

Oral Health-Related Quality of Life in the Elderly: A Review and Future Challenges in Thailand

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ABSTRACT

Oral health related quality of life (OHRQoL) is a multidimensional concept that measures perceptions of oral health and the consequences of oral conditions at individual and population levels. Poor oral conditions are associated with a deteriorating quality of life (QoL) through functional and psychosocial impacts. As the elder population is growing worldwide and the prevalence of oral diseases among older adults remains high, more attention needs to be paid to oral health conditions as well as impacts on QoL. However, there are few population studies regarding OHRQoL in older Thai adults. Apparently, there are several challenges facing the assessment and improvement of the OHRQoL of this aging population. First, effort towards the standardization of instruments and validation of translated instruments is needed. Secondly, a multidisciplinary team, composed of health care providers, dental professionals, and policy makers has to be established. Finally, a holistic oral health care concept must be emphasized in dental educational programs and training. This review presents an overview of OHRQoL and its importance to the elderly and discusses future challenges to this group of the population in Thailand.

Keywords: Elderly, oral health, periodontal disease, quality of life, tooth loss

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INTRODUCTION

An increasing proportion of the population worldwide is aging and more than two-thirds of these older people will be living in developing countries.¹ In Thailand, the aging population in 2010 was about 10%, though it is projected to approach 30% by 2050.^{1,2} A substantial number of older people will be community-dwelling elders who will be able to live and function quite independently. Others will be home-bound or live in long-term care (LTC) facilities.

Maintaining good physical and mental health in these populations is, therefore, challenging for health care providers and policy makers.

In response to the global aging issue, the World Health Organization (WHO) has, during the last decade, focused on the concept of “Active Aging” and emphasized the need to advance knowledge about health care and strengthening health promotion to enhance the QoL of older people.³ WHO defines health as “a complete state of physical, mental, and social well-being and not just the absence of disease”.⁴ Health-related quality of life (HRQoL) is, therefore, a multidimensional construct focusing on the impact of health status while also taking into consideration other QoL factors related to physical, mental, emotional and social functioning. Increases in

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interest in HRQoL over the last 30 years suggest that people want not only to live longer, but also to stay healthy and active for as long as possible.⁵ OHRQoL is one part of HRQoL⁶ and an important component of the “Active Aging” program,³ although recognition and acknowledgment of OHRQoL issues, in contrast to those of medicine, were raised at a later time.⁷ The importance of oral health has been overlooked, especially in older adults. This may be due to the perception that oral diseases are unimportant problems and may not necessarily impair QoL. In fact, oral health problems have significant social, economic, psychological and systemic consequences for affected individuals.⁸⁻¹¹

Oral health problems are more complicated in the elderly than in the young adults due to the clinical complexity of health status and the number of barriers to receiving care, ranging from knowledge and attitudes about oral health to financial concerns.^{6,12,13} This review, therefore, aims to provide an overview of OHRQoL measures and common oral diseases and their importance concerning QoL in the elderly. Lastly, the authors discuss future challenges in Thailand.

Oral health-related quality of life measures

OHRQoL, known as socio-dental indicators or social impacts of oral diseases¹⁴, is a subjective evaluation of people’s perceptions about oral health and its impact on their lives. To date, there exist several definitions, key concepts, and theoretical models to explain OHRQoL.^{7,15,16} For example, the Surgeon General has defined OHRQoL as “a multidimensional construct that reflects people’s comfort when eating, sleeping and engaging in social interaction, their self-esteem, and their satisfaction with respect to their oral health”.¹⁷ Kressin N defines OHRQoL as “a broad conception of health, encompassing the traditional definition of health as well as the individual’s subjective impact of health on well-being and functioning in everyday life”.¹⁸ Thus, OHRQoL represents the individual’s subjective perspective of the impact of oral conditions on different aspects of life, including general health and social interaction.^{16,19,20}

OHRQoL can be assessed at both indi-

vidual and population levels.¹⁴ Many questionnaires and scales to measure OHRQoL outcomes have been developed⁷ and vary widely in terms of the number and format of the questions as well as the responses.¹⁴ In addition, most instruments developed after 1997 were intended to be used with children and orthodontic patients.^{7,14,16} To assess OHRQoL in the elderly, seven instruments have been recommended. However, only the Geriatric Oral Health Assessment Index (GOHAI) and the Oral Health Impact Profile (OHIP) were developed for use primarily with older adults.²¹ OHRQoL measures have been used in both epidemiological and clinical studies. Epidemiological studies use OHRQoL scores to report the adverse impacts of oral diseases on functional, psychological and social dimensions^{12,22} and assess the associations with clinical parameters and treatment needs^{8,12,23} to further facilitate the planning of health services. Additionally, clinical intervention studies utilize OHRQoL measures to assess the effect of treatment with respect to QoL.²⁴ In Thailand, there are few OHRQoL studies of adults at the population-based level²⁵⁻²⁷ in which the Oral Impacts on Daily Performance (OIDP) are frequently used.^{26,27}

Common oral health problems in the elderly and impacts on quality of life

Dental caries

Both coronal and root caries are common among the elderly and the caries progression rate may be faster among those with additional risk factors, such as a lack of manual dexterity, wearing removable dentures, and mouth dryness.^{28,29} For the latter, medical problems (e.g., chronic renal failure and ongoing medications) can lead to alterations in salivary composition and flow rate, increasing the caries risk.³⁰ In Thailand, adults aged 60-74 have an average number of 18.8 remaining natural teeth. About half have at least one tooth with untreated coronal caries (an average of 1.4 teeth per person). Approximately 13% have primary root caries and 17% have recurrent caries on root surfaces with an average of 0.2 teeth per person.³¹ Older people with untreated caries may suffer from pain, discomfort, eating, and sleeping disruption. However, previous findings

in the elderly have indicated that there is a poor relationship between the number of decayed teeth and the presence of oral impacts.^{8,27} It has been explained that dental caries has long latent periods before causing pain or discomfort. Older people are unlikely to perceive such impacts until the advanced stages of caries progression. The loss of teeth, resulting from untreated dental caries, will have greater impact on QoL as it causes functional impairment. Therefore, clinical indicators of biological disease (such as the number of decayed teeth) is weakly correlated with subjective perceptions of QoL compared to indicators of functional limitation, such as tooth loss and occluding pairs of teeth.⁸

Poor oral hygiene contributes to dental caries. A reduction in manual ability as a result of the aging process or a systemic condition (e.g., rheumatoid arthritis) to efficiently perform oral hygiene in the elderly, is inevitable.³²⁻³⁴ In addition, previous studies indicate that a lower level of cognitive function is correlated with a decreased capacity to perform oral hygiene care and greater severity of dental caries.^{13,35} Thus, oral health care plans for older adults should involve the family members and caregivers to facilitate communication with elder persons and help them to perform individual oral hygiene care.^{36,37}

Periodontal diseases

Periodontal diseases involving gingival inflammation as well as destruction of the periodontal ligament and alveolar bone are the most common chronic infections in adults. Also smoking has been identified as a major risk factor for periodontal disease.³⁸ Many studies report associations between periodontal infection and a number of medical problems, such as cardiovascular disease, bacterial pneumonia, infective endocarditis, and diabetes mellitus (DM). Nonetheless, evidence is not sufficient to claim a cause-effect relationship between periodontal pathology and such systemic diseases,^{39,40} though a systemic condition like DM may be a risk factor for periodontal disease.^{12,41}

WHO introduced Community Periodontal Index (CPI) as a measure for periodontal diseases assessment in countries. However, compared to

developed countries, few surveys on the periodontal health status of older people have been conducted in developing countries.⁴² In Thailand, the 7th national oral health survey reported that about 11% and 21% of adults aged 60-74 had deep (CPI = 4) and shallow (CPI = 3) pockets, respectively, while about 44% of elderly Thais had calculus (CPI = 2) or gingival bleeding (CPI = 1).³¹

Worse periodontal health can interfere with QoL in many ways, including physical aspects, masticatory function, and psychological concerns.^{27,43-45} Furthermore, the impact of periodontal disease on QoL is related with disease severity in adults and older people. Subjects with loss of supporting bone tissue or periodontitis had lower QoL than those with gingivitis, expressed as higher scores of OHRQoL.⁴³⁻⁴⁵ This emphasizes the importance of prevention and early treatment of periodontal disease as greater severity of periodontal destruction has a more negative effect on an individual's QoL.⁴³⁻⁴⁵ However, a study of the older population in Britain found that periodontal disease, as measured by the presence of mobile teeth, was not significantly associated with OHRQoL scores.⁸ This may be due to differences in OHRQoL instruments, clinical parameters used for periodontal disease assessment, and cultural differences in how people perceive impairments.^{8,27,43-45}

Tooth wear

Tooth wear or tooth surface loss is defined as a progressive loss of the tooth's surface due to actions other than those which cause tooth decay or trauma. The prevalence and severity of tooth wear are greater among older populations compared to younger populations.⁴⁶ Different methods or indices used in population studies make it difficult to draw conclusions about the prevalence of tooth wear.^{47,48} Tooth surface loss prevalence in adults ranges between 4% and 82%.⁴⁶ In Thailand, there is no national data reporting prevalence of tooth wear. A cross-sectional study in southern Thailand using convenient samples reported that tooth wear was associated with increasing age, carbonated drinks, alcohol consumption, and the consumption of sour fruits.⁴⁹ Dietary, behavioral, occupational, and environmental factors are all

correlated with tooth wear. Medications (e.g., antihistamines, tranquilizers, antidepressants, and dopamine-related drugs) may contribute to the progression of tooth wear by reducing the flow rate and/or the buffering capacity of saliva. Bruxism and acid reflux from gastro-esophageal reflux disease, bulimia, and anorexia nervosa may cause pathological tooth wear.⁴⁷

People with severe tooth wear often complain of tooth sensitivity, dental pain, discomfort, poor esthetics (due to shortened clinical crown and loss of vertical dimension) and functional impairment (difficulties with chewing due to occlusal alterations and dental tissue loss).⁵⁰ Nonetheless, few studies have investigated impacts of tooth wear on QoL.⁵¹ One study reported that patients with extensive tooth wear had impaired OHRQoL, which was comparable to that of edentulous patients.⁵¹

Multiple tooth loss and complete tooth loss (edentulism)

Tooth loss is the ultimate outcome of dental caries and periodontal disease. Prevalence of complete tooth loss has declined over the last decade.^{3,31} However, complete tooth loss among the elderly remains a major public health problem in many countries. The prevalence of those who had no natural teeth among the elderly ranged from 6% to more than 50%.³ The 7th Thai national oral health survey reported that 7.2% and 32.2% of adults aged 60-74 and 80-89 were edentate, respectively.³¹ The dentate adults aged 60-74 had an average of 18.8 remaining teeth, while those aged 80-89 had only 8.9 remaining teeth. About 58% and 24% of adults aged 60-74 and 80-89 had at least 20 remaining teeth, which is a goal for oral health in the elderly set by WHO. Average occluding pairs of teeth were 3.2 and 1.0 for adults aged 60-74 and 80-89, respectively.³¹ With the elderly, tooth loss was more likely to be found among the poorly educated, those with low income, and institutionalized adults.^{9,52}

A positive correlation between dentate status, number of remaining teeth, and dentures with the QoL older adults has consistently been reported.^{8,27,53-55} In Thailand, edentulous older adults perceived more oral impacts compared to dentate

individuals.²⁷ About two-third of older adults with no natural teeth reported eating problem compared to 45% of dentate elderly. Speaking was affected in 14.9% of edentulous compared to 9.1% of dentate older adults. However, there was a small difference in social contact impacts between edentulous (6.8%) and dentate (4.4%) older adults²⁷. Another study in older Thais reported that older people with a lower number of natural teeth were more likely to be underweight.⁵⁶ Besides the number of remaining teeth, the number of natural tooth contacts with opposing teeth was reported to associate with OHRQoL.⁸ A longitudinal study in poor elderly Koreans found that overall OHRQoL and physical disability subscales scores were significantly increased after receiving prosthodontic treatments.⁵³ It has been speculated that an older adult's chewing ability may be improved by prostheses, an option which can affect dietary choices and nutritional intake and improve general health.⁵³ Impacts on OHRQoL among edentulous participants may decrease as they age due to the decline in demands and expectations from reduced dentition.⁵⁷ In addition, relative to other health problems they are increasingly facing, oral health problems may not seem to be serious in their perceptions.⁵¹

Challenges for Thailand's oral health care in the elderly

Similar to other countries worldwide, the proportion of elderly Thais has tremendously grown while the oral health status of this population is generally poor.^{1,2} They often do not access routine oral health care due to barriers like low oral health literacy, negative attitudes to oral health or lack of available transportation. Moreover, oral health problems and treatment decision-making in the elderly is complicated by their medical conditions, physical functioning, and psychosocial factors. This poses a number of challenges to health care providers and policy makers to improve and maintain QoL in this aging population.

In Thailand, few available studies have investigated the association between general health, oral health, and QoL of older adults.^{26,27} To implement OHRQoL tools in clinical practice, it is a necessary step to identify a standard instru-

ment which has been adapted to Thai culture and validated in the Thai population. Furthermore, the collaboration of primary health care providers and oral health professionals is required in order to improve OHRQoL in the elderly. The common risk factor approach, a strategy recommended by WHO, should be adopted to integrate oral health preventive care into general health programs.³ Most oral and chronic diseases share several common risk factors and non-communicable diseases are now leading causes of disability and mortality.¹ The WHO approach would be beneficial in Thailand where there is an uneven distribution of health care services. Apparently, there is a need for greater integration of oral health into health care. Educational programs, both in dentistry and medicine, must emphasize the patient-centered care concept in treatment planning. Primary health care professionals may be trained to assess oral health problems and provide oral hygiene advice to the elderly. Additionally, oral and general health professionals must educate older people and their caregivers by emphasizing that oral health is important to overall health and well-being and that oral health preventive care is a lifelong commitment.

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