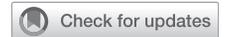


EDENTULISM AND HEALTH

Quality of life alterations and edentulism



BACKGROUND

Medical diseases can substantially affect patients' quality of life and have been extensively studied in this regard. Oral health-related quality of life, however, is usually investigated using disease-specific descriptive instruments. This approach does not allow the comparison of oral health-related and medical disease-related quality of life. Economic methods such as the time trade-off (TTO) technique enable such comparisons and provide a link between quality of life effects of medical and dental conditions. The utility of health states in edentulous patients was investigated using the TTO approach.

METHODS

The 58 patients age 65 years or older (mean age 73.3 years) had received complete dentures in the dental clinic within the previous 10 years. The TTO approach was used to evaluate patient preferences for the edentulous state and for the poorest imaginable oral health status the patient could experience.

The TTO technique involved several steps. Patients were asked to imagine they had a life expectancy of 30 years but suddenly found themselves confined to a wheelchair for the rest of their lives. They were then asked how much of their life expectancy they would give up to be able to walk again. The health state utility of being wheelchair bound was calculated as the remaining life expectancy spent in perfect health divided by the total life expectancy. Patients were then told to value the poorest oral health state imaginable. Life expectancy for each patient was based on statistical life tables and communicated to the patients. Patients were given the choice to trade 6 months of their life expectancy for perfect oral health. If they were willing to trade 6 months of life expectancy for perfect oral health, they were asked if they would trade their life expectancy minus 6 months to live 6 months in perfect health. If they were unwilling, they were asked if they would trade 12 months of their life expectancy for being in perfect health. The stepwise increase method was used until patients reached a point of indifference. This value was used to estimate the health state utility of the worst possible oral health state. Additional courses of this method were used to determine the utility of patients' current oral health status, including being edentulous in 1 or both jaws.

The EQ-5D questionnaire was used to describe the general health status of the patients, covering the dimensions of mobility, self-care, usual activities, pain/discomfort, and anxiety/depression with 3 levels in each dimension (no problems, some problems, and extreme problems); the results were depicted on a visual analog scale (VAS). Socioeconomic parameters were also collected and measured by VAS.

RESULTS

The average life expectancy of the patients was 14.6 years, and more than two thirds had a higher educational degree, with 7% having academic degrees. The average length of time patients were edentulous was 24.6 years, with 15 having a complete denture in both jaws and 41 having a complete upper jaw denture. Mean satisfaction score with the current denture was 84.8 on a scale from 0 to 100.

Eighty percent of the individuals agreed to exchange time for a shorter life with optimal oral health when beginning from their current oral health status. In addition, 93.9% were willing to give up time when starting from their poorest oral health status. Mean EQ-5D VAS score was 75, average EQ-5D index score was 0.83, and TTO utility score was 0.43 for the poorest and 0.73 for the current oral health states.

When denture wearers with a complete upper denture were evaluated, the TTO utility score was 0.75 for current oral health status and 0.40 for poorest possible oral health status. When denture wearers with complete dentures in both the upper and the lower jaws were evaluated, the TTO utility was 0.68 for the current and 0.5 for the worst possible oral health status. The TTO utility values of the denture wearer groups did not differ significantly.

The TTO utility values for edentulous status could be compared to those associated with several medical conditions. For example, edentulous TTO utility values were comparable to being disease free after lumpectomy as a result of breast cancer or a minor stroke. The worst oral health state was comparable to symptomatic HIV infection or 6 months after a hip replacement due to osteoarthritis (Table 4).

Table 4. Time Trade-off Utilities of Different Medical Diseases

Health State	Utility
Atrial fibrillation, nonvalvular, receiving warfarin	0.98
Minor stroke	0.89
Breast cancer	0.89
Myocardial infarction	0.87
Complete impotence	0.85
Diabetes type I	0.84
Breast cancer, lumpectomy, good physical and mental health	0.75
Edentulous in 1 or both jaws	0.73
Asymptomatic HIV infection	0.69
Angina pectoris	0.69
Tuberculosis, hospitalized, 3 mo	0.6
End-stage renal disease	0.56
Breast cancer, mastectomy	0.48
Osteoarthritis, hip, moderate, hip replacement, 6 mo after surgery	0.44
Depression, 3 mo	0.44
Poorest imaginable oral health state	0.43
Major stroke	0.3

Tengs and Wallace (2000).

Bold rows indicate states featured in the present article.

(Courtesy of Sendi P, Oppliger N, Chakroun F, et al: Health state utilities in edentulous patients: A time trade-off approach. *JDF Clin Translational Res* 3:346-353, 2018.)

Stepwise regression analysis indicated that sex was the only variable that was associated with the utility score. Women tended to rate their oral health state utility an average of -0.18 lower than

men. Length of time the patient was edentulous did not affect TTO score.

DISCUSSION

The majority of these edentulous patients were willing to trade life years for optimal oral health and even more willing when they considered a worse oral health state. Women in the study group assigned a lower health state utility to their oral health condition than men did.

Clinical Significance

Medical disorders can significantly diminish the quality of life for patients. Quality of life also appears to be susceptible to the effects of poor oral health, such as being edentulous. This evaluation underscores the important contribution of oral health to patients' quality of life and shows how it can be compared to results related to medical health status.

Sendi P, Oppliger N, Chakroun F, et al: Health state utilities in edentulous patients: A time trade-off approach. *JDF Clin Translational Res* 3:346-353, 2018

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FLUORIDATION

Supporting community water fluoridation



BACKGROUND

Community water fluoridation was addressed in a policy statement by the American Association for Dental Research (AADR). It has been found to be safe and effective in preventing dental caries in both children and adults. The specific areas addressed in the statement on community water fluoridation included a detailing of the problem of dental caries, the effects of community water fluoridation on dental caries, the cost-effectiveness of this intervention, and any adverse effects associated with fluoridation of community water supplies.

DENTAL CARIES

Children and Adolescents

Dental caries is characterized by the destruction of the dental hard tissues and causes pain, infection, and loss of teeth. Caries results from the bacterial fermentation of sugar, which creates acidic by-products that attack the dental tissues. The primary teeth are affected in more than a third of children age 2 to 8 years, and the permanent dentition becomes carious in 20% of those age 6 to 11 years and more than half of adolescents age 12 to 19 years. Children with poor oral health are more likely to develop problems that cause them to miss school and have