

# Oral health related to quality of life in patients with stomatological diseases

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## SUMMARY

*Aim.* To describe the oral health-related quality of life (OHR-QoL) in patients with stomatological diseases.

*Methods.* All new patients seen in the Stomatology Clinic, from August 2008 to July 2009 were selected. OHR-QoL was measured using OHIP-14, in face-to-face interviews. The stomatological diseases were classified into groups according to their origin. OHIP-14 data were used to calculate two variables: prevalence and severity.

*Results.* The questionnaire was completed by 113 subjects, with a mean of 53.77 years; 63.7% women; 38% of the subjects reported one or more OHR-QoL impacts “fairly often” or “very often” in the last 6 months. The overall result of OHIP-14 index showed a mean of 14.35 (+/-12.01). There was no statistical significance between the stomatological disease groups and the prevalence scores ( $p=0.25$ ) and mean severity scores ( $p=0.57$ ).

*Conclusions.* It seems that bad oral conditions affected quality of life of these patients, especially physical pain and psychological discomfort.

**Key words:** oral health, quality of life, oral diseases.

## INTRODUCTION

In 1994, the World Health Organization, defined Quality of Life (QoL) as “the individual’s perception of his or her position in life, within the cultural context and value system he or she lives in, and in relation to his or her goals, expectations, parameters and social relations” (1). This is a wide concept affected by a person’s physical health, psychological state, socio-economic status, access to health services and education, and other factors.

People’s notion of QoL is closely related to their health status. The concept of health is being changed by a multidimensional concept, and the concept of oral health has undergone similar development. Quality of life, including daily function and well

being, is considered to comprise important dimensions that should be assessed during diagnostic, interventions and treatments procedures (2).

In acknowledging general health and oral health as multidimensional concepts and as essential factors in QoL, the patient’s view has been considered imperative. The use of subjective measures has become increasingly important in general health and oral health assessment(3). Many oral health related quality of life (OHR-QoL) measures have been developed to assess the functional, psychological and social impacts of oral diseases and disorders, also called stomatological diseases (2, 4-6).

Theoretical models have proposed that oral diseases and disorders may compromise the physical and psychosocial functioning of the individual, leading to a negative oral health perception that may compromise overall QoL (4,5). Studies conducted throughout the world have evaluated these oral health-related QoL measures in the context of the general population (7) and the elderly (8, 9). In the last few years, increasing numbers of studies have assessed the impact of oral diseases on OHR-QoL in specific conditions such as: temporomandibular disorders (10, 11), periodontal disease(12,

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13), stomatological diseases (14) oral cancer (15, 16), lesions associated with HIV (17) and burning mouth syndrome (18, 19), and the majority of these researches have revealed that such conditions are related to worse OHR-QoL.

When assessing the impact of stomatological disease on OHR-QoL, Llewellyn and Warnakulasuriya (2003) (14) demonstrated that patients suffering from oral diseases reported significantly lower OHR-QoL, and the presence of stomatological disease was associated with higher levels of functional limitation, physical pain and psychological discomfort than found in the general population. In the Brazilian context, there is no literature describing the impact of different stomatological disease groups on OHR-QoL. Describing the impacts of oral health in a subjective concept such as Quality of Life, might be considered an important dimension that should be assessed during oral health diagnostic, interventions and treatments procedures.

The Oral Health Impact Profile (OHIP), in both the long (OHIP-49) (20) and short forms (OHIP-14) (21), is one of the most commonly used instruments to evaluate the impact of different oral disorders on well-being. It was developed by Slade and Spencer in 1994 (20), and it contains seven dimensions that are based on Locker's theoretical model of oral health (22). The dimensions are: functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability and handicap. These dimensions are hierarchically ordered to capture outcomes that have an increasingly disruptive impact on people's lives (21).

The aim of this study was to describe the oral health-related quality of life (OHR-QoL) in subjects diagnosed with stomatological diseases, using the OHIP-14, among patients of the Stomatology Ambulatory of the University Hospital, Federal University of Santa Catarina, Brazil.

## METHODS

### Study Design

This was a cross-sectional study in design. All new patients referred to or seeking treatment at the Stomatology Ambulatory clinic of the University Hospital of the Federal University of Santa Catarina during the period from August 2008 to July 2009 were selected to take part in this study. Patients lacking the cognitive capacity to answer a questionnaire and were under 18 years old were excluded.

Patients are referred to this clinic either by their general practitioner (primary health care) or from

other public health services. This is the only public service in the State of Santa Catarina for the treatment of stomatological diseases.

This study was reviewed and approved by the Ethics Committee of the Federal University of Santa Catarina (Process number 178/2008). All patients read, understood and signed an informed consent form and received free and unconditional treatment, if necessary.

### Data Collection

Immediately after the initial stomatological consultation, data were collected in face-to-face interviews, held by only one previously trained and calibrated interviewer, who gave the patient detailed information about the study. Patients' records were consulted to gain information on age, sex, medications, general health problems and the diagnosis made of their oral conditions. The diagnosis was based on the attending consultant's clinical judgment and refined where necessary with the aid of special investigations including hematological and image exams and biopsy.

OHR-QoL was measured using the OHIP-14 form validated and translated to Portuguese (23) based on the original reduced version of the OHIP (21). This measure contains seven dimensions (functional limitation, physical pain, psychologi-

**Table 1.** Classification of stomatological diseases analyzed in the study

Classification of the stomatological diseases	
Group 1	Infectious diseases
Group 2	Reactive lesions, development anomalies and sensorial complaints
Group 3	Cysts and tumors of the jaws
Group 4	Auto immune disease
Group 5	Lesion with malignant potential
Group 6	Benign and malignant mucosal tumors

**Table 2.** Sample Characteristics: gender, use of medicines, systemic disease and earlier demand for oral health (OH) assistance (n=113)

Sample Characteristics	n	%	
Gender	Fem.	72	63.7
	Male	41	36.3
Use of medicines	N	47	41.6
	Y	66	58.4
Systemic Diseases	N	43	38.0
	Y	61	54.0
	Don't Know	9	8.0
Earlier demand for OH assistance	N	26	23.0
	Y	87	77.0

cal discomfort, physical disability, psychological disability, social disability and handicap), whose hierarchy captures outcomes that have a gradually more disruptive impact on one's life. Questions about functional limitation, physical pain and psychological discomfort capture impacts that would be apparent primarily to the individual. Questions in the disability dimension refer to impacts on everyday activities, and handicap represents the extent of disadvantage caused by oral health (22).

For each OHIP-14 question, the respondents were asked, how frequently they had experienced the impact in the last month. Responses were made on a five-point Likert scale, which was coded as follows: 4 (very often), 3 (fairly often), 2 (occasionally), 1 (hardly ever), 0 (never). In order to minimize the possibility of memory playing an important role in the process of choosing the answers (remembering only the first or last response), the interviewer showed a card with all possible answers to each interviewee and read them aloud, without using the alternative answer I don't know.

The final score was obtained by summing the response codes to the 14 items comprising the measure. Consequently, the OHIP-14 scale ranged from 0 to 56, with higher scores indicating poorer OHR-QoL.

The stomatological diseases were classified in groups according to their origin to allow the statistical analysis (Table 1).

### Statistical Analysis

OHIP-14 data were used to calculate two summary variables: prevalence and severity. Prevalence was considered the percentage of participants reporting one or more scores 4 ("very often") and 3 ("fairly often"). Severity was considered the sum of the response scores for the 14 items (0-56). Descriptive analysis was performed by gender, use of medicines, systemic disease and earlier demand for oral health (OH) assistance, as independent variables.

Associations between OHIP-14 impacts and independent variables were tested using Pearson Chi-Square test with Continuity Correction and Kruskal-Wallis test. Severity scores were dichotomized considering the median score (14), classifying the OHR-QoL impacts as "high" and "low".

Data were analyzed using SPSS® 17.0 (SPSS Inc., Chicago, IL, USA) and GraphPadInstat® 3.06 (GraphPad Software Inc., La Jolla, CA, USA) statistical packages.

## RESULTS AND DISCUSSION

**Table 3.** Prevalence values and Mean Scores per item of OHIP-14 (n=113)

Items	Dimensions	Prevalence (%)	Mean Score (0 to 4) ±SD
<b>Functional limitation</b>			
1.	Had trouble pronouncing words	13.3	1.04±1.28
2.	Felt that sense of taste had worsened	15.0	0.83±1.36
<b>Physical pain</b>			
3.	Had painful aching in mouth	15.9	1.04±1.33
4.	Was uncomfortable when eating foods	31.9	1.58±1.60
<b>Psychological discomfort</b>			
5.	Has been feeling self conscious	25.7	1.67±1.44
6.	Has felt tense	25.7	1.57±1.43
<b>Physical disability</b>			
7.	Diet has been unsatisfactory	22.1	1.22±1.52
8.	Has had to interrupt meals	8.0	0.57±1.08
<b>Psychological disability</b>			
9.	Finds it difficult to relax	15.0	0.94±1.35
10.	Has been a bit embarrassed	23.0	1.47±1.55
<b>Social disability</b>			
11.	Has been irritable with other people	11.5	0.74±1.25
12.	Has had difficulty during usual jobs	8.0	0.48±1.05
<b>Handicap</b>			
13.	Has found life less satisfying	15.0	0.88±1.36
14.	Has been totally unable to function	4.4	0.35±0.92

A total of 122 new patients attended the Stomatology Ambulatory during the recruitment period. Six of them were excluded because they were under 18 years old and three declined to participate in the study, leaving 113 subjects who completed the questionnaire.

Their age-range was from 20 to 83 years, with a mean of 53.77±15.82 years. Further characteristics of the sample, such as gender, use of medicines, systemic disease and earlier demand for oral health assistance, are shown in Table 2.

Patients were classified according to predetermined groups of stomatological diseases. Most of the subjects, 51 (45%) belonged to Group 2, 17 (15%) were classified in Group 6; 16 (14%) Group 1; 12 (10.6%) Group 4; 5 (4.4%) Group 5; and 4 (3.5%) in Group 3. It was not possible to deter-

mine the diagnosis of 8 (7%) patients at the time of data collection.

The internal consistency of the OHIP-14 was calculated in this study by Cronbach’s alpha test, resulting  $\alpha=0.89$ .

Overall, 38% of the subjects reported one or more impacts “fairly often” or “very often” in the last six months. The items that presented higher prevalence were “uncomfortable when eating foods” (31.9%), “feeling self conscious and tense” (25.7%), and “being embarrassed” (23%), as seen in Table 3. The higher mean scores in each item are in agreement with the prevalence values.

The overall result of OHIP-14 index, which expresses the severity of impact of OHR-QoL on subjects showed a mean of 14.35 ( $\pm 12.01$ ). These scores could range from 0 to 56. The prevalence and severity values by gender, use of medicines, systemic disease and earlier demand for oral health assistance are shown in Table 4.

The prevalence e severity scores of OHIP-14 were higher in participants who were affected by a systemic disease, however the association was statistically significant only for prevalence scores. Although there were no statistically significant differences in prevalence and severity scores by gender, use of medicines and earlier demand for oral health assistance, there were subtle differences for both summary variables of OHIP-14.

Table 5 presents the results of prevalence and severity in the six groups of stomatological disease. There was no statistical significance between the stomatological disease groups and the prevalence scores ( $p=0.25$ ) and mean severity scores ( $p=0.57$ ). In Group 5, which included participants diagnosed with some lesion with malignant potential, the highest prevalence and mean severity scores of OHIP-14 were observed. On the other hand, no percentage of respondents reporting one or more impacts of items 3 and 4 was observed in Group 3, those diagnosed with cysts and tumors of the jaws. This group had the lowest severity scores.

The assessment of OH-QoL is a complex and subjective issue involving the overall and specific evaluation of some life dimensions, such as pain, chewing, speech, social contact and psychological aspects(3, 15).Considering the results of Oliveira and Nadanovisky (2005) (23), who investigated the psychometric properties of the Brazilian Version of OHIP-14, face-to-face interview was chosen as a data collection method and the use of a response card in order to guarantee the reliability of answers. Nevertheless, it was observed that the participants had some difficulties in choosing the intermediate

answers 1, 2 and 3. In addition, codes 4 and 0 were easily identified. Consequently, the OHIP has limitations in showing evidence of subtle variations in the impact of OH-QoL. The addition of global ratings of oral health-related quality of life and quality of life may help to understand the negative consequences of oral disorders (2).

In this survey, OH-QoL was evaluated in patients with stomatological diseases, who sought treatment at a reference public service. The majority of them had previously consulted another general practitioner. It was observed that these subjects usually felt insecure and tense about their diagnosis. The data was collected in the context of the first appointment, when the diagnosis was not concluded and treatment had not yet been established.

The results showed a moderate impact of stomatological diseases on OH-QoL, when analyzing the OHIP-14 severity (14.35 of a range 0-56) and prevalence (38%) scores. Some studies in the general population, have usually demonstrated low impact of OH-QoL(3, 4, 14). Whereas, studies focused on OH-QoL in specific oral disorders and diseases, such as oral cancer, burning mouth

**Table 4.** Prevalence and severity according gender, use of medicines, systemic disease and earlier demand for oral health (OH) assistance (n=113)

		n	Prevalence %	Severity (mean score)
Gender	Fem.	72	36.1	15.15
	Male	41	41.4	12.95
Use of medicines	N	47	27.6	12.98
	Y	66	45.4	15.33
Systemic Diseases	N	43	23.2*	13.05
	Y	61	49.1	15.41
	Don't Know	9	33.3	13.44
Earlier demand for OH assistance	N	26	38.4	12.69
	Y	87	37.9	14.85

\*  $p<0.05$

**Table 5.** Prevalence and Severity values according the Stomatological disease groups (n=105)

Stomatological Diseases	n	Prevalence %	Mean Score (0 to 4) +/- SD
Group 1	16	37.5	15.5 $\pm$ 15
Group 2	51	35.2	13.01 $\pm$ 11.33
Group 3	4	0	11.25 $\pm$ 4.57
Group 4	12	33.3	18.66 $\pm$ 11.49
Group 5	5	80	20.2 $\pm$ 17.79
Group 6	17	41.1	11.29 $\pm$ 9.88

syndrome, TMD, dentine hypersensitivity and the presence of oral mucosal lesions in dermatological patients have revealed higher impacts scores(2, 10, 11, 15, 16, 25-27).

Data also revealed the greatest negative impact on QoL was perceived because of physical pain, followed by the dimensions of psychological discomfort and psychological disability. These findings are in agreement with other studies in the literature(9, 10, 14, 17). Llewellyn and Warnakulasuriya (2003) (14) suggested that oral conditions have a direct impact on patients and are not merely pathological aberrations of importance only to clinicians. Considering the characteristics and multiplicity of signs and symptoms of stomatological diseases, discomfort in chewing and swallowing, including soreness are the first functions affected. Moreover, psychological discomfort represented by the sensation of feeling worried and tense was prevalent in patients seeking treatment during their first appointment, without knowing their diagnosis and prognosis. In the same way, the mouth is commonly related to appearance and social contacts. Thus, oral lesions affecting these two aspects may cause embarrassment when they are located in the lips or perioral sites.

Although there was a moderate OH-QoL impact, it was not associated with the classification and severity of the stomatological diseases. In spite of the classification having considered the differences in the seriousness, etiology, chronicity and outcomes of the diseases, the patients constituted a heterogeneous group from their socio-demographic and cultural aspects. These differences influenced their self-perception of oral health status and its impact on QoL and daily activities. The impact of OH-QoL results from a set of subjective factors, including people's expectations, oral health self-perception and satisfaction, and individual adaptability(5, 9).

Not surprisingly, the patients who had systemic diseases presented higher OH-QoL impact. According to Kieffer and Hoogstraten (2008) (3), the theoretical basis of this finding is related to the relationship between OH and QoL. The authors con-

cluded the connection between these two concepts is strongly established when subjects had particular health conditions, such as chronic diseases.

In addition, the patients included in Group 5, who were diagnosed with some lesion with malignant potential, presented higher OH-QoL impact. This group of diseases commonly does not cause a painful sensation, however, it can be assumed that these patients were worried about the prognosis, because they had become aware of the possible outcome.

Some limitations should be considered. Due to the specific characteristics of the sample, these results must be analyzed carefully in relation to generalizability and transposition of data. The sample size was determined by the time expended during data collection. The results must be interpreted carefully, especially those from groups 3 and 5, since there were few participants diagnosed under these categories. Although, there was good adherence of the participants, a few of the charts were not completed as regards indicating the diagnosis.

The prevalence and severity scores of OHIP-14 were high in this sample group, attended at a public stomatological reference service.

Stomatological diseases in some ways disturb daily life activities. The OHIP dimensions of physical pain and the perception of subjective discomfort were considered the most affected in the quality of life of this group of patients. Because of the subjective aspects that are involved in health and QoL concepts, the OHIP had limitations in showing evidence of subtle variations in the impact of OH-QoL.

## CONCLUSIONS

Although there was no significant association between OH-QoL and the results of groups of stomatological diseases, it seems that bad oral conditions, such as those focused on in this study, disturbed daily life activities, especially when related to the sensation of physical pain and psychological discomfort.

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