Table 1. Characteristics of included studies – Psychologische behandeling

Study *Location*	**Participants** I = intervention C= control	**Comparison**	**Follow-up**	**Outcome measures**	**Comments**	**Risk of bias***
Burke (2019) *Ireland*	**N at baseline** I: 35 | C: 34 **Age (mean±SD)**: I: 50±12.3 | C: 52±13.8 **Sex (% female)**: I: 29 |C: 21 **Time since SCI (mean±SD)**: I: 16±11.8 | C: 16±12.6 **Traumatic/nontraumatic SCI (n)**: I: 21/12 | C: 24/10 **Paraplegia/Tetraplegia/NR (n)**: I: 20/10/5 | C: 24/7/73	**Intervention:** online multidisciplinary SCI CBT-pain management program (SPIRE) *6 modules delivered once weekly. Participants were notified of new content and received a reminder once weekly.* **Control:** Waitlist: access to the CBT-pain management program after study completion	Baseline Post-intervention 3 months post-intervention	Pain (overall pain intensity (NRS), worst pain intensity (NRS)) Participation (ISCIPBDS-LSF) Pain interference QoL (WHOQOL-BREF, 4 domains), ISCI-QoL-BDS, 3 items	**Inclusion criteria**: AIS A to D, not an inpatient, >3 months of pain, Higher proportion of NP in control group (79%) compared to intervention group (49%) **Attrition:** Average access to program content: 50% (3±2.1 out of 6 modules) On average 2 modules completed with >80% engagement. **Funding/Conflicts of interest** None reported **Other:**	HIGH

	Incomplete/complete lesion/NR (n) I: 9/22/4 | C: 9/22/3 **Pain medication used (n, %)**: I: 32 (91) | C: 30 (88)				Baseline difference in QoL in favor of intervention group (higher).	
Hearn (2018) *United Kingdom*	**N at baseline**: I: 36 | C: 31 **Age (mean± SD)**: I: 43.8±8.7 | C: 45.2±12.2 **Sex (%female)**: I: 53 | C: 55 **Traumatic/nontraumatic/NR SCI (n)**: I: 30/6/0 | C: 20/6/5 **Level of injury (n)** **C1-C8/T1-T5/T6-T12/L1-L5** I: 12/13/9/2 | C: 13/5/10/3	**Intervention:** Online mindfulness training is specifically designed for people with chronic pain/illness. *two, 10-minute guided meditations/day, 6 days/week, delivered online for 8 weeks* **Control** internet-delivered psychoeducation including established elements found in pain management psychoeducation programs *One e-mail/week, for 8 weeks*	Baseline Post-intervention 3 months post-intervention	Pain (Intensity and unpleasantness (NRS)) QoL (WHOQoL) Mood (HADS)	**Inclusion criteria:** > 1year after SCI <u>>3 months of pain</u> ≥12 on LANSS PAIN scale Internet access No previous experience with mindfulness. **Attrition:** Course completion (n, %) I: 26 (72) | C: 26 (84) **Funding/Conflicts of interest:** None reported	HIGH

	ASIA score A/B/C/D (n): I: 3/13/9/11 | C: 6/4/10/11 **Time since SCI (years)** **1-2/2-4/4-8/8-12/12-15/15+** I: 5/11/11/3/3/3 C: 6/7/8/3/4/3 *No reports on pain medication*				Baseline difference in pain intensity in favor of intervention group I: 6.5±2.1 | C: 7.4±2.0	
Heutink (2011) *The Netherlands*	**N at baseline**: I: 31 | C: 30 **Age (mean±SD):** 58.8±11.4^ **Time since SCI (median years [range]):** 5.4 [1.4 to 23.7] ^ **Sex (% female):** I: 32.3 | C: 40.0	**Intervention:** 10 sessions of 3 hours over a 10-week period + 1 comeback session at week 13. Sessions included educational, cognitive, and behavioral elements. They were led by a psychologist and a physiotherapist based on BioPsychosocial Model and Activating event-Belief-Consequence model (ABC) **Control:** Waiting list, participants were offered the intervention after 6 months.	Baseline Post- intervention 3 months post-intervention	Pain (NRS) Participation (CPG, pain-related disability) QoL (HADs)	**Inclusion criteria:** >6 months of pain, >1 year after discharge of inpatient facility and ≥40/100 on chronic pain grade; stable pain medication **Attrition** Dropout (n, %): I: 7(11.5) Session attendance (mean±SD): I: 9.3±1.7 out of 11 sessions **Funding/Conflicts of interest:** None reported	Some concerns (pain, QoL) HIGH (participation)

	Traumatic/nontraumatic SCI (n): I: 25/6 | C: 19/11 **Paraplegia/Tetraplegia (n)**: I: 20/11 | C: 22/8 **Incomplete/complete lesion(n)**: I: 9/22/4 | C: 9/22/3				**Other:** Baseline difference in participation in favor of control group (lower in intervention group)	
Kaur (2019) *India*	**N at baseline**: I: 21 | C: 21 **Age (mean±SD)**: I: 31.6±10.7 | C: 29.3±10.1 **Sex (%female)**: I: 28.6 | C: 19.0 **Traumatic/nontraumatic SCI (n)**: I:18/3 | C: 20/1	**Intervention:** Mental imagery consisting of: guided imagery (15 min) suggestions to relax and then awareness of body parts) and laterality training (15 min). *30 min/5 days a week/4 weeks* **Control:** 15 minutes random addition task and 15 minutes listening to music. *30 min/5 days a week/4 weeks*	Baseline Directly post-intervention	Pain (VAS, NRS)	**Inclusion criteria:** to 60 years; neuropathic pain diagnosed by Douleur Neuropathique en 4 questionnaire (≥4 cutoff) and ≥ 6 months; C3 and below neurological level; Ability to imagine (VAS for vividness); stable pain medication **Attrition:** not reported **Funding/conflicts of interest** None reported	HIGH

	Level of injury (cervical/ thoracic/cauda equina conus medullaris) (n): I: 12/8/2 | C: 14/6/1 **AIS level (A/B/C/D) (n):** I: 10/2/5/4 | C: 9/2/6/4				**Other**	
Müller (2022) *Switzerland*	**N at baseline** I: 87 | C: 81 **Age (mean±SD)**: I: 55.0±12.0 | C: 56.0±12.0 **Sex (%female)**: I:35.6 | C: 35.8 **Traumatic/nontraumatic SCI (n)**: I: 72/15 | C: 58/23 **Time since SCI (mean±SD)**: I: 18.5±12.6 (n=85) C: 16.0+12.3 (n=80)	**Intervention:** Instructions to perform four personalized positive psychology exercises. Best preferred out of 10 possibilities. *8 weeks at least 15 min, at least 1 day a week and in particular* *on "bad" days* **Control**: Instructions to be mindful and write about current life events *8 weeks, at least* *15 min, at least once a week and in particular on "bad" days* Both groups received an e-mail or phone call once a week	Baseline Post-intervention 3-months post-intervention	Pain, QoL (HADs-D, WHO-QoL)	**Inclusion criteria:** SCI Pain ≥4 on NRS on half the day in the past four weeks **Attrition:** Median freq/week[rang] I: 4.6 [0 to 7] | Cl: 2.8 [0 to 7] **Practice time (min):** Intervention: 31[5-180] Control: 23[5-120] **Funding/conflicts of interest** Study financing by Swiss SCI Cohort Study.	HIGH

	Lesion severity (n, %) Paraplegia complete: I: 24 (27.6) | C: 24 (29.6) Paraplegia incomplete: I: 35 (40.2) | C: 35 (43.2) Tetraplegia complete: I: 8 (9.2) | C: 4 (4.9) Tetraplegia incomplete: I: 20 (23) | C: 18 (22.2) **Pain medication** (%) ^† NSAID: 30 to 31% Anticonvulsants: 32 to 35 Opiod: 27 to 30 Sedative hypnotics: 12 to 13 TCA: 5 to 7 Marijuana: 2 to 3					
Zanca (2022) *United States*	**N at baseline** I: 12 (values reported for n =11) C: 12 (values reported for n=10) **Age (median [range]):**	**Intervention:** Clinical Meditation and Imagery *4 weeks* of guided practice in a group setting *Once weekly, 2 hours, 5-8 participants. 30-min, 5-d/week self-practice.*	Baseline (2 weeks prior to start) Post-guided intervention (4 weeks) Post-self-directed practice (8 weeks)	Pain Function (SOPA disability)	**Inclusion criteri**a SCI>1 year Community-dwelling ≥3 months of pain ≥ 4 on NRS Stable pain treatment regimen	Some concerns/HIGH

	I: 50 [37 to 65] | C: 45 [27 to 72] **Sex (%female):** I: 18 | C: 30 **Time since SCI (median [range])**: I: 13 [1 to 21] | C: 6 [2 to 18] **Pain type** nociceptive/neuropathic/both (%)**:** I:9/26/55 | C: 40/10/50 **Traumatic/nontraumatic SCI (%)**: I:100/0 | C: 90/10 **Lesion severity (%)** Paraplegia complete: I: 18 | C: 20 Paraplegia incomplete: I: 27 | C: 20 Paraplegia (unknown):	followed by *4-week* self-directed home-based practice **Control:** Health education program *4 weeks* in a group setting followed by *Once weekly, 2 hours, 5-8 participants. 30-min, 5-d/week self-practice.* followed by *4 weeks* self-directed home-based education activities			**Attrition:** Attendance all classes (%) I: 67% | C: 67% Minutes per week exercise (mean): I: 98 | C: 52 **Other:** First cycle of classes was given in person, second cycle online due to 'participants' transportation difficulties' More ambulatory individuals in control group	

	I: 9 | C: 20 Tetraplegia complete: I: 9 | C: 0 Tetraplegia incomplete: I: 37 | C: 20 Tetraplegia (unknown): I: 0 | C: 20					

Abbreviations: AIS- American Spinal Injury Association Impairment Scale; BI - Barthel Index; C – control; CBT – cognitive behavioral therapy; CPG – Chronic Pain Grade questionnaire; HADS (Hospital Anxiety and Depression Scale; I – intervention; ISCIPBDS - International Spinal Cord Injury Pain Basic Data Set; LSF - Limits in Activity and Changes in Social and Recreational Activity and Family-Related Activity; NR – not reported; NRS - Numeric Rating Scale; QoL – Quality of Life; SCI – Spinal Cord Injury; UAL – Utrecht Activities List; WHOQOL-BREF - The World Health Organization Quality of Life Bref

*^outcome measure was not reported for intervention and control group separately *For further details, see risk of bias table in the appendix †range of pain medication at baseline, post-treatment and 3-month follow-up in both groups*