

Protocol for a New Index Validation in Prosthodontics Clinical Research

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[S I R]
Score for Implant Restorations

Introduction

Protocols to validate indices in prosthodontics research have been scarcely reported. Meanwhile, there is no appropriate index gathering all different aspects of implant restorations. This work introduces a protocol to validate a new index to Score Implant Restorations (SIR index).

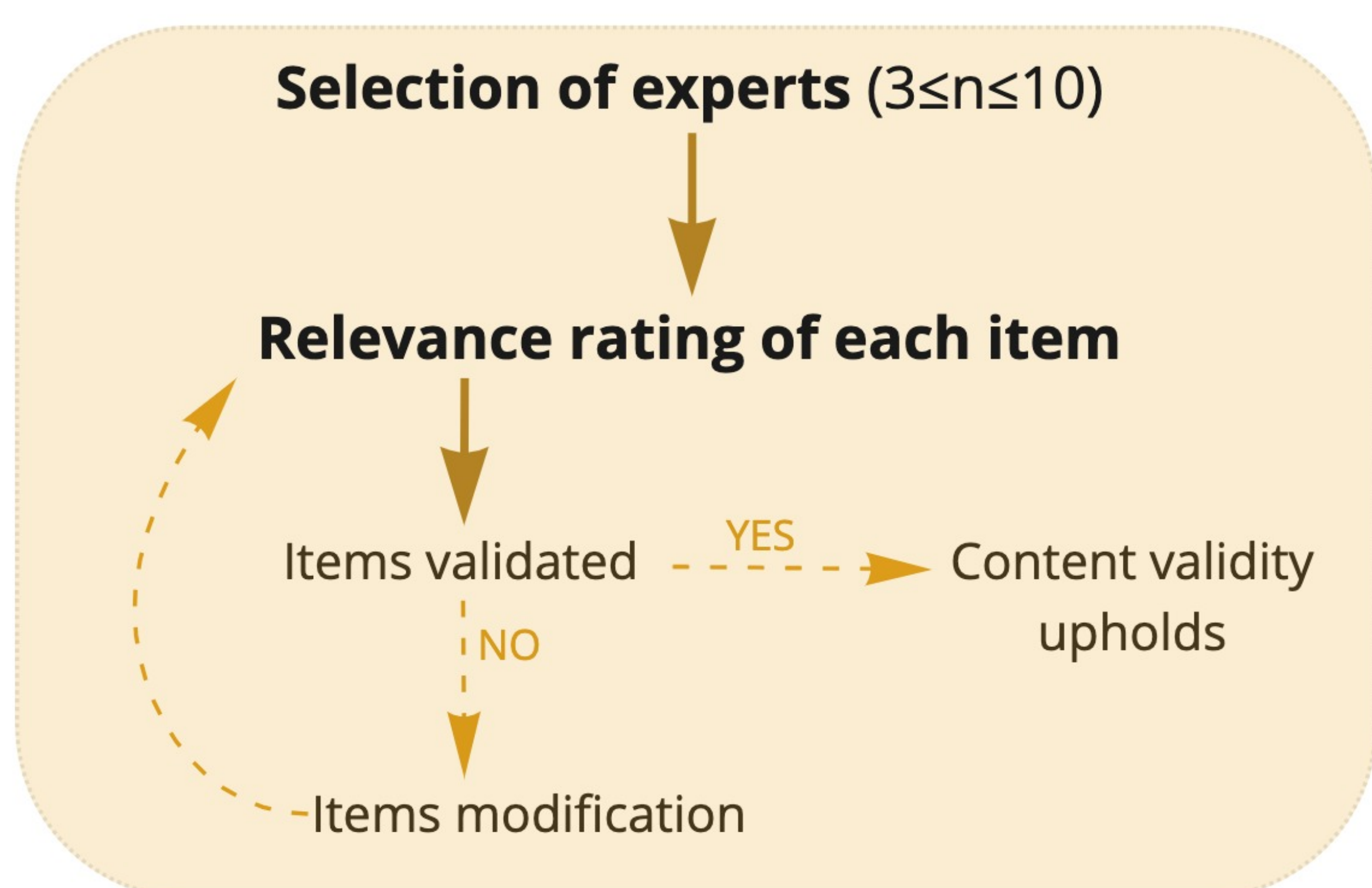
Methods

The index items are developed by experts in the field of implant prosthodontics clinical research based on literature and practical needs. The first step consists in the validation of the index items to establish content validity (relation of the items to the concept). Experienced clinical researchers (prosthodontists and surgeons) are asked to rate the relevance of each item on a 4-point Likert scale. The number of experts ranges from 3 to 10 depending on criteria of expertise and knowledge diversity. If the content of items is not validated, modifications are conducted and a new evaluation round is carried on until the content validity upholds. The second step concerns the validation of the index across measures of discriminant validity (tests whether concepts or measurements that are not supposed to be related are actually unrelated), internal consistency (explores the extent of correlation between the different items of the same scale), inter-rater agreement and intra-rater reliability (test-retest reliability) on a sample of clinical researchers. An online platform containing pictures of clinical cases is designed. The examiners are calibrated following a 4-step procedure (blind rating, educational session, second round rating, debriefing). Subsequently, examiners ($n=X$) evaluate a sample of restorations and repeat the evaluations at a time interval ranging from 2 to 4 weeks ($n=Y$ for the first round and $n=Y'$ for the second). X and Y are calculated on the basis of a 95% confidence interval (CI) of the pre-defined intra-class correlation coefficients (ICCs). Evaluation time is also considered when determining Y and Y' .

INDEX VALIDATION PROTOCOL

1

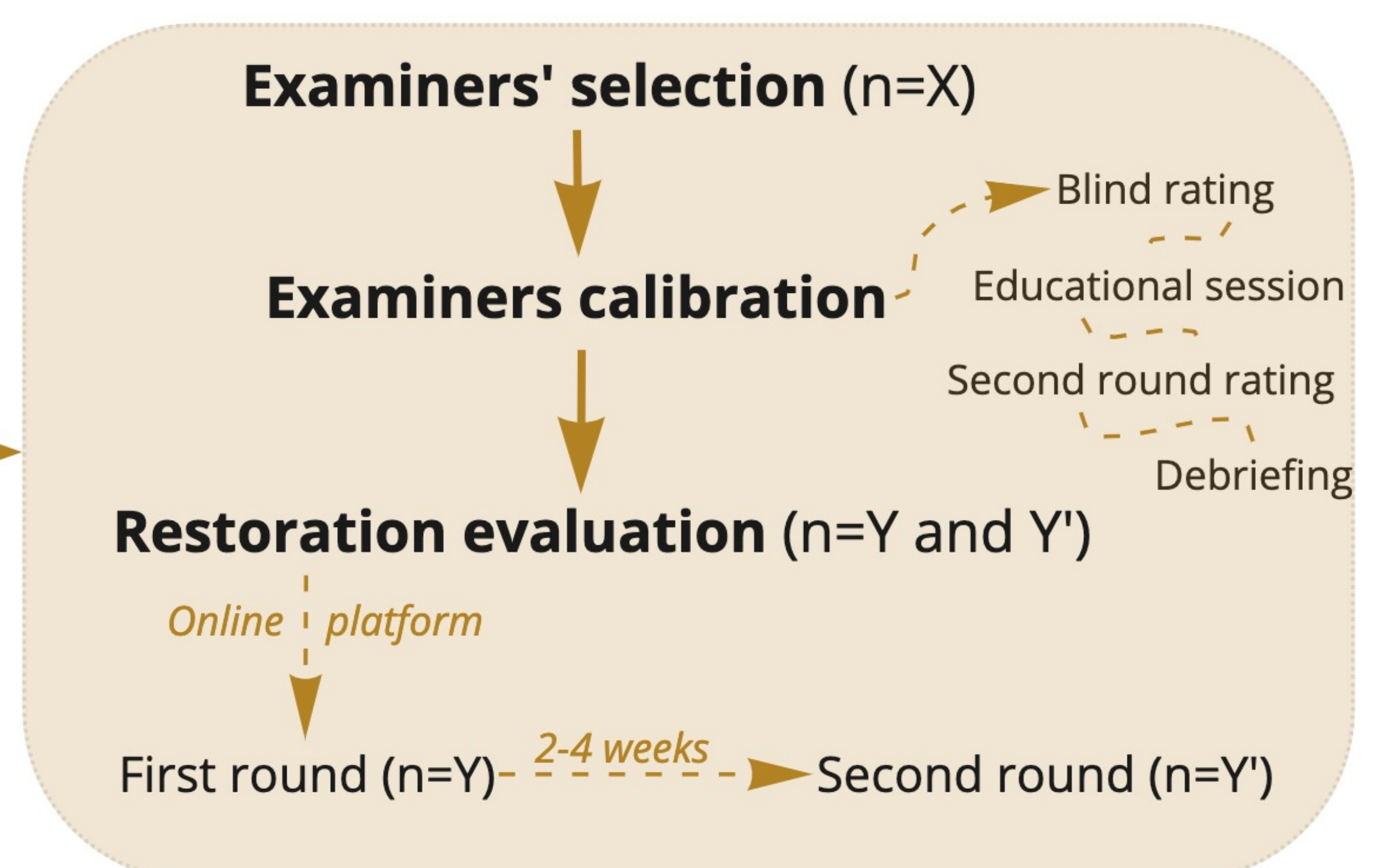
Items validation



CONTENT VALIDITY

2

Validation of the index itself



DISCRIMINANT VALIDITY
INTERNAL CONSISTENCY
INTER-RATER AGREEMENT
INTRA-RATER RELIABILITY

O
U
T
C
O
M
E

Discussion

This original protocol could be used by researchers to validate any index in prosthodontics clinical research. It will first be used to validate a new index to score implant restorations (SIR index), which is currently needed to improve clinical research in implant prosthodontics.