INPLASY

A Study on the Measurement Tool Characteristics of Knee Osteoarthritis Patients Undergoing Knee Replacement Surgery Based on the ICF Framework

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Formal screening of search results against eligibility criteria.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 16 December 2025 and was last updated on 16 December 2025.

INTRODUCTION

Review question / Objective The study population includes patients undergoing knee replacement surgery due to knee osteoarthritis (KOA) during the perioperative period. Exposure is defined as undergoing knee replacement surgery. The control group has no specific requirements. The outcome measures encompass all measurement characteristics of knee-related assessment tools, including but not limited to reliability, intra-rater reliability, inter-rater reliability, concurrent validity, predictive validity, construct validity, and hypothesis testing. The study design is a cohort study.

Condition being studied Numerous functional measurement tools exist for perioperative knee osteoarthritis, covering multiple dimensions including medical history, pain, joint range of motion, walking function, sleep disturbance, physical endurance, social participation, quality of life, and psychological/emotional status. As established, systematic content, they offer significant convenience for patient assessment and are widely welcomed in clinical practice. However, these measurement tools currently have varying focuses, their alignment with ICF core categories remains incomplete, and data analysis on their reliability and validity is lacking.Therefore, this review aims to identify commonly used assessment tools for the perioperative period of knee arthroplasty, perform an associative analysis of these tools using ICF categories, establish an ICF category repository relevant to perioperative KOA, and comprehensively evaluate the measurement characteristics reported in the perioperative KOA population. This work lays the groundwork for future studies, such as generating ICF core categories for perioperative KOA, and provides crucial clinical guidance for selecting appropriate measurement tools to assess adult patients undergoing perioperative KOA procedures, holding significant clinical value.

METHODS

Participant or population Patients undergoing knee replacement surgery due to knee osteoarthritis (KOA) during the perioperative period.

Intervention Undergoing knee replacement surgery.

Comparator No.

Study designs to be included Cohort study.

Eligibility criteria Inclusion criteria are as follows: (1) Studies involving patients diagnosed with knee osteoarthritis undergoing knee replacement surgery during the perioperative period; (2) Studies reporting the characteristics of knee-related measurement tools.
Exclusion criteria are as follows: (1) Editorials/ reviews, conference proceedings, duplicate publications, and non-peer-reviewed publications; (2) Studies for which full-text access was unavailable; (3) Animal studies.

Information sources PubMed、Web of Science、Embase、CNKI.

Main outcome(s) The outcome measures encompass all measurement characteristics of knee-related assessment tools, including but not limited to reliability, intra-rater reliability, inter-rater reliability, concurrent validity, predictive validity, construct validity, and hypothesis testing.

Quality assessment / Risk of bias analysis The NEWCASTLE-OTTAWA QUALITY ASSESSMENT SCALE (NOS) was used to assess the quality of the included studies.

Strategy of data synthesis The database search results were saved to the Zotero reference manager. After removing duplicates, two researchers screened the titles and abstracts. If disagreements arose during screening, the items were re-reviewed. Persistent disagreements were resolved by a third reviewer. Full-text articles were then included based on this screening process. Any disagreements during full-text review followed the same resolution procedure. The study selection results were reported using the PRISMA flow diagram.

Subgroup analysis None.

Sensitivity analysis None.

Country(ies) involved China.

Keywords ICF; knee osteoarthritis; knee arthroplasty; measurement properties.

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