



BMJ Open Oral health assessment of older adults living in long-term care facilities by non-dental professionals: a systematic review protocol of instruments

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ABSTRACT

Introduction Regular oral health assessment among older adults living in long-term care facilities (LTCF) can improve their oral health. Different instruments have been developed and used to evaluate the oral health of institutionalised older people by non-dental professionals. These instruments must demonstrate adequate measurement properties. This systematic review aims to examine the studies describing the instruments employed to assess the oral health of older adults living in LTCF by non-dental professionals. The study will also evaluate the measurement properties of such instruments using the checklist proposed by the Consensus-based Standards to select health Measurement Instruments (COSMIN).

Methods and analysis Studies describing the development of instruments for assessing oral health of institutionalised older adults by non-dental professionals will be included. Studies assessing at least one measurement property (validity, reliability or responsiveness) will be also considered. Electronic searches will be conducted on MEDLINE (PubMed, Ovid), Embase, Web of Science, Scopus and LILACS databases. Two independent reviewers will select the studies and will extract data concerning the characteristics of the research and the instrument. The measurement properties will be evaluated using the COSMIN checklist. The Grading of Recommendations, Assessment, Development and Evaluation approach will be used to grade the quality (or certainty) of evidence and strength of recommendations. **Ethics and dissemination** No ethical approval is required. The results will be submitted for publication to a peer-review journal and presented at relevant conferences. **PROSPERO registration number** CRD42020191479.

INTRODUCTION

Population ageing is a worldwide process resulting in a burden of chronic age-related conditions that constitute a significant challenge for health systems.¹ Since frailty and functional dependency increase with ageing, it can be expected an increase of institutionalisation among older people.² Institutionalised older adults present greater dependency to

Strengths and limitations of this study

- This study will be an evidence for implementing best oral healthcare practices in long-term care facilities.
- The systematic review will be guided by validated and consolidated instruments and tools. The assessment of the risk of bias and the quality of the evidence will be carried out using Consensus-based Standards to select health Measurement Instruments checklist, and Grading of Recommendations, Assessment, Development and Evaluation approach and will be reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses.
- The systematic review will allow us to support an implementation study for oral care.
- This review will be limited to studies published in English, Spanish and Portuguese languages.

perform routine activities on daily basis than non-institutionalised ones, including dependency to perform oral hygiene.³ The decline on manual dexterity and vision impairment may affect their ability to maintain an adequate level of oral hygiene and, cognitive and physical disabilities may have a negative impact on the motivation for oral health self-care.⁴ Over the recent years, the complex interrelationships between frailty, cognitive decline and poor self-care related to oral health in older adults have been drawn attention due to the increase of tooth retention in this age group. The latter has been a common finding in dental surveys in different countries. The longer tooth retention may be associated with a higher prevalence of oral diseases, such as tooth and root decay and periodontal disease.⁴ Older adults with missing teeth might also experience oral functional impairments due to poor adaptation of dental prostheses. Another problem is the paucity of public dental services for older

adults in some places, where emergency dental care is the only service available⁴ and there is a shortage of oral health professionals working at long-term care facilities (LTCF).

The maintenance of oral health must be part of the healthcare in LTCF,⁵ which in turn may prevent the occurrence of systemic diseases such as aspiration pneumonia.⁶ Regular oral examination can detect early dental problems, reducing oral health deterioration and the need of complex dental treatments. The systematic evaluation of oral health can also support the need for adoption, reinforcement or improvement of guidelines for oral health promotion and preventive strategies in institutionalised older adults. In this context, caregivers are responsible for healthcare of older people in the daily routine in LTCF. Thus, they have a crucial role in performing oral health evaluation as part of the healthcare plan.^{4 5 7 8}

Some instruments have been used to evaluate the oral health of institutionalised older people by non-dental professionals, such as Oral Health Assessment Tool,⁹ Minimal Data Set,¹⁰ Dental Hygiene Registration,¹¹ Oral Health Screening Tool for Nursing Personnel¹² and oral health-related section of the Resident Assessment Instrument.¹³ The use of appropriate instruments is paramount to identify oral health problems, favouring the daily oral care plan, and referral to a dental service, if necessary.^{7 11 13–15} Although such instruments must demonstrate adequate measurement properties, there is evidence that some of them may present methodological shortcomings.^{15 16} Two previous systematic reviews have evaluated the instruments used for oral health assessment.^{15 16} However, both studies have not focused on institutionalised older adults.^{15 16} Thus, an update seems timely and legitimate.

Implementing best practices in LTCF, such as oral health assessment, should be evidence based and adapted to each context. This review can support the identification of the most suitable instrument for oral health evaluation of institutionalised older adults. The results may also indicate the need for additional assessment of the measurement properties of the existing instruments or highlight the need to develop and test a new one. This systematic review aims to identify the studies that described instruments developed to assess the oral health of older adults in LTCF by non-dental professionals and to evaluate their measurement properties.

METHODS AND ANALYSIS

This study protocol has been prepared according to the 2015 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Protocols guidelines (online supplemental material 1). The systematic review also will be reported according to the PRISMA¹⁷ and Consensus-based Standards to select health

Measurement Instruments (COSMIN) checklist for systematic reviews.¹⁸

Review question

What instruments have been used to assess the oral health of institutionalised older people by non-dental professionals?

Do these instruments present acceptable measurement properties?

Patient and public involvement

No patients were involved in the design of the study.

Inclusion criteria

- The instrument must aim to assess oral health of institutionalised older adults.
- The instrument must be applied by non-dental professionals, such as caregivers and nurses.
- Studies must describe the development or the assessment of at least one measurement property of the instrument (validity, reliability or responsiveness).
- Studies published in English, Spanish or Portuguese.
- No publication date or publication status restrictions will be imposed.

Types of studies

This review will include epidemiological studies, including validation studies and observational studies reporting measurement properties of the instruments used to assess oral health of institutionalised older adults by non-dental professionals.

Search strategy

The studies will be identified by searching four electronic databases: MEDLINE (PubMed), Embase, Web of Science, Scopus and LILACS (Latin American and Caribbean Literature in Health Sciences). Besides, a search on Google Scholar and OpenGray will identify further potential relevant articles. The reference lists of included articles will also be screened.

According to the COSMIN checklist for systematic reviews, the search strategy will follow up four key elements of the review aim: (1) Construct (related to Oral Health); (2) Population (related to Age, Long-term care and Caregivers); (3) Type of instrument (related to Assessment Tool) and (4) Measurement properties (using a PubMed search filter to find studies on measurement properties).¹⁹ The search blocks site will be used to assist the construction of the search strategy blocks (<https://blocks.bmi-online.nl/>). The index terms were used to develop a full search strategy for MEDLINE (online supplemental material 2).

Screening and eligibility assessment will be performed independently by two trained reviewers. They will evaluate the relevant articles according to abstract and then the full text, respectively. Disagreements between the reviewers will be resolved by consensus. The number of identified articles, the screening and eligibility steps, and

Box 1 Data to be extracted from included studies

Characteristics of the study

- ▶ Aim of the study.
- ▶ Study design.
- ▶ Sample size.
- ▶ Country of data collection.
- ▶ Settings.
- ▶ Measurement properties evaluated.
- ▶ Limitations of the study.
- ▶ Conclusions.

Characteristics of the instrument

- ▶ Name of the instrument.
- ▶ Instrument objectives.
- ▶ Professionals who applied the instrument.
- ▶ Need for training to apply the instrument.
- ▶ Instrument items.
- ▶ Instrument scoring system.

the included studies will be shown using the flow diagram proposed by PRISMA.

Data extraction

Two reviewers will perform data extraction independently using a prepiloted spreadsheet developed for this purpose. A third reviewer will be consulted in case of disagreements. The characteristics of the study and the instrument that will be extracted from each article are presented in [box 1](#).

The extracted data from all included studies will be qualitatively synthesised and presented in tables along with a narrative summary.

Assessment of methodological quality

Two trained reviewers will independently evaluate the quality of the included studies using the COSMIN Risk of Bias checklist.²⁰ The COSMIN aims to improve the selection of patient-reported outcome measures (PROMs) instruments in research and clinical practice through tools to select the most appropriate instrument. Despite focusing on PROMs, it can also be adapted for other purposes, such as instruments for measuring clinical outcomes.¹⁸ According to COSMIN, three domains must be evaluated to assess the quality of the instrument: reliability, validity and responsiveness. Each domain contains one or more measurement properties ([table 1](#)).¹⁸ [Figure 1](#)

presents the steps to assess the methodological quality and grading the quality of evidence.

The COSMIN Risk of Bias checklist will be used to assess the methodological quality of single studies included in the systematic review. The checklist contains standards referring to design requirements and preferred statistical methods of studies on measurement properties, containing 10 boxes: with one standard for PROM development and nine for measurement properties: content validity, structural validity, internal consistency, cross-cultural validity/measurement invariance, reliability, measurement error, criterion validity, hypotheses testing for construct validity and responsiveness. A standard COSMIN Excel spreadsheet will be used for each box. The measurement properties evaluated in a study will determine which boxes should be completed. A four-point rating scale will be assigned for each study as follows 'very good', 'adequate', 'doubtful' or 'inadequate'. The overall rating of the quality of each study will be determined by taking the lowest rating of any standard in the box.¹⁸ Next, the results of each study on a measurement property will be rated against the updated criteria for good measurement properties. Each result will be rated as either sufficient (+), insufficient (–) or indeterminate (?).¹⁸ The overview tables will be used to assess whether the results of two or more articles using the same instrument are consistent with each other to obtain the pooled result against criteria of good measurement properties.

Grading the quality of evidence

After pooling all evidence per measurement property per instrument and rating the pooled result against the criteria for good measurement properties, the quality of the evidence will be graded based on a modified Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach for systematic reviews. The quality of the evidence refers to the confidence that the summarised result is valid. The GRADE approach classifies the certainty in the findings as high, moderate, low or very low. Four of the five factors of the GRADE approach will be used for evaluating measurement properties: risk of bias (the methodological quality of the studies), inconsistency (unexplained inconsistency of results across studies), imprecision (total sample size of available studies) and indirectness (evidence from a different population than the population of interest in the review).²¹ The quality of the evidence will be performed by two trained reviewers independently. The GRADE approach will be used to downgrade evidence when there are concerns about the quality of evidence. The starting point is always the assumption that the obtained pooled result is of 'high' quality level. The quality of evidence can be subsequently downgraded by one or two levels per factor to moderate, low or very low evidence if there is imprecision (low sample size) or serious or very serious risk of bias, inconsistency, indirectness. The quality of evidence can even be downgraded by three levels when

Table 1 Definitions of measurement properties

Domain	Definition
Reliability	The degree to which the measurement is free from measurement error
Validity	The degree to which a PROM measures the construct(s) it purports to measure
Responsiveness	The ability of a PROM to detect change over time in the construct to be measured

PROM, patient-reported outcome measure.

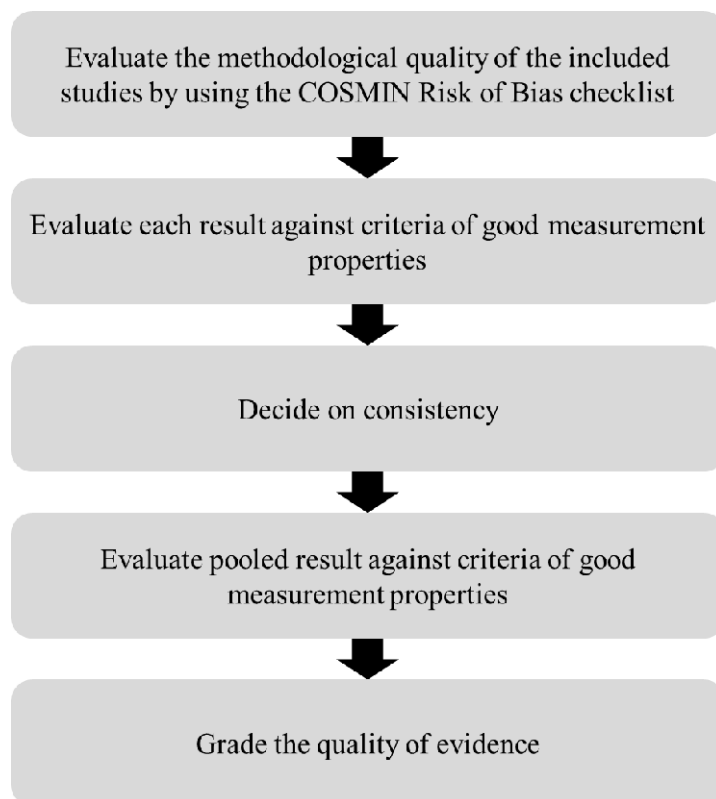


Figure 1 Flow chart of methodological quality evaluation and grading the quality of evidence source: adapted from Mokkink *et al*¹⁸. COSMIN, Consensus-based Standards to select health Measurement Instruments.

the evidence is based on only one inadequate study (extremely serious risk of bias).

This review also aims to assess the interpretability, which corresponds to the qualitative meaning for the quantitative scores obtained by applying the instrument, and the feasibility, that is, the ease of use of the instruments.¹⁸ Finally, based on the evaluations performed, this study will might be able to suggest recommendations on the most suitable instrument for non-dental professionals assessing the oral health of institutionalised older adults.

Ethics and dissemination

No ethical approval is required. The results will be submitted for publication to a scientific journal and presented at relevant conferences.

Contributors LGR and RCF conceived the study. LGR and ILF drafted the manuscript. AAS, MVW and RCF revised the manuscript. All authors approved the final version to be published. LGR is the guarantor of the review.

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Disclaimer The sponsors have not been involved in the study design; in the writing of this protocol; and in the decision to submit the paper for publication.

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Supplemental material

Search	Query	Results
#1	<p>""Oral Health""[Mesh] OR ""Geriatric Dentistry""[Mesh] OR ""Dental Care""[Mesh] OR ""Dental Care for Aged""[Mesh] OR ""Dentistry""[Mesh] OR ""Dentists""[Mesh] OR dental*[ti] OR dentist*[ti] OR oral hygien*[ti] OR dental*[ot] OR dentist*[ot] OR oral hygien*[ot]",,Publication Date,, ""Oral Health""[MeSH Terms] OR ""Geriatric Dentistry""[MeSH Terms] OR ""Dental Care""[MeSH Terms] OR ""Dental Care for Aged""[MeSH Terms] OR ""Dentistry""[MeSH Terms] OR ""Dentists""[MeSH Terms] OR dental*""[Title] OR dentist*""[Title] OR oral hygien*""[Title] OR dental*""[Other Term] OR dentist*""[Other Term] OR oral hygien*""[Other Term]"</p>	499,813
#2	<p>""Aged""[Mesh] OR ""Aged, 80 and over""[Mesh] OR ""Frail Elderly""[Mesh] OR ""Geriatrics""[Mesh] OR ""Geriatric Psychiatry""[Mesh] OR ""Geriatric Nursing""[Mesh] OR ""Geriatric Dentistry""[Mesh] OR ""Dental Care for Aged""[Mesh] OR ""Health Services for the Aged""[Mesh] OR (elder*[tw] OR eldest[tw] OR frail*[tw] OR geriatri*[tw] OR old age*[tw] OR oldest old*[tw] OR senior*[tw] OR senium[tw] OR very old*[tw] OR septuagenarian*[tw] OR octagenarian*[tw] OR octogenarian*[tw] OR nonagenarian*[tw] OR centarian*[tw] OR centenarian*[tw] OR supercentenarian*[tw] OR older people[tw] OR older subject*[tw] OR older patient*[tw] OR older age*[tw] OR older adult*[tw] OR older man[tw] OR older men[tw] OR older male*[tw] OR older woman[tw] OR older women[tw] OR older female*[tw] OR older population*[tw] OR older person*[tw]),,Publication Date,, ""Aged""[MeSH Terms] OR ""aged, 80 and over""[MeSH Terms] OR ""Frail Elderly""[MeSH Terms] OR ""Geriatrics""[MeSH Terms] OR ""Geriatric Psychiatry""[MeSH Terms] OR ""Geriatric Nursing""[MeSH Terms] OR ""Geriatric Dentistry""[MeSH Terms] OR ""Dental Care for Aged""[MeSH Terms] OR ""Health Services for the Aged""[MeSH Terms] OR elder*""[Text Word] OR eldest""[Text Word] OR frail*""[Text Word] OR geriatri*""[Text Word] OR old age*""[Text Word] OR oldest old*""[Text Word] OR senior*""[Text Word] OR senium""[Text Word] OR very old*""[Text Word] OR septuagenarian*""[Text Word] OR octagenarian*""[Text Word] OR octogenarian*""[Text Word] OR nonagenarian*""[Text Word] OR centarian*""[Text Word] OR centenarian*""[Text Word] OR supercentenarian*""[Text Word] OR older people""[Text Word] OR older subject*""[Text Word] OR older patient*""[Text Word] OR older age*""[Text Word] OR older adult*""[Text Word] OR older man""[Text Word] OR older men""[Text Word] OR older male*""[Text Word] OR older woman""[Text Word] OR older women""[Text Word] OR older female*""[Text Word] OR older population*""[Text Word] OR older person*""[Text Word]"</p>	3,421,849
#3	<p>""nursing homes""[Mesh] OR ""long term care""[Mesh] OR ""residential care"" OR ""homes for the aged""[Mesh] OR ""residential facilities""[Mesh] OR ""long-term care institution"" OR ""residential aged care"" OR ""skilled nursing facilities""[Mesh] OR ""nursing facility"" OR ""care worker"" OR ""nurses aids"" OR ""nursing personnel"" OR ""Caregivers""[Mesh] OR ""Nursing""[Mesh] OR ""nursing"" [Subheading] OR ""Nursing Care""[Mesh] OR ""Nurses""[Mesh] OR ""Nursing Staff""[Mesh] OR ""Nursing Care""[Mesh] OR ""Nurse's Role""[Mesh] OR ""Home Health Aides""[Mesh] OR ""Nursing Assistants""[Mesh] OR ""Licensed Practical Nurses""[Mesh] OR ""Home Care Services""[Mesh] OR nurs*""[tiab] OR home care*""[tiab] OR home healthcare*""[tiab] OR home health care*""[tiab] OR care aide*""[tiab] OR home health aide*""[tiab],,Publication Date,, ""nursing homes""[MeSH Terms] OR ""long term care""[MeSH Terms] OR ""residential care""[All Fields] OR ""homes for the aged""[MeSH Terms] OR ""residential facilities""[MeSH Terms] OR ""long-term care institution""[All Fields] OR ""residential aged care""[All Fields] OR ""skilled nursing facilities""[MeSH</p>	802,910

	Terms] OR ""nursing facility""[All Fields] OR ""care worker""[All Fields] OR ""nurses aids""[All Fields] OR ""nursing personnel""[All Fields] OR ""Caregivers""[MeSH Terms] OR ""Nursing""[MeSH Terms] OR ""Nursing""[MeSH Subheading] OR ""Nursing Care""[MeSH Terms] OR ""Nurses""[MeSH Terms] OR ""Nursing Staff""[MeSH Terms] OR ""Nursing Care""[MeSH Terms] OR ""Nurse's Role""[MeSH Terms] OR ""Home Health Aides""[MeSH Terms] OR ""Nursing Assistants""[MeSH Terms] OR ""Licensed Practical Nurses""[MeSH Terms] OR ""Home Care Services""[MeSH Terms] OR ""nurs""[Title/Abstract] OR ""home care""[Title/Abstract] OR ""home healthcare""[Title/Abstract] OR ""home health care""[Title/Abstract] OR ""care aide""[Title/Abstract] OR ""home health aide""[Title/Abstract]"	
#4	""Oral Health screening tool"" OR ""Geriatric Assessment""[Mesh] OR ""assessment tool"" OR ""needs assessment""[Mesh] OR ""oral assessment"" OR ""assessment scale"" OR ""Surveys and Questionnaires""[Mesh] OR questionnaire*[tiab] OR instrument*[tiab] OR measure*[tiab] OR survey*[tiab]", Publication Date., ""Oral Health screening tool""[All Fields] OR ""Geriatric Assessment""[MeSH Terms] OR ""assessment tool""[All Fields] OR ""needs assessment""[MeSH Terms] OR ""oral assessment""[All Fields] OR ""assessment scale""[All Fields] OR ""Surveys and Questionnaires""[MeSH Terms] OR ""questionnaire""[Title/Abstract] OR ""instrument""[Title/Abstract] OR ""measure""[Title/Abstract] OR ""survey""[Title/Abstract]"	4,917,678
#5	(instrumentation[sh] OR methods[sh] OR ""Validation Studies""[pt] OR ""Comparative Study""[pt] OR ""psychometrics""[MeSH] OR psychometr*[tiab] OR clinimetr*[tw] OR clinometr*[tw] OR ""outcome assessment (health care)""[MeSH] OR ""outcome assessment""[tiab] OR ""outcome measure""[tw] OR ""observer variation""[MeSH] OR ""observer variation""[tiab] OR ""Health Status Indicators""[Mesh] OR ""reproducibility of results""[MeSH] OR reproducib*[tiab] OR ""discriminant analysis""[MeSH] OR reliab*[tiab] OR unreliab*[tiab] OR valid*[tiab] OR ""coefficient of variation""[tiab] OR coefficient[tiab] OR homogeneity[tiab] OR homogeneous[tiab] OR ""internal consistency""[tiab] OR (cronbach*[tiab] AND (alpha[tiab] OR alphas[tiab])) OR (item[tiab] AND (correlation*[tiab] OR selection*[tiab] OR reduction*[tiab])) OR agreement[tw] OR precision[tw] OR imprecision[tw] OR ""precise values""[tw] OR test-retest[tiab] OR (test[tiab] AND retest[tiab]) OR (reliab*[tiab] AND (test[tiab] OR retest[tiab])) OR stability[tiab] OR interrater[tiab] OR inter-rater[tiab] OR intrarater[tiab] OR intra-rater[tiab] OR intertester[tiab] OR inter-tester[tiab] OR intratester[tiab] OR intra-tester[tiab] OR interobserver[tiab] OR inter-observer[tiab] OR intraobserver[tiab] OR intra-observer[tiab] OR intertechnician[tiab] OR inter-technician[tiab] OR intratechnician[tiab] OR intra-technician[tiab] OR interexaminer[tiab] OR inter-examiner[tiab] OR intraexaminer[tiab] OR intra-examiner[tiab] OR interassay[tiab] OR inter-assay[tiab] OR intraassay[tiab] OR intra-assay[tiab] OR interindividual[tiab] OR inter-individual[tiab] OR intraindividual[tiab] OR intra-individual[tiab] OR interparticipant[tiab] OR inter-participant[tiab] OR intraparticipant[tiab] OR intra-participant[tiab] OR kappa[tiab] OR kappa's[tiab] OR kappas[tiab] OR repeatab*[tw] OR ((replicab*[tw] OR repeated[tw]) AND (measure[tw] OR measures[tw] OR findings[tw] OR result[tw] OR results[tw] OR test[tw] OR tests[tw])) OR generaliza*[tiab] OR generalisa*[tiab] OR concordance[tiab] OR (intraclass[tiab] AND correlation*[tiab]) OR discriminative[tiab] OR ""known group""[tiab] OR ""factor analysis""[tiab] OR ""factor analyses""[tiab] OR ""factor structure""[tiab] OR ""factor structures""[tiab] OR dimension*[tiab] OR subscale*[tiab] OR (multitrait[tiab] AND scaling[tiab] AND (analysis[tiab] OR analyses[tiab])) OR ""item discriminant""[tiab] OR ""interscale correlation""[tiab] OR error[tiab] OR errors[tiab] OR ""individual variability""[tiab] OR ""interval variability""[tiab] OR ""rate variability""[tiab] OR (variability[tiab] AND (analysis[tiab] OR values[tiab])) OR (uncertainty[tiab] AND (measurement[tiab] OR measuring[tiab])) OR ""standard	9,508,385

<p>error of measurement"[tiab] OR sensitiv*[tiab] OR responsive*[tiab] OR (limit[tiab] AND detection[tiab]) OR "minimal detectable concentration"[tiab] OR interpretab*[tiab] OR ((minimal[tiab] OR minimally[tiab] OR clinical[tiab] OR clinically[tiab]) AND (important[tiab] OR significant[tiab] OR detectable[tiab]) AND (change[tiab] OR difference[tiab])) OR (small*[tiab] AND (real[tiab] OR detectable[tiab]) AND (change[tiab] OR difference[tiab])) OR "meaningful change"[tiab] OR "ceiling effect"[tiab] OR "floor effect"[tiab] OR "Item response model"[tiab] OR IRT[tiab] OR Rasch[tiab] OR "Differential item functioning"[tiab] OR DIF[tiab] OR "computer adaptive testing"[tiab] OR "item bank"[tiab] OR "cross-cultural equivalence"[tiab]" ,Publication Date,, "instrumentation"[MeSH Subheading] OR "methods"[MeSH Subheading] OR "Comparative Study"[Publication Type] OR "psychometrics"[MeSH Terms] OR "psychometr*"[Title/Abstract] OR "clinimetr*"[Text Word] OR "clinometr*"[Text Word] OR "outcome assessment"[Title/Abstract] OR "outcome measure*"[Text Word] OR "observer variation"[MeSH Terms] OR "observer variation"[Title/Abstract] OR "Health Status Indicators"[MeSH Terms] OR "reproducibility of results"[MeSH Terms] OR "reproducib*"[Title/Abstract] OR "discriminant analysis"[MeSH Terms] OR "reliab*"[Title/Abstract] OR "unreliab*"[Title/Abstract] OR "valid*"[Title/Abstract] OR "coefficient of variation"[Title/Abstract] OR "coefficient"[Title/Abstract] OR "homogeneity"[Title/Abstract] OR "homogeneous"[Title/Abstract] OR "internal consistency"[Title/Abstract] OR ("cronbach*"[Title/Abstract] AND ("alpha"[Title/Abstract] OR "alphas"[Title/Abstract])) OR ("item"[Title/Abstract] AND ("correlation*"[Title/Abstract] OR "selection*"[Title/Abstract] OR "reduction*"[Title/Abstract])) OR "agreement"[Text Word] OR "precision"[Text Word] OR "imprecision"[Text Word] OR "precise values"[Text Word] OR "test-retest"[Title/Abstract] OR ("test"[Title/Abstract] AND "retest"[Title/Abstract]) OR ("reliab*"[Title/Abstract] AND ("test"[Title/Abstract] OR "retest"[Title/Abstract])) OR "stability"[Title/Abstract] OR "interrater"[Title/Abstract] OR "inter-rater"[Title/Abstract] OR "intrarater"[Title/Abstract] OR "intra-rater"[Title/Abstract] OR "intertester"[Title/Abstract] OR "inter-tester"[Title/Abstract] OR "intratester"[Title/Abstract] OR "intra-tester"[Title/Abstract] OR "interobserver"[Title/Abstract] OR "inter-observer"[Title/Abstract] OR "intraobserver"[Title/Abstract] OR "intra-observer"[Title/Abstract] OR "intertechician"[Title/Abstract] OR "inter-technician"[Title/Abstract] OR "intratechician"[Title/Abstract] OR "intra-technician"[Title/Abstract] OR "interexaminer"[Title/Abstract] OR "inter-examiner"[Title/Abstract] OR "intraexaminer"[Title/Abstract] OR "intra-examiner"[Title/Abstract] OR "interassay"[Title/Abstract] OR "inter-assay"[Title/Abstract] OR "intraassay"[Title/Abstract] OR "intra-assay"[Title/Abstract] OR "interindividual"[Title/Abstract] OR "inter-individual"[Title/Abstract] OR "intraindividual"[Title/Abstract] OR "intra-individual"[Title/Abstract] OR "interparticipant"[Title/Abstract] OR "inter-participant"[Title/Abstract] OR "intraparticipant"[Title/Abstract] OR "intra-participant"[Title/Abstract] OR "kappa"[Title/Abstract] OR "kappa's"[Title/Abstract] OR "kappas"[Title/Abstract] OR "repeatab*"[Text Word] OR ("replicab*"[Text Word] OR "repeated"[Text Word]) AND ("measure"[Text Word] OR "measures"[Text Word] OR "findings"[Text Word] OR "result"[Text Word] OR "results"[Text Word] OR "test"[Text Word] OR "tests"[Text Word])) OR "generaliza*"[Title/Abstract] OR "generalisa*"[Title/Abstract] OR "concordance"[Title/Abstract] OR ("intraclass"[Title/Abstract] AND "correlation*"[Title/Abstract]) OR "discriminative"[Title/Abstract] OR "known group"[Title/Abstract] OR "factor analysis"[Title/Abstract] OR "factor analyses"[Title/Abstract] OR "factor structure"[Title/Abstract] OR "factor structures"[Title/Abstract] OR "dimension*"[Title/Abstract] OR "subscale*"[Title/Abstract] OR</p>	
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	<p>("multitrait"[Title/Abstract] AND "scaling"[Title/Abstract] AND ("analysis"[Title/Abstract] OR "analyses"[Title/Abstract])) OR "item discriminant"[Title/Abstract] OR "interscale correlation"[Title/Abstract] OR "error"[Title/Abstract] OR "errors"[Title/Abstract] OR "individual variability"[Title/Abstract] OR "interval variability"[Title/Abstract] OR "rate variability"[Title/Abstract] OR ("variability"[Title/Abstract] AND ("analysis"[Title/Abstract] OR "values"[Title/Abstract])) OR ("uncertainty"[Title/Abstract] AND ("measurement"[Title/Abstract] OR "measuring"[Title/Abstract])) OR "standard error of measurement"[Title/Abstract] OR "sensitivity"[Title/Abstract] OR "responsive"[Title/Abstract] OR ("limit"[Title/Abstract] AND "detection"[Title/Abstract]) OR "minimal detectable concentration"[Title/Abstract] OR "interpretability"[Title/Abstract] OR ("minimal"[Title/Abstract] OR "minimally"[Title/Abstract] OR "clinical"[Title/Abstract] OR "clinically"[Title/Abstract]) AND ("important"[Title/Abstract] OR "significant"[Title/Abstract] OR "detectable"[Title/Abstract]) AND ("change"[Title/Abstract] OR "difference"[Title/Abstract]) OR ("small"[Title/Abstract] AND ("real"[Title/Abstract] OR "detectable"[Title/Abstract]) AND ("change"[Title/Abstract] OR "difference"[Title/Abstract])) OR "meaningful change"[Title/Abstract] OR "ceiling effect"[Title/Abstract] OR "floor effect"[Title/Abstract] OR "Item response model"[Title/Abstract] OR "IRT"[Title/Abstract] OR "Rasch"[Title/Abstract] OR "Differential item functioning"[Title/Abstract] OR "DIF"[Title/Abstract] OR "computer adaptive testing"[Title/Abstract] OR "item bank"[Title/Abstract] OR "cross-cultural equivalence"[Title/Abstract]"</p>	
#6	<p>("addresses"[Publication Type] OR "biography"[Publication Type] OR "case reports"[Publication Type] OR "comment"[Publication Type] OR "directory"[Publication Type] OR "editorial"[Publication Type] OR "festschrift"[Publication Type] OR "interview"[Publication Type] OR "lectures"[Publication Type] OR "legal cases"[Publication Type] OR "legislation"[Publication Type] OR "letter"[Publication Type] OR "news"[Publication Type] OR "newspaper article"[Publication Type] OR "patient education handout"[Publication Type] OR "popular works"[Publication Type] OR "congresses"[Publication Type] OR "consensus development conference"[Publication Type] OR "consensus development conference, nih"[Publication Type] OR "practice guideline"[Publication Type]) NOT ("animals"[MeSH Terms] NOT "humans"[MeSH Terms]), Publication Date, ("biography"[Publication Type] OR "case reports"[Publication Type] OR "comment"[Publication Type] OR "directory"[Publication Type] OR "editorial"[Publication Type] OR "festschrift"[Publication Type] OR "interview"[Publication Type] OR "legislation"[Publication Type] OR "letter"[Publication Type] OR "news"[Publication Type] OR "newspaper article"[Publication Type] OR "patient education handout"[Publication Type] OR "consensus development conference"[Publication Type] OR "consensus development conference, nih"[Publication Type] OR "practice guideline"[Publication Type]) NOT ("animals"[MeSH Terms] NOT "humans"[MeSH Terms])"</p>	4,188,714
#7	<p>#1 AND #2 AND #3 AND #4 AND #5, Publication Date, ("Oral Health"[MeSH Terms] OR "Geriatric Dentistry"[MeSH Terms] OR "Dental Care"[MeSH Terms] OR "Dental Care for Aged"[MeSH Terms] OR "Dentistry"[MeSH Terms] OR "Dentists"[MeSH Terms] OR "dental"[Title] OR "dentist"[Title] OR "oral hygien"[Title] OR "dental"[Other Term] OR "dentist"[Other Term] OR "oral hygien"[Other Term]) AND ("Aged"[MeSH Terms] OR "aged, 80 and over"[MeSH Terms] OR "Frail Elderly"[MeSH Terms] OR "Geriatrics"[MeSH Terms] OR "Geriatric Psychiatry"[MeSH Terms] OR "Geriatric Nursing"[MeSH Terms] OR "Geriatric Dentistry"[MeSH Terms] OR "Dental Care for Aged"[MeSH Terms] OR "Health Services for the Aged"[MeSH Terms] OR "elder"[Text Word] OR "eldest"[Text Word])</p>	423

<p>OR "frail"[Text Word] OR "geriatric"[Text Word] OR "old age"[Text Word] OR "oldest old"[Text Word] OR "senior"[Text Word] OR "senium"[Text Word] OR "very old"[Text Word] OR "septuagenarian"[Text Word] OR "octagenarian"[Text Word] OR "octogenarian"[Text Word] OR "nonagenarian"[Text Word] OR "centarian"[Text Word] OR "centenarian"[Text Word] OR "supercentenarian"[Text Word] OR "older people"[Text Word] OR "older subject"[Text Word] OR "older patient"[Text Word] OR "older age"[Text Word] OR "older adult"[Text Word] OR "older man"[Text Word] OR "older men"[Text Word] OR "older male"[Text Word] OR "older woman"[Text Word] OR "older women"[Text Word] OR "older female"[Text Word] OR "older population"[Text Word] OR "older person"[Text Word])) AND ("nursing homes"[MeSH Terms] OR "long term care"[MeSH Terms] OR "residential care"[All Fields] OR "homes for the aged"[MeSH Terms] OR "residential facilities"[MeSH Terms] OR "long-term care institution"[All Fields] OR "residential aged care"[All Fields] OR "skilled nursing facilities"[MeSH Terms] OR "nursing facility"[All Fields] OR "care worker"[All Fields] OR "nurses aids"[All Fields] OR "nursing personnel"[All Fields] OR "Caregivers"[MeSH Terms] OR "Nursing"[MeSH Terms] OR "Nursing"[MeSH Subheading] OR "Nursing Care"[MeSH Terms] OR "Nurses"[MeSH Terms] OR "Nursing Staff"[MeSH Terms] OR "Nursing Care"[MeSH Terms] OR "Nurse's Role"[MeSH Terms] OR "Home Health Aides"[MeSH Terms] OR "Nursing Assistants"[MeSH Terms] OR "Licensed Practical Nurses"[MeSH Terms] OR "Home Care Services"[MeSH Terms] OR "nurs"[Title/Abstract] OR "home care"[Title/Abstract] OR "home healthcare"[Title/Abstract] OR "home health care"[Title/Abstract] OR "care aide"[Title/Abstract] OR "home health aide"[Title/Abstract])) AND ("Oral Health screening tool"[All Fields] OR "Geriatric Assessment"[MeSH Terms] OR "assessment tool"[All Fields] OR "needs assessment"[MeSH Terms] OR "oral assessment"[All Fields] OR "assessment scale"[All Fields] OR "Surveys and Questionnaires"[MeSH Terms] OR "questionnaire"[Title/Abstract] OR "instrument"[Title/Abstract] OR "measure"[Title/Abstract] OR "survey"[Title/Abstract]) AND ("instrumentation"[MeSH Subheading] OR "methods"[MeSH Subheading] OR "Comparative Study"[Publication Type] OR "psychometrics"[MeSH Terms] OR "psychometr"[Title/Abstract] OR "clinimetr"[Text Word] OR "clinometr"[Text Word] OR "outcome assessment"[Title/Abstract] OR "outcome measure"[Text Word] OR "observer variation"[MeSH Terms] OR "observer variation"[Title/Abstract] OR "Health Status Indicators"[MeSH Terms] OR "reproducibility of results"[MeSH Terms] OR "reproducib"[Title/Abstract] OR "discriminant analysis"[MeSH Terms] OR "reliab"[Title/Abstract] OR "unreliab"[Title/Abstract] OR "valid"[Title/Abstract] OR "coefficient of variation"[Title/Abstract] OR "coefficient"[Title/Abstract] OR "homogeneity"[Title/Abstract] OR "homogeneous"[Title/Abstract] OR "internal consistency"[Title/Abstract] OR "cronbach"[Title/Abstract] AND ("alpha"[Title/Abstract] OR "alphas"[Title/Abstract])) OR ("item"[Title/Abstract] AND ("correlation"[Title/Abstract] OR "selection"[Title/Abstract] OR "reduction"[Title/Abstract])) OR "agreement"[Text Word] OR "precision"[Text Word] OR "imprecision"[Text Word] OR "precise values"[Text Word] OR "test-retest"[Title/Abstract] OR ("test"[Title/Abstract] AND "retest"[Title/Abstract]) OR ("reliab"[Title/Abstract] AND ("test"[Title/Abstract] OR "retest"[Title/Abstract])) OR "stability"[Title/Abstract] OR "interrater"[Title/Abstract] OR "inter-rater"[Title/Abstract] OR "intrarater"[Title/Abstract] OR "intra-rater"[Title/Abstract] OR "intertester"[Title/Abstract] OR "inter-tester"[Title/Abstract] OR "intratester"[Title/Abstract] OR "intra-tester"[Title/Abstract] OR "interobserver"[Title/Abstract] OR "inter-observer"[Title/Abstract] OR "intraobserver"[Title/Abstract] OR "intra-</p>	
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	<p>observer"[Title/Abstract] OR "intertechician"[Title/Abstract] OR "inter-technician"[Title/Abstract] OR "intratechnician"[Title/Abstract] OR "intra-technician"[Title/Abstract] OR "interexaminer"[Title/Abstract] OR "inter-examiner"[Title/Abstract] OR "intraexaminer"[Title/Abstract] OR "intra-examiner"[Title/Abstract] OR "interassay"[Title/Abstract] OR "inter-assay"[Title/Abstract] OR "intraassay"[Title/Abstract] OR "intra-assay"[Title/Abstract] OR "interindividual"[Title/Abstract] OR "inter-individual"[Title/Abstract] OR "intraindividual"[Title/Abstract] OR "intra-individual"[Title/Abstract] OR "interparticipant"[Title/Abstract] OR "inter-participant"[Title/Abstract] OR "intraparticipant"[Title/Abstract] OR "intra-participant"[Title/Abstract] OR "kappa"[Title/Abstract] OR "kappa's"[Title/Abstract] OR "kappas"[Title/Abstract] OR "repeatab"[Text Word] OR ("replicab"[Text Word] OR "repeated"[Text Word]) AND ("measure"[Text Word] OR "measures"[Text Word] OR "findings"[Text Word] OR "result"[Text Word] OR "results"[Text Word] OR "test"[Text Word] OR "tests"[Text Word]) OR "generaliza"[Title/Abstract] OR "generalisa"[Title/Abstract] OR "concordance"[Title/Abstract] OR ("intraclass"[Title/Abstract] AND "correlation"[Title/Abstract]) OR "discriminative"[Title/Abstract] OR "known group"[Title/Abstract] OR "factor analysis"[Title/Abstract] OR "factor analyses"[Title/Abstract] OR "factor structure"[Title/Abstract] OR "factor structures"[Title/Abstract] OR "dimension"[Title/Abstract] OR "subscale"[Title/Abstract] OR ("multitrait"[Title/Abstract] AND "scaling"[Title/Abstract] AND ("analysis"[Title/Abstract] OR "analyses"[Title/Abstract])) OR "item discriminant"[Title/Abstract] OR "interscale correlation"[Title/Abstract] OR "error"[Title/Abstract] OR "errors"[Title/Abstract] OR "individual variability"[Title/Abstract] OR "interval variability"[Title/Abstract] OR "rate variability"[Title/Abstract] OR ("variability"[Title/Abstract] AND ("analysis"[Title/Abstract] OR "values"[Title/Abstract])) OR ("uncertainty"[Title/Abstract] AND ("measurement"[Title/Abstract] OR "measuring"[Title/Abstract])) OR "standard error of measurement"[Title/Abstract] OR "sensitiv"[Title/Abstract] OR "responsive"[Title/Abstract] OR ("limit"[Title/Abstract] AND "detection"[Title/Abstract]) OR "minimal detectable concentration"[Title/Abstract] OR "interpretab"[Title/Abstract] OR ("minimal"[Title/Abstract] OR "minimally"[Title/Abstract] OR "clinical"[Title/Abstract] OR "clinically"[Title/Abstract]) AND ("important"[Title/Abstract] OR "significant"[Title/Abstract] OR "detectable"[Title/Abstract]) AND ("change"[Title/Abstract] OR "difference"[Title/Abstract]) OR ("small"[Title/Abstract] AND ("real"[Title/Abstract] OR "detectable"[Title/Abstract]) AND ("change"[Title/Abstract] OR "difference"[Title/Abstract])) OR "meaningful change"[Title/Abstract] OR "ceiling effect"[Title/Abstract] OR "floor effect"[Title/Abstract] OR "Item response model"[Title/Abstract] OR "IRT"[Title/Abstract] OR "Rasch"[Title/Abstract] OR "Differential item functioning"[Title/Abstract] OR "DIF"[Title/Abstract] OR "computer adaptive testing"[Title/Abstract] OR "item bank"[Title/Abstract] OR "cross-cultural equivalence"[Title/Abstract]"</p>	
#8	<p>#7 NOT #6,Publication Date,,"("Oral Health"[MeSH Terms] OR "Geriatric Dentistry"[MeSH Terms] OR "Dental Care"[MeSH Terms] OR "Dental Care for Aged"[MeSH Terms] OR "Dentistry"[MeSH Terms] OR "Dentists"[MeSH Terms] OR "dental"[Title] OR "dentist"[Title] OR "oral hygien"[Title] OR "dental"[Other Term] OR "dentist"[Other Term] OR "oral hygien"[Other Term]) AND ("Aged"[MeSH Terms] OR "aged, 80 and over"[MeSH Terms] OR "Frail Elderly"[MeSH Terms] OR "Geriatrics"[MeSH Terms] OR "Geriatric Psychiatry"[MeSH Terms] OR "Geriatric Nursing"[MeSH Terms] OR "Geriatric Dentistry"[MeSH Terms] OR "Dental Care for Aged"[MeSH Terms] OR "Health Services for the Aged"[MeSH Terms] OR ("elder"[Text Word] OR "eldest"[Text Word] OR "frail"[Text Word] OR "geriatri"[Text Word] OR "old age"[Text</p>	420

<p>Word] OR ""oldest old""[Text Word] OR ""senior""[Text Word] OR ""senium""[Text Word] OR ""very old""[Text Word] OR ""septuagenarian""[Text Word] OR ""octagenarian""[Text Word] OR ""octogenarian""[Text Word] OR ""nonagenarian""[Text Word] OR ""centarian""[Text Word] OR ""centenarian""[Text Word] OR ""supercentenarian""[Text Word] OR ""older people""[Text Word] OR ""older subject""[Text Word] OR ""older patient""[Text Word] OR ""older age""[Text Word] OR ""older adult""[Text Word] OR ""older man""[Text Word] OR ""older men""[Text Word] OR ""older male""[Text Word] OR ""older woman""[Text Word] OR ""older women""[Text Word] OR ""older female""[Text Word] OR ""older population""[Text Word] OR ""older person""[Text Word])) AND (""nursing homes""[MeSH Terms] OR ""long term care""[MeSH Terms] OR ""residential care""[All Fields] OR ""homes for the aged""[MeSH Terms] OR ""residential facilities""[MeSH Terms] OR ""long-term care institution""[All Fields] OR ""residential aged care""[All Fields] OR ""skilled nursing facilities""[MeSH Terms] OR ""nursing facility""[All Fields] OR ""care worker""[All Fields] OR ""nurses aids""[All Fields] OR ""nursing personnel""[All Fields] OR ""Caregivers""[MeSH Terms] OR ""Nursing""[MeSH Terms] OR ""Nursing""[MeSH Subheading] OR ""Nursing Care""[MeSH Terms] OR ""Nurses""[MeSH Terms] OR ""Nursing Staff""[MeSH Terms] OR ""Nursing Care""[MeSH Terms] OR ""Nurse's Role""[MeSH Terms] OR ""Home Health Aides""[MeSH Terms] OR ""Nursing Assistants""[MeSH Terms] OR ""Licensed Practical Nurses""[MeSH Terms] OR ""Home Care Services""[MeSH Terms] OR ""nurs""[Title/Abstract] OR ""home care""[Title/Abstract] OR ""home healthcare""[Title/Abstract] OR ""home health care""[Title/Abstract] OR ""care aide""[Title/Abstract] OR ""home health aide""[Title/Abstract]) AND (""Oral Health screening tool""[All Fields] OR ""Geriatric Assessment""[MeSH Terms] OR ""assessment tool""[All Fields] OR ""needs assessment""[MeSH Terms] OR ""oral assessment""[All Fields] OR ""assessment scale""[All Fields] OR ""Surveys and Questionnaires""[MeSH Terms] OR ""questionnaire""[Title/Abstract] OR ""instrument""[Title/Abstract] OR ""measure""[Title/Abstract] OR ""survey""[Title/Abstract]) AND (""instrumentation""[MeSH Subheading] OR ""methods""[MeSH Subheading] OR ""Comparative Study""[Publication Type] OR ""psychometrics""[MeSH Terms] OR ""psychometr""[Title/Abstract] OR ""clinimetr""[Text Word] OR ""clinometr""[Text Word] OR ""outcome assessment""[Title/Abstract] OR ""outcome measure""[Text Word] OR ""observer variation""[MeSH Terms] OR ""observer variation""[Title/Abstract] OR ""Health Status Indicators""[MeSH Terms] OR ""reproducibility of results""[MeSH Terms] OR ""reproducib""[Title/Abstract] OR ""discriminant analysis""[MeSH Terms] OR ""reliab""[Title/Abstract] OR ""unreliab""[Title/Abstract] OR ""valid""[Title/Abstract] OR ""coefficient of variation""[Title/Abstract] OR ""coefficient""[Title/Abstract] OR ""homogeneity""[Title/Abstract] OR ""homogeneous""[Title/Abstract] OR ""internal consistency""[Title/Abstract] OR (""cronbach""[Title/Abstract] AND (""alpha""[Title/Abstract] OR ""alphas""[Title/Abstract])) OR (""item""[Title/Abstract] AND (""correlation""[Title/Abstract] OR ""selection""[Title/Abstract] OR ""reduction""[Title/Abstract])) OR ""agreement""[Text Word] OR ""precision""[Text Word] OR ""imprecision""[Text Word] OR ""precise values""[Text Word] OR ""test-retest""[Title/Abstract] OR (""test""[Title/Abstract] AND ""retest""[Title/Abstract]) OR (""reliab""[Title/Abstract] AND (""test""[Title/Abstract] OR ""retest""[Title/Abstract])) OR ""stability""[Title/Abstract] OR ""interrater""[Title/Abstract] OR ""inter-rater""[Title/Abstract] OR ""intrarater""[Title/Abstract] OR ""intra-rater""[Title/Abstract] OR ""intertester""[Title/Abstract] OR ""inter-tester""[Title/Abstract] OR ""intratester""[Title/Abstract] OR ""intra-tester""[Title/Abstract] OR ""interobserver""[Title/Abstract] OR ""inter-observer""[Title/Abstract] OR ""intraobserver""[Title/Abstract] OR ""intra-observer""[Title/Abstract] OR ""intertechician""[Title/Abstract] OR ""inter-</p>	
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<p>technician"[Title/Abstract] OR "intratechnician"[Title/Abstract] OR "intra-technician"[Title/Abstract] OR "interexaminer"[Title/Abstract] OR "inter-examiner"[Title/Abstract] OR "intraexaminer"[Title/Abstract] OR "intra-examiner"[Title/Abstract] OR "interassay"[Title/Abstract] OR "inter-assay"[Title/Abstract] OR "intraassay"[Title/Abstract] OR "intra-assay"[Title/Abstract] OR "interindividual"[Title/Abstract] OR "inter-individual"[Title/Abstract] OR "intraindividual"[Title/Abstract] OR "intra-individual"[Title/Abstract] OR "interparticipant"[Title/Abstract] OR "inter-participant"[Title/Abstract] OR "intraparticipant"[Title/Abstract] OR "intra-participant"[Title/Abstract] OR "kappa"[Title/Abstract] OR "kappa's"[Title/Abstract] OR "kappas"[Title/Abstract] OR "repeatab"[Text Word] OR ("replicab"[Text Word] OR "repeated"[Text Word]) AND ("measure"[Text Word] OR "measures"[Text Word] OR "findings"[Text Word] OR "result"[Text Word] OR "results"[Text Word] OR "test"[Text Word] OR "tests"[Text Word]) OR "generaliza"[Title/Abstract] OR "generalisa"[Title/Abstract] OR "concordance"[Title/Abstract] OR ("intraclass"[Title/Abstract] AND "correlation"[Title/Abstract]) OR "discriminative"[Title/Abstract] OR "known group"[Title/Abstract] OR "factor analysis"[Title/Abstract] OR "factor analyses"[Title/Abstract] OR "factor structure"[Title/Abstract] OR "factor structures"[Title/Abstract] OR "dimension"[Title/Abstract] OR "subscale"[Title/Abstract] OR ("multitrait"[Title/Abstract] AND "scaling"[Title/Abstract] AND "analysis"[Title/Abstract] OR "analyses"[Title/Abstract])) OR "item discriminant"[Title/Abstract] OR "interscale correlation"[Title/Abstract] OR "error"[Title/Abstract] OR "errors"[Title/Abstract] OR "individual variability"[Title/Abstract] OR "interval variability"[Title/Abstract] OR "rate variability"[Title/Abstract] OR ("variability"[Title/Abstract] AND ("analysis"[Title/Abstract] OR "values"[Title/Abstract])) OR ("uncertainty"[Title/Abstract] AND ("measurement"[Title/Abstract] OR "measuring"[Title/Abstract])) OR "standard error of measurement"[Title/Abstract] OR "sensitive"[Title/Abstract] OR "responsive"[Title/Abstract] OR ("limit"[Title/Abstract] AND "detection"[Title/Abstract]) OR "minimal detectable concentration"[Title/Abstract] OR "interpretab"[Title/Abstract] OR ("minimal"[Title/Abstract] OR "minimally"[Title/Abstract] OR "clinical"[Title/Abstract] OR "clinically"[Title/Abstract] AND ("important"[Title/Abstract] OR "significant"[Title/Abstract] OR "detectable"[Title/Abstract]) AND ("change"[Title/Abstract] OR "difference"[Title/Abstract])) OR ("small"[Title/Abstract] AND ("real"[Title/Abstract] OR "detectable"[Title/Abstract]) AND ("change"[Title/Abstract] OR "difference"[Title/Abstract])) OR "meaningful change"[Title/Abstract] OR "ceiling effect"[Title/Abstract] OR "floor effect"[Title/Abstract] OR "Item response model"[Title/Abstract] OR "IRT"[Title/Abstract] OR "Rasch"[Title/Abstract] OR "Differential item functioning"[Title/Abstract] OR "DIF"[Title/Abstract] OR "computer adaptive testing"[Title/Abstract] OR "item bank"[Title/Abstract] OR "cross-cultural equivalence"[Title/Abstract]) NOT ("biography"[Publication Type] OR "case reports"[Publication Type] OR "comment"[Publication Type] OR "directory"[Publication Type] OR "editorial"[Publication Type] OR "festschrift"[Publication Type] OR "interview"[Publication Type] OR "legislation"[Publication Type] OR "letter"[Publication Type] OR "news"[Publication Type] OR "newspaper article"[Publication Type] OR "patient education handout"[Publication Type] OR "consensus development conference"[Publication Type] OR "consensus development conference, nih"[Publication Type] OR "practice guideline"[Publication Type]) NOT ("animals"[MeSH Terms] NOT "humans"[MeSH Terms])"</p>	
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