Self-reporting measures for periodontal disease

Are self-reported measures of periodontal disease valid?

Blicher B, Joshipura K, Eke P.

Validation of self-reported periodontal disease: a systematic review. J Dent Res 2005; 84:881-890.

Data Sources Medline and bibliographies of identified studies.

Study Selection Only studies that validated the self-reporting of periodontal and/or gingival disease were included.

Data Extraction and Synthesis Data on population characteristics, sampling criteria, method of self-reporting (self-assessment, questionnaire, interview) self-reported questions, clinical gold standards and the results of the validation study were recorded by a single abstractor and verified by a second author. Qualitative summary was carried out due to variation in reported statistical methods.

Results Sixteen studies were included, seven specific for gingivitis, four included only periodontitis with five including both gingivitis and periodontitis.

Conclusions Some measures show promise, but results varied across populations and self-reported measures. Potentially higher validity could be obtained by using several self-reported questions and other predictors of periodontal disease.

Commentary

Let's assume that you were planning an investigation among the adult population in your district, trying to find out the occurrence of periodontitis. What question should you ask in a self-report study to make sure you get the faultless answer? That is, people with periodontitis should correctly report the presence of disease and people with no periodontal disease should also give the correct answer reporting the absence of this specific disease.

In epidemiological oral health investigations, self-reported oral health questionnaires are widely used because they are time- and cost-effective, providing detailed information on subjects in a single measure.^{1,2} Validity and reliability of these questionnaires are crucial for self-assessed data on oral health and disease to be useful.³ Self-reporting and clinical examination using a "golden standard" should thus be in agreement.

In this report Blicher et al. reviewed all published studies validating self-reported periodontal disease or gingivitis. The objective was to summarise the validity of different self-reported measures in different populations and also to identify methods and measures showing promise for use and further improvement. A total of 749 studies were initially identified: finally 16 studies were reviewed. Of these, three used a specified self-assessment method and 13 publications assessed symptoms or awareness of disease conditions by means of questionnaire for self-report. Eight studies validated self-reported periodontal disease, and 13 studies validated self-reported gingivitis. The best measure for self-reported periodontal disease was obtained asking "Has any dentist/hygienist told you that you have deep pockets?".

Validation against pocket depth (≥ 4 mm) showed sensitivity of 55% and specificity of 90%. That is, 55% of those having any pockets ≥ 4 mm self-reported periodontal disease, whereas 90% with no pockets ≥ 4 mm correctly reported no disease. The limitation with this best measure for self-reporting periodontal disease is of course that the patient must have knowledge of a previous professional diagnosis. This limits the validity to those individuals who are visiting the dental profession. One challenge with epidemiological research and self-assessment of periodontal disease is to also include those individuals who do not visit the dental office but may well have the disease. Another limitation with this self-reporting is that it only relates to the history of disease, not necessarily the current situation. Most likely, self-reporting will result in underestimation of periodontal disease. This review presents all available data in an easily comprehensible manner and also discusses shortcomings and possibilities in a very creative way.

Practice point

Results from self-reported studies should be interpreted with wisdom. No single question will correctly reveal whether an individual has periodontitis or not. Higher validity will be obtained by the use of combinations of several self-reported questions. The most clever and appropriate questions in this respect still need to be asked and subsequently validated.

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- 1 Locker D. Measuring oral health; a conceptual framework. Community Dental Health. 1988; 5:3-18.
- 2 Gooch BF, Dolan TA, Bourque LB. Correlates of self-reported dental health status upon enrollment in the Rand Health Insurance Experiment. J. Dent. Ed. 1989; 53:629-637.
- 3 Helöe LA. Comparison of dental health data obtained from questionnaires, interviews and clinical examination. Scand J Dent. Res. 1972; 80:495-499.

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