

# Reliability and validity of MINCIR scale for methodological quality in dental therapy research

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The clinical paradigm of evidence-based medicine requires a foundation of good quality research upon which clinical and epidemiological decisions can be based. Several instruments have been designed to assess research quality and validated, though most have limitations. The MINCIR scale was designed to determine the methodological quality (MQ) of clinical research, its psychometric properties for dental research involving large-scale evaluations have not yet been determined. The aim of this study was to determine the validity and reliability of the MINCIR scale for assessment of the MQ of dental therapy studies published in journals indexed in Institute for Scientific Information (ISI) databases. A validation study was performed on a sample of 99 articles from four representative ISI dental journals. Criterion validity was determined in relation to level of evidence (LoE) classification as described by the Oxford Center for Evidence-Based Medicine (OCEBM) ranking system, reliability was determined by calculation of intra-class correlation coefficient (ICC) values, and internal consistency was determined by calculation of Cronbach's alpha. Very good inter-observer reliability (ICC = 0.93), excellent temporal stability (ICC = 0.97), good internal consistency (Cronbach's alpha = 0.77), and a strong (inverse) correlation with OCEBM LoEs (-0.807;  $p < .0001$ ) were obtained. These results indicate that the MINCIR scale has adequate psychometric properties and therefore is a valid option for use in the assessment of MQ in dental therapy research articles.

Dental research

Reproducibility of results

Research design

calculation

classification

correlation coefficient

Cronbach alpha coefficient

data base

dental research

human

human experiment

internal consistency

medicine

reproducibility

tooth

validation study

validity

article

clinical trial (topic)

equipment

evidence based dentistry

methodology

nonparametric test

observer variation

psychometry

publication

reference value

reproducibility

standard

Clinical Trials as Topic

Dental Research

Evidence-Based Dentistry

Humans

Observer Variation

Periodicals as Topic

Psychometrics

Reference Values

Reproducibility of Results

Research Design

Statistics, Nonparametric