**Appendix E.** Characteristics of included studies

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| First Author | Year | Study N | Mean Age | Pain Condition | Pain Duration | Kinesiophobia measure instrument | Outcome measure: disability | Outcome measure: pain | Outcome measure: quality of life | Design | Duration follow-up |
| Akbari [60] | 2016 | 142 | 45.9 (SD 11.9) | Mixed | 46.33 months (SD 65.69) | TSK-17 | RDQ | Pain intensity (VAS) | - | C-S  | - |
| Alschuler [25] | 2011 | 20 | 46.1 (SD 9.35) | CLBP | 40.75 months (SD 51.71) | TSK (no mentioned which version) | Ambulatory monitoring of physical activity | Pain intensity (NRS) | - | C-S | - |
| Altuğ [28] | 2016 | 112 | 44.98 (SD 14.63) | CLBP | 52.10 months (SD 69.84) | TSK-17 | ODI | Pain intensity (VAS) | SF-36 | C-S | - |
| Areeudomwong [51] | 2017 | 80 | 65.53 (SD 9.39) | KOA | 37.47 months (SD 47.89) | TSK-17 | WOMAC disability | Pain intensity (VAS) | - | C-S | - |
| Askary-Ashtiani [52] | 2014 | 96 | 47.46 (SD 12.6) | CNP | 669 days (SD 794.3) | TSK-17 | NDI | Pain intensity (VAS) | SF-12 (PCS-12 and MCS-12) | C-S | - |
| Boersma [34] | 2005 | 184 (136 with chronicity) | <1 year (45.1 SD (9.5)); 1-3 years (42.8 SD (9.0)); >3 years (45.6 SD (9.2)) | Mixed | <1 year (6 months); 1-3 years (2 years); >3 years (9 years) | TSK-17 | Five questions from Orebro Screening questionnaire for pain | Pain intensity (Orebro screening questionnaire for pain) | - | C-S | - |
| Bränström [15] | 2008 | 295 (261 included the final analysis) | 37.7 (SD 9.4) | Mixed | 2551 days (SD 2430) | TSK-17 | DRI | Pain intensity (VAS); pain severity (MPI) | - | C-S | - |
| Carvalho [48] | 2017 | 119 | 40 (SD 19) | CLBP | 12 (IQR=42) | TSK-17 | RMDQ | Pain intensity (NRS) | - | C-S | - |
| Damsgard [88] | 2010 | 263 (232 included the final analysis) | 42 (SD 10.0) | Mixed | < 6 months (1 (SD 0.4)), 7-12 months (22 (SD 10)), 13-60 months (101 (SD 47)), 61-119 months (43 (SD 20)), >120 months (50 (SD 23) |  TSK-13 | - | Pain intensity (during activity) (NRS)(during general activity or exercise) (a simple YES-NO question) | - | C-S | - |
| Demirbüken [36] | 2016 | 99 | 43.65 (SD 12.83) | CNP | Pain for 6 months at least (exact data on the duration was lacking) | TSK-17 | - | Pain intensity (VAS) | - | C-S | - |
| Dimitriadis [37] | 2015 | 45 | 35.9 (SD 14.5) | CNP | Pain for 6 months at least (exact data on the duration was lacking) | TSK (no mentioned which version) | NDI | Pain intensity (VAS) | - | C-S | - |
| Domenech [61] | 2013 | 97 | 32.0 (SD 10.0) | CKP | 12 months (6-22) | TSK-17 | Lysholm Scale | Pain intensity (VAS) | - | C-S | - |
| Elfving [62] | 2007 | 75 (64 included the final analysis) | 47 (IRQ 36.0-56.5) | CLBP | Pain for 6 months at least (exact data on the duration was lacking) | TSK-13 | RDQ (results were not reported) | - | - | C-S | - |
| Er [59] | 2017 | 31 | 47.42 (SD 14.03) | AS | 21.35 years (SD 13.20) | TSK-17 | BASFI | - | - | C-S | - |
| Falla [91] | 2016 | 205 | 40.1 (SD 11.4) | CWAD | - | TSK-11 | - | Pain intensity (VAS) | - | C-S | - |
| Ferrari [63] | 2015 | 103 | 51.98 (SD 14.56) | CLBP | 12 (IQR 18) | TSK-13 | ODI | Pain intensity (NRS) | - | C-S | - |
| Franklin [64] | 2015 | 60 | There is not a total score (data supported by groups) | Mixed | There is not a total score (data supported by groups) | TSK-11 | RDQ | Pain intensity (NRS) | - | C-S | - |
| French [53] | 2007 | 200 | 40.0 (SD 10.6) | Mixed | 67.0 weeks (SD 49.1) | TSK-17 | QBD | Pain intensity (VAS) | - | C-S | - |
| George [54] | 2011 | 80 | 46.6 (SD 11.5) | CLBP | 193.0 weeks (SD 354.4) | TSK-11 | ODI | Pain intensity (NRS) | - | C-S | - |
| Helminen [31] | 2016 | 111 | 63.6 (SD 7.2) | KOA | Less than 6 years (46 (51)); 6 years or more (54 (60)) | TSK (no mentioned which version)  | WOMAC-function; RAND-36-function | Pain intensity (WOMAC-pain) | - | L | At baseline (T0); three months (T1); twelve months (T2) |
| Heuts [65] | 2004 | 254 (227 included the final analysis) | 51.7 (SD 5.0) | KOA | Pain for 3 months at least (exact data on the duration was lacking) | TSK-17 | WOMAC-function | - | - | C-S | - |
| Van Den Houte [32] | 2017 | 182 (153 included the final analysis) | 43.28 (SD 9.16) | FM | 8.35 years (SD 7.66) | TSK-17 | PDI | Pain severity (MPI) | - | L  | At baseline (T0); after intervention (T1); three months (T2) |
| Howell [66] | 2012 | 35 | 42.3 (SD 10.7) | CNP | 4.75 years (SD 4.61) | TSK-17 | NDI | - | - | C-S | - |
| Huijnen [67] | 2009 | 42 (34 included the final analysis)  | 45.4 (SD 9.9) | CLBP | 156.5 months (SD 116.9) | TSK-17 | QBPDS | - | - | C-S | - |
| Huis [68] | 2007 | 121 (103 included the final analysis (58 with CNP)) | 49.34 (SD 5.02) | CNP | 66 months (SD 61.4) | TSK-17 | NDI | Pain intensity (NRS) | - | Case-control | - |
| Johansen [69] | 2013 | 221 | 45.0 (SD 11.2) | CNP | Pain for 3 months at least (exact data on the duration was lacking) | TSK-13 | NDI | - | - | C-S | - |
| Koho [70] | 2011 | 93 | TSK tertiles: 17-33 (43 (SD 8)); 34-40 (45 (SD 8)); 41-68 (44 (SD 8)) | Mixed | ≤ 1 to ≥ 5 years | TSK-17 | ODI | Pain intensity (VAS) | - | L | At baseline (T0); six months (T1); twelve months (T2) |
| Lambin [50] | 2011 | 100 (50 FM and 50 CLBP) | FM 44.6 (SD 8.3); CLBP 43.3 (SD 8.1) | Mixed | FM 12.9 years (SD 5.4); CLBP 11.1 years (SD 6.4) | TSK-17 | PDI | Pain intensity (NRS) | - | Case-control  | - |
| Lamoth [27] | 2006 | 39 (19 with CLBP included the final analysis) | 38 (range 21-52 years) | CLBP | 1.2 years (range 3.5 months to 3 years) | TSK (no mentioned which version) | RDQ | Actual and anticipated pain intensity (VAS) | - | Case-control  | - |
| Larsson [89] | 2016 | 433 | 74.8 (SD 7.5) | Mixed | 10.2 years (SD 12.2) | TSK-11 | - | Pain intensity (one item derived from the brief screening version of MPI) | One item derived from the SF-12 | C-S | - |
| Lewis [71] | 2012 | 65 (47 with CLBP, being 42 with CLBP included the final analysis) | 46.2 (SD 11.1) | CLBP | 7.2 years (range 3 months to 40 years) | TSK-17 | RDQ | Pain intensity (NRS) | - | Case-control  | - |
| López-de-Uralde-Villanueva [72] | 2016 | 147 (50 without neuropathic symptoms) | 44.76 (SD 14.66) | CNP | 3 to 6 months (15.7%); 7 to 12 months (9.8%); 13 and 36 months (15.7%); more than 36 months (58.8%) | TSK-11 | NDI | Pain intensity (VAS) | - | Case-control  | - |
| Lundberg [26] | 2011 | 147 | Specific CLBP (46.4 (SD 11.4)); Non-specific CLBP (46.7 (SD 11.1)) | CLBP | 3-12 months (42); 1-2 years (23); >2 years (82) | TSK-17 | ODI | Pain intensity (VAS) | - | C-S | - |
| Lüning Bergsten [73] | 2012 | 349 (265 included the final analysis) | 45 (IQR 37-51) | CLBP | Pain for 3 months at least (exact data on the duration was lacking) | TSK-17 | DRI | - | - | L | At baseline (T0); after intervention (T1); six months (T2) |
| Matos [74] | 2017 | 170 (135 included the final analysis) | 78.3 (SD8.7) | Mixed | 7.3 years (SD 10.1) | TSK-13 | BPI | - | - | L | (T0) no specified; (T1) three months |
| Meeus [49] | 2012 | 103 | 40.50 (SD 9.43) | CFS | 99.05 months (SD 79.76) | TSK-CFS | CFS-APQ | Pain intensity (VAS) | SF-36 pain | C-S | - |
| de Moraes Vieira [46] | 2013 | 215 | 18-45 (50.7%); 45-65 (49.3%) | CLBP | 6-18 months (15.3%); 19-48 months (25.6%); 49 months or more (59.1%) | TSK-17 | ODI | - | - | C-S | - |
| Nijs [75] | 2004 | 64 | 39.63 (SD 8.82) | CFS | 64 months (SD 46.5) | TSK-17 | CFS-APQ | - | - | C-S | - |
| Nijs b [76] | 2004 | 70 (51 included the final analysis) | 40.7 (SD 10.0) | CFS | 86.3 months (SD 83.5) | TSK-CFS | CFS-APQ | - | - | C-S | - |
| Nijs c [94] | 2008 | 148 | Dutch-speaking sample 39.2 (SD 11.1); French-speaking sample 41.4 (SD 10.5) | CFS | Dutch-speaking sample 2.7 years (SD 2.2); French-speaking sample 2.2 years (SD 2.1) | TSK-CFS | - | - | SF-36 | C-S | - |
| Orenius [95] | 2013 | 141 (111 included the final analysis) | 45 (SD 8) | Mixed | ≤1, years (5 (SD 5));1–5, years (76 (SD 68));> 5 years (30 (SD 27)) | TSK (no mentioned which version) | - | - | The Health State Descriptive System (15D) | L | At baseline (T0); twelve months (T1) |
| Oskay [29] | 2017 | 163 | Low kinesiophobia 38.6 (SD 12); high kinesiophobia 37.6 (SD 10) | AS | More than three months | TSK-17 | BASFI | Pain intensity (VAS) | ASQoL | CS | - |
| Picavet [16] | 2002 | 1,571 (188 with CLBP) | - | CLBP | More than three months | TSK-17 | QBPDS | - | - | L | At baseline (T0); six months (T1) |
| Roelofs [55] | 2004 | 616 (CLBP 225; FM 391) | CLBP 50.0 (SD 14.0); FM 47.4 (SD 10.0) | Mixed | CLBP 75 months (SD 93); FM 159 months (SD 115) | TSK-17 | CLBP (QBPDS); FM (DRI) | - | - | C-S | - |
| Roelofs b [56] | 2007 | 1109 | 41.7 (SD 8.7) | Mixed | More than three months | TSK-17 (TSK-SF and TSK-AA) | DASH | Pain intensity (VAS) | - | C-S | - |
| Russek [77] | 2014 | 1,125 | 40-49 | FM | 5-10 years | TSK-17 | FIQR and FIQR-pf | Pain intensity (NRS from FIQR) | - | C-S | - |
| Rusu [57] | 2014 | 191 | 50.1 (SD 11.3) | CLBP | 6.2 years (SD 8.5) | TSK-17 | ODI and PDI | Pain intensity (NRS) | - | C-S | - |
| Saavedra-Hernández [78] | 2012 | 97 | 40 (range 19 to 59) | CNP | Pain for 3 months at least (exact data on the duration was lacking) | TSK-17 | NDI | Pain intensity (NPRS) | - | C-S | - |
| Schiphorst Preuper [79] | 2008 | 92 | 38.5 (SD 8.7) | CLBP | 52 weeks (IRQ 24-150) | TSK-17 | RMDQ and the WorkWell FCE | - | - | C-S | - |
| Sinikallio [80] | 2014 | 111 | 63.6 (SD 7.2) | KOA | 7.8 (7.0) | TSK-17 | WOMAC function | Pain intensity (WOMAC pain) | - | C-S | - |
| Sullivan [92] | 2009 | 90 | 40.6 (IRQ 20-60) | CLBP | 7.3 years (SD 6.9) | TSK-17 | - | Pain severity (MPQ) | - | C-S | - |
| Thibault [93] | 2008 | 72 | Women (46.2 (SD 10.4); men (43.2 (SD 10.0) | Mixed | Pain for 3 months at least (exact data on the duration was lacking) | TSK-17 | - | Pain severity (MPQ-PRI) | - | C-S | - |
| Thomas [81] | 2010 | 50 | 50.26 (SD 11.48) | CLBP | 116.9 months (SD 149.02) | TSK-17 | RM | Pain intensity (VAS) | DPQ | C-S | - |
| Thompson [82] | 2016 | 58 | 59 (SD 11) | KOA | 7.3 years (SD 2.4) | TSK-17 | KOOS-ADL | - | - | C-S | - |
| Turk [47] | 2004 | 233 | 43.79 (SD 10.83) | FM | 10.30 years (SD 9.29) | TSK-17 | ODI | Pain severity (MPI) | FIQ | C-S | - |
| Vernon [83] | 2010 | 107 | 45.4 (SD 17) | CWAD | 13.4 months (SD 14.6) | TSK-17 | NDI | Pain intensity (VAS) | - | C-S | - |
| Vernon b [84] | 2011 | 91 | 41.7 (SD 14.7) | CWAD | 9.4 months (SD 11.2) | TSK-17 | NDI | Pain intensity (VAS) | - | C-S | - |
| Vernon c [85] | 2013 | 72 (64 included the final analysis) | 41.4 (SD 16.1) | CWAD | 9.7 months (SD 6.2) | TSK-17 | NDI | Pain intensity (VAS) | - | C-S | - |
| Vincent [86] | 2011 | 192 | Non-Obese (45.5 (SD 21.1); Obese (51.10 (SD 15.6) | CLBP | Non-Obese (3.3 years (SD 6.6); Obese (3.7 years (SD 7.9) | TSK-11 | ODI | - | - | C-S | - |
| Vlaeyen [90] | 1995 | 103 | Women 39.0 (SD 8.9); men 42.9 (SD 7.7) | CLBP | Women 10.5 years (SD 8.7); men 9.75 years (SD 9.6) | TSK-17 | - | Pain intensity (VAS)  | - | C-S | - |
| Vlaeyen b [87] | 1995 | 129 | 40.1 (SD 9.0) | CLBP | 9.9 (SD 8.8) | TSK-17 | - | Pain intensity (MPQ-PRI) | - | C-S | - |
| Woby [58] | 2005 | 103 | 44.4 (SD 11.8) | CLBP | 6.7 years (SD 7.6) | TSK-11 | RDQ | Pain intensity (VAS) | - | C-S | - |
| Wong [30] | 2015 | 226 (178 included the final analysis)  | 44.89 (SD 9.24) | Mixed | 7.19 years (SD 6.15) | TSK-17 | CPG | Pain severity (CPG) | SF-12 version 2 | L | At baseline (T0); three months (T1); six months (T2) |

Note: CLBP: chronic low back pain; CWAD: chronic whiplash associated-disorders; CNP: chronic neck pain; CKP: chronic knee pain; CFS: chronic fatigue syndrome; FM: fibromyalgia; KOA: knee osteoarthritis; AS: Ankylosing spondylitis; VAS: visual analogue scale; RDQ: Roland and Morris Disability Questionnaire; RMDQ: Roland and Morris Disability Questionnaire; NRS: numeric rating scale; ODI: Oswestry disability index; SF-36 quality of life scale; PDI: Pain Disability Index; DRI: disability rating index questionnaire; MPI: the Multidimensional Pain Inventory; NDI: Neck Disability Index; WOMAC: Western Ontario and McMaster Universities Osteoarthritis Index; QBPDS: the Quebec Back Pain Disability Scale; CFS-APQ: Chronic Fatigue Syndrome Activities and Participation Questionnaire; FIQR: Revised Fibromyalgia Impact Questionnaire; FIQR-pf: Revised Fibromyalgia Impact Questionnaire perceived function; NPRS: the numeric pain rating scale; MPQ: the McGill Pain Questionnaire; RM: the Roland-Morris Low Back Pain and Disability Questionnaire; DPQ: the Dallas Pain Questionnaire; KOOS-ADL: the knee injury and osteoarthritis outcome scale- activities of daily living subscale; FIQ: Fibromyalgia Impact Questionnaire; DASH: the Disabilities of the Arm, Shoulder and Hand; BPI: the Brief Pain Inventory; CPG: Chronic Pain Grade questionnaire; ASQoL: the Ankylosing Spondylitis Quality of Life Questionnaire; SF-12 version 2: the Medical Outcome Study 12-item Short-Form Health Survey; PCS-12: physical component of the SF-12; MCS-12: mental component of the SF-12; TSK-SF: tampa scale for kinesiophobia-somatic focus; TSK-AA: tampa scale for kinesiophobia-activity avoidance; BASFI: Bath Ankylosing Spondylitis Functional Index; RAND-36-Function: SF-36 item Health Survey RAND-36; C-S: cross-sectional; L: longitudinal.