Does dentine hypersensitivity affect oral health-related quality of life?

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Dentine hypersensitivity is an oral complaint frequently reported in clinical dental practice. While many individuals do not seek treatment to desensitise their teeth because they do not perceive dentine hypersensitivity to be a severe oral health problem, a substantial number of patients experience discomfort to the extent that it interferes with their eating, drinking, oral hygiene habits and sometimes even breathing. These symptoms often have a considerable adverse impact on their daily quality of life (QoL). This article reviews the impairments of oral health related quality of life in patients seeking care for dentine hypersensitivity.

Traditionally, dentists have been trained to recognise & treat oral diseases & to describe them by using dental indices. Dental indices provide a quantitative method for measuring, scoring, and analysing dental conditions in individuals and groups. They describe the status of individuals or groups with respect to the condition being measured. However, important as these objective measures are, they only reflect the end-point of the disease processes. They give no indication of the impact of the disease process, especially oral disorder, on function or psychosocial well being, and only provide little insight into the impact on daily living and QoL.

Therefore, QoL research in medicine & dentistry has attracted increasing attention over the past years. QoL is defined as an individual’s perception of his or her position in life, in the context of the culture and value systems in which he or she lives and in relation to his or her expectations, goals and concerns. QoL has multiple dimensions (such as cultural factors, social integration, socio-economic status, quality of environment and personal autonomy). One dimension of QoL is health. The real impact of health and disease on QoL as health related quality of life (HRQoL). Oral health related quality of life (OHRQoL) is that part of HRQoL that focuses on oral health and orofacial concerns (Fig. 1). The concept of OHRQoL facilitates studying the impact of a disease on a person’s total oral health because it can be used across conditions. It describes the way in which oral health affects a person’s ability to function, his or her psychological status, social factors and pain or discomfort.

How to measure OHRQoL
OHRQoL is a multidimensional construct that cannot be observed directly. It needs to be visualised by means of suitable indicators. In order to comprehend a construct like this, target persons, that is patients, have to be asked pertinent questions. For example, some questions focus on function, some are concerned with pain and discomfort, and others evaluate self-image and social interaction. The Oral Health Impact Profile (OHIP) is amongst the most widely used instrument in studies evaluating OHRQoL. It attempts to measure both the frequency and severity of oral problems on functional & psychosocial well being. This tool was developed by Slade and Spener in Australia in 1994.

The OHIP is a 49-item measure, with statements grouped into seven theoretical domains, namely functional limitation, pain, psychological discomfort, physical disability, psychological disability, social disability and handicap. Examples of some OHIP questions are:

- Have you had trouble pronouncing words because of problems with your teeth, mouth or dentures?
- Have you found it uncomfortable to eat any foods 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?
- For each of the 49 OHIP questions, subjects are asked how frequently they have experiencd the oral problem. Responses are according to a Likert-type scale: 0 = never, 1 = hardly ever, 2 = occasionally, 5 = fairly often, and 4 = very often.

A summary score of between 0 & 196 results from the 49 questions, with 5 scoring steps each, which provides a good impression of the extent to which OHRQoL is affected. A score of 0 indicates the absence of any oral health related problem. Higher scores represent an OHRQoL that is more impaired. The most extensive impairment of the OHRQoL is expressed by a score of 196. This is termed the problem index and demonstrates that all oral problems are frequently encountered. A table of standard values representative of different populations is provided, according to which the patient’s score can be compared and evaluated.

To be able to assess levels of OHRQoL, in non-English speaking populations, cross-culturally adapted translations of the original English-language version of the OHIP into Chinese, Dutch, Hungarian, Italian, Japanese, Portuguese, Spanish & Swedish has been achieved in several countries. The demand for an internationally comparable German tool led to the development of a German version of the OHIP (OHIP-G), which determines the OHRQoL of German speaking persons. OHIP-G includes the 49 items of the English original, as well as four additional items that were regarded as important for the German population specifically. OHIP-G can be applied to patients of 16 years and older.

A study was conducted at the Martin Luther University, Halle-Wittenberg, Germany to describe and evaluate OHRQoL in patients with dentine hypersensitivity. Data was collected through a questionnaire as part of a larger study targeting several areas of oral health beyond hypersensitive teeth, such as oral hygiene, prevention efforts, and oral behaviours and habits.

There were 724 patients (mean age: 42.8 ± 13.0 years) who participated in the study, presenting at 161 German dental offices because of hypersensitive teeth and reacting positively to an air stimulus applied by the dentist. Patients with removable partial dentures & patients with missing answers in the OHIP questionnaire were excluded. After these exclusions, 656 patients remained in the study for analysis. These patients were compared with 1,541 subjects without removable partial dentures from a national, general German population sample (mean age: 57.7 ± 13.4 years). OHRQoL was assessed using OHIP-G. The patients completed the OHIP-G questionnaire in the dental office.

Fig. 1. OHIP-G is one dimension of quality of life.

Fig. 2. Hypersensitive cervical dentine surface.

Fig. 3. Differences in OHRQoL measured with the OHIP questionnaire in patients with dentine hypersensitivity and in a general population sample.

Fig. 4. OHRQoL in patients with dentine hypersensitivity and in a general population grouped by gender.

Fig. 5. Differences in OHRQoL measured with the OHIP questionnaire in patients with dentine hypersensitivity and in a general population sample.
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The OHP-G summary score characterised the OHQoL as a whole. The OHP-G summary score of patients with hypersensitive teeth was 54.5 (± 22.6), while the general population sample had a score of 12.2 (± 18.4). The 22.5 difference was statistically significant. The general population subjects had an OHP-G median score of 5, while the patient group had an OHP-G median score of 50 (Fig. 3). Ten percent of the subjects with the highest OHP-G summary scores had scores of 56 (general population) and 66 (patients).

Differences according to gender were minimal. Although the difference between gender of a mean 2.8 points was statistically significant (p < 0.01), it was regarded as negligible. Amongst the patient group, women reported more problems with the condition of dentine hypersensitivity than men, which is in contrast to the general population, in which men had higher OHP scores than women (Fig. 4).

Conclusions

OHQoL has been established as an important outcome for evaluating the impact of a disease and for assessing the efficacy of treatment. The impact of oral disorders and interventions on patients’ perceived oral health status and OHQoL is increasingly recognised as an important component of health. Dentine hypersensitivity is a frequent problem that can be observed in adults of all ages. In this study, patients with sensitive teeth reported substantial OHQoL impairment, which may have an influence on whether or how patients should be treated. The extent of this effect is comparable to that of other oral diseases and conditions, such as temporomandibular disorders. The present investigation is the first study that evaluates the impact of this condition using a widely used patient-centred outcome measure to characterise the broader influence of this condition on patients’ perceived oral health.

About the author

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Delegates that joined the first precongress sessions on Thursday morning confirmed that the programme was a large improvement to the offerings in 2008. Most of the people interviewed said that because of these changes they were able to attend most of the sessions held during the course of the meeting.

“I think the congress was pretty well organised and there was less overlapping which made it easier to get into more sessions,” said one dentist from Singapore.

According to Mr Dreyer, preparations for the next edition of IDEM in 2012 have already begun and the first speakers have been announced. Amongst others, there will be sessions on the management of endodontic disasters, the biological effects of current restorative materials on the pulp-dentine complex and current concepts on posts and cores.

The next meeting is scheduled to be held 20–22 April 2012.