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Inequity in Oral Health Care for Elderly Canadians: Part 1. Oral Health Status

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Abstract

Oral health is a contributory factor to general well-being and quality of life. The Canadian Health Measures Survey between March 2007 and February 2009, documented the oral problems that elderly people experience. This age group faces inequity in oral health care (especially in a fee-for-service system) and the aging of the Canadian population will exacerbate the problem of inequity. This article, the first of a 3-part series, discusses the impact of poor oral health on elderly people. The second article will consider inequity in terms of the financial, behavioural and physical barriers within the Canadian health care system, as well as ethical considerations related to this inequity, and the third will provide suggestions to overcome the barriers.

The mouth is the gateway to the body; hence, good oral health is an integral part of general well-being and a contributory factor to quality of life.¹ According to Statistics Canada, the life expectancy for Canadian men and women is 79 years and 84 years, respectively.² Although there is no universal definition of old age, an adult 65 years or older is considered a senior citizen or elderly person in Canada.² More than 80% of elderly people have chronic health conditions, including arthritis, cataracts, back pain, cardiovascular disorders and diabetes mellitus.³ These conditions typically worsen with advancing age, eventually restricting daily activities, including oral hygiene

activities and regular access to dental care.⁴ As a result, even though utilization of medical services rises with increasing age, the opposite occurs with dental services.⁵ In particular, elderly people face inequity in oral health care, especially within a fee-for-service system.⁶⁻⁸ Although all permanent residents in Canada have prepaid access to a general health care plan administered by a provincial or territorial government,⁹ the legislation for these plans does not cover dental services.¹⁰

This 3-part series of articles addresses the inequities faced by elderly patients in a fee-for-service environment for dental services. This first article of the series describes the

oral health status of older Canadians, on the basis of findings from a recent health survey, and notes the implications of oral health for general well-being. The second article will briefly discuss the public and private oral health care plans available in Canada and will explore the inequity in care experienced by elderly people and related ethical considerations. The third article will offer suggestions for reducing this form of inequity and improving access to dental care among elderly people.

Canadian Health Measures Survey

Oral problems commonly observed in elderly people include caries, periodontal diseases, tooth loss, xerostomia, candidiasis and cancer.^{11,12} The Canadian Health Measures Survey (CHMS), conducted from March 2007 to February 2009 sampled 5,600 Canadians from approximately 97% of the population, excluding people living on Aboriginal reserves or Crown lands, members of the Canadian Forces, residents of institutions and residents in some remote regions.¹³ Dwellings of known household composition were stratified into 5 age groups: 6–11, 12–19, 20–39, 40–59 and 60–79 years. Very young (< 6 years) and very old (> 80 years) people were excluded. Each participant was interviewed and underwent a physical (including oral) examination. During the interviews, questions about oral health were related to the comfort and appearance of the mouth and teeth, the effects of oral disabilities, oral care habits, visits to dental professionals and dental insurance coverage. The oral examinations were performed by dentists whose examination skills were calibrated to achieve high agreement (Cohen's kappa coefficient ≥ 0.6) with clinical criteria recommended by the World Health Organization. During the

examination, the dentist gathered data on occlusion, mucosal lesions, accumulation of debris and calculus, gingivitis, edentulism, prostheses and trauma to the incisors. The prevalence and severity of caries were estimated from the average numbers of decayed (D), missing (M) and filled (F) teeth (DMFT). Periodontal status was represented by the deepest probing depth on 1 of 10 indicator teeth and mean loss of attachment on 6 sites of indicator teeth. The data collected are suitable for developing policies about oral health needs in Canada but are inadequate for clinical research.

Oral Health Status of Elderly Canadians

The CMHS revealed that almost everyone in the oldest age group (60–79 years) had at least 1 DMFT (excluding wisdom teeth). This age group had the highest mean DMFT (15.7, consisting of D=0.4, M=5.6 and F=9.7) and the highest rate of edentulism (22%).¹³ Nonetheless, earlier studies in various countries have identified a trend toward the retention of more natural teeth in older age,^{14,15} and this trend is supported by evidence from Statistics Canada that the rate of edentulism among those older than 65 years declined in Canada from 43% in 1990 to 30% in 2003.¹⁶ More recently, the CHMS found that over half (58%) of those 60–79 years of age retained more than 21 natural teeth (mean=19). Older adults participating in the survey claimed to brush and floss as frequently as the younger participants, yet more than a tenth (11%) had untreated root caries, and nearly one-third (31%) had at least one periodontal pocket of at least 4 mm. Although oral problems were distributed similarly in both the oldest age group and in the 40- to 59-year age group,¹³ there was a greater need for professionally administered preventive and restorative therapies,



particularly to prevent and control caries. This can be explained by accelerating factors such as loss of gingival attachment, dry mouth and reduced dexterity, and possibly because the pathogenesis of dental diseases follows a different pattern with advancing age.

Among those 60 to 79 years of age, more than a tenth (13%) avoided dentists, and even more (16%) declined treatment because of the cost. Thirteen per cent of this age group, and nearly a quarter (23%) of those without natural teeth reported that they avoided certain foods because of oral problems, while about one-tenth (7%) of the participants reported persistent pain.¹³ Although such complaints were not highly prevalent, these responses could be an underestimation of the true prevalence, as older people tend not to report oral pain, possibly because of increased tolerance of noxious stimuli¹⁷ or misattribution of pain to old age.¹⁸ Denture stomatitis was observed in 20% of edentulous mouths.¹³ Contrary to the common belief that loss of teeth ends the need for dental visits,¹⁹ a substantial proportion of the edentulous participants (41%) needed treatment for soft-tissue abnormalities.¹⁴

Consequences of Poor Oral Health

Poor oral health can adversely affect quality of life²⁰ by imposing a physiological burden, particularly among elderly people. For example, hyposalivation, which is common in old age, arises from hypofunction of the salivary glands, the manifestations of systemic diseases such as diabetes and the adverse effects of medications or radiotherapy for cancer. Polypharmacy is common in older adults, and multiple medications can interact to induce dry mouth. Nearly one-third (29%) of adults 65 years or older living independently in Ontario reported xerostomia.²¹ Loss of the natural cleansing effect of saliva increases the oral bacterial load, which predisposes a frail person to dental problems and other systemic conditions, such as aspiration pneumonia,²² coronary artery disease and cerebral infarction.²³ Moreover, people with subjective xerostomia and tooth loss may have reduced masticatory ability²⁴; food avoidance from fibre, protein, vitamins^{25,26} and minerals²⁷; and impairment of speech.²⁸ Malnutrition may reduce immunity against infection²⁹ and has been associ-

ated with cardiovascular disease,³⁰ poor cognitive performance³¹ and periodontal disease in older adults.³² In turn, periodontal disease increases the risk of root caries³³ and further tooth loss. Indeed, this vicious cycle of poor dentition, malnutrition and increased comorbidities (including dental comorbidities) can escalate to inflate medical expenses across the population, with far-reaching consequences for society in general.

Mandatory retirement has been abolished in many provinces in Canada and may be removed at the federal level.³⁴ As such, a large proportion of those over 65 years of age may wish to remain in the workforce.³⁵ However, poor oral health can create psychological and social constraints, by undermining general appearance and limiting a person's confidence in social interactions³⁶ and his or her ability to secure or retain a job.¹⁹ Furthermore, older adults with poor oral health tend to lead an inactive lifestyle.³⁷ More specifically, the CHMS showed that approximately 40% of those 60–79 years of age reported an average of 3.5 hours lost from work or normal activities per year because of dental sick days.¹³ Unexpected absence from work³⁸ due to acute oral discomfort or pain could create financial and socio-economic strains at the individual, corporate and social levels.

Furthermore, many systemic diseases exhibit oral manifestations, and oral cancer is among the top 10 most common cancers worldwide.³⁹ About 3,400 new cases of oral cancer were diagnosed in 2009 in Canada alone, and the incidence increases after age 40.⁴⁰ Thus, oral care should remain an important part of health screening for the older population.

Looking Forward

The CHMS provides an incomplete picture of oral health in older Canadians. It did not survey people 80 years of age or older, although this age group now makes up about 4% of the Canadian population.⁴¹ It also excluded institutional residents, who are generally more frail, are unable to execute an optimal standard of oral hygiene, receive less dental care, and have poor oral health and greater treatment needs.^{42,43} In one study, 58% of elderly Canadian nursing home residents of the need was in need of dental treatment; two-thirds (67%) of the need was attributed to caries and periodontal

problems.⁴⁴ Although dental services were made available to residents of the facilities, the incidence of tooth loss and edentulism increased over the subsequent 5-year period.⁴⁵

Utilization of dental services in Canada has risen modestly, from 44% to 68%, since 1970.^{13,46} Over the same period, dental expenditures per capita have increased approximately fourfold,⁴⁷ which indicates that either dental services have become more costly or individual patients are utilizing more services. Data from the CHMS indicate that income is a strong determinant of health status and access to care.¹³ The inequitable situation is even more palpable for elderly people, especially if they have lost insurance coverage after retirement and have become more frail. The next article in this 3-part series will discuss the barriers to oral health care faced by the elderly population in Canada and the ethical considerations associated with inequities in oral care. ♦

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