Knee Injury and Knee Osteoarthritis

Development, evaluation and clinical application of patient-relevant questionnaires

Ewa Roos

From the Department of Physical Therapy
University of Lund, Sweden
Ask the patient – instead of us deciding what is good for them
(Professor Paul Dieppe, 1998)
Contents

Definitions and abbreviations, 3
Introduction, 5
  Knee injury and knee OA, 5
  Outcome measures, 5
Objectives, 7
  General, 7
  Specific, 7
List of papers, 8
Previous investigations, 9
  Impairment, disability, and handicap, 9
  Assessment of knee injury and knee OA, 9
  The Tapper & Hoover grading system, 10
  The Lysholm Knee Scoring Scale, 10
  The Cincinnati Knee Ligament Rating System, 11
  The International Knee Documentation Committee Knee Ligament Standard Evaluation Form (IKDC), 12
  The Flandry Questionnaire, 12
  Quality of Life Outcome Measure for Chronic Anterior Cruciate Ligament Deficiency (ACL-QOL), 13
  The Activities of Daily Living Scale (ADLS) of the Knee Outcome Survey, 13
  Hospital for Special Surgery Knee Score (HSS), 13
  The Knee Society Clinical Rating System (KSS), 14
  Lequesne Index of Severity – Knee (Lequesne ISK), 14
  WOMAC Osteoarthritis Index, 14
  12-item questionnaire for total knee replacement, 15
  SF-36—a generic measure, 15
  Musculoskeletal Functional Assessment Questionnaire (MFA)—a generic measure, 15
  The Patient-Specific Index—a measure for total hip replacement, 16
  Patient-Specific Functional Scale (PFPS)—a generic measure of disability, 16
  Methodological aspects of outcome measures for knee injury and knee OA, 17
Present investigations, 19
Subjects, 19
  Meniscus cohorts, 19
  Anterior cruciate ligament reconstruction, 20
  Knee arthroscopy, 21
Methods, 22
  The Flandry Questionnaire, 22
  WOMAC Osteoarthritis Index, 22
  Knee Injury and Osteoarthritis Outcome Score (KOOS), 23
  SF-36, 25
  Lysholm Knee Scoring Scale, 25
  Performance tests, 25
  Measure of recreational physical activity level, 26
  Radiographic evaluation, 27
  Statistics, 27

Results, 30
  Development and validation of the questionnaires (studies III–V), 30
  Sensitivity and responsiveness of the KOOS versus the WOMAC (studies II–V), 35
  Comparison of the KOOS subscales and the KOOS profiles between study groups (studies II–V), 37
  Short-term results of meniscectomy (study VI), 38
  Long-term results of meniscectomy (study I), 39

General discussion, 40
  Development of the KOOS, 40
  Construct validity, 42
  Comparison of the KOOS to the WOMAC, 42
  Comparison of KOOS subscales and KOOS profiles between study groups, 43
  Minimum significant level of change, 44
  Comparison of the KOOS to established, observer-administered knee scoring scales, 45
  Comparison of the KOOS to other self-administered measures for knee injury, 48
  Comparison of the KOOS to outcome measures for knee OA, 50
  Comparison of the Lequesne Index and the WOMAC, 51
  Clinical applications, 54
  What outcomes to measure, and what instrument to choose? 56

Conclusions, 58

Abstract, 59

Summary in Swedish, 60

Acknowledgements, 62

References, 64

Appendices, 74

Paper I–VI