

Development of the Taste And Smell Tool for Evaluation (TASTE) questionnaire using modern psychometrics and Rasch models

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Introduction:

The human chemosensory senses of taste and smell is more important in everyday life than most people realize. For evaluation of the impact of chemosensory impairment and related quality of life a psychometric tool is needed. The aim was to develop a thorough scale comprising of all relevant domains in relation to chemosensory dysfunction and related quality of life using modern psychometrics.

Methods:

The study consisted of four steps: Development, selection and formulation of items, pilot-testing and field testing. This resulted in eight domains with 21 items with answers from 316 patients with chemosensory impairment and 27 healthy participants. Content and face validity were assessed. Internal consistency was evaluated. Major depression Index, Sniffin' Sticks and Short-Form-36 were investigated for criterion validity. Discriminative properties were investigated using known-groups. Intraclass correlations coefficient was used for testing test-retest reliability.

Results:

All items in all domains had high item-total correlations. This was confirmed by fit of items to the Rasch model and by over-all model fit for all subscales. No evidence of differential item functioning (DIF) was disclosed, except for 'Item1' where DIF with respect to gender was found. Validity was confirmed by criterion and discriminant validity, known-groups validity, clinical validity, confirmatory factor analysis, and Rasch analysis. Reliability was confirmed by internal reliability and test-retest reliability.

Discussion:

The TASTE questionnaire is a valid and reliable instrument suitable for the assessment of smell and taste disorders and can be used to investigate disease severity and track changes over time in relation to treatment.