REVIEW ARTICLE

A Brief Insight into Oral Health Related Quality of Life

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ABSTRACT

Oral diseases have long been a chief health concern globally and the commonest of chronic diseases that affect mankind. Oral diseases have an impact on an individual's quality of life, well-being, dialect and selection of food which is often associated with pain, discomfort, compromised mastication ability and affecting aesthetics. Moreover, recent studies suggest an association between poor oral health and systemic diseases such as diabetes, cardiovascular diseases, rheumatoid arthritis and osteoporosis, preterm low birth weight and chronic obstructive pulmonary disease . Hence oral health forms a vital component of general health and quality of life. Oral health-related quality of life (OHRQoL) that has gained rapid attention over the past few years' forms an integral part of general health that has important implications for the clinical practice of dentistry, dental research, and dental education. Given the fact that most of the oral diseases are not life threatening but can bring about evident changes in one's life, hence the concept of OHRQoL have been developed that attempts to answer the individual perception/daily limitations due to oral maladies. The paper discusses the OHRQoL tools, their advantages, challenges and suggestions for future research based on an appraisal of the scientific literature.

KEYWORDS: Oral Diseases, Oral Health, Oral Health-Related Quality Of life (OHRQoL)

INTRODUCTION

The domain around the concept of health changed when World Health Organization (WHO) defined Health as, "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity".[1] However, the standard for measurement of health has not been developed. The most commonly used descriptor of health has yet been mortality trends, life expectancy, and measurements of morbidity.[2] In an attempt to address broader aspects of health has resulted in the development of quality of life measurements. Quality of life (QoL) as defined by WHO states, "that an individual's perception of their position in life in the context of their culture and value systems and in relation to their goals, expectations, standards and concerns".[3]

The relevance of health-related quality of life has undergone quantum shift since the beginning of the 21st century. Health-related quality of life (HRQoL) is a multidimensional model comprising of five areas of interest: accessibility/feasibility, health awareness, functional status, functional deficit and life span. It speaks about the balance between how long and how well an individual lives.[4] It is now recognized as a valid parameter in patient assessment in nearly every area of physical and mental health, including oral health.

Oral disease predominately comprises of tooth decay and/or periodontal disease and its impact on individuals and society in terms of pain and distress, loss of function and compromised quality of life, is considerable.[5] Daves[6] et al (1976) proclaimed that apart from pain and life-threatening cancers, oral diseases are mainly of cosmetic concern without any impact on social life. It was later in the late 1980s OHRQoL concept started to evolve as more evidence grew of the impact of oral disease on general health.[7] Further, the Global Oral Health Program by WHO in 2003 emphasized on OHRQoL as an integral part of general health and well-being.[8] OHRQoL is defined as 'a multifaceted model that considers individual's comfort when eating, sleeping and engaging in social interaction; their self-esteem; and their satisfaction with respect to their oral health'.[9]

Clinical meters of oral disease such as tooth decay and gum disease cannot be applied to the new concept of health declared by WHO, especially aspects of mental and social well-being which has lead researchers to develop alternative measures, in the form of standardized questionnaire, that help evaluate the physical, emotional and societal impact of oral conditions on general health.[7]

Reisine[10] in his study (1980s) reported the social and psychological impact of the oral disease and the need for a comprehensive approach. The need to consider oral health as an integral part of general health, and the contribution of oral health to overall health-related QoL, has been stressed.

MODEL OF OHRQoL

Kressin[11] in brief, considers OHRQoL as "an impact of

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oral conditions on daily functioning". The model of OHRQoL attempts to quantify factors that determine oral health. It features an individual's subjective perspective about how his/her functional factors, psychological factors, social factors, and experience of pain/ discomfort in relation to orofacial concerns.

OHRQoL has become an important focus for assessing the impact of a range of oral conditions on an individual's quality of life and well-being together with the outcomes of clinical care, such as the effectiveness of treatment interventions.[12]

DETERMINANTS OF OHRQoL

Locker's (1988) conceptual model of oral health states that there are five consequences of oral disease - impairment, functional limitation, pain/discomfort, disability, and handicap which are sequentially related. Impairment (structural abnormality, e.g., edentulousness) leads to functional limitation (restrictions in body functions, e.g., difficulty chewing) and pain/discomfort (self-reports of physical and psychological symptoms), which, in turn, lead to disability (limitations in performing daily activities, e.g., unsatisfactory diet) and then to handicap (social disadvantage, e.g., social isolation). The Functional limitation may also lead directly to handicap.[4,12]

OH-QoL is explained by using the personal assessment of how the following factors affect a person's well being[3]:

- Functional factors
- Psychological factors (concerning the person's appearance and self esteem)
- Social factors (such as interaction with others)
- Experience of pain or discomfort

OH-QoL incorporates these four parameters and can be assessed when these parameters centered around orofacial concerns.[12] Similar models have been adapted by Patrick and Erikson[13] (1993), Wilson and Cleary[14] (1995); Barbosa and Gavião[15], (2008), the model focuses on health status, psychological well-being, functional status, oral-facial appearance and overall QoL. In addition these models identify the influence of environmental factors and accessibility to health care facility on oral health. An additional determinant of oral health has been incorporated, about the treatment expectations, as depicted in the given Figure 1.

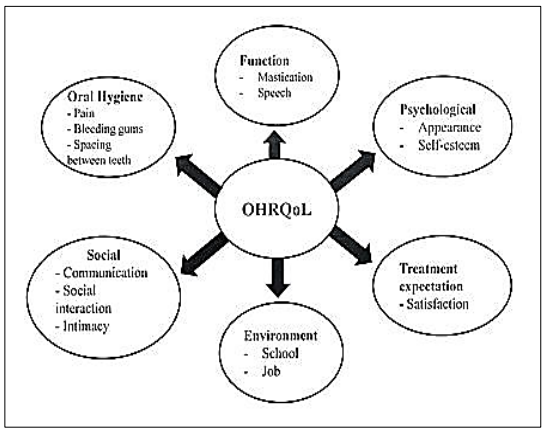

Figure 1: Determinants of OHRoL

SIGNIFICANCE OF EACH FACTOR

Oral health factor: The Surgeon General's report on "The Face of the Child"[16], highlights the significance of children's oral health on their general health and well-being and the overwhelming impact that oral health can have on children's QoL.[16,17] Several studies on diverse population comprising of patients with oral cancer, toddlers with early childhood caries[18], or children with craniofacial anomalies[19] are proven to have an impact on QoL. Hence OHRQoL has an obvious role in clinical dentistry which translates into the clinicians' claiming that they are not merely treating teeth and gums, but human beings.

Function factor: Discriminants of disease like the type, extent, diagnostic and treatment seeking group have also been utilized as determinants of OHRQoL. Research has revealed that ability to carry out routine masticatory function is hampered in individuals with low OHRQoL. For example, women with HIV[20], individuals with dental anxiety/fear[21] and individuals with periodontal disease[22] have lower OHRQoL compared with the general population.

Psychological factor: With increasing area of interest in health policies for health promotion and disease prevention, Health psychologists have identified optimism and resilience as psychological assests that correlate with person's QoL, as to how well she or he is capable of coping with the disease and poor health[23, 24]. This concept combines positive psychology with oral health that has far-reaching implications in health delivery, since coping and social connectedness have been associated with better immunity, health outcomes, and mortality[24].

Social factor: Since Cohen and Jago[25] (1976) first advocated the development of socio-dental indicators, efforts have been invested in developing instruments to measure OHRQoL[26, 27]. The subjective evaluation of OHRQoL is the result of an interaction between and among oral health conditions, social and contextual factors[28], and the rest of the body[29]. Studies have shown positive correlation that considers effects of oral health on social life, including self-esteem, social interaction and job performance, etc.

Environmental factor: Research based on epidemiological survey have examined the swing in OHRQoL (*e.g.*, tooth decay), identified human and environmental properties that affect OHRQoL (*e.g.*, income, education, etc.), and have aided in appraisal and health planning for population-based policy plans. OHRQoL is important because of its relation with oral health discrepency and access to care. Unfortunately,

socioeconomic and racial/ethnic oral health disparities constitute a major social problem[30].

Where developing countries have minimal dental health professionals, and rural area often lack facilities for dental services, in developed countries, treatment access is still limited by high costs and sometimes by transportation difficulties[31].

Treatment expectation factor: Recent studies on OHRQoL that used instrument such as the Child Oral Health Impact Profile (COHIP), tends to assess the impact of treatment (*e.g.*, satisfaction) on overall health and well-being among patients and the non-treatment seeking individuals,"[32] have shown positive correlation.

Assessment of OHRQoL allows for a shift from traditional medical/dental standards of assessment and treatment that focus on a person's social and emotional experience and physical functioning to aid in appropriate treatment goals and outcomes[33].

Tools to measure OHRQoL: Fitzpatrick[34] et al. (1992) put forth certain uses of OHRQoL measures as follows,

- Helps in treating and monitoring for psychosocial problems in individual patient care
- Population surveys of unknown health problems
- Medical audit
- Research of treatment outcomes in health services.
- Clinical trials
- Cost-utility analysis

There are three groups of instruments which may be used as standards of HRQoL measures[35,36]:

Generic measures - Generic measures do have uses in comparisons across populations and they have scope for use in economic evaluation but they have limited ability to capture the effects of certain interventions.

Utility measures - The use of these measures in clinical trials requires measurement of the patient's Quality of Life throughout the study. There are two fundamental approaches to utility measurement. One is to ask patients a number of questions about their function and to classify the patients into categories on the basis of their responses. The second approach is to ask patients to make a single rating of all aspects of their Quality of Life.

Specific measures - They focus on a particular condition, disease, population or problem. Their narrow focus means that they are potentially more responsive to small, but clinically relavent manifestation of health.

The need to develop patient oriented measures of oral health status was first recognized by Cohen and Jago[25]. Basically, there are three categories of OHRQoL measure as indicated by Slade[26]. These are a) social indicators, b) global self-ratings of OHRQoL and c) multiple items questionnaires of OHRQoL.

a) Social indicators: They are used to assess the effect of oral conditions at the community level with the help of surveys. Here large population surveys are carried out to assess the burden of oral diseases on the entire population with help of social indicators such as number of days of restricted activities, work loss, and absence from school due to oral conditions. Though social indicators are useful in policy-making, they have limitations in assessing OHRQoL. For example, using work loss is not an proper indicator for those not going out for work.

b) Global self-ratings of OHRQoL/ single-item ratings: here individuals are asked a general question about their oral health. The response options to this global question are in a categorical or visual analog scale (VAS) format. For example, a global question asking like, "How do you score your oral health today?" can present categorical responses ranging from "Excellent" to "Poor" or VAS responses on a 100 mm scale.

c) Multiple items questionnaires: is the most extensively followed method to evaluate OHRQoL. Nowadays researchers have developed QoL tools specific to oral health and ever since have grown rapidly to meet the demand of more specific measures. Currently, measures of oral health, overall versus specific instruments carried out by categorical generic instruments. The specific instruments are specialized to measure specific oral health conditions such as dental anxiety or conditions such as head and neck tumor or oral-facial deformity or assessment of specific populations such as, denture impact of dentures in aged population with compromised nutrition. Some of the currently accepted OHRQoL questionnaire[34] are mentioned in the Table 1.

Sl no	Authors Name and year	Name of Measure
1.	Cushing et al, 1986	Social Impacts of Dental Disease
2.	Atchison and Dolan, 1990	Geriatric Oral Health Assessment Index
3.	Strauss and Hunt, 1993	Dental Impact Profile
4.	Slade and Spencer, 1994	Oral Health Impact Profile
5.	Locker and Miller, 1994	Subjective Oral Health Status Indicators
6.	Leao and Sheiham, 1996	Dental Impact on Daily Living
7.	Adulyanon and Sheiham, 1997	Oral Impacts on Daily Performances
8.	McGrath and Bedi, 2000	OH-Qol UK

Table: Examples of currently available oral specific health status measures

ADVANTAGES

An OHRQoL approach have shown the following benefits 1) helps clinical practitioners in selecting treatments options and monitoring patient treatment outcomes; 2) aids researchers in identification of determinants of health, assessing levels of health risk factors, and determining use of services in populations; and 3) policy-makers establishing program and institutional priorities, policies, and funding decisions.[4]

CHALLENGES

Though the concept of OHRQoL has come into being from past couple of decades it is still in its budding stage. The core issues to be handled are 1) validated instruments for assessment of HRQoL in relation to OHRQoL remain insufficient. For instance, although the number of teeth is one of the measures of oral health status, individuals with

no teeth can in some cases chew much better than those with removable partial dentures. 2) The future challenges will be to implement knowledge and experiences in oral disease prevention and health promotion into action programs. 3) Meticulous action plan for inclusion of patient-driven measures, such as perceptions and functional status. 4) A theoretical framework from which concepts, measures and models can be driven must be developed to address oral health, oral health related quality of life, health and health related quality of life.

FUTURE RESEARCH SUGGESTIONS

The concept of Quality of Life that we need to focus on lies in the realistic science which is translational, and QoL assessments may be at the hub of evidence-based clinical trials. An enormous number of works has been done in the development of OHRQoL measures. However a number of further issues remain to be resolved or clarified.

1. Establishing standardized measure: The research community internationally should come together to build a strategy which helps to compare data.
2. Cross cultural significance of the consequences of oral disorders must be considered. Allison et al[37] explored this issue and reported that the nature and magnitude of impacts could vary between populations with different cultural backgrounds which can be an issue in national level population surveys.
3. Addressing issues of disparities in access to health care and treatment costs. Studies comparing QoL among treatment groups may aid in decision-making for patients, healthcare providers, and policymakers.
4. Encouraging oral health professionals to apply OHRQoL measures in their patients and enhance evidence-based care[38]
5. Assessments of health perceptions from patients and community- dwellers can increase our understanding of healthcare access, expectations, and treatment effectiveness.
6. To train future clinician, researchers, and administrators as well as future dental educators that will help shape OHRQoL care in future.

CONCLUSION

Evidence is of the fact that oral health influences the general wellbeing by affecting QoL of an individual. As a simple decayed tooth may cause impaired mastication, reduced appetite, sleep disruption and poor school/work performance. Our conventional methods of assessing oral health and treatment needs were based mainly on clinical indicators, whereas with recent knowledge of OHRQoL that considers patient oriented outcome accounts for the functional and psychosocial aspects of oral health and not merely treating dental maladies.

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