

Oral health related quality of life

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Abstract

Diseases and disorders that damage the mouth and face can disturb well-being and his self-esteem. Oral health-related quality of life (OHRQOL) is a relatively new but rapidly growing notion. The concept of OHRQOL can become a tool to understand and shape not only the state of clinical practice, dental research and dental education but also that of community at large. There are different approaches to measure OHRQOL; the most popular one is multiple item questionnaires. OHRQOL should be the basis for any oral health programme development. Moreover, research at the conceptual level is needed in countries where OHRQOL has not been previously assessed, including India.

Key words: Health, indices, oral health related quality of life, oral health

BACKGROUND

In the preamble of its constitution, the World Health Organization (WHO) states “Health is a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity.”^[1] Recent developments in the definition of health and measurement of health status have little impact on dentistry. The dental profession has remained narrowly clinical in its approach to oral health equating health with disease. This is the reason why dentistry has remained immune to this broadening concept of health. So now it is important to know that quality of life (QOL) measures are not a substitute of measuring outcomes associated with the disease, but are adjunct to them.^[2]

Oral health related quality of life (OHRQOL) is a relatively new, but rapidly growing phenomenon, which has emerged over the past 2 decades. Slade and others

identified the shift in the perception of health from merely the absence of disease and infirmity to complete physical, mental, and social well-being, the definition of the WHO. This shift happened in the second half of the 20th century and it was the result organization (WHO) as the key issue in the conception of health related quality of life (HRQOL) and subsequently OHRQOL a “silent revolution” in the values of highly industrialized societies from materialistic values that concentrate on economic stability and security to values focused on self-determination and self-actualization.^[3]

It is evident from the literature that the notion of OHRQOL appeared only in the early 1980s in contrast to the general HRQOL notion that started to emerge in the late 1960s. One explanation for the delay in the development of OHRQOL could be the poor perception of the impact of oral diseases on QOL. Only 40 years ago, researchers rejected the idea that oral diseases could be related to general health. Davis asserted that apart from pain and life-threatening cancers, oral disease does not have any impact on social life and it is only linked with cosmetic issues.^[4] Likewise, others have argued that dental disease was one of the frequent complaints such as headache, rash, and burns that were perceived as unimportant problems^[5] that rarely contributed to the classic “sick role” and therefore should not be an excuse for exemption from work.^[6] Later, in the late 1970s, the OHRQOL concept

Access this article online	
Quick Response Code:	Website: www.jispcd.org
	DOI: 10.4103/2231-0762.115700

started to evolve as more evidence grew of the impact of oral disease on social roles.^[7-10]

Clearly, clinical indicators of oral diseases such as dental caries or periodontal diseases were not entirely suitable to capture the new concept of health declared by WHO, particularly the aspects of mental and social well-being. This has created a demand for new health status measures, in contrast to clinical measures of disease status. As a result, researchers started to develop alternative measures that would evaluate the physical, psychological, and social impact of oral conditions on an individual. These alternative measures are in the form of standardized questionnaires.^[11]

CONCEPT OF OHRQOL

The concept of “OHRQOL” captures the aim of new perspective i.e., the ultimate goal of dental care mainly good oral health. According to the US Surgeon General, oral disease and conditions can “...undermine self-image and self-esteem, discourage normal social interaction, and cause other health problems and lead to chronic stress and depression as well as incur great financial cost. They may also interfere with vital functions such as breathing, food selection eating, swallowing and speaking, and with activities of daily living such as work, school, and family interactions”.^[12] People assess their HRQOL by comparing their expectations and experiences.^[13]

QOL is a highly individual concept. Mount and Scott likened the assessment of it to assessing the beauty of rose: No matter how many measurements are made (Ex-color, Smell, Height, etc.) the entire beauty of the rose is never captured. QOL that are important to an individual, although systems in which patient specify at least some of the qualities are likely to come closest. Florence Nightingale was one of the first clinician to insist on measures the outcome of care to evaluate treatment.^[2]

Definition

OHRQOL as “a multidimensional construct that reflects (among other things) people’s comfort when eating, sleeping, and engaging in social interaction; their self-esteem; and their satisfaction with respect to their oral health.”^[14]

OHRQOL is associated with:^[15] Functional factors, Psychological factors, Social factors, and Experience of pain or discomfort [Figure 1].

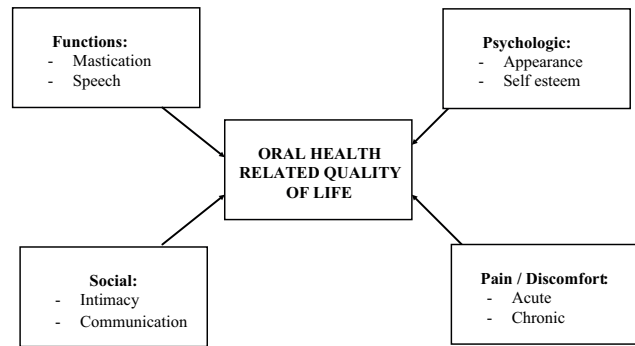


Figure 1: Factors associated with oral health related quality of life

Uses of quality of life measures in clinical practice

- Identifying and prioritizing problems
- Facilitating communication
- Screening for hidden problems
- Facilitating shared clinical decision making
- Monitoring changes/responses to treatment.^[15]

Properties needed by measures used in clinical practice

- Validity
- Appropriateness and acceptability
- Reliability
- Responsiveness to change
- Interpretability.^[15]

Indices used to measure OHRQOL

For the public health purposes, oral health can be quantified at the macro level using the societal measures of oral conditions, which demonstrate that oral disease creates a substantial burden of illness, particularly among disadvantaged groups. The OHRQOL is a multidimensional concept that is capturing people’s perception about factors that are important in their day today life. The need to develop patient centered measures of oral health status was first recognized by Cohen and Jago.^[7] Fundamentally, there are three categories of OHRQOL measure as indicated by Slade.^[16] These are social indicators, global self-ratings of OHRQOL and multiple items questionnaires of OHRQOL. Briefly, social indicators are used to assess the effect of oral conditions at the community level. Typically, large population surveys are carried out to express the burden of oral diseases on the whole population by means of social indicators such as days of restricted activities, work loss, and school absence due to oral conditions. While social indicators are meaningful to policy-makers, they have limitations in assessing OHRQOL. For example, using work loss to measure the impact of oral diseases is not an appropriate indicator for those who are not working.

Global self-ratings of OHRQOL, also known as

single-item ratings, refer to asking individuals a general question about their oral health. Response options to this global question can be in a categorical or visual analog scale (VAS) format. For example, a global question asking: “How do you rate your oral health today?” can have categorical responses ranging from “Excellent” to “Poor” or VAS responses on a 100 mm scale.

Multiple items questionnaires are the most widely used method to assess OHRQOL. Researchers have developed QOL instruments specific to oral health and the number continues to grow rapidly to comply with the demand of more specific measures. In

addition, these measures can be classified into generic instruments that measure oral health overall versus specific instruments. The latter can be specialized to measure specific oral health dimensions such as dental anxiety^[17] or conditions such as head and neck cancer^[18] or dentofacial deformity^[19] or to assess specific populations such as denture impact on nutritional status of aged population^[20] or children.^[21]

Furthermore, OHRQOL instruments vary widely in terms of the number of questions (items), and format of questions and responses. Ten OHRQOL instruments that have been thoroughly tested to assess their psychometric properties such as reliability, validity, and responsiveness were presented at the First International Conference on measuring oral health.^[22] Different measures of OHRQOL with their author name and year^[23] is shown in Table 1 whereas Table 2 shows different Oral health related quality of life questionnaires.^[11]

Table 1: Name of measures with their authors name and year

Authors	Name of measure
Cushing <i>et al.</i> , 1986	Social impacts of dental disease
Atchison and Dolan, 1990	Geriatric oral health assessment index
Strauss and Hunt, 1993	Dental impact profile
Slade and Spencer, 1994	Oral health impact profile
Locker and Miller, 1994	Subjective oral health status indicators
Leao and Sheiham, 1996	Dental impact on daily living
Adulyanon and Sheiham, 1997	Oral impacts on daily performances
McGrath and Bedi, 2000	OH-quality of life UK

OH = Oral health

Importance of QOL measurement

Most studies that evaluate changes in the oral health status of individual subjects and populations have been based on the clinical indicators of disease; there are relatively few evaluation studies on health and

Table 2: Oral health related quality of life questionnaires

Instrument	Dimensions measured	No. of question	Response format
Social dental scale	Chewing, talking, smiling, laughing, pain appearances	14	Yes/no
RAND dental health index	Pain, worry, conversation	3	4 categories; “not at all” to “a great deal”
General oral health assessment index	Chewing, eating, social contacts, appearance, pain, worry, self-consciousness	12	6 categories; “always-never”
Dental impact profile	Appearance, eating, speech, confidence, happiness, social life, relationships	25	3 categories; good effect, bad effect, no effect
Oral health impact profile	Function, pain, physical disability, social disability, handicap	49	5 categories; “very often-never”
Subjective oral health status indicators	Chewing, speaking, symptoms, eating, communication, social relations	42	Various depending on question format
Oral-health quality of life inventory	Oral health, nutrition, self-related oral health, overall quality of life	56	Part A: 4 categories “not at all” to “a great deal” Part B: 4 categories “unhappy-happy”
Dental impact on daily living	Comfort, appearance, pain, daily activities, eating	36	Various depending on question format
Oral health related quality of life	Daily activities, social activities, conversation	3	6 categories; “all of time” to “none of the time”
Oral impacts on daily performances	Performance in eating, speaking, oral hygiene, sleeping, appearance emotion	9	Various depending on question format

RAND = The short form (36) Health survey is a survey of patient health, The SF-36 is a measure of health status and is commonly used in health economics as a variable in the quality-adjusted life year calculation to determine the cost-effectiveness of a health treatment, The original SF-36 came out from the Medical outcome study, MOS, done by the RAND Corporation. Since then a group of researchers from the original study released a commercial version of SF-36 while the original SF-36 is available in public domain license free from RAND. The SF-36 and RAND-36 include the same set of items that were developed in the Medical Outcomes Study. Scoring of the general health and pain scales is different, however, The differences in scoring are summarized by Hays, Sherbourne, and Mazel (Health Economics, 2: 217-227, 1993). RAND name originated as a contraction of research and development

welfare from the subject's perception.^[24] Over the last 30 years, the use of socio-dental indicators in oral epidemiology has been widely advocated, because single measures of clinical disease do not document the full impact of oral disorders.^[25,26] These indicators were constructed and tested in epidemiological studies on different populations to build a more concrete relationship between subjective and objective oral health measures, which would help to estimate the real population needs.^[26]

Several methods have been developed to minimize the complexity and social and cultural relative aspects of QOL as well as to provide indexes capable to capture data beyond the biological and pathological disease process. In general, health-related QOL can be determined by two approaches: The first includes an interpretative and qualitative explanatory method and the second, which is the most common approach is usually based on the questionnaires that emphasize the subject's perception on physical and psychological health and functional capacity.^[27]

The results obtained by using these instruments are usually reported as a score system, which indicates the severity of the outcome measures or oral diseases.^[28] Information on QOL allows the evaluation of feelings and perceptions in the individual level, increasing the possibility of effective communication between professionals and patients, better understanding of the impact of oral health on the lives of the subject and family, and measuring the clinical results of services provided.^[26]

In public health, QOL measurement is a useful tool to plan welfare policies because it is possible to determine the population needs, priority of care, and evaluation of adopted treatment strategies; thus helping in the decision making process.^[29] Regarding research, these measurement tools help to assess the outcomes of treatments or actions and further develop guidelines for evidence-based clinical practice.^[27]

OHRQOL to refocus dental education

Educating patient about good oral health promotion and preventive care will therefore be crucial. OHRQOL considerations can serve as a tool for bringing about these changes in the perspective of future clinician. Dental education aims at training future clinician, researchers, and administrators as well as future dental educators. OHRQOL is a crucial concept in professional lives of all these groups. It provides researchers with a chance to consider the larger perspective of how their research will ultimately serve point. It focuses clinician

on providing truly patient centered care, culturally competent and able to work from an interdisciplinary perspective. It can contribute to prioritizing the work of administrators and it can motivate dental educators by showing them the tremendous difference that their students can make in the lives of patients.^[15,26]

Research on OHRQOL: Current status and future directions

Research on QOL has gained interest and visibility in recent decades internationally. "How" we live and not just "how long" we live has increasingly become recognized as a central issue in health-care and health research. QOL assessment received heightened visibility with the release of the healthy people 2010 health promotion and disease prevention initiative. The first healthy people initiative was started in 1979 and focused mainly on changes in disease measures.

Current objectives of this initiative are to increase quality and years of healthy life and to eliminate health disparities.^[15]

Workshops on QOL outcomes assessment are;

Major research recommendations that arose from the workshop were,

- Oral health needs to be defined and conceptualized and appropriate operational measures need to be brought into systematic use
- More research needs to be conducted to conceptualized and measure oral health as a system contributing to total health
- Mediating and independent variable influencing oral health outcomes need to be thoughtfully considered
- An assessment of "Outcomes for whom" needs to be made to determine the nature and extent of indicators
- Methodological issues such as following need to be addressed, development of outcome measure for longitudinal studies; appropriateness of measures as influenced by the passage of time, sensitivity, specificity, reliability, and validity.^[15]

Specific research recommendations that focus on social, psychological, and economic impacts of oral conditions and treatment,

- Testing the sensitivity of generic health status indicators for persons with oral conditions and disorders
- Exploring whether generic instruments such as sickness illness profile could be modified for use in patients with oral conditions

- Addressing methodological problems as well as comparing responses to various subjective oral health indicators in the same population or patient groups
- Investigating relationships between clinical indicators of disease and subjective indicators measuring disease impact
- Assessing the value of subjective indicators in clinical trials of existing/new intervention/technologies
- Testing measures and indicators in populations of all ages.^[15]

CONCLUSION

The OHRQOL can provide the basis for any oral health-care program and it has to be considered one of the important element of the Global oral health program.^[30] Research on trends in dentistry and dental education shows that in future, fewer dentists will take care of the increasing number of patients. Therefore, educating these patients about promoting good oral health and preventive care will be crucial. Research also shows that certain population segments are drastically underserved. Dental education has to make a contribution if this situation is to change. Finally, with rapidly changing knowledge base and technology in all health-care fields, interdisciplinary considerations and collaborations become increasingly important. QOL measures are not only being used in population surveys, but also in randomized clinical trials, technology assessment in health-care and evaluation of health-care delivery systems. The perception of QOL has a subjective component and therefore varies from one culture to another. Therefore, research at the conceptual level is needed in countries where the OHRQOL has not been described, like India. This is a necessary step because adapting models developed and validated in other cultures could lead to inaccurate measurement of OHRQOL and may not address the important issues pertaining to Indian culture.

REFERENCES

1. Park K. Park's Text Book of Preventive and Social Medicine. 19th ed. M/S Banarsidas Bhanot Publishers; 2007, Jabalapur, India.
2. Higginson IJ, Carr AJ. Measuring quality of life: Using quality of life measures in the clinical setting. *BMJ* 2001;322:1297-300.
3. Gift HC, Atchison KA, Dayton CM. Conceptualizing oral health and oral health-related quality of life. *Soc Sci Med* 1997;44:601-8.
4. Davis P. Compliance structures and the delivery of health care: The case of dentistry. *Soc Sci Med* 1976;10:329-37.
5. Dunnell K, Cartwright A. Medicine takers, prescribes and hoarders. London: Routledge and Kegan; 1972.
6. Gerson LW. Expectations of "sick role" exemptions for dental problems. *J Can Dent Assoc (Tor)* 1972;38:370-2.
7. Cohen LK, Jago JD. Toward the formulation of sociodental indicators. *Int J Health Serv* 1976;6:681-98.
8. Bonito A, Bonito AJ, Iannacchoine V, Jones S, Stuart CA. Study of dental health-related process outcomes associated with prepaid dental care. Final Report: Part I. Research Triangle Park, North Carolina: Research Triangle Institute; 1984.
9. Cushing AM, Sheiham A, Maizels J. Developing socio-dental indicators: The social impact of dental disease. *Community Dent Health* 1986;3:3-17.
10. Ettinger RL. Oral disease and its effect on the quality of life. *Gerodontology* 1987;3:103-6.
11. Al Shamrany M. Oral health-related quality of life: A broader perspective. *East Mediterr Health J* 2006;12:894-901.
12. Rozier RG, Pahel BT. Patient- and population-reported outcomes in public health dentistry: Oral health-related quality of life. *Dent Clin North Am* 2008;52:345-65, vi-vii.
13. Carr AJ, Gibson B, Robinson PG. Measuring quality of life: Is quality of life determined by expectations or experience? *BMJ* 2001;322:1240-3.
14. DHHS Oral health in America: A report of the Surgeon General. Rockville, Maryland: US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institute of Health; 2000. p. 7.
15. Inglehart MR, Bagramian RA. Inglehart MR, Bagramian RA. Oral Health Related Quality of Life. Illinois: Quintessence Publishing Co. Inc.; 2002.
16. Slade GD. Oral health-related quality of life: Assessment of oral health-related quality of life. In: Inglehart MR, Bagramian RA, editors. Oral Health-Related Quality of Life. Illinois: Quintessence Publishing Co. Inc.; 2002.
17. McNeil DW, Rainwater AJ 3rd. Development of the Fear of Pain Questionnaire: III. *J Behav Med* 1998;21:389-410.
18. Terrell JE, Nanavati KA, Esclamado RM, Bishop JK, Bradford CR, Wolf GT. Head and neck cancer-specific quality of life: Instrument validation. *Arch Otolaryngol Head Neck Surg* 1997;123:1125-32.
19. Cunningham SJ, Garratt AM, Hunt NP. Development of a condition-specific quality of life measure for patients with dentofacial deformity: I. Reliability of the instrument. *Community Dent Oral Epidemiol* 2000;28:195-201.
20. Wöstmann B, Michel K, Brinkert B, Melchheier-Weskott A, Rehmann P, Balkenhol M. Influence of denture improvement on the nutritional status and quality of life of geriatric patients. *J Dent* 2008;36:816-21.
21. Jokovic A, Locker D, Stephens M, Kenny D, Tompson B, Guyatt G. Validity and reliability of a questionnaire for measuring child oral-health-related quality of life. *J Dent Res* 2002;81:459-63.
22. Slade GD, Strauss RP, Atchison KA, Kressin NR, Locker D, Reisine ST. Conference summary: Assessing oral health outcomes: Measuring health status and quality of life. *Community Dent Health* 1998;15:3-7.
23. Allen PF. Assessment of oral health related quality of life. *Health Qual Life Outcomes* 2003;1:40.
24. Locker D, Jokovic A. Three-year changes in self-perceived oral health status in an older Canadian population. *J Dent Res* 1997;76:1292-7.

25. Smith JM, Sheiham A. How dental conditions handicap the elderly. *Community Dent Oral Epidemiol* 1979;7:305-10.
26. Locker D, Miller Y. Evaluation of subjective oral health status indicators. *J Public Health Dent* 1994;54:167-76.
27. McGrath C, Broder H, Wilson-Genderson M. Assessing the impact of oral health on the life quality of children: Implications for research and practice. *Community Dent Oral Epidemiol* 2004;32:81-5.
28. Slade GD, Spencer AJ. Development and evaluation of the Oral Health Impact Profile. *Community Dent Health* 1994;11:3-11.
29. Seidl EM, Zannon CM. Qualidade de vida e saúde: aspectos 3. conceituais e metodológicos. *Cad Saúde Pública* 2004;20:580-8. Quality of life and health: Conceptual and methodological issues. *Cad Saude Publica* 2004;20:580-8.
30. Petersen PE. The World Oral Health Report 2003: Continuous improvement of the oral health in 21st century: The approach of the WHO Global Oral Health Programme. Geneva: World Health Organization; 2003. *Community Dent Oral Epidemiol*. 2003 Dec; 31 Suppl 1:3-23.

How to cite this article: Bennadi D, Reddy C. Oral health related quality of life. *J Int Soc Prevent Communit Dent* 2013;3:1-6.
Source of Support: Nil, **Conflict of Interest:** None declared.

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