

Short Question:

Specific Question:

What proportion of patients undergoing Total Knee Replacement (TKR) have a poor outcome?

Clinical bottom line

A systematic review and a prospective study have identified that between 10 and 35% of patients have a poor outcome following a total knee replacement. The highest quality study suggests this figure is 20%.

Recommendations for Practice: Total Knee Replacement (TKR) is a cost effective and clinical effective procedure, 80% of patient are likely to get a good outcome. However a proportion of patients will have a poor outcome. Patients and clinicians need to be aware of this information when making informed decisions about future care.

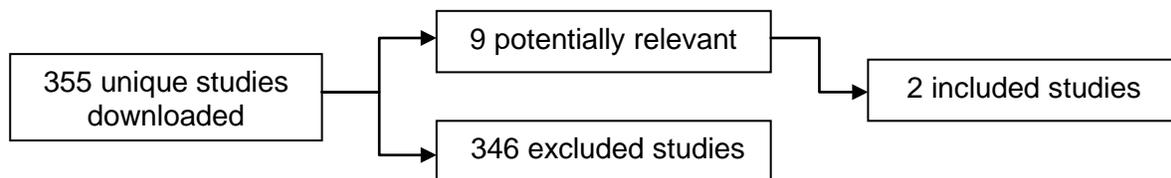
Why is this important? Total knee replacement is a very common procedure, mainly undertaken for osteoarthritis (97%, National Joint Registry 2010). During 2010 there were 76,870 primary total knee replacements undertaken in England and Wales (National Joint Registry 2010). In the NHS, 67% were undertaken, 24% in Independent Hospitals, 6% in Independent Sector Treatment Centres (ISTCs) and 3% in NHS treatment centres. The mean age at surgery was 67.5 years and BMI is higher in patients relieving TKR compared to total hip replacements. It is important that patients have appropriate information about the predictors of poor outcome following a total knee replacement. It is also important that clinicians who are referring patients for this intervention should be aware of the modifiable and non modifiable predictors of poor functional outcome.

Inclusion Criteria

	Description	Search terms
Population and Setting	Adult patients receiving Total knee replacement Any age	Arthroplasty, total knee replacement, OA
Intervention or Exposure (ie what is being tested)	Total knee replacement	Arthroplasty, Total knee Replacement
Comparison, if any	none	
Outcomes of interest	Pain, function, return to work, Quality of life, medical consultations	Pain, function, return to work, Quality of life
Types of studies	SR& RCTs only Observational cohort studies if no RCTs	SR, cohort studies, rct

Databases Searched	Date of last search	No. downloaded
Clinical Knowledge Summaries		
PEDro		
BMJ Updates		
Clinical Evidence		
TRIP Database		
NICE		
HTA		
Bandolier		
The Cochrane Library		
Medline		
Cinahl		
Embase		
PsycInfo		
Professional websites		
	355	9

Results



First Author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Beswick et al 2012 Systematic review	Prospective studies of consecutive , unselected patients with OA undergoing TKR	TKR/THR	10-35% of patients reported poor outcome	Small number of studies
Scott et al 2010 Prospective observational study	Prospective study 1217 patients	TKR	18% unsure or dissatisfied with procedure	No validation of satisfaction questionnaire used

Beswick et al 2012

Abstract

Total hip or knee replacement is highly successful when judged by prosthesis-related outcomes. However, some people experience long-term pain. **OBJECTIVES:** To review published studies in representative populations with total hip or knee replacement for the treatment of osteoarthritis reporting proportions of people by pain intensity. **DATA SOURCES:** MEDLINE and EMBASE databases searched to January 2011 with no language restrictions. Citations of key articles in ISI Web of Science and reference lists were checked. **STUDY ELIGIBILITY CRITERIA, PARTICIPANTS AND INTERVENTIONS:** Prospective studies of consecutive, unselected osteoarthritis patients representative of the primary total hip or knee replacement population, with intensities of patient-centred pain measured after 3 months to 5-year follow-up. **STUDY APPRAISAL AND SYNTHESIS METHODS:** Two authors screened titles and abstracts. Data extracted by one author were checked independently against original articles by a second. For each study, the authors summarised the proportions of people with different severities of pain in the operated joint. **RESULTS:** Searches identified 1308 articles of which 115 reported patient-centred pain outcomes. Fourteen articles describing 17 cohorts (6 with hip and 11 with knee replacement) presented appropriate data on pain intensity. The proportion of people with an unfavourable long-term pain outcome in studies ranged from about 7% to 23% after hip and 10% to 34% after knee replacement. In the best quality studies, an unfavourable pain outcome was reported in 9% or more of patients after hip and about 20% of patients after knee replacement. **LIMITATIONS:** Other studies reported mean values of pain outcomes. These and routine clinical studies are potential sources of relevant data. **CONCLUSIONS AND IMPLICATIONS OF KEY FINDINGS:** After hip and knee replacement, a significant proportion of people have painful joints. There is an urgent need to improve general awareness of this possibility and to address determinants of good and bad outcomes.

Summary of Beswick et al 2012

- Searched Embase and Medline to Jan 2011, no language restriction, prospective studies, pain measured at 3 months to 5 years.
- Used MOOSE checklist, 2 independent assessors. 1308 articles identified, 115 reported pain. 14 articles describing 17 cohorts (6 hip, 11 knee).
- 10 -34% reported long term/ unfavourable pain.
- In the best quality study unfavourable pain was reported as 20%.
- Authors identify that they were unable to apply a standard definition of pain severity at follow up and identified the need for consistency, also highlighted small numbers of studies.

Scott et al 2010

Abstract: Up to 20% of patients are not satisfied with the outcome following total knee replacement (TKR). This study investigated the pre- and post-operative predictors of dissatisfaction in a large cohort of patients undergoing TKR. We assessed 1217 consecutive patients between 2006 and 2008 both before operation and six months after, using the Short-form (SF)-12 health questionnaire and the Oxford Knee Score. Detailed information concerning comorbidity was also gathered. Satisfaction was measured at one year when 18.6% (226 of 1217) of patients were unsure or dissatisfied with their replacement and 81.4% (911 of 1217) were satisfied or very satisfied. Multivariate regression analysis was performed to identify independent predictors of dissatisfaction. Significant ($p < 0.001$) predictors at one year included the pre-operative SF-12 mental component score, depression and pain in other joints, the six-month SF-12 score and poorer improvement in the pain element of the Oxford Knee Score. Patient expectations were highly correlated with satisfaction. Satisfaction following TKR is multifactorial. Managing the expectations and mental health of the patients may reduce dissatisfaction. However, the most significant predictor of dissatisfaction is a painful total knee replacement.

Summary of Scott et al 2010

- Assesses 1217 consecutive patient between 2006-2008 pre op and 6 months post op using SF12 and Oxford Knee score. Satisfaction measured at 1 year
- Mean age 70 years, 698 women and 515 men
- At 12 months 81.4% were satisfied or very satisfied and 18.6% were unsure or dissatisfied
- Both satisfied and non satisfied participant had significant improvement in SF12 and looks at 6 months, although significantly greater in satisfied patients

Significant predictors of dissatisfaction at one year were

- Pre op SF12 mental component score
- Depression
- Pain in other joints (back pain and other joints)
- Of patients known to have depression pre op, two thirds were satisfied.
- Authors suggests that completing a mental health questionnaire prior to TKR surgery may enable further investigation and treatment of depressive symptoms prior to surgery
- Most significant predictor of dissatisfaction was persistent pain
- Prior expectations correlate well with satisfaction. It is important to manage these preoperatively

Summary

Both studies suggests that patients receiving a total knee replacement are likely to receive a good outcome, but there are a proportion of patients (10-34%) who have a poor long term outcome.

Conclusions

A systematic review of prospective studies identified between 10 -34% of patients reported long term/ unfavourable pain following a TKR. Within this review, the highest quality study identified unfavourable pain in 20% of patients following TKR (Beswick et al 2012).

A prospective study of 1217 patients (Scott et al 2010) identified up to 20% of patients are not satisfied with their outcome following total knee replacement

References

Beswick AD Wylde V Goberman- Hill R Blom A Dieppe P 2012 What proportion of patients report long term pain after total hip or knee replacement for osteoarthritis? A systematic review of prospective studies in unselected patients BMJ Open 1-12

Scott CEH Howie CR Macdonald D Biant LC 2010 Predicting dissatisfaction following total knee replacement a prospective study of 1217 patients Journal Bone and Joint Surgery 92b (9) 1253-1257