

■ SUPPLEMENTARY MATERIAL

Table i. Patient-reported outcome measures (PROMs) addressed in this study

PROM description	Number of studies using PROMs
PSQ (patient satisfaction questionnaire)	2
UCLA (University of California, Los Angeles)	1
ARS (Activity Rating Scale)	1
Tegner-Lysholm Knee Score	1
IPAQ (International Physical Activity Questionnaire)	1
WOMAC (Western Ontario McMaster University Score)	12
KSS (Knee Society Score)	12
SF-36 (Short Form-36)	12
FJS (Forgotten Joint Score)	1
KOOS-PS (Knee injury and Osteoarthritis Outcome Score-Physical Function)	5
POMS (Profile of Mood States)	1
HADS (Hospital Anxiety and Depression Scale)	1
CPG (Chronic Pain Grade)	1
Dutch KOOS	1
VAS (Visual Analogue Scale)	3
OKS (Oxford-12 Knee Score)	6
Swedish OKS	1
NHP (Nottingham Health Profile)	1
SIP (Sickness Impact Profile)	1
SF-12 (Short-Form 12)	3
Korean OKS	1
EQ-5D (Generic Measure of Quality of Life, EuroQoL Group Index Score - 5 Domains)	2
Portuguese OKS	1
PerF (Function) and PerP (Pain)	1
Hungerford	1
KOS-ADLS (Knee Outcome Survey - Activities of Daily Living Score)	2
French OKS	2
HAAS (High Activity Arthroplasty Score)	2
IKS (International Knee Society)	1
KKS (Korean Knee Score)	1
Singapore OKS (10-item Chinese or English version)	2
BOAS (British Orthopaedic Association Score)	1
SAPS (Self-Administered Patient Satisfaction)	1
MODEMS (Musculoskeletal Outcomes Data Evaluation and Management System)	1
HFKS (High-Flexion Knee Score)	1
Feller	1
OKS-D (German adaptation)	1
New KSS	2
NRS (Numerical Rating Scale)	1
ICOAP (Intermittent and Constant OsteoArthritis Pain)	1
Lequesne	1
New Zealand Score (NZS)	1
Dutch New KSS (Knee Scoring System)	1
SF-6D (Short Form-6 Domains)	1
Hospital for Special Surgery Knee Score	2
Bristol Knee Score	1
French KSS	1

Table ii. Psychometric properties reported in each study

Study	Instruments	Validity	Reliability	Responsiveness	Development
Bach et al ¹	Hungerford; HSS score; KSS; Bristol	0	1	0	0
Becker et al ²	KSS; WOMAC; SF-36	1	0	0	0
Behrend et al ³	FJS-12; WOMAC	1	1	0	1
Busijja et al ⁴	SF-36	1	0	0	0
Davis et al ⁵	KOOS-PS	1	1	1	1
de Groot et al ⁶	Dutch KOOS; SF-36; VAS	1	0	0	1
Debette et al ⁷	French New KSS; KOOS; SF-12	1	1	1	0
Dinjens et al ⁸	New KSS; KSS; KOOS-PS	1	1	1	0
Dunbar et al ⁹	WOMAC; Swedish OKS; SF-12; SF-36; SIP	1	1	1	1
Eun et al ¹⁰	Korean OKS, SF-36, VAS	1	1	0	1
Grosse Frie et al ¹¹	OKS; EQ-5D	1	0	0	0
Gonçalves et al ¹²	Portuguese OKS; SF-36; VAS	1	1	0	1
Hossain et al ¹³	PerF/PerP; WOMAC; SF-36	1	1	1	1
Impellizzeri et al ¹⁴	OKS; WOMAC; SF-12; KOS-ADLS	1	1	1	0
Jenny et al ¹⁵	OKS; AKS	1	1	0	1
Jenny et al ¹⁶	AKSS; OKS; HAAS	1	1	0	0
Jenny et al ¹⁷	French OKS	1	1	0	1
Kim et al ¹⁸	KKO;OKS;SF-36	1	1	1	1
Ko et al ¹⁹	SF-36; OKS	1	1	0	1
Ko et al ²⁰	KSS; SF-36; OKS	0	0	1	0
Liow et al ²¹	OKS	0	1	0	0
Liow et al ²²	AKS	0	1	0	0
Mahomed et al ²³	SAPS;WOMAC;SF-36	1	1	0	1
Marx et al ²⁴	MODEMS;SF-36	1	1	0	0
Monticone et al ²⁵	KOOS	1	0	1	0
Na ²⁶	HKFS;WOMAC;Feller;SF-36	1	0	1	1
Naal et al ²⁷	WOMAC;KSS;KOS-ADLS;SF-12	1	1	0	1
Naal et al ²⁸	UCLA;Tegner;ARS	1	1	0	0
Noble et al ²⁹	New KSS	1	1	0	1
Perruccio et al ³⁰	KOOS;WOMAC	1	1	0	1
Roos et al ³¹	WOMAC, KOOS	1	1	1	1
Ruysen-Witrand et al ³²	NRS, ICOAP; KOOS-PS; WOMAC	1	1	1	1
Talbot et al ³³	HAAS	1	0	0	1
Toyé et al ³⁴	WOMAC; NZS	1	0	0	0
Van Der Straeten et al ³⁵	New Dutch KSS	1	1	0	1
Whitehouse et al ³⁶	OKS	1	1	0	0
Xie et al ³⁷	OKS; SF-36;EQ-5D	1	1	0	1
Zhang et al ³⁸	SF-6D;EQ-5D	0	0	0	0

References

1. **Bach CM, Nogler M, Steingruber IE, et al.** Scoring systems in total knee arthroplasty. *Clin Orthop Relat Res* 2002;399:184–196.
2. **Becker R, Döring C, Denecke A, Brosz M.** Expectation, satisfaction and clinical outcome of patients after total knee arthroplasty. *Knee Surg Sports Traumatol Arthrosc* 2011;19:1433–1441.
3. **Behrend H, Giesinger K, Giesinger JM, Kuster MS.** The “forgotten joint” as the ultimate goal in joint arthroplasty: validation of a new patient-reported outcome measure. *J Arthroplasty* 2012;27:430–436.
4. **Busija L, Osborne RH, Nilsdotter A, Buchbinder R, Roos EM.** Magnitude and meaningfulness of change in SF-36 scores in four types of orthopedic surgery. *Health Qual Life Outcomes* 2008;6:55.
5. **Davis AM, Perruccio AV, Canizares M, et al.** Comparative, validity and responsiveness of the HOOS-PS and KOOS-PS to the WOMAC physical function subscale in total joint replacement for osteoarthritis. *Osteoarthritis Cartilage* 2009;17:843–847.
6. **de Groot IB, Favejee MM, Reijman M, Verhaar JAN, Terwee CB.** The Dutch version of the knee injury and osteoarthritis outcome score: A validation study. *Health Qual Life Outcomes* 2008;6:16.
7. **Debette C, Parratte S, Maucourt-Boulch D, et al.** French adaptation of the new Knee Society Scoring System for total knee arthroplasty. *Orthop Traumatol Surg Res* 2014;100:531–534.
8. **Dinjens RN, Senden R, Heyligers IC, Grimm B.** Clinimetric quality of the new 2011 Knee Society score: high validity, low completion rate. *Knee* 2014;21:647–654.
9. **Dunbar MJ, Robertsson O, Ryd L, Lidgren L.** Translation and validation of the Oxford-12 item knee score for use in Sweden. *Acta Orthop Scand* 2000;71:268–274.
10. **Eun JS, Kim OG, Kim CK, Lee HS, Lee JS.** Validation of the Korean version of the Oxford Knee Score in patients undergoing total knee arthroplasty. *Clin Orthop Relat Res* 2013;471:600–605.
11. **Grosse Frie K, van der Meulen J, Black N.** Relationship between patients’ reports of complications and symptoms, disability and quality of life after surgery. *Br J Surg* 2012;99:1156–1163.
12. **Gonçalves RS, Tomás AM, Martins DI.** Cross-cultural adaptation and validation of the Portuguese version of the Oxford Knee Score (OKS). *Knee* 2012;19:344–347.
13. **Hossain FS, Patel S, Fernandez MA, Konan S, Haddad FS.** A performance based patient outcome score for active patients following total knee arthroplasty. *Osteoarthritis Cartilage* 2013;21:51–59.
14. **Impellizzeri FM, Mannion AF, Leunig M, Bizzini M, Naal FD.** Comparison of the reliability, responsiveness, and construct validity of 4 different questionnaires for evaluating outcomes after total knee arthroplasty. *J Arthroplasty* 2011;26:861–869.
15. **Jenny JY, Louis P, Diesinger Y.** High activity arthroplasty score has a lower ceiling effect than standard scores after knee arthroplasty. *J Arthroplasty* 2014;29:719–721.
16. **Jenny JY, Diesinger Y.** The Oxford Knee Score: compared performance before and after knee replacement. *Orthop Traumatol Surg Res* 2012;98:409–412.
17. **Jenny JY, Diesinger Y.** Validation of a French version of the Oxford knee questionnaire. *Orthop Traumatol Surg Res* 2011;97:267–271.
18. **Kim JG, Ha JK, Han SB, Kim TK, Lee MC.** Development and validation of a new evaluation system for patients with a floor-based lifestyle: the Korean knee score. *Clin Orthop Relat Res* 2013;471:1539–1547.
19. **Ko Y, Lo NN, Yeo SJ, et al.** Rasch analysis of the Oxford knee score. *Osteoarthritis Cartilage* 2009;17:1163–1169.
20. **Ko Y, Lo NN, Yeo SJ, et al.** Comparison of the responsiveness of the SF-36, the Oxford Knee Score, and the Knee Society Clinical Rating System in patients undergoing total knee replacement. *Qual Life Res* 2013;22:2455–2459.
21. **Liow RYL, Walker K, Wajid MA, Bedi G, Lennox CME.** The reliability of the American Knee Society score. *Acta Orthop Scand* 2000;71:603–608.
22. **Liow RYL, Walker K, Wajid MA, Bedi G, Lennox CME.** Functional rating for knee arthroplasty: comparison of three scoring systems. *Orthopedics* 2003;26:143–149.
23. **Mahomed N, Gandhi R, Daltroy L, Katz JN.** The self-administered patient satisfaction scale for primary hip and knee arthroplasty. *Arthritis* 2011;2011:591253.
24. **Marx RG, Jones EC, Atwan NC, et al.** Measuring improvement following total hip and knee arthroplasty using patient-based measures of outcome. *J Bone Joint Surg [Am]* 2005;87-A:1999–2005.
25. **Monticone M, Ferrante S, Salvaderi S, Motta L, Cerri C.** Responsiveness and minimal important changes for the Knee Injury and Osteoarthritis Outcome Score in subjects undergoing rehabilitation after total knee arthroplasty. *Am J Phys Med Rehabil* 2013;92:864–870.
26. **Na SE, Ha CW, Lee CH.** A new high-flexion knee scoring system to eliminate the ceiling effect. *Clin Orthop Relat Res* 2012;470:584–593.
27. **Naal FD, Impellizzeri FM, Sieverding M, et al.** The 12-item Oxford Knee Score: cross-cultural adaptation into German and assessment of its psychometric properties in patients with osteoarthritis of the knee. *Osteoarthritis Cartilage* 2009;17:49–52.
28. **Naal FD, Impellizzeri FM, Leunig M.** Which is the best activity rating scale for patients undergoing total joint arthroplasty? *Clin Orthop Relat Res* 2009;467:958–965.
29. **Noble PC, Scuderi GR, Brække AC, et al.** Development of a new Knee Society scoring system. *Clin Orthop Relat Res* 2012;470:20–32.
30. **Perruccio AV, Stefan Lohmander L, Canizares M, et al.** The development of a short measure of physical function for knee OA KOOS-Physical Function Shortform (KOOS-PS) - an OARSI/OMERACT initiative. *Osteoarthritis Cartilage* 2008;16:542–550.
31. **Roos EM, Toksvig-Larsen S.** Knee injury and Osteoarthritis Outcome Score (KOOS) – validation and comparison to the WOMAC in total knee replacement. *Health Qual Life Outcomes* 2003;1:17.
32. **Ruyssen-Witrand A, Fernandez-Lopez CJ, Gossec L, et al.** Psychometric properties of the OARSI/OMERACT osteoarthritis pain and functional impairment scales: ICOAP, KOOS-PS and HOOS-PS. *Clin Exp Rheumatol* 2011;29:231–237.
33. **Talbot S, Hooper G, Stokes A, Zordan R.** Use of a new high-activity arthroplasty score to assess function of young patients with total hip or knee arthroplasty. *J Arthroplasty* 2010;25:268–273.
34. **Toyé F, Barlow J, Wright C, Lamb SE.** A validation study of the New Zealand score for hip and knee surgery. *Clin Orthop Relat Res* 2007;464:190–195.
35. **Van Der Straeten C, Witvrouw E, Willems T, Bellemans J, Victor J.** Translation and validation of the Dutch New Knee Society scoring system. *Clin Orthop Relat Res* 2013;471:3565–3571.
36. **Whitehouse SL, Blom AW, Taylor AH, Pattison GTR, Bannister GC.** The Oxford Knee Score; problems and pitfalls. *Knee* 2005;12:287–291.
37. **Xie F, Li SC, Lo NN, et al.** Cross-cultural adaptation and validation of Singapore English and Chinese Versions of the Oxford Knee Score (OKS) in knee osteoarthritis patients undergoing total knee replacement. *Osteoarthritis Cartilage* 2007;15:1019–1024.
38. **Zhang XH, Li SC, Xie F, et al.** An exploratory study of response shift in health-related quality of life and utility assessment among patients with osteoarthritis undergoing total knee replacement surgery in a tertiary hospital in Singapore. *Value Health* 2012;15 (suppl):S72–S78.