BUCCAL HEALTH AND QUALITY OF LIFE

Eduardo Bresciani[1]
Terezinha de Jesus Esteves Barata[1]
Maria Fidela de Lima Navarro[1]
José Carlos Pereira[1]

[1]*Department of Operative Dentistry, Endodontics and Dental Materials, Bauru Dental School, University of São Paulo, Bauru, São Paulo.*

BRESCIANI, Eduardo et al. *Salusvita*, Bauru, v. 24, n. 1, p. 137-148, 2005.

ABSTRACT

The measures to determine health in dentistry have changed from that old concept of health means absence of diseases to a new concept. This concept correlates the disease not only with the oral damages in teeth tissue, but also with functional and social disability. These new methods to evaluate health are so called "Oral Health-related Quality of Life – OHRQL". There are a vast number of methods to verify OHRQOL. This paper will describe two measurements, the short form of Oral Health Impact Profile–OHIP and the Geriatric (General) Oral Health Assessment Index – GOHAI, the differences between them and how each one perform in a specific population. Both methods are based on self-response questionnaires. These questionnaires are important to develop educational and preventive actions for the population.

KEY WORDS: Buccal health; quality of life; perceived buccal health

INTRODUCTION AND DISCUSSION

According to the 2003 annual WHO report, buccal health is integrated with the general health of people and it is a determinant

Received in: May 5, 2005.
Accepted in: June 24, 2005.

of quality of life. They state that good buccal health does not mean just good teeth, but it implies being free of chronic oro-facial pain, oral and pharyngeal cancer, buccal tissue lesions, cleft lip and palate and other diseases that affect buccal, dental and craniofacial tissues (PETERSEN, 2003).

Another paper from WHO reports the importance of "non-fatal outcomes". That means that the health conditions of a populations is not only the death reports, but also the way people live their lives (WORLD HEALTH ORGANIZATION, 2003), including functioning, disabilities and handicap. In dentistry it means that the number of carious or filled teeth is not the only indicator of health, we also should address the social and psychological consequences of buccal disorders.

In order to achieve this goal, Locker in 1988 described the model of buccal health (LOCKER, 1988). This model is divided into three levels: the organ, the individual and the society. The organ level comprises the disease, the impairment and the functional limitation. The individual level comprises the disability and the social level, the handicap (LOCKER, 1988). The first level is characterized by structural, biochemical or physiological anomaly and restricted function of the organ. The second means limited ability to perform activity of daily life and the third social disadvantage. The closer the concepts, the greater the association between them. The extremes in this model have less strong association (LOCKER, 1988).To this concept Wilson and Cleary (1995) added two more factors that influences the hole model, that are characteristics of individuals and characteristics of the environment (WILSON; CLEARY, 1995). This because the concept of quality of life differs from health, though related to it. Economic, political, cultural, and spiritual factors may affect overall quality of life, but are generally not considered by the physicians or by the health care systems.

These three levels are related to the disease and most of times have different influences in each individual life. At this point, the self perceived buccal health is an important factor or maybe the most important to be discussed. Sometimes, the same injury of the tooth implies in different reactions according to different people. These different people could be at the same culture or even from the same family and the response to the same injury will be different.

The perception of buccal health is not just related to an injury or symptom (HEFT et al., 2003). In a recent study in Sweden (STÄHLNACKE et al., 2003), the authors verified that the social factor was correlated to the self perceived buccal health and that social problems, as changes in remuneration of public dental care, had the major influence in changing the self perceived oral health from the same person in different periods of evaluation (STÄHLNACKE et al., 2003).

Another study from the USA report the self perceived buccal health conditions of a representative community of adults aged over 45 years. They found that, instead of a discrepancy between clinically determined dental problems, self-reports of dental problems and perceived need for dental care, the clinical conditions were associated with perceived need for dental care and this last associated with satisfaction with dental care. In the other hand, the self-rated buccal health was not associated with satisfaction with dental care (HEFT et al., 2003). In other study performed in England with different ethnicity, it was found that ethnicity and age predict the reporting of self-assessed buccal health status (NEWTON et al., 2003). For pain, this study verified that gender is an important factor, and women related more pain than men. The age had some influence in the ability to chew, with older people relating more difficult, and some influence in the item worry/concern with older people having lower levels (NEWTON et al., 2003).

All these studies correlate variables to the perceived buccal health. Among them we have gender (NEWTON et al., 2003), age (NEWTON et al., 2003, STÄHLNACKE et al., 2003), financial status (GOLLETZ et al., 1995, HEFT et al., 2003, STÄHLNACKE et al., 2003), and cultural aspects (NEWTON et al., 2003; STÄHLNACKE et al.,2003). To verify the way all these data from the self-perceived buccal health measurement interferes in life, many methods to quantify buccal health quality of life were introduced. These methods are called Oral Health Related Quality of Life (OHRQoL). A number of buccal health related quality of life measurements have been developed to assess the functional, psychological, social and economic implications to evaluate as buccal health programmes as specific treatments techniques (PETERSEN, 2003).

In this paper the OHIP14 (Oral Health Impact Profile) and the GOHAI (Geriatric or General Oral Health Assessment Index) will be focuses due to their large application in studies presents in literature.

The OHIP was developed and first evaluated by Slade & Spencer (1994), in order to achieve a measurement capable to verify levels of dysfunction, discomfort and disability associated with buccal disorders (SLADE; SPENCER, 1994). Forty nine statements derived from 535 obtained from patients were divided into seven subscales.

Slade (1997) tested a short form of this measure, maintaining the seven initial subscales (Functional limitation, Physical pain, Psychological discomfort, Physical disability, Psychological disability, Social disability, and Handicap) with two questions in each. A controlled regression procedure permitted identification of 14 questions with internal reliability of 0.88.

This questionnaire is a self-reported model and the answers follow the Likert-type scale, and are coded as 4=very often, 3=fairly often, 2=occasionally, 1=hardly ever and 0=never (SLADE, 1997). TABLE 1.

TABLE 1 – Subscales and questions of OHIP 14 (SLADE, 1997).

SUBSCALE	QUESTION
Functional Limitation	Have you have trouble *pronouncing any words* because of problems with your teeth, mouth or dentures?
	Have you felt that your *sense of taste* has worsened because of problems with your teeth, mouth or dentures?
Physical Pain	Have you had *painful aching* in your mouth?
	Have you found it *uncomfortable to eat any foods* because of problems with your teeth, mouth or dentures?
Psychological Discomfort	Have you been *self-conscious* because of your teeth, mouth or dentures?
	Have you *felt tense* because of problems with your teeth, mouth or dentures?
Physical Disability	Have your *diet been unsatisfactory* because of problems with your teeth, mouth or dentures?
	Have you had *interrupted meals* because of problems with your teeth, mouth or dentures?
Psychological Disability	Have you found it *difficult to relax* because of problems with your teeth, mouth or dentures?
	Have you been a bit *embarrassed* because of problems with your teeth, mouth or dentures?
Social Disability	Have you been a bit *irritable with other people* because of problems with your teeth, mouth or dentures?
	Have you had *difficulty doing your usual jobs* because of problems with your teeth, mouth or dentures?
Handicap	Have you felt that life in general was *less satisfying* because of problems with your teeth, mouth or dentures?
	Have you been *totally unable to function* because of problems with your teeth, mouth or dentures?

At the end the mean score is calculated according to each subscale weight. The higher the value, the poorer the oral quality of life. Some studies verified that the arithmetic mean does not alter the results of the measurement.

Various studies proved this measure to be valid and reliable (LOCKER; SLADE, 1993).The validation is almost always done verifying association between OHIP and the self-perceived buccal health (LOCKER; SLADE, 1993) or comparing the short form OHIP with the conventional one (WONG et al., 2002). The reliability is observed using statistical tests (LOCKER; SLADE, 1993) or sometimes observed reapplying the questionnaire after a period of time (MASSALU et al., 2003). The GOHAI was developed by Atchison & Dolan (1990), as a need to the evolution and maturation of a scientific knowledge base in geriatric dentistry. This instrument was developed based on pre-existing questionnaires of oral functioning, patient satisfaction, and buccal symptoms. Three items that reflect problems affecting older people were selected: (1) physical function, including eating, speech and swallowing, (2) psychosocial function, including worry or concern about oral health, self-image, self-consciousness about buccal health, and avoidance of social contacts because buccal problems, and (3) pain or discomfort. The initial questionnaire was composed by 36 questions. The revised test is composed by 12 questions, TABLE 2 (ATCHISON; DOLAN, 1990).

TABLE 2 – Questions of GOHAI (ATCHISON; DOLAN, 1990).

	QUESTION
01	How often did you limit the kinds or amounts of food you eat because of problems with your teeth or dentures?
02	How often did you have trouble biting or chewing any kinds of food, such as firm meat or apples?
03	How often were you able to swallow comfortably?
04	How often have you teeth or dentures prevented you from speaking the way you wanted?
05	How often were you able to eat anything without feeling discomfort?
06	How often did you limit contacts with people because of the condition of your teeth or dentures?
07	How often were you pleased or happy with the looks of your teeth and gums, or dentures?
08	How often did you use medication to relieve pain or discomfort from around your mouth?
09	How often were you worried or concerned about the problems with your teeth, gums, or dentures?
10	How often did you feel nervous or self-conscious because of problems with your teeth, gums, or dentures?
11	How often did you feel uncomfortable eating in front of people because of problems with your teeth, gums, or dentures?
12	How often were your teeth or gums sensitive to hot, cold, or sweets?

The reliability was observed using the internal consistency approach (Cronbach´s alpha) and Pearson´s correlations were used to measure the inter-item and item-scales correlation.

These are the two most commonly used measures to determine buccal health related quality of life. Studies in literature compare (LOCKER et al., 2001) the two measures and observed that GOHAI identified more buccal functional and psychosocial impacts than the OHIP-14, because associations were stronger between GOHAI scores and variables. This fact according to the authors does not affect the predicting overall psychological well-being and life satisfaction (LOCKER et al., 2001).

Some variables do influence the results of these measures and should be discussed in order to have a better interpretation of the results. Among them, this article is going to discuss the most important ones, which are gender, age, social condition, cultural and lingual influences, negative affectivity, and health diseases.

The gender is most of times related as not affecting the overall buccal health related quality of life. In the other hand there are reports that state the gender as having different patterns of self-perceived buccal health. As Locker et al. (2000) suggested that poor self-perceived buccal health and poor quality of life are co-existents, we can conclude that gender sometimes influences at the buccal health quality of life.

One study performed in England showed the differences observed in different cultural communities living in England and among them, Chinese and Indian women related poorer buccal health conditions. If the buccal health quality of life measure was applied in this study, certainly the Indian and Chinese women would have the worst values for quality of life (NEWTON et al., 2001).

The age is a common variable discussed in almost all studies of quality of life. A questionnaire of buccal related quality of life was developed specially for geriatric use, namely GOHAI (ATCHISON; DOLAN, 1990). Another measure for children was also developed [COHQOL – Child Oral Health-related Quality of Life] (JOKOVIC et al., 2003). After this observation it becomes easy to note the importance in discussing the age.

Several studies using the GOHAI observed that older people related less impact in buccal health related quality of life. This fact is observed because older people probably accept their buccal conditions better than an adult or a child. And it is also important to note that older people have just had so many bad situations in life and these “experiences” let them fewer critics with buccal health. This fact does really not mean that older people do not have oral problems, it just means they do not care the amount it should be (SILVA; FERNANDES, 2001).

Social condition is another important factor that interferes at the self-perceived buccal health and consequently in the buccal health related quality of life. Poorer people have better perception of their buccal conditions and then better buccal health related quality of life. This fact could be addressed to the lack of information or lack of opportunities to dental treatments that leads to lack of stimulus with the buccal health problems.

Studies in literature state this variable very well and show that individual with better social conditions perceive their buccal health perception with more criteria and the smallest pain would be reported.

On the other hand, social disadvantaged people should have worse oral health, and according to some studies related to self-perceived oral health, it is said that basic clinical situations, as missing or fractured restorations, are more perceived and as poorer people have less financial condition this fact should be more frequently seen in these disadvantaged people. As a result they should report worse buccal health quality of life.

This topic is very interesting and a clinical examination should be performed in order not to sub or super estimate the answers from disadvantage people.

Another variable is the negative affectivity. Kressin et al. (2001) tested three buccal health related to quality of life measurements in association with negative affectivity. This factor is a contextual one that in the buccal health related model (LOCKER, 1988) was added by Wilson & Cleary (1995). These authors related that as more subject the scales to be evaluated, more NA will affect quality of life. In this study the OHIP was more correlated to the NA and the psychological disability was more correlated subscale. They conclude that individuals who tend to view things negatively and/or complain about things in general are more likely to report worse buccal quality of life. They state that worse buccal related quality of life scores alone may not be sufficient to indicate worse buccal health, but may reflect an individual's disposition to complain or view many things negatively.

Cultural and lingual aspects have been reported as factors influencing OHQL. Two studies in literature present the importance of an adequate translation to other languages (WONG et al., 2002, TUBERT-JEANNIN et al., 2003). Both studies relate the importance in perform the translation by translators which second language is English, and then retranslate to the English by English first language translators. At this way it is possible to assure that the translated version is a validity version. The French study reports that instead of already having a French version of the questionnaires,

which were used in Canada, it was important to do the translation due to differences in culture (TUBERT-JEANNIN et al., 2003). Some points that are easy to understand in a Canadian culture could be difficult in the French culture. The pilot study was performed using these questionnaires among people and relating difficulties in understanding questions (TUBERT-JEANNIN et al., 2003). The Chinese study also performed the retranslation and cultural aspects from older people living in Hong Kong were assessed before translation in order to achieve a better version. Both two studies observed the validity of translation to other languages (WONG et al., 2002, TUBERT-JEANNIN et al., 2003), but cultural aspects may be considered. Other study performed in Tanzania related the importance in considering cultural aspects (MASSALU et al., 2003). There the questionnaire was applied in English to university students which second language is English. They conclude that it is not important just to be worry with language, but also with cultural aspects.

In a population certain buccal problems could not have the same impact to the quality of life as it would have in other population. The clinical concerns could be the same or close to each other, and some times the clinical aspects and sometimes the OHQL will ride the clinical procedure to be performed.

The last factor to be discussed here, but not the last that has some influence in the OHQL, are the general diseases. The first flash that comes to our mind is when someone is affected by a disease, their OHQL will be worse than that person without medical problems (HAY et al., 2001, LOCKER et al., 2002). these studies revealed that people having medical problems are more worried about their medical problems and buccal health is apart. Their buccal perception is not so much confident and consequently their buccal health-related quality of life is better.

All these studies cited above were performed in order to relate quality of life with the population, most of times correlating the buccal programs existents in the public services. These methods can also be used to evaluate a specific treatment. Some studies in literature relate this method to evaluate orthodontic treatment (OLIVEIRA; SHEIHAM, 2003), the differences between conventional and implants dentures (HEYDECKE et al., 2003) or fixed prosthesis (SONOYAMA et al., 2002), and to evaluate third molar surgery (MCGRATH et al., 2003).

The important thing to observe is that these measures of Oral Health-related quality of life are important methods to evaluate how patients perceive their own buccal conditions and how these perceptions influence the quality of life. A person with worse buccal health-

related quality of life does not necessarily present poor buccal health conditions, but the conditions he/she presents is bad enough to worsen the quality of life. From this statement we can not say that the opposite is true. People with poor buccal conditions could present a good buccal health-related quality of life because buccal problems does not matter or are less important for these people.

The clinical examination is an important instrument that should always be together with OHQL measures in order to not sub or super estimate the results.

CONCLUSIONS

The methodology of buccal health related quality of life could be used in all population, in order to evaluate a public buccal programme, or in specific groups to evaluate a treatment or a new technique.

These measurements have validation and reliability proved in the literature. The validation is related to the self-perception of the buccal conditions and the reliability is observed between correlations inside each subscale or among each question. They are reported as being high at the literature.

There are some variables influencing the results and they must be very clear defined in order not to create wrong interpretations.

The good buccal health related quality of life does not mean the individual does not present buccal problems, it means that if these buccal problems are present, they do not affect the individual life style. In order to have a complete view of the buccal conditions of the patients and how these conditions affect daily life is extremely important to perform clinical examination in association with the OHRQoL measures.

RESUMO

Mudanças no conceito tradicional de saúde como a ausência de doença vem gradativamente sendo substituído também na odontologia, pois a saúde bucal não está somente relacionada a problemas dentários, mas também a problemas funcionais, sociais e psicológicos decorrentes das doenças bucais. Para a avaliação da saúde bucal por meio deste contexto foram desenvolvidos indicadores de qualidade de vida relacionados à saúde bucal. O objetivo deste artigo será descrever dois destes indicadores: Oral Health Impact Profile–OHIP e o

Geriatric (General) Oral Health Assessment Index – GOHAI. Cada um destes métodos apresenta diferenças e são aplicados a populações e situações específicas. Por outro lado, ambos métodos são baseados em questionários de autopercepção dos pacientes. Estes questionários são indicadores de qualidade de vida importantes para desenvolver ações preventivas e educativas para a população.

PALAVRAS-CHAVES: Saúde Bucal; qualidade de vida; percepção de saúde bucal

REFERENCES

1. ATCHISON, K. A.; DOLAN T. A. Development of the geriatric oral health assessment index. *J. Dent. Educ.*, v. 54, n. 11, p. 680-687, 1990.

2. GOLLETZ, D. et al. Dental care satisfaction: the reliability and validity of DSQ in a low-income population. *J. Public Health Dent.*, v. 55, n. 4, p. 210-217, 1995.

3. HAY, K. D. et al. Quality of life and nutritional studies in Sjogren's syndrome patients with xerostomia. *New Zeal Dent. J.*, v. 97, n. 430, p. 128-131, Dec. 2001.

4. HEFT, M. W. et al. Relationship of dental status, sociodemographic status, and oral symptoms to perceived need for dental care. *Community Dent Oral Epidemiol.*, v. 31, p. 351-360, 2003.

HEYDECKE, G. et al. Oral and general health-related quality of life with conventional and implant dentures. *Community Dent. Oral Epidemiol.*, v. 31, p. 161-168, 2003.

5. JOKOVIC, A. et al. Measuring parental perceptions of child oral health-related quality of life. *J. Public Health Dent.*, v. 63, n. 2, p. 67-71, 2003.

6. KRESSIN, N. R. et al. Is negative affectivity associated with oral quality of life? *Community Dent. Oral Epidemiol.*, v. 29, p. 512-23, 2001.

7. LOCKER, D. Measuring oral health: a conceptual framework. *Community Dent. Health*, v. 5, p. 3-18, 1988.

8. LOCKER, D.; SLADE, G. Oral health and quality of life among older adults: the oral health impact profile. *J. Can. Dent. Assoc.*, v. 59, n. 10, p. 830-844, Oct. 1993.

9. LOCKER, D. et al. Self-perceived oral health status, psychological well-being, and life satisfaction in an older adult population. *J. Dent. Res.*, v. 79, n. 4, p. 970-975, 2000.

10. LOCKER, D. et al. Comparison of the GOHAI and OHIP-14 as measures of the oral health-related quality of life of the elderly. *Community Dent. Oral Epidemiol.*, v. 29, p. 373-81, June 2001.

11. LOCKER, D. et al. Oral health-related quality of life of a population fo medically compromised elderly people. *Community Dent Health*, v. 19, n. 2, p. 90-97, June 2002.

12. MASSALU, J. R. et al. Applicability of an abbreviated version of the oral impacts on daily performances (OIDP) scale for use among Tanzanian students. *Community Dent. Oral Epidemiol.*, v. 31, p. 7-14, 2003.

13. MCGRATH, C. et al. Changes in life quality following third molar surgery – the immediate postoperative period. *British Dent. J.*, v. 194, n. 5, p. 265-268, 2003.

14. NEWTON, J. T. et al. The self-assessed oral health status of individuals from with, Indian, Chinese and black caribean communities in south-east England. *Community Dent. Oral Epidemiol.*, v. 31, p. 192-199, 2003.

15. OLIVEIRA, C. M.; SHEIHAM, A. The relationship between normative orthodontic treatment need and oral health-related quality of life. *Community Dent Oral Epidemiol*, v. 31, p. 426-436, 2003.

16. PETERSEN, P. E. The world oral health report 2003: continuous improvement of oral health in the 21st century – the approach of WHO global oral health programme. *Community Dent. Oral Epidemiol.*, supl. 1, v. 31, p. 3-24, 2003.

17. SILVA, S. C. R.; FERNANDES, R. A. C. Autopercepção das condições de saúde bucal por idosos. *Rev. Saúde Pública*, v. 35, n. 4, p. 349-355, 2001.

18. SLADE, G. D.; SPENCER, A. J. Development and evaluation of the oral health impact profile. *Community Dent. Oral Epidemiol.*, v. 11, n. 1, p. 3-11, 1994.

19. SLADE, G. D. Derivation and validation of a short-form oral health impact profile. *Community Dent. Oral Epidemiol.*, v. 25, n. 4, p. 284-290, 1997.

20. SONOYAMA, W. et al. Quality of life assessment in patients with implant-supported and resin-bonded fixed prothesis for bounded edentulous space. *Clin. Oral Impl. Res.*, v. 13, p. 359-364, 2002.

21. STÄHLNACKE, K. et al. Perceived oral health: changes over 5 years in one Swedish age-cohort. *Community Dent. Oral Epidemiol.*, v. 31, p. 292-299, 2003.

22. TUBERT-JEANNIN, S. et al. Validation of an oral health quality of life index (GOHAI) in France. *Community Dent. Oral Epidemiol.*, v. 31, p. 275-284, 2003.

23. WILSON, I. B.; CLEARY, P. D. Linking clinical variables with health related quality of life. *J. Amer. Med. Assoc.*, v. 273, n. 1, p. 59-65, 1995.

24. WONG, M. C. et al. Validation of a Chinese version of the oral health impact profile (OHIP). *Community Dent. Oral Epidemiol.*, v. 30, p. 423-430, 2002.

25. WORLD HEALTH ORGANIZATION. International classification of functioning, disability and health. On line at: <http://www.who.int>. Accessed in: 3 Dec. 2003.