer qu'un seul mot de notre énoncé, et non pas la question centrale de la conversation.

Il y a 22 ans que le défi de la Dre Woodall a été lancé et, depuis ce temps-là, notre identité professionnelle collective a eu un changement mesuré. Et pourtant, la notion n'a pas eu la force de traction suffisante pour modifier sa perception dans le public. Il avait été dit auparavant que si l'on continue de faire ce qu'on fait, on continuerait d'obtenir ce qu'on obtient. À moins d'être préparées à poursuivre la même discussion sur l'identité professionnelle dans 22 ans, nous ne pouvons pas toujours continuer de faire les mêmes choses.

Voilà pourquoi j'apprécie l'Énoncé d'identité professionnelle de l'ACHD. Celle-ci ne fait pas que poursuivre ce qu'elle faisait, elle fait encore plus. En entreprenant cette procédure de collaboration pour exprimer clairement

aspire, CDHA has simultaneously set a goal, challenged us to achieve that goal, and started a dialogue on how to achieve it. Let us embrace this challenge and keep the dialogue going.

l'identité professionnelle à laquelle nous pouvons tous aspirer, l'ACHD s'est fixé simultanément un but, s'est mise au défi de l'atteindre et a entrepris un dialogue pour y parvenir. Relevons le défi et maintenons le dialogue.

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A journey to improve oral care with best practices in long-term care

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ABSTRACT

Between January 2010 and July 2011, a registered dental hygienist and Registered Nurses' Association of Ontario (RNAO) best practice coordinator set out on a journey to improve the outcomes of oral care for residents in a long-term care (LTC) home in rural Ontario. Using evidence-based oral care resources developed by the RNAO, the quality improvement team created an education intervention for LTC staff and monitored their progress in providing oral care to the residents. The initiative was marginally successful in achieving its primary objective of improving oral care but this outcome was negligible in light of other oral/dental health issues and documentation discrepancies. This article shares findings and discusses challenges encountered along this quality improvement journey, and suggests next steps to improve the delivery of oral care for residents of LTC homes.

RÉSUMÉ

Entre les mois de janvier 2010 et juillet 2011, une hygiéniste dentaire autorisée et une coordonnatrice des meilleures pratiques de l'Association des infirmières et infirmiers autorisés d'Ontario (RNAO) ont amorcé une trajectoire pour optimiser les soins dentaires dans un établissement de soins de longue durée (SLD) dans l'Ontario rurale. S'appuyant sur des ressources fondées sur des données probantes, élaborées par la RNAO, l'équipe d'amélioration de la qualité a créé une intervention éducative pour le personnel du SLD et en a suivi la progression des effets dans la prestation de ses soins buccodentaires aux résidents. L'initiative a eu un succès marginal dans la poursuite de son premier objet visant à améliorer les soins buccodentaires, mais ce résultat fut négligeable, vu les autres problèmes de l'ensemble buccodentaire et les lacunes documentaires. Cet article fait état des résultats obtenus, discute des difficultés rencontrées dans cette démarche d'amélioration de la qualité et propose des mesures à prendre pour améliorer la prestation des soins buccodentaires aux résidents des établissements de SLD.

Key words: evidence-based practice, frail elder, long-term care, oral health, quality improvement

INTRODUCTION

Evidence has shown that oral care is often overlooked in residents of long-term care (LTC) homes, many of whom have poor oral health.[1,2] Cleaning their own teeth or dentures can be a challenge for residents, and assistance from point-of-care staff or oral health professionals may be inadequate, inaccessible or unavailable.[3] Staff often report insufficient time or materials to perform oral care, resulting in ineffective removal of debris. Additionally, residents with dementia often forget to brush their teeth and can be combative or refuse care. Inadequate oral care, coupled with snacks and supplements high in sugar content and the use of sweet foods to facilitate medication administration, can lead to serious health consequences for LTC residents including oral disease, cardiovascular disease, stroke, and pneumonia.[4–8]

In an effort to improve oral care provided by nurses, the Registered Nurses' Association of Ontario (RNAO) produced an evidence-based oral health best practice guideline (BPG) with a panel of experts, including a dental hygienist.[9] The BPG provides recommendations for assessment, planning, implementation, and evaluation of oral care in all health care settings. Companion tools also produced by RNAO include 2 videos, entitled *Oral Care for Residents with Dementia*[10] and *Oral Care for Xerostomia, Dysphagia, and Mucositis*.[11] RNAO supports health service and academic organizations to improve the delivery of quality care by using multifaceted, applied knowledge exchange strategies. The RNAO Long-Term Care Best Practices Program, funded by the Government of Ontario, is one such successful resource targeted to LTC homes. It links registered nurses employed as best practice coordinators with LTC homes across Ontario to support LTC leaders and staff in creating a culture of evidence-based practice through capacity development and the implementation of RNAO's BPGs.[12]

Guided by RNAO's oral care BPG,[9] an RNAO best practice coordinator (BPC) and registered dental hygienist (RDH) partnered with the managers of a LTC home in rural Ontario to implement a quality improvement initiative for residents' oral health. The initiative set out to enhance the consistency and quality of oral care provided to

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residents by increasing the awareness, knowledge, and skills of point-of-care staff, which included 14 registered nurses (RN), 13 registered practical nurses (RPN), and 73 personal support workers (PSW). This article shares the outcomes and challenges encountered along this quality improvement journey and suggests next steps to improve the delivery of oral care for residents of LTC homes.

BACKGROUND

In 2009, the majority of Canadians (68%) had the benefit of dental insurance and spent about $2.8 billion on professional dental services.[13] Residents of LTC homes today have more natural teeth and complex, expensive restorations, such as bridges, crowns, and implants, than a decade ago. With the increasing number and complexity of restorations and oral prosthetics among dependent elderly, the provision of proper and adequate routine oral care has become more challenging.[14] Nonetheless, it is critically important that staff in LTC homes be able to provide consistent, evidence-based oral care.

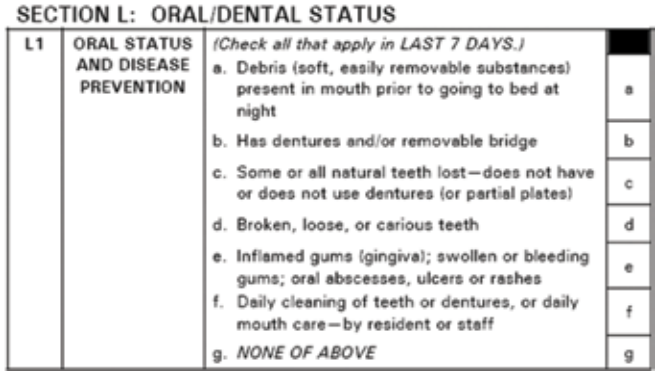
In Ontario, the Long Term Care Homes Act (2007) requires that every LTC home have a plan of care for each resident, including assessment of oral/dental status and oral hygiene. Each resident must receive oral care to maintain the integrity of oral tissue, including twice-daily mouth care and cleaning of dentures, and physical assistance to clean their own teeth if required. Clinical data on LTC residents' oral/dental status are collected using the provincially mandated Resident Assessment Instrument–Minimum Data Set 2.0 for long-term care (RAI–MDS), a standardized tool to screen and record the health status of each resident upon admission, quarterly, on significant change in health status, and annually. The RAI–MDS assessment is conducted by nursing staff and reports residents' oral/dental health status as well as any problematic conditions.

This quality improvement journey was initiated as a result of the LTC home's existing relationship with the BPC and RDH. The LTC home was committed to enhancing the evidence-based practice culture of point-of-care staff; improving oral care became a specific intervention focus in response to complaints received from residents' family members regarding the quality of oral care provided by the LTC home. Observations of poor oral care were substantiated by the RDH, who had been providing fee-for-service oral care to the LTC home since 2002. In consultation with the director of care and clinical manager, the BPC and RDH set out to determine residents' oral health status and deliver an education intervention to point-of-care staff based on oral care best practices. The aim of the initiative was to improve oral care knowledge and skills of staff, as evidenced by improvements in the oral health status of residents.

METHODS AND IMPLEMENTATION

The oral care quality improvement initiative was launched in January 2010. Activities included establishing baseline oral health status through onsite oral assessments and comparing assessment findings with daily flow sheet and RAI–MDS data completed by nursing staff (January–February 2010); delivering an education intervention to all point-of-care staff (February–July 2010); and, evaluating oral health status and documentation immediately post-intervention (July–August 2010) and 1 year later (July 2011). Assessments and data audits were undertaken on 2 of the LTC home's 4 units after receiving verbal consent from residents who were interested in participating.

Figure 1. RAI–MDS oral/dental status report



SECTION L: ORAL/DENTAL STATUS

L1	ORAL STATUS AND DISEASE PREVENTION	*(Check all that apply in LAST 7 DAYS.)*	
		a. Debris (soft, easily removable substances) present in mouth prior to going to bed at night	a
		b. Has dentures and/or removable bridge	b
		c. Some or all natural teeth lost—does not have or does not use dentures (or partial plates)	c
		d. Broken, loose, or carious teeth	d
		e. Inflamed gums (gingiva); swollen or bleeding gums; oral abscesses, ulcers or rashes	e
		f. Daily cleaning of teeth or dentures, or daily mouth care—by resident or staff	f
		g. *NONE OF ABOVE*	g

Onsite oral assessments were conducted using the RAI–MDS oral/dental assessment instrument and focused primarily on identifying residents' level of oral debris (Figure 1). Debris was measured using an index created by the BPC and RDH (Table 1) and was defined as the presence of any soft deposit (e.g., biofilm, plaque, food particles), which could be consistently removed on a twice-daily basis using oral physiotherapy aids (e.g., brush, floss, interproximal and tongue cleaners). Residents with an assessed debris level of minimal to abundant were considered positive for debris. It was also assumed that a resident had received daily oral care if debris was recorded as minimal or none. Dentures and restorations, natural

Table 1. Debris index

Debris level	Description
None	No debris present
Minimal	Debris along gum line
Moderate	Debris not covering more than 1/3 of teeth or tissue surfaces
Substantial	Debris covering 1/3 to 2/3 of teeth and tissue surfaces
Abundant	Debris covering greater than 2/3 of teeth and tissue surfaces

teeth, dental/oral problems, and cleaning methods/abilities were also recorded for each resident, and findings were compared across assessments to determine whether there was any change in oral health status.

Daily flow sheet documentation and RAI–MDS data were then compared with baseline oral assessments to identify any discrepancies. The daily flow sheet is completed by point-of-care staff and identifies the type of oral care provided (teeth, dentures, mouth) and the individual who completed the care (resident or staff). Post-intervention oral assessments were also compared with the flow sheet documentation. One-year post-intervention RAI–MDS data were not available for comparison.

The education intervention focused on skill instruction, with particular emphasis on providing oral care to residents with dementia. The intervention was delivered by the BPC and RDH to point-of-care staff as a 30–45 minute session, and consisted of viewing RNAO's *Oral Care for Residents with Dementia* video[10] and photos of case examples, followed by a demonstration. Participants practiced oral care techniques on a resident volunteer while being observed by the RDH and BPC. Each participant was also given an Oral Care Pocket Docket,[15] a condensed resource of information presented in the video. The educational session was offered 14 times over a 6-month period.

RESULTS

Pre-intervention findings

Onsite oral assessments, daily flow sheet documentation, and RAI–MDS data for 42 residents from 2 units were compared to establish the LTC home's baseline oral health status (Table 2). RAI–MDS data reported fewer residents with natural teeth, broken/loose/carious teeth, inflammation, and debris in comparison to oral assessment findings by the RDH. In fact, the RDH's assessment of minimal to no debris in 31% of residents suggested that only they had received oral care that day, while flow sheet documentation and RAI–MDS data reported that nearly all residents had received care (86% and 100%, respectively). There was 0% prevalence of debris reported by the RAI–MDS compared to 88% prevalence recorded by the RDH. Additionally, daily flow sheet documentation indicated that 72% of the residents who were assessed by the RDH as having moderate to abundant levels of debris had staff perform their daily oral care.

Education intervention

About half (51%) of the LTC home's point-of-care staff attended the education session, which received "good" to "excellent" ratings from all participants. The original intention was to have participants practice oral care techniques on each other. However, at the first session several staff members refused to clean each other's mouths, which prompted the recruitment of a resident volunteer for this and all subsequent sessions. During practice, participants were often observed using incorrect, and sometimes harmful, techniques. For example, one participant caused obvious pain when he attempted to clean the resident's natural teeth. It was discovered that this participant had dentures and no recent experience cleaning his own mouth and natural teeth. At each education session the RDH corrected participants and ensured they were employing proper toothbrushing technique.

Post-intervention findings

Oral assessments of 38 residents from 2 units conducted immediately following the education intervention showed a modest reduction of oral debris; this improvement was sustained when the residents were assessed at 1-year follow-up (Figure 2). However, the prevalence of inflammation was found to be greater at post-intervention (23%) and at 1-year follow-up (27%) than assessed at baseline (19%).

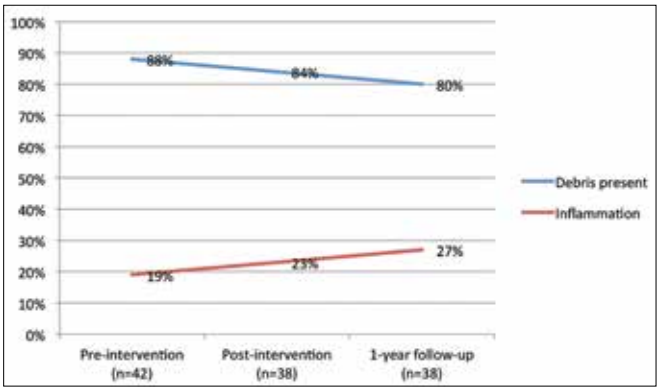
RAI–MDS data and daily flow sheet documentation continued to show discrepancies. RAI–MDS data, available for only 1 unit, reported a 0% post-intervention prevalence of debris and inflammation compared to 84% prevalence of debris and 23% prevalence of inflammation recorded by the RDH. Post-intervention flow sheet documentation was not available for comparison.

Table 2. Comparison of RDH oral assessments, RAI–MDS data, and daily flow sheet documentation at pre-intervention (n=42)

Oral/dental status	Oral RDH assessment % (n)	RAI–MDS LTC data % (n)	Daily flow sheet documentation % (n)
Some or all natural teeth	45 (19)	27 (13)	NA
Broken, loose or carious teeth	24 (10)	8 (4)	NA
Inflamed gums	19 (8)	0	NA
Dentures or removable bridge	69 (29)	NR	43 (18)
Debris present	88 (37)*	0	NA
Daily oral care provided	31 (13)**	100 (42)	86 (36)

NA = not applicable to documentation; NR = not reported
*Residents with minimal to abundant debris levels
**Residents with none to minimal debris levels

Figure 2. Prevalence of debris and inflammation assessed in LTC home residents at pre-intervention, post-intervention, and at 1-year follow-up



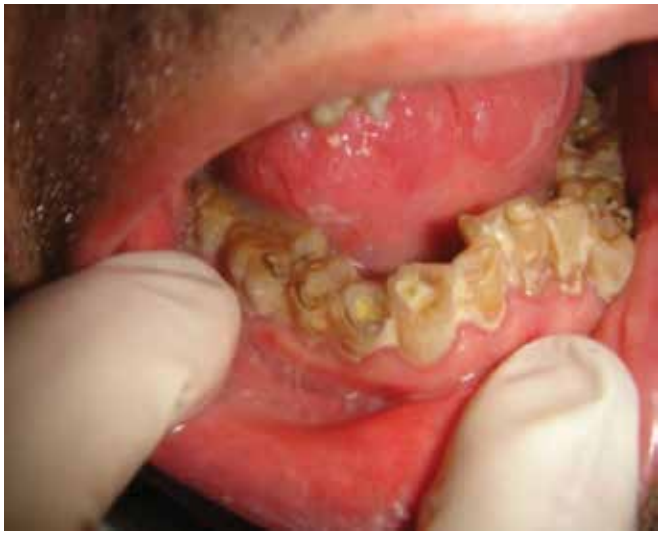
At 1-year follow-up, debris was present in 80% of assessed residents. Daily flow sheet documentation showed that 73% of residents had received daily oral care compared to 29% assessed by the RDH as having minimal to no debris. Daily flow sheet documentation showed that staff performed daily oral care for nearly all (91%) of the residents assessed as having moderate to abundant levels of debris.

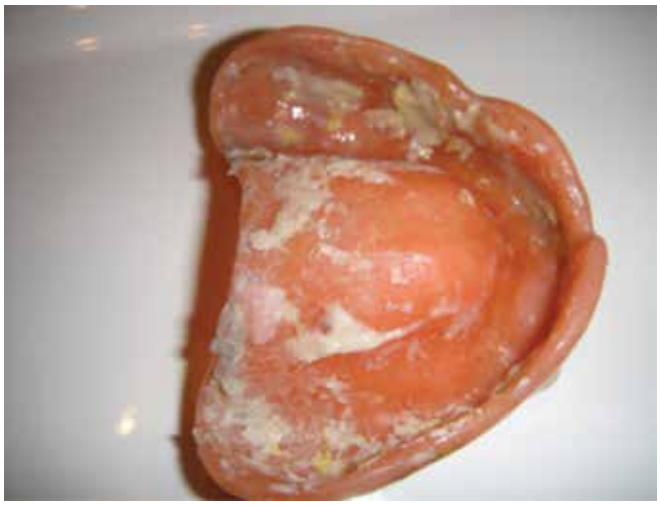
DISCUSSION

Evidence may identify best practices for health care delivery, but ensuring their application and changing the behaviour of point-of-care staff are challenging. Although a modest reduction in oral debris was observed from pre-intervention (88%) to 1-year follow-up (80%), it remained a problem. Inflammation was observed in more residents one year following the intervention than at baseline (27% versus 19%). Furthermore, flow sheet observations suggested that a very high proportion of residents (91%) assessed with moderate to abundant levels of debris had staff assistance to perform daily oral care, raising concerns about the quality of the care provided. While the education intervention incorporated evidence-based best practices, nearly half of the staff (49%) did not attend the sessions. Similar to findings reported by others,[16] the BPC and RDH concluded that the education intervention did not result in clinically meaningful improvements to oral care. Figure 3 provides two examples of oral/dental health status assessed by the RDH following the intervention.

Documentation recorded in both the daily flow sheets and the RAI–MDS contradicted onsite oral assessments and underreported dental/oral problems. Staff explained that daily flow sheet entries are frequently used to complete the RAI–MDS for daily oral care. This may explain why such large discrepancies were found in comparing oral assessments with both corresponding flow sheet documentation and RAI–MDS data. For example, onsite oral assessments 1 year following the intervention showed that only 29% of residents had no debris and received daily mouth care. Daily flow sheets reported that 73% of residents had received care. While the RAI–MDS data for the LTC home was unavailable for comparison, the provincial 2010–11 RAI–MDS data reported that nearly all Ontario LTC home residents had no debris and received daily mouth care (96.3% and 99.4%, respectively).[17] The team's finding that the RAI–MDS oral/dental status severely underreported problematic conditions has also been reported by others.[18] In fact, several researchers have noted concerns about the quality of data in other areas of the RAI–MDS.[19–21]

Figure 3. Post-intervention debris





While it is not unusual for documentation to contradict observations,[22] when important information is missing or inaccurate, there is an increased potential for suboptimal clinical care, posing a significant risk to the health and safety of residents. Over 20 countries use the RAI–MDS in long-term care settings.[23] In Canada, the data are publicly reported and often used by managerial and policy decision makers to identify priorities for care planning, policy development, health care resourcing, and research. This is of grave concern when evidence suggests that the

RAI–MDS is not accurate in identifying LTC residents in need of oral care attention and dental treatment. Documentation discrepancies also suggest that nursing staff need to better understand what constitutes debris, broken/loose/carious teeth, and inflammation and how to assess and document oral/dental status accurately. As a result of this initiative, the RDH has been working with nursing staff responsible for conducting the RAI–MDS at LTC homes to clarify the categories of the RAI–MDS oral/dental status.

Organizational culture, including administration and leadership, also influences the quality of oral care services in LTC homes and was important in this initiative.[24] Leaders at the LTC home labelled all of the residents' dentures when it was discovered during the RDH's oral assessments that very few dentures were identifiable. Another benefit initiated by management included adding oral care education to the LTC home's mandatory orientation program for all newly hired point-of-care staff. Major changes that occurred within the management team of the LTC home also created significant challenges. During the course of this journey, staff turnover and vacancies in all key support roles, including the director of care, hindered the project. The BPC and RDH had discussed with leaders additional strategies to improve oral care delivery, including training "Oral Care Champions"[25] who would be responsible for continuing to implement RNAO's oral care BPG[9] across the LTC home. However, there was a marked reduction in motivation to continue the oral care quality improvement initiative following these management changes, and engagement in the activities came to a premature halt.

In an environment in which there are many part-time and casual point-of-care workers, quality improvement projects quite easily lapse when key staff members leave. Two such leaders—an RN and PSW who were instrumental in supporting oral care best practices in the LTC home—had to direct their attention to other priorities. Eventually, the PSW returned to school and the funding ended for the RN to continue working on the initiative, leaving a leadership void at the point of care.

CONCLUSION

From this experience, several recommendations can be made to facilitate improvements in oral care for LTC residents. First, it is clear that an oral/dental daily assessment tool that connects, correlates, and is consistent with the RAI–MDS is urgently needed. As Jiang and MacEntee suggest, "Computer software with standardized assessment protocols relating to oral health care might better align dental audits with general care plans and care pathways in LTC."[26] This refinement to documentation would be an extensive undertaking but perhaps a more plausible alternative than attempting to change the RAI–MDS for LTC homes.

The LTC sector should also consider the role of registered oral care professionals in the assessment and documentation of residents' oral/dental status. The RAI–MDS oral/nutritional status, for example, is completed by a registered dietition who is responsible for conducting and documenting nutrition, chewing, and swallowing assessments. Certain oral care requirements are beyond the scope and role of PSWs, who constitute the greatest proportion of point-of-care staff in a LTC home, and residents' families are not usually aware of the need for a RDH to provide this care.[26] However, dental hygienists with appropriate knowledge, skills, and experience could provide accurate RAI–MDS assessments, identify residents who require attention, provide evidence-based oral care, and educate staff. In this manner, the RDH would effectively champion positive improvements in oral care delivery in LTC homes at the point of care.[27]

Professional oral care services primarily follow a fee-for-service model in Canada. Although the public has high expectations for LTC home staff to keep residents safe, healthy, and comfortable, oral care is not a societal priority.[28] Given the high risk of health problems associated with poor oral health, there is an immediate need to increase interest in the oral care of LTC residents. Improved awareness among health care providers on whom residents are dependent for the delivery of this care, as well as among family and caregivers who are responsible for acquiring professional oral/dental services, is particularly important.

The Ontario Ministry of Health and Long Term Care's quality inspection program[29] in LTC homes, which includes questions about oral care, is a step in the right direction to keeping residents healthy and protecting their quality of life. However, it will only be through proactive investments targeted at public awareness, appropriate organizational infrastructure (staff, time, documentation, and material resources), and staff education that the journey toward oral health improvement in LTC homes will end in the delivery of high quality, resident-centred care.

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Stress and the dental hygiene profession: Risk factors, symptoms, and coping strategies

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ABSTRACT

Objective: This article reviews risk factors, stress issues and symptoms, coping strategies, and resources for Canadian registered dental hygienists, and answers the question, "How can clinical dental hygienists recognize and manage stress symptoms in order to prevent professional burnout?" **Method:** A search of peer-reviewed and non-peer-reviewed literature published between 1990 and 2013 was conducted. Thirty-one publications were cited, including quantitative and qualitative studies pertaining to dental hygienists, health care workers or organizational employees. Statistics from government sources were added for information purposes. **Results and Discussion:** Occupational stress is one of today's leading public health issues. Many government agencies have addressed the detrimental effects of occupational stress on individuals and health care systems. Dental hygienists are at particular risk of suffering from compounded work and life stress, and burnout. There seems to be a lack of stress management education in dental hygiene curricula. To prevent burnout among dental hygienists, there is a need for increased awareness. Further research on occupational stress specific to dental hygienists is also warranted. **Conclusion:** Dental hygienists can combat stress and prevent burnout through increased awareness of risk factors, symptoms, and effective coping skills.

RÉSUMÉ

Objet : Revue des facteurs de risque, des problèmes et des symptômes liés au stress, des stratégies d'adaptation ainsi que des ressources pour les hygiénistes dentaires agréées canadiennes. Cet article répond à la question : « Comment les hygiénistes dentaires peuvent-elles reconnaître et gérer les symptômes de stress pour prévenir l'épuisement professionnel? » **Méthode :** Recherche de la littérature, évaluée et non évaluée par des pairs, publiée entre 1990 et 2013. Trente et une publications ont été citées, y compris des études quantitatives et qualitatives concernant les hygiénistes dentaires, les travailleurs de la santé ou le personnel des organisations. Des statistiques provenant de sources gouvernementales ont été ajoutées à titre informatif. **Résultats et Discussion :** Le stress lié au travail est aujourd'hui un des principaux problèmes de santé publique. Plusieurs agences gouvernementales ont abordé les effets nuisibles du stress au travail, chez les personnes et dans les régimes de soins de santé. Les hygiénistes dentaires courent un risque accru de souffrances au travail et dans la vie, et d'épuisement. Il semble y avoir un manque d'information sur la gestion du stress dans les programmes de formation en hygiène dentaire. Pour prévenir l'épuisement chez les hygiénistes dentaires, il faut en accroître la sensibilisation. Il en résulte un besoin de recherches particulières sur le stress propre aux hygiénistes dentaires. **Conclusion :** Les hygiénistes dentaires peuvent combattre le stress et prévenir l'épuisement en augmentant leur sensibilisation aux facteurs et aux symptômes de risque ainsi que leur habileté d'adaptation.

Key words: burnout, health care providers, health surveys, occupational stress and dental hygienists, stress management, stress reduction, stress risk factors

BACKGROUND

Stress is an undeniable part of life. In today's society, with pressures to do more at work and at home, along with the unlimited ability to be "plugged in," it can be difficult to take a minute to unwind and find peace. Though negative stressors may be unavoidable, management of one's stress load is fundamental in preventing exhaustion and burnout. According to the 2010 General Social Survey by Statistics Canada, stress not only causes negative changes in psychological health, but also produces emotional and physical strains as well.[1,2] Results of this survey indicated that approximately 27% of working Canadians experienced a high level of stress most of the time.[1,2] Approximately 62% of these respondents identified work as the main cause of their stress.[1] Health care providers and other "white collar" workers experienced higher levels of stress than the general working population.[1,2] Similarly, a 2003 Canadian Community Health Survey (CCHS) report indicated that almost half of all health care providers experienced work stress regularly (Table 1).[2] Unresolved stress can activate a chronic "fight or flight" response, resulting in an increased correlation to cardiovascular disease, chronic inflammatory disease, mental health issues, insomnia, digestion issues, musculoskeletal diseases and injuries, compromised immunity, obesity, diabetes, periodontal disease, and a reduction of one's overall quality of life and wellbeing.[3–5] Ultimately, these consequences can lead to professional "burnout," which has been characterized as emotional and physical exhaustion, detachment from work, as well as a feeling of professional loneliness.[6,7]

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Table 1. Percentage of health care providers reporting high work stress by population ages 18-75, Canada, 2003

Reference category	Percentage
Total health care workers	**45.0**
Personal income	
Less than $20,000	27.8*
$20,000 to $39,999	41.8*
$40,000 to $59,999	54.0
$60,000 or more	49.8
Employer	
Self-employed	36.8
Not self-employed	46.3*
Weekly work hours	
Less than 35	36.9
35 to 44	44.5*
45 to 79	60.3*
80 or more	56.8*
Personal factors—sex	
Men	42.4
Women	45.6
Age group	
18 to 24	31.0
25 to 34	42.4*
35 to 44	48.0*
45 to 54	49.9*
55 to 75	40.9*
Day-to-day stress	
Low (not at all/a bit)	28.7
High (quite/extremely)	78.3*
Life satisfaction	
Satisfied	44.4
Dissatisfied	75.2*
General health	
Good/Very Good/Excellent	42.7
Fair/Poor	54.7*

*significantly different from estimate for reference category ($p<0.05$)

Source: Adapted from Wilkins,[2] based on data from the 2003 Canadian Community Health Survey, cycle 2.1.

OBJECTIVE

The consequences and adverse health effects of workplace stress, along with the associated costs to employers and the burden on health care systems, have been recognized by both the World Health Organization (WHO) and the United Nations International Labour Organization.[8–10] Both of these organizations have deemed occupational stress a serious issue and have referred to it as a global epidemic.[8–10] In order for dental hygienists to protect their health and mitigate the many negative effects of stress and burnout that can lead to an early departure from a potentially rewarding career, increased awareness of work-stress risk factors, symptoms, coping strategies, and resources is essential. The aim of this literature review is to answer the question, "How can clinical dental hygienists recognize and manage stress symptoms in order to prevent professional burnout?"

METHOD

This review discusses stress and the clinical aspects of the dental hygiene profession, with emphasis on identifying risk factors, stress symptoms, coping strategies, and resources. A search of peer-reviewed and non-peer-reviewed literature pertaining to stress and dental hygienists, as well as other health care providers, was conducted. Inclusion criteria were literature published between 1990 and 2013, including quantitative and qualitative studies. Publications prior to 1990 were excluded. The databases selected for the search were PubMed/MEDLINE, Ovid, Google Scholar, and Western University e-journal resources. The literature found included articles, websites, and a textbook chapter, published between 1992 and 2013. Statistics from government sources were added for information purposes. The key words included in the search criteria were occupational stress and dental hygienists, health care providers, health surveys, burnout, stress management, stress risk factors, and stress reduction.

RESULTS AND DISCUSSION

Ample research has been carried out on occupational stress among health care providers. Insofar as the dental field is concerned, however, most of these studies have investigated the dentistry population. This choice could be attributed to the perceived high incidence of suicide rates among dentists, the documented high-stress environment in which they work or a lack of dental hygiene-focused research in the occupational stress area.[3,6,11] There are fewer resources dealing with stress and the dental hygiene population; most of those studies investigated work-stress and job satisfaction in Europe and Australia. Geographic bias should, therefore, be a consideration when reviewing the literature as work environments and responsibilities can vary substantially depending on location.

In a review by Alexander, female health care providers were found to experience elevated levels of stress compared to their male colleagues because of the responsibility of managing family life and children, as well as work.[11] This conclusion is supported by data gathered from Statistics Canada, which found women to be more susceptible to occupational stress related to dual roles.[2,5] Alexander found no data on suicide rates among dental hygienists.[11] He found that very few programs in dental or dental hygiene schools addressed stress and management techniques. In

1999, he sent an informal survey to 54 dental schools in the United States.[11] The results indicated that only 23% of responding schools taught dental hygiene students about stress management and only 3.3% of students learned about suicide prevention.[11] Alexander's research highlights the need for further stress studies on the dental hygiene professional population specifically, as well as the incorporation of stress recognition and management into dental hygiene school curricula, not only for self-awareness and prevention, but also for instruction on recognizing and alerting fellow colleagues who exhibit signs of stress or burnout.[11]

A study by Jerković-Ćosić, van Offenbeek, and van der Schans on job satisfaction among Dutch dental hygienists revealed that those with 2 or 3 years of education, versus a 4-year bachelor's degree, felt higher job satisfaction.[12] On the one hand, the degree holders did enjoy an increased scope of practice and increased mental stimulation. On the other hand, in the Netherlands, dental hygiene degree holders perform extended procedures such as caries treatments, which must be supervised by a dentist, leading to a perceived decrease in autonomy and, therefore, increased stress. Care should be taken to not generalize these results globally, as laws pertaining to supervision vary greatly depending on geographic location. Canadian dental hygienists generally enjoy less supervision and more autonomy with higher levels of education, such as the bachelor's degree or advanced training in dental hygiene. In British Columbia, for example, dental hygienists with a bachelor's degree in dental hygiene or other equivalence and registered in the "Full Registration" category may apply for an exemption to the "365 day rule," which states that a client must have been examined by a dentist within the previous 365 days before a dental hygienist may provide services.[13] In another example, dental hygienists in Alberta with advanced training may also prescribe certain drugs.[13]

Geographic difference in occupational stress was also noted in another study by Ylipaa et al., which compared Australian and Swedish dental hygienists.[14] Researchers found that Australian dental hygienists experienced a higher incidence of musculoskeletal issues and scored lower in mental well-being than their Swedish counterparts. Differences were due mainly to the structure of the work environment, such as the amount of support received from management.[14] The need to incorporate sociodemographic considerations in future studies when comparing dental hygienists from different countries is emphasized.

A Swedish study by Candell and Engstrom found that dental hygienists' work environments could produce positive stress, such as beneficial relationships with co-workers and clients, positive results in work, recognition, and increased autonomy.[15] Negative stressors in the dental hygiene work environment included time stressors/running against the clock, no control over time booked for appointments, being overbooked or underbooked, waiting for the dentist especially if already behind, failed results, constant noise, poor salary and benefits, and physical pain.[15] The overall theme was that dental hygienists work in a stressful environment, despite the presence of positive stressors. Limitations to this study include the small sample size of 11 dental hygienists and the exclusive geographic area.

A national survey of dental hygienists in the United Kingdom conducted by Gibbons, Corrigan, and Newton found that most dental hygienists experienced a high level of job satisfaction, particularly those who were older or had children.[16] This finding may be related to the fact that the majority who took breaks from the hygiene profession had done so for pregnancy or child-related reasons. Only 3.8% of the respondents expressed very low levels of satisfaction, and it was noted that selection bias might have been at play with the approximately 40% who did not respond to the survey. Researchers stated that the dental hygienists who did not reply may have represented a higher percentage of occupationally unhappy professionals.[16]

In comparison, in 2011, the Canadian Dental Hygienists Association conducted a nationwide Job Market and Employment Survey, and found that 24% of respondents had been affected by an occupational issue including physical injuries and other medical concerns related to their dental hygiene work.[17] Of these, 42% noted changes in their ability to work. There was a higher level of satisfaction regarding level of autonomy related to decision making, but low satisfaction related to pay and benefits.[17]

In a systematic review by Marine et al., which included "14 RCTs, three cluster-randomised trials and two crossover trials" examining occupational stress among health care workers, organizational interventions such as teaching stress recognition and management skills, as well as offering a reduced workload or reorganizing work, were compared.[18] The authors found positive results with these interventions, but the evidence was limited in terms of trial sizes and quality of studies. Another survey by Bader and Sams supported the use of interventions such as improving organizational relationships to reduce stress among dental hygienists.[19] This finding is further supported by an evidence-based presentation by Jean-Pierre Brun, available on the WHO website, which indicates that managers play a significant role in protecting the health of their employees, thereby decreasing costs to businesses arising from work-stress, burnout, and turnover.[19] In order for individuals and organizations to combat the negative effects of work-related stress, awareness of risk factors, symptom recognition, and coping strategies must be increased.

Risk factors for stress and burnout

Throughout the literature reviewed, many themes relating to risk factors for occupational stress and dental hygienists emerged. Lack of control or autonomy in decision making was the most common risk factor for stress reported.[3,5–7,12,15,19–24] Other risk factors identified in these resources are presented in Table 2.

Table 2. Risk factors for occupational stress

Risk factors
Lack of control or autonomy in decision making
Lack of support from co-workers or management
Demanding work
Restrictions by government or insurance companies
Lack of communication
Chronic physical pain
Difficult clients
No buffer time or breaks in work day
Continuous sounds and noise (e.g., from ultrasonic scalers or sterilization units)
Low pay or limited benefits
Working without an assistant
Working in a "helping" profession
Working long hours with a person in your personal space
Isolation: no time for socializing with peers
Monotonous work
Poor ergonomics
Lack of opportunity for promotions
Lack of knowledge of stress management
Lack of recognition, civility and respect
Negative relationships with peers
Demanding work schedules
Lack of office organization
Lack of policies to deal with stress
Chronic, unresolved stress load
Imbalance in work and home life

Table 3. Occupational stress issues and symptoms[1–7,11,12,15,19–27,29]

Issues and symptoms
Feelings of depression, low self-esteem, hopelessness
Confusion or memory problems
Anger, irritability
Isolation and withdrawal from previously enjoyable activities
Negative attitude
Gastrointestinal problems (e.g., constipation, ulcers, irritable bowel syndrome)
Cardiovascular disease
Type 2 diabetes
Musculoskeletal problems or injuries (e.g., chronic neck/back/wrist pain)
Headaches
Insomnia and fatigue
Anxiety
Instigating conflict at work or home
Alcoholism or drug abuse
Dietary changes (e.g., loss of appetite)
Menstrual or pregnancy problems, impotence
High blood pressure
Obesity
Compromised immunity
Loss of productivity and costs to organizations, increased health care burden

Occupational stress issues and symptoms

Once a combination of and exposure to risk factors takes place over an extended period of time, signs and symptoms of occupational stress may develop (Table 3). It is important to recognize stress symptoms before they lead to burnout and total exhaustion.

Coping strategies

Management of extensive stress symptoms is important to prevent work-related burnout,[1–7,11,12,15,19–28,30] and is the responsibility not only of the individual, but also of the employer or organization.[9,10,14,15,18,20–24,27] In two recent studies published in the *Journal of Occupational Medicine*, researchers found there to be a lack of assessment tools, such as questionnaires about job satisfaction, motivation and stress, within organizations.[23,24] The absence of such resources hindered the management of occupational stress issues of employees. It was also found that incorporating such assessment tools and increasing employer–employee communication could help to motivate employees, improve health outcomes, and reduce turnover.[23,24] If standard organizational policies were developed to deal with stress and burnout, even in private dental practice, the stigma associated with stress issues might be alleviated and the health outcomes of individuals improved. Such policies would have the potential to enhance the work environment as a whole.

Self-assessment is the first step in addressing work stress. The Canadian Mental Health Association (CMHA) has a stress index questionnaire on its website, which provides instant feedback once completed (Table 4).[29] A review by Salmon of the effects of physical exercise on stress sensitivity, anxiety, and depression found considerable benefits in relation to managing the effects of stress and preventing burnout.[31] He found that exercise not only helps to stabilize mood and increase self-mastery and resilience when dealing with stress, but it also has an analgesic effect for physical pain and encourages increased social interactions. Salmon concluded that further research would be warranted on the psychobiological effects of exercise.[31] In addition, moderate physical activity can help to counteract the negative effects of a chronic stress response from daily hassles or stressors by helping to

Table 4. CMHA stress index questions[29]

Do you frequently (yes/no):
Neglect your diet?
Try to do everything yourself?
Blow up easily?
Seek unrealistic goals?
Fail to see the humour in situations others find funny?
Act rude?
Make a 'big deal' of everything?
Look to other people to make things happen?
Have difficulty making decisions?
Complain you are disorganized?
Avoid people whose ideas are different from your own?
Keep everything inside?
Neglect exercise?
Have few supportive relationships?
Use sleeping pills and tranquilizers without a doctor's approval?
Get too little rest?
Get angry when you are kept waiting?
Ignore stress symptoms?
Put things off until later?
Think there is only one right way to do something?
Fail to build relaxation time into your day?
Gossip?
Race through the day?
Spend a lot of time complaining about the past?
Fail to get a break from noise and crowds?

Source: Canadian Mental Health Association [website]. In order to complete and find out your results, please go to http://www.cmha.ca/mental_health/whats-your-stress-index/

Table 5. Recommendations for managing stress

Coping strategies
Identify sources of stress
Seek out social support including friends, family, co-workers
Get 7–9 hours of sleep [CMHA recommendation]
Practise hatha yoga
Have fun: dancing, singing, laughing, gardening, social sports
Try massage therapy
Take a long walk or bath
Do not use negative stress-management techniques such as alcohol consumption, substance abuse, smoking, overeating, oversleeping or withdrawal
Improve ergonomics
Communicate clearly in a respectful manner
Engage in regular moderate physical activity
Write in a journal
Eat a balanced diet and limit caffeine and sugar intake
Be assertive
Take time to play with a pet
Remind yourself to nurture yourself first in order to have the personal resources to care for others
Strive for personal optimal health and well-being
Foster better working relationships with your employer and co-workers
Learn to say "no"
Use relaxation techniques such as visualization, deep breathing, and meditation
Prioritize your time and make lists
Seek professional help from a counsellor, physician, registered dietician, fitness trainer
Try to focus on the positives in situations
Spend time outdoors
Let go of situations that have caused you past stress

expend built-up nervous energy.[3,31] Some other coping strategies, including recommendations from the Public Health Agency of Canada, are listed in Table 5.[1–7,11,12,15,19–30]

Canadian resources

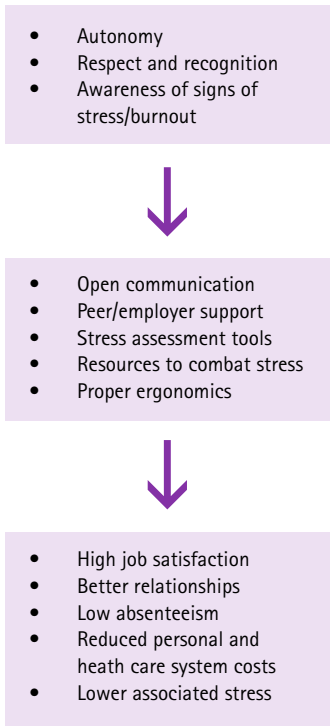
The Canadian Dental Hygienists Association (CDHA) and its provincial counterparts provide benefits and services to members, including information regarding free counselling services, on their respective websites. CDHA also launched a new national counselling and wellness program for members in November 2013.[17] To support the promotion of health and the benefits of physical activity, CDHA and some provincial associations offer reduced corporate rates for certain fitness establishments. CDHA members receive information about these resources through the national and provincial associations.[17]

In addition, the stress index tool is available from the Canadian Mental Health Association at http://www.cmha.ca/mental_health/whats-your-stress-index. The questions in this assessment tool are listed in Table 4.[29]

CONCLUSION

Chronic stress and occupational burnout can have debilitating effects on individuals and generate monumental costs for employers in terms of lost workplace productivity.[20] The WHO recognizes this issue as more than just a local concern, referring to work stress as a global epidemic.[9,10] Furthermore, researchers around the world have conducted studies on work stress as a public health issue, given the burden of health care costs that are borne by individuals and health care systems. Most of the research reviewed in this article came from

Figure 1. Summary of factors that may prevent burnout



European sources, and there were documented differences in responses based on geographic location, due to the variability in levels of dental hygiene education, scope of practice, and organizational management.[14] As health care providers, dental hygienists are at increased risk of burnout. Thus, further studies specific to the profession of dental hygiene in North America are warranted.

Figure 1 presents factors that may help to prevent burnout. Throughout this review, it was noted that autonomy, respect, and decision-making power are some of the most important factors contributing to occupational stress. The lower the level of autonomy perceived by the dental hygienist, the greater the associated work stress. Another important issue identified was the need to incorporate stress management into dental hygiene education curricula. Based on the evidence demonstrating that few programs are currently implementing stress management education, it would be beneficial to help prevent adverse health issues by increasing awareness among dental hygienists of how to cope with stress effectively and prevent burnout, prior to entering the working world. Organizations or employers can also address workplace stressors through assessment tools, open communication or office policies and resources in stress management. Registered dental hygienists have a responsibility to themselves and to the public to provide the utmost quality of care. If personal resources are low, then it is quite challenging to fulfill this responsibility. Therefore, by increasing awareness of occupational stress in the dental hygiene profession, dental hygienists can be better equipped to recognize risk factors and symptoms, as well as adopt positive coping strategies in order to prevent professional burnout.

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CDHA position statement: Interdental brushing

On February 25, 2014, the Canadian Dental Hygienists Association (CDHA) Board of Directors endorsed the following position statement on interdental brushing and the practice guideline, "Interdental Brushing or Flossing: Self-Care Recommendations for Clients with Interdental Inflammation."

POSITION STATEMENT

Interdental self-care is important for disrupting the oral biofilm and maintaining oral health.[1] The use of an interdental brush is an effective alternative to dental floss in achieving interproximal health by eliminating both plaque and bleeding. When assessing a client's ability and motivation for daily interdental self-care, it is recommended that the practitioner consider the following factors:

1. The client's preferences
2. The cost and availability of the product
3. The intraoral anatomy, such as the presence of fixed prostheses and orthodontics, and the anatomy of embrasure space

CDHA recommends that further research be undertaken to

- develop an accurate and reliable index for assessing interproximal dental plaque. This is particularly important in assessing Type 1 embrasures where visibility is limited and for incorporating the recent developments in oral biofilm maturation and its effects on gingival inflammation.[1]
- investigate other interdental aids' effectiveness in Type 1 embrasures as viable alternatives to dental floss for clients who lack dexterity.[1]
- study long-term compliance with and effectiveness of interdental aids to address the Hawthorne effect on the short-term results.[1]
- study long-term unintended outcomes and/or consequences of interdental brush use on hard and soft tissues.

Endnote

[1]Imai PH, Yu X, MacDonald D. Comparison of interdental brush to dental floss for reduction of clinical parameters of periodontal disease: a systematic review. *Can J Dent Hyg*. 2012;46(1):63–78.

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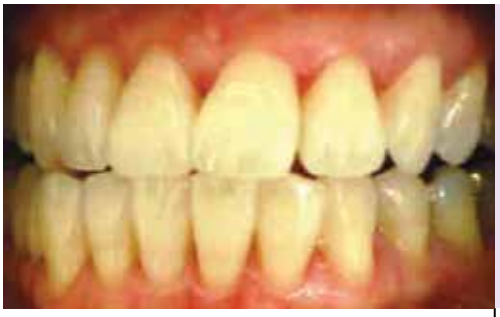
NOTE

This position statement considered research studies that compared interdental brushing with the use of dental floss. The research papers selected did not compare interdental brushing with other interdental devices.

To download and print the position statement, please go to
http://www.cdha.ca/pdfs/Profession/Resources/CDHA_interdental_brushing_statement.pdf

Interdental Brushing or Flossing: Self-Care Recommendations for Clients with Interdental Inflammation

Client with interdental inflammation



Clinical signs:

- redness
- swelling
- soft interdental papilla
- bleeding (with or without stimulation)
- plaque (visible or not)

All are related to plaque biofilm, gingivitis and/or periodontitis

Assess client's level of ability

ADEQUATE ability

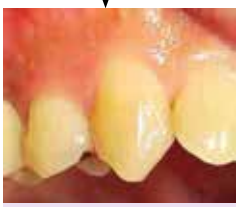
LIMITED ability

Assess motivation

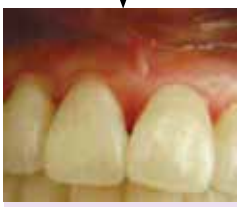
HIGH motivation

LIMITED motivation

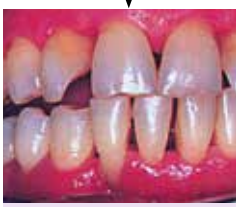
Assess intraoral anatomy



Type I embrasure



Type II embrasure



Type III embrasure*

All embrasure types

Recommend dental floss

Recommend interdental brush

* Photo courtesy Sherry Saunderson

Le brossage interdentaire : Déclaration de l'ACHD

Le 25 février 2014, le conseil d'administration de l'Association canadienne des hygiénistes dentaires (ACHD) a approuvé la déclaration suivante à l'égard du brossage interdentaire et des normes de pratique en matière de soins personnels interdentaires chez les clients qui ont de l'inflammation interdentaire.

DÉCLARATION

Les soins personnels interdentaires aident de façon importante à perturber le biofilm et permettent de maintenir une santé buccale optimale1. La brossette interdentaire est un substitut efficace de la soie dentaire et son utilisation contribue à garder les régions interproximales en bonne santé en éliminant à la fois la plaque et le saignement. Il est important que le praticien tienne compte des facteurs suivants lorsqu'il évalue la dextérité et la motivation du client à l'égard des soins personnels interdentaires quotidiens :

1. Les préférences du client
2. Le coût et la disponibilité du produit
3. L'anatomie intrabuccale; la présence de prothèses fixes et d'orthodontie et l'anatomie des embrasures

L'ACHD propose que des recherches plus approfondies soient entreprises afin d'/de :

- mettre au point un indice précis et fiable pour évaluer la plaque dentaire interproximale. Cela est particulièrement important pour l'évaluation des embrasures de type 1 où la visibilité est restreinte ainsi que pour inclure les données récentes concernant la maturation du biofilm buccal et de ses effets sur l'inflammation gingivale[1].
- explorer si d'autres outils interdentaires peuvent être des substituts efficaces à la soie dentaire pour le nettoyage des embrasures de type 1, lorsque les clients ont une faible dextérité[1].
- étudier si les clients utiliseront les outils interdentaires à long terme et examiner leur efficacité en tenant compte de l'effet Hawthorne et les résultats à court terme[1].
- étudier les effets à long terme (les résultats non intentionnels ou les conséquences) de l'utilisation de brossettes interdentaires sur les tissus durs et mous.

Note en fin de texte

[1]Imai PH, Yu X, MacDonald D. Comparison of interdental brush to dental floss for reduction of clinical parameters of periodontal disease: a systematic review. *Can J Dent Hyg*. 2012;46(1):63–78.

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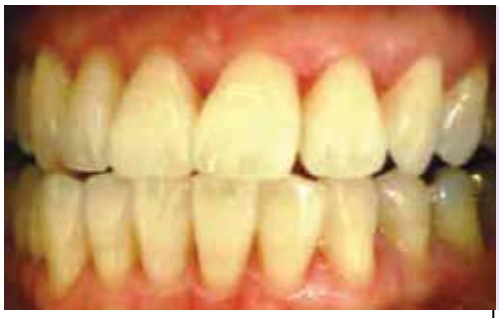
NOTE

Cette déclaration a pris en considération des études de recherche qui ont comparé le brossage interdentaire à l'utilisation de la soie dentaire. Le rapport de recherche sélectionné n'a pas comparé le brossage interdentaire à d'autres outils interdentaires.

Pour télécharger et imprimer la déclaration, veuillez consulter le site web suivant :
http://www.cdha.ca/pdfs/Profession/Resources/CDHA_interdental_brushing_statement_fr.pdf

Le brossage interdentaire ou l'utilisation de la soie dentaire : Recommandations de soins personnels aux clients qui ont de l'inflammation interdentaire

Client qui a de l'inflammation interdentaire



Signes cliniques :

- rougeur
- œdème
- papille interdentaire spongieuse
- saignement avec ou sans stimulation
- plaque visible ou non

Tous les signes sont liés au biofilm, la gingivite ou la parodontite.

Évaluer la dextérité du client

Dextérité — ADÉQUATE

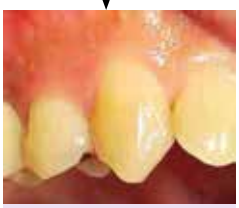
Dextérité — FAIBLE

Évaluer la motivation

Motivation — FORTE

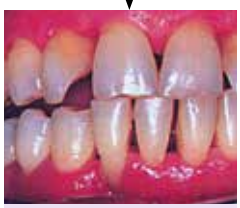
Motivation — FAIBLE

Évaluer l'anatomie intrabuccale



Embrasure — type I

Embrasure — type II



Embrasure — type III*

Tous les types d'embrasures

Conseiller d'utiliser la soie dentaire

Conseiller d'utiliser la brossette interdentaire

* photo : gracieuseté de Sherry Saunderson

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L'ASSOCIATION CANADIENNE DES HYGIÉNISTES DENTAIRES

CJDH ethics policy

Approved by the journal's editorial board on 9 April 2014

Authorship criteria

Authorship credit will be assigned only to individuals who meet all of the following criteria. Each author must have

- contributed to study conception and design or data acquisition or data analysis, AND
- contributed to writing or critically reviewing the article, AND
- approved the final version of the article submitted for publication.

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Conflict of interest

Authors should disclose any conflict of interest, perceived or real, that could undermine the integrity of the research presented. Conflicts of interest may arise from employment circumstances, sources of funding or personal financial interests, among others.

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Code d'éthique du JCHD

Approuvé par le Comité de rédaction du journal le 9 avril 2014

Critères du statut d'auteur

Le statut d'auteur sera attribué à ceux et celles qui auront respecté tous les critères suivants. Chaque auteur doit avoir :

- contribué à la conception et au traitement ou à l'acquisition des données ou à leur analyse, ET
- contribué à la rédaction ou à l'examen critique de l'article, ET
- approuvé la version finale de l'article présenté pour publication.

Ces critères du statut d'auteur sont conformes au statut de coopération à la rédaction du Comité international des rédacteurs de revues médicales (www.icmje.org). L'obtention du financement, la collection des données ou la supervision générale du groupe de recherche ne constitue pas le statut d'auteur. Les personnes qui ont ainsi contribué au manuscrit devraient plutôt être mentionnées dans la section des remerciements.

Les auteurs et co-auteurs des articles de recherche originale et de revues de la littérature devront remplir un formulaire d'information sur le statut d'auteur, dans lequel ils doivent préciser leur contribution au travail décrit dans le manuscrit. L'information sera conservée dans le dossier du Bureau de la rédaction.

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Les auteurs doivent révéler tout conflit d'intérêt, apparent ou réel, qui pourrait compromettre l'intégrité de la recherche présentée. Les conflits d'intérêt peuvent survenir, entre autres sources, des circonstances en matière d'emploi, des sources de financement ou des intérêts financiers personnels.

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Les sources de financement de la recherche devraient être identifiées dans tous les manuscrits.

Les manuscrits fondés sur des études financées par contrats (pas des subventions) de toute source, y compris les entreprises commerciales ainsi que les fondations personnelles ou gouvernementales, doivent être accompagnés d'une déclaration décrivant le rôle des auteurs et des commanditaires dans la conception de l'étude, la collection, l'analyse et l'interprétation des données, la rédaction de l'article et la décision de soumettre celui-ci à la publication. Le journal ne révisera pas ni ne publiera de manuscrit fondé sur des études effectuées sous des conditions permettant au commanditaire de contrôler les données ou de retenir la publication.

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- a signed patient consent form from any patient whose case is described and any person identifiable in an illustration.

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- un formulaire de consentement signé par tout patient ou toute patiente dont le cas est décrit ou de toute personne identifiable dans une illustration.

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Les manuscrits qui impliquent des investigations concernant les participants doivent mentionner le nom du comité d'éthique qui a approuvé l'étude. Les manuscrits décrivant les études dans lesquelles il y a eu un contact direct avec des êtres humains doivent décrire comment a été obtenu le consentement éclairé. Dans les études sur les patients dont l'état peut affecter leur capacité de donner un consentement entièrement éclairé, le manuscrit doit décrire comment les auteurs ont déterminé que les participants pouvaient donner leur consentement, si celui-ci a été obtenu des participants plutôt que des gardiens.

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L'éditeur scientifique doit enquêter entièrement les allégations de fabrication ou de falsification des données, ou de plagiat. Toute évidence de faute sera montrée aux auteurs; ceux-ci devront présenter une explication détaillée des preuves constatées. Le journal reconnait que plusieurs instances d'inconduite dans la recherche résultent d'un manque de compréhension des informations et des citations obligatoires. La décision éditoriale sera prise une fois l'investigation terminée.

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Les auteurs devraient s'assurer que le manuscrit qu'ils soumettent est une œuvre originale et qu'il n'a pas été présenté ni publié ailleurs par écrit ou sous forme électronique. Le manuscrit ne doit pas être revu par quiconque d'autre. Cela n'inclut pas les résumés préparés et présentés lors d'une réunion et subséquemment publiés dans le compte-rendu.

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Conference proceedings – abstract

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No author

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Organization as author

Canadian Dental Hygienists Association. Policy framework for dental hygiene education in Canada. *Probe.* 1998;32(3):105–7.

BOOKS AND OTHER MONOGRAPHS

Personal authors

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Editors as authors

Cairns J Jr, Niederlehner BR, Orvosm DR, editors. *Predicting ecosystem risk.* Princeton (NJ): Princeton Scientific Publications; 1992.

Chapter in book

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Conference paper

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Scientific or technical report
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OTHER PUBLICATIONS

Newspaper article
Rensberger B, Specter B. CFCs may be destroyed by natural process. *The Globe and Mail*. 1989 Aug 7;Sect B:24.

Audiovisual
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Unpublished material
Smith A, Jones B. The whitening phenomenon. *J Nat Dent*. (Forthcoming 2004)

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Journal on Internet
Walsh MM. Improving health and saving lives. *Dimens Dent Hyg* [serial on Internet] 2003 Nov/Dec [cited 2004 Jan 12]. Available from: www. dimensionsofdentalhygiene.com/nov_dec/saving_lives.htm

Homepage/website
Canadian Dental Hygienists Association [homepage on the Internet]. Ottawa: CDHA; 1995 [cited 2003 Nov 20]. Available from: www.cdha.ca

Le *Journal canadien de l'hygiène dentaire* (JCHD) est une publication trimestrielle révisée par les pairs de l'Association canadienne des hygiénistes dentaires. Il invite la présentation de manuscrits en anglais et en français sur des sujets relevant de la pratique, la théorie, la formation et la politique de l'hygiène dentaire. Les manuscrits devraient traiter de sujets d'actualité afin de contribuer de façon significative à l'ensemble des connaissances en hygiène dentaire et de faire progresser les bases de la pratique. Toute demande de renseignements préalables et toutes les soumissions doivent être adressées au journal@cdha.ca.

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5. **Lettres à la rédactrice** : maximum de 500 mots, pas plus de 5 références et 3 auteurs. Pas de résumé.
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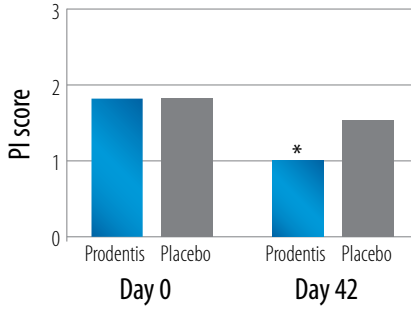

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