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A Systematic Review of the Health-related Quality of Life Measures following Total Knee Arthroplasty

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Recommended Citation

Total knee arthroplasty (TKA) is a treatment of choice when all other treatment options have been exhausted in patients with different forms of knee arthritis.

One of the goals of TKA, including the rehabilitation interventions that follow TKA, is to improve health-related quality of life (HRQOL).

Patients awaiting TKA expect TKA to improve their health status, a goal that is aligned with the clinimetric properties of more established HRQOL measures such as the EQ-5D, QWB, and WHQOL also for newer joint-specific QOL measure such as the osteoarthritis knee and hip quality of life questionnaire (OAKQOL).

Researchers should examine the psychometric properties of more established HRQOL measures such as the EQ-5D, QWB, and WHQOL also for newer joint-specific QOL measure such as the osteoarthritis knee and hip quality of life questionnaire (OAKQOL).

Clinicians should be careful while selecting PROs and base their decision on what exactly they want to measure – pain/functions (KOOS or WDOMAC), burden of disease or health status (SF-36 or SF-12), or HRQOL (no preferred measure available as of yet).

Objectives

- To examine the cognitive, psychometric, and functional properties of PRO measures in the context of TKA.
- To assess the acceptability of PRO measures in TKA patients.

Background

- Total knee arthroplasty (TKA) is a treatment of choice when all other treatment options have been exhausted in patients with different forms of knee arthritis.
- One of the goals of TKA, including the rehabilitation interventions that follow TKA, is to improve health-related quality of life (HRQOL).
- Patients awaiting TKA expect TKA to improve their health status, a goal that is aligned with the clinimetric properties of more established HRQOL measures such as the EQ-5D, QWB, and WHQOL also for newer joint-specific QOL measure such as the osteoarthritis knee and hip quality of life questionnaire (OAKQOL).

Methods

- Bibliographic databases such as MEDLINE, CINAHL AND EMBASE were searched using pre-determined search terms.
- Search terms were - (total knee arthroplasty OR total knee replacement OR knee arthroplasty OR knee replacement) AND (patient-reported outcomes OR self-reported outcomes OR outcome measures)
- Inclusion/exclusion criteria were - any PRO used in either randomized controlled trial (RCTs) or described in systematic reviews (SRs) for assessing HRQOL in patients with TKA were identified and included in the review. The HRQOL outcomes used in cohort or case-controlled studies were excluded. The PROs published in languages other than English and the objective assessment scores were excluded.
- A total of eight criteria were reviewed. These were conceptual model, reliability, validity, responsiveness, interpretability, administrative burden, alternative modes of administration, and cultural adaptability performed for that HRQOL outcome. These criteria have been described earlier (3).
- Two independent reviewers searched the literature, identified the potential HRQOL outcomes, and extracted the necessary data.
- Any disagreements between the reviewers were addressed by discussion and consensus-building.

Results

- The review identified seven outcomes that have been used in the RCTs and SRs focusing on patients with TKA.
- They were - Short Form 36 (SF-36) and its shorter version SF-12, The Western Ontario and McMaster Universities Arthritis Index (WOMAC), EuroQOL (EQ-5D), Quality of Well-being (QWB) scale, Knee Osteoarthritis Outcome Score (KOOS), and 15D
- The review identified seven outcomes that have been used in the RCTs and SRs focusing on patients with TKA.

Conceptual model

- SF-36 and SF-12 - generic measures and developed for assessing burden of disease on health status but not HRQOL
- The WOMAC - joint-specific measure and assesses pain, stiffness, function, social, and emotional well-being in patients with knee arthritis
- The EQ-5D - generic health measure for clinical and economic analysis for different interventions
- QWB Scale - generic measure based on the general health policy model, assesses preference for observed health states
- KOOS - joint-specific measure and assesses pain, symptoms, ADL, sports and recreation, and QOL in patients with knee pathology

Validity and Responsiveness

- Construct validity and responsiveness of the KOOS and the WOMAC has acceptable reliability (ICC > 0.7) in patients with TKA
- Of the generic measures, only the SF-36 has been examined for its test-retest reliability (ICC > 0.75) in patients with TKA

Reliability

- Two joint specific measures of the KOOS and the WOMAC has acceptable reliability (ICC > 0.7) in patients with TKA
- Of the generic measures, only the SF-36 has been examined for its test-retest reliability (ICC > 0.75) in patients with TKA

Interpretability and Versions in Other Languages

• The WOMAC and the KOOS have more condition-specific items and have proven psychometric properties for patients with TKA; however they are primarily measures of pain and functions rather than HRQOL
• SF-36 and SF-12 are other measures which have been tested in patients with TKA, however have low to moderate validity/responsiveness in this patient group.
• Other measures have not been tested in TKA and need further examination before their use.

Discussion and Conclusions

• The WOMAC and the KOOS have more condition-specific items and have proven psychometric properties for patients with TKA; however they are primarily measures of pain and functions rather than HRQOL
• SF-36 and SF-12 are other measures which have been tested in patients with TKA, however have low to moderate validity/responsiveness in this patient group.

References


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