Author’s response to reviews

Title: Validating an alternate version of the chewing function questionnaire in partially dentate patients

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Author’s response to reviews: see over
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Dear Dr. Rikki Graham, PhD
Senior Assistant Editor
BMC-series journals

We are submitting our 2\textsuperscript{nd} revision of the manuscript titled “\textit{Validating an alternate version of the chewing function questionnaire in partially dentate patients}” Although our previous version had been tentatively accepted; we also had several suggestions and comments from you and the reviewer. We believe we have responded to these comments and have incorporated the suggested changes into the revised manuscript. We have provided point by point responses to the reviewer’s comments and information on how we changed the manuscript. We would be very pleased if the manuscript is judged acceptable for publication in the \textit{BMC Oral Health}.

Very sincerely yours,

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Response to reviewer 2

Introduction: A good rationale behind the study is provided with a succinct review of the literature.

Response. Thanks.

Methodology: In deriving an alternative version of the chewing function questionnaire the researchers employed exploratory factor analysis. This is but one approach and has in itself many limitations. The authors should discuss alternative approach and reasoning behind only using CFA, which is a rather limited approach given recent development in the field of psychometrics within oral health research (particularly OHQoL research).

Response: We assume that the reviewer meant EFA, exploratory factor analysis, instead of CFA in the second sentence. We agree with the reviewer that other methods exist. This is now discussed in more detail in the discussion. We mentioned before that “… we believe that our EFA provided an initial insight into a more detailed assessment of chewing ability. According to our findings, dimensions of perceived chewing ability may exist. Future research involving confirmatory factor analyses and other multi-variable statistical techniques as well as qualitative analyses may provide further insights into the structure of perceived chewing ability.”

We changed this paragraph according to the reviewer suggestions into:

“…we believe that our EFA provided an initial insight into the dimensionality of perceived chewing ability. We used an exploratory technique because we considered this the appropriate step for an evaluation of a construct where factor analytic techniques have not been applied before and only expert opinion of the construct structure was available. In this situation, EFA is often recommended as the first analytic approach (1). According to our findings, dimensions of perceived chewing ability may exist. This hypothesis could be tested using confirmatory factor analysis (CFA) against alternative models of perceived chewing ability, in particular, a uni-dimensional model. Future research involving CFA-related multi-variable statistical techniques such as structural equation modeling as well as qualitative analyses (2) may provide further insights into the structure of perceived chewing ability.”

It seems rather strange that validity was assessed by correlating chewing function scores with OHIP-14 which is a generic oral health-related quality of life measure. If anything, this would suggest the measure being not valid as it is
associated with aspect of oral health NOT related to oral function. Rationale behind such validity testing is required. I can appreciate why it may be correlated with the domain of functional limitation.

Response: In our opinion, the dimensional structure of OHIP-14 has not been thoroughly investigated and there is evidence that the empirical correlations among the domains don’t support OHIP’s domain structure for the long instrument (3). Therefore, we used the items, possible dimensions, and the construct as a whole to investigated the relationship between perceived chewing ability and OHRQoL as comprehensively as possible. In our opinion, the observed pattern is supportive of the perceived chewing ability’s construct validity. Perceived chewing ability correlated most highly with “Physical disability” and almost as highly with “functional limitation”. The highest correlation with items was observed for “uncomfortable to eat”. That a substantial correlation was observed with the construct as a whole is expected because OHIP domains correlate substantially and the OHIP-14 summary score with its longer range favors higher correlations.

According to the reviewer’s suggestion we present a rationale for our approach to validity testing on P. 5.

For validity assessment, we investigated how OHIP items, OHRQoL domains suggested by Slade, 1997 [this is the original OHIP-14 publication, but don’t put this note into the response to the reviewer], and the construct as a whole were correlated with perceived chewing ability. We expected a substantial correlation between perceived chewing ability and OHRQoL because the construct as a whole would capture the direct and indirect consequences of chewing problems. In addition, we expected higher correlations for items and domains related to eating and oral function or physical aspects of oral health compared to items/domains not directly related to these aspects of oral health.

References


if a page number and chapter heading are needed: Exploratory and Confirmatory Factor Analysis P:3-4

We have two parts if detailed information is needed:

Qualitative Methods P.55-58

Factor Analysis and Structural Equation modelling P.131-160