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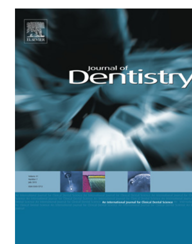

Does the mode of administration of the Oral Health Impact Profile-49 affect the outcome score?

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ABSTRACT

Objective: To determine if there are differences in outcome scores if the Oral Health Impact Profile-49 (OHIP-49) is delivered by two different modes of administration (manual-self complete versus telephone interview).

Methods: Patients with chronic periodontitis ($n = 83$, 54% females and 46% males, mean age 49.1 ± 9.5 years) completed the OHIP-49 using two modes of administration (manual self-complete and telephone interview) in a randomly assigned order, with a minimum washout period of 2 weeks between modes, both episodes occurring prior to any periodontal treatment being provided. To assess convergent validity, after each mode of administration, the patients were additionally asked a global question about their oral health-related quality of life (OHRQoL).

Results: Median OHIP-49 scores recorded by manual self-complete (median 36 [IQR = 20–70]) were significantly higher than those recorded by telephone interview (median 27 [IQR = 11–61]) ($p < 0.01$). The global question was well correlated to the OHIP domains, but did not reveal any evidence of an order effect such as was seen with OHIP-49 itself (which showed a higher impact on OHRQoL during the first administration in either mode).

Conclusions: The mode of administration (manual-self complete versus telephone interview) did substantially influence the OHIP-49 scores in patients with chronic periodontitis. The OHRQoL differed between the two modes of administration, with significantly higher scores (indicating poorer OHRQoL) when the questionnaire was manually self-completed.

Clinical significance: The mode of administration of quality of life questionnaires such as OHIP-49 could potentially affect the outcome scores derived. This study investigated whether there is a difference in outcome scores if OHIP-49 is delivered via manual self-complete or by telephone interview in patients with chronic periodontitis. We found that there was a significant difference between the two modes: manual self-completion by the patients yielded significantly higher scores than completion by telephone interview. It is therefore important to be consistent in the mode of completion of OHIP-49, as mixing modes could introduce additional error into clinical studies that utilise this instrument.

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1. Introduction

Over recent years, a number of measures to assess oral health-related quality of life (OHRQoL) have been published which aim to assess the impact that various oral conditions have on an individual's well-being and their life quality. One of the most commonly used OHRQoL measures is the Oral Health Impact Profile (OHIP).[1] This measure has been used in a number of health surveys to assess the impact that chronic oral diseases have on an individual. The full version of OHIP (OHIP-49) contains 49 items (divided into 7 domains) that assess various impacts of oral health and disease on OHRQoL. The two main modes of administration of OHIP-49 that have been used are: (i) interview (in which a researcher asks the questions face-to-face with the respondent and records the responses) and (ii) self-administration (in which the respondent completes the questionnaire themselves).[2] The latter mode has been used most frequently, probably for reasons of convenience; this is despite the fact that OHIP was originally designed to be administered via an interview.[1] An interview can either be conducted face-to-face or over the telephone, and the self-completion of the questionnaire can be performed either manually (i.e. hand-written on hard copies) or electronically (e.g. online). Both modes of administration (interview or respondent self-complete) have their advantages and disadvantages in terms of patient burden, response rates and costs, and these are related to the environment in which they are used.[2]

Until recently, no study had examined if the scores derived from OHIP-49 are affected by the mode of administration. In a study of 42 prosthodontic patients, Reissman et al. examined the effect of three modes of administration (telephone interview, face-to-face interview, and self-complete) on the summary scores from OHIP-49.[2] These authors identified slightly, but significantly, lower OHIP summary scores when the questionnaire was administered via telephone interview versus the other two modes of administration ($p < 0.05$). However, as recognised by these authors, prosthodontic patients may not have been an ideal cohort for this study, because in such patients, the functional limitation and physical disability domains of OHIP-49 generally outweigh the psychosocial impacts and other impairments that are assessed by this instrument.[2] This masking effect coupled with the burden on respondents of having to complete three separate OHIP evaluations may mean that the true magnitude of any difference between modes of administration has not yet been fully described. This is an important issue, because if the mode of administration does influence OHIP scores, then this will need to be taken into account when designing future studies. Our previous work has shown that periodontal disease has significant psychosocial impacts on OHRQoL.[3,4] Durham et al. found that patients diagnosed with chronic periodontitis reported significantly poorer OHRQoL when compared with periodontally healthy patients, and reported significant functional, physical, social and psychological impacts on their QoL.[4] Hence, patients with periodontal disease may provide a useful cohort in which to examine further the impact of mode of administration on OHIP scores.

The aim of this study was, therefore, to examine any differences between the summary scores derived from OHIP-49 between the two most commonly used modes of administration: manual self-complete and telephone interview, with the null hypothesis being that there would be no difference between manual self-complete or telephone delivered questionnaires ($\alpha = 0.05$).

2. Methods

2.1. *Ethical approval*

The study received ethical review and approval from the UK NHS National Research Ethics Service Committee North East, Northern and Yorkshire (Ref. 11/NE/0223).

2.2. *Participants*

For the study, a purposive sampling strategy was selected and participants were recruited from new patients attending for routine appointments at the periodontology clinic of Newcastle Dental Hospital (UK). All recruited participants provided written informed consent prior to enrolment into the study. The inclusion criteria were: participants should be dentate with a minimum of twenty natural teeth, with a diagnosis of chronic periodontitis, assessed using the Basic Periodontal Examination (BPE), with a BPE score of 4 in a minimum of three out of six sextants. Individuals were excluded if they had insufficient understanding of English to participate effectively in the reading, listening and speaking required for the study, or were suffering from any other dental/orofacial problems other than chronic periodontitis (as assessed by the global question "Do you have any current problems with your teeth, dentures, mouth, jaws or face other than the gum disease you are being seen on clinic for today?").

2.3. *Assessment of OHRQoL*

The English language version of OHIP-49 was used in this study.[1] It consists of 49 problem-based questions (items) and uses a reference period of the "last one month". The items are grouped into seven domains consistent with Locker's model of oral health[5] and are scored using an ordinal response scale: 0 = never; 1 = hardly ever; 2 = occasionally; 3 = fairly often; 4 = very often. In this study OHIP ADD (i.e. a summed response code) was used as the outcome measure, as it is one of the methods of scoring of OHIP-49 that is most sensitive to change.[2] A *higher* score indicates a *poorer* OHRQoL.[6]

Each participant enrolled in the study completed the OHIP-49 using both modes of administration: (i) manual self-complete and (ii) telephone interview. In order to minimise any influence of the administration sequence on the OHIP-49 scores, the sequence was randomised using a permuted squares randomisation procedure. Depending on whether it was the first or second mode of administration for manual self-complete of the questionnaire, the questionnaire was given to the patient to complete in the waiting room or to self-complete at home or was sent to the patient with a self-addressed envelope to be returned within a week. Telephone

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