

# 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.<sup>1,2</sup> Results of this survey indicated that approximately 27% of working Canadians experienced a high level of stress most of the time.<sup>1,2</sup> Approximately 62% of these respondents identified work as the main cause of their stress.<sup>1</sup> Health care providers and other “white collar” workers experienced higher levels of stress than the

general working population.<sup>1,2</sup> Similarly, a 2003 Canadian Community Health Survey (CCHS) report indicated that almost half of all health care providers experienced work stress regularly (Table 1).<sup>2</sup> 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.<sup>3-5</sup> 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.<sup>6,7</sup>

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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
<b>Total health care workers</b>	<b>45.0</b>
<b>Personal income</b>	
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
<b>Employer</b>	
Self-employed	36.8
Not self-employed	46.3*
<b>Weekly work hours</b>	
Less than 35	36.9
35 to 44	44.5*
45 to 79	60.3*
80 or more	56.8*
<b>Personal factors—sex</b>	
Men	42.4
Women	45.6
<b>Age group</b>	
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*
<b>Day-to-day stress</b>	
Low (not at all/a bit)	28.7
High (quite/extremely)	78.3*
<b>Life satisfaction</b>	
Satisfied	44.4
Dissatisfied	75.2*
<b>General health</b>	
Good/Very Good/Excellent	42.7
Fair/Poor	54.7*

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

Source: Adapted from Wilkins,<sup>2</sup> 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.<sup>8–10</sup> Both of these organizations have deemed occupational

stress a serious issue and have referred to it as a global epidemic.<sup>8–10</sup> 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.<sup>3,6,11</sup> 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.<sup>11</sup> This conclusion is supported by data gathered from Statistics Canada, which found women to be more susceptible to occupational stress related to dual roles.<sup>2,5</sup> Alexander found no data on suicide rates among dental hygienists.<sup>11</sup> 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.<sup>11</sup> 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.<sup>11</sup> 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.<sup>11</sup>

A study by Jerković-Čosić, 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.<sup>12</sup> 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.<sup>13</sup> In another example, dental hygienists in Alberta with advanced training may also prescribe certain drugs.<sup>13</sup>

Geographic difference in occupational stress was also noted in another study by Ylipaa et al., which compared Australian and Swedish dental hygienists.<sup>14</sup> 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.<sup>14</sup> 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.<sup>15</sup> 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.<sup>15</sup> 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.<sup>16</sup> 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.<sup>16</sup>

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.<sup>17</sup> 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.<sup>17</sup>

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.<sup>18</sup> 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.<sup>19</sup> 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.<sup>19</sup> 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.<sup>3,5-7,12,15,19-24</sup> 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

### 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,<sup>1-7,11,12,15,19-28,30</sup> and is the responsibility not only of the individual, but also of the employer or organization.<sup>9,10,14,15,18,20-24,27</sup> 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.<sup>23,24</sup> 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

**Table 3.** Occupational stress issues and symptoms<sup>1-7,11,12,15,19-27,29</sup>

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

help to motivate employees, improve health outcomes, and reduce turnover.<sup>23,24</sup> 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).<sup>29</sup> 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.<sup>31</sup> 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.<sup>31</sup> 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<sup>29</sup>

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/](http://www.cmha.ca/mental_health/whats-your-stress-index/)

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

#### 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.<sup>17</sup> 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.<sup>17</sup>

Table 5. Recommendations for managing stress

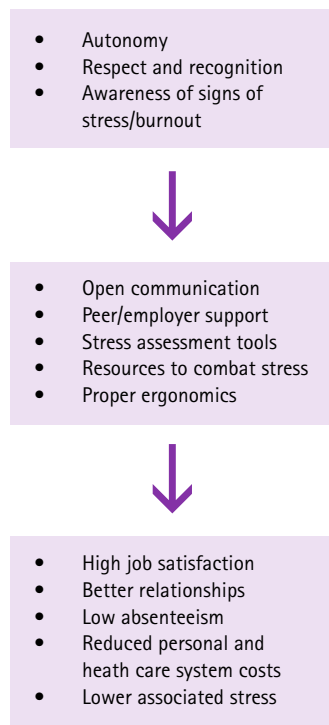
Coping strategies
Identify sources of stress
Seek out social support including friends, family, co-workers
Get 7–9 hours of sleep [CMHA recommendation]
Practise hatha yoga
Have fun: dancing, singing, laughing, gardening, social sports
Try massage therapy
Take a long walk or bath
Do not use negative stress-management 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

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](http://www.cmha.ca/mental_health/whats-your-stress-index). The questions in this assessment tool are listed in Table 4.<sup>29</sup>

#### CONCLUSION

Chronic stress and occupational burnout can have debilitating effects on individuals and generate monumental costs for employers in terms of lost workplace productivity.<sup>20</sup> The WHO recognizes this issue as more than just a local concern, referring to work stress as a global epidemic.<sup>9,10</sup> 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.<sup>14</sup> 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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