

Table 4. Non-exercise-based Interventions

| <b>Author Year</b><br><b>Country</b><br><b>Research Design</b><br><b>Score</b><br><b>Total Sample Size</b>  | <b>Methods</b>   | <b>Outcome</b>  |
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| <p><a href="#">Pourjafari et al.</a><br/>                     2022<br/>                     Iran<br/>                     RCT<br/>                     Level 2<br/>                     PEDro=4<br/>                     N=45</p> | <p><b>Objective:</b> To compare the effectiveness of virtual reality-based (VR) rehabilitation exercises and reflexology in reducing the fatigue rate of veterans with paraplegia.</p> <p><b>Population:</b> 45 veterans with paraplegia, with a use of a wheelchair for daily work, with a history of exercise for at least the last 6 months, and with a fatigue level of 45.57<br/>                     Mean age 54.3 years<br/>                     Level of injury: T12-L4</p> <p><b>Treatment:</b> Participants were randomly assigned to one of three groups:</p> <ul style="list-style-type: none"> <li>• Experimental condition I (n=15): Upper limb VR games (e.g., Xbox/Kinect boxing). Sessions lasted 50 min, were performed 3 times per week, for 6 weeks.</li> <li>• Experimental condition II (n=15): Reflexology massage therapy. Sessions lasted 30 min (10 min of relaxation techniques and 15 min of reflexology massage), were performed 3 times per week, for 6 weeks.</li> <li>• Control condition (n=15): No details provided.</li> </ul> <p><b>Outcome Measures:</b> FSS was measured at baseline</p> | <ol style="list-style-type: none"> <li>1. Decrease in fatigue severity in both VR and massage groups (<math>p \leq 0.001</math>) comparing with control group.</li> <li>2. No difference in reducing fatigue between massage (<math>28.9 \pm 20.65</math>) and VR (<math>27.8 \pm 93.97</math>) (<math>p=0.99</math>).</li> </ol> |

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|   | and after the program (6 weeks).   |   |
| <p><a href="#">Lovas et al.</a> 2017<br/>Australia<br/>RCT<br/>Level 2<br/><a href="#">PEDro=4</a><br/>N=40</p> | <p><b>Objective:</b> To determine the efficacy of massage therapy as a treatment that could be implemented to reduce pain and fatigue in people with chronic SCI.</p> <p><b>Population:</b> 40 participants with SCI<br/>34M, 6F<br/>Mean age 45.95 years<br/>Etiology: Traumatic (n=30), non-traumatic (n=9), and other (n=1)<br/>Level of injury: Paraplegia (n=30), tetraplegia (n=9), and non-reported (n=1)<br/>Completeness of injury: Complete injuries (n=20), incomplete injuries (n=19), and NP (n=1)<br/>Mean (SD) time since injury 18.4 (12.1) years</p> <p><b>Treatment:</b> Participants were randomly assigned into one of two arms:</p> <ul style="list-style-type: none"> <li>• Experimental condition (n=20): Swedish massage therapy (MT) on the participant's back, neck and arms in sitting position.</li> <li>• Control condition (n=20): Guided imagery relaxation (GI).</li> </ul> <p>All participants received 30 min once a week of either massage or guided imagery over 5 consecutive weeks.</p> <p><b>Outcome Measures:</b> CFS was measured at baseline and after the completion of the five sessions</p> | <ol style="list-style-type: none"> <li>1. No significant between-group differences in fatigue scores: <math>F_{1,38}=0.89</math>, <math>p&gt;0.05</math>, <math>\eta^2=0.02</math> and power=15%.</li> <li>2. Fatigue scores were reduced significantly over time: <math>F_{1,38}=18.4</math>, <math>p&lt;0.01</math>, <math>\eta^2=0.33</math> and power=99%, with post-hoc analyses indicating that fatigue scores were reduced significantly in the MT group (<math>p&lt;0.05</math>) and in the GI group (<math>p&lt;0.05</math>).</li> <li>3. There was no significant interaction effect between groups and intervention over time: <math>F_{1,38}=1.49</math>, <math>p&gt;0.05</math>, <math>\eta^2=0.04</math>, power=22%.</li> </ol> |

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| <p><a href="#">Chase et al. 2013</a><br/>USA<br/>RCT cross-over<br/>Level 2<br/><a href="#">PEDro=5</a><br/>N=40</p> | <p><b>Objective:</b> To determine the feasibility of conducting a RCT of massage therapy for patients with a new SCI during acute inpatient rehabilitation</p> <p><b>Population:</b> 40 participants with SCI reporting any type of pain<br/>33M, 7F<br/>Mean (SD) age 40.24 (13.8) years<br/>Etiology: Traumatic (n=36) and non-traumatic (n=4)<br/>Level of injury: paraplegia (n=7) and tetraplegia (n=33)<br/>AIS A (n=23), AIS B (n=9), AIS C (n=7), and AIS D (n=1)<br/>Mean (SD) time since injury 69.35 (31.11) days</p> <p><b>Treatment:</b> Participants were randomized to receive either broad compression massage or light contact touch first, in six 20-min treatment sessions (3 times per week) over 2 weeks, with a 1-week washout period. between the 2-week treatment periods.</p> <p><b>Outcome Measures:</b> FSS was measured at baseline and after the intervention program for each of the two periods.</p> | <p>1. Groups did not significantly differ on fatigue scores (Period 1: FSS change [SD]=1.58 [11.20] [p=0.66]; Period 2: FSS change [SD]=-1.37 [6.97] [p=0.55].</p>   |
| <p><a href="#">Wardell et al. 2006</a><br/>USA<br/>Prospective controlled trial<br/>Level 2<br/>N=12</p>             | <p><b>Objective:</b> To determine the feasibility of delivering a healing modality (healing touch and guided progressive relaxation) in a home environment and to determine whether these techniques could influence the pain and coping of veterans with SCI.</p> <p><b>Population:</b> 12 participants with SCI and experiencing</p>  | <p>1. No difference in the POMS total score between groups in the trend of change (<math>F=0.69</math>, <math>df=2, 19</math>, <math>p=0.51</math>) across the study period.</p> <p>2. In the fatigue scale of the POMS, the experimental group decreased (pre-treatment <math>M=17</math>, posttreatment <math>M=11.29</math>), but the variation was large (only 4 of the experimental group</p> |

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|   | <p>chronic neurogenic pain<br/>12M, 0F<br/>Mean age 54.35 years<br/>Motor completeness of injury: Complete (n=6) and incomplete (n=9)<br/>Mean time since injury 257.23 months</p> <p><b>Treatment:</b> Participants were assigned to either healing touch (n=7) or guided progressive relaxation (n=4) for six weekly home visits</p> <p><b>Outcome Measures:</b> POMS was measured at baseline, after the second session and at posttreatment.</p>   | <p>participants had decreased scores).</p>  |
| <p><a href="#">Jensen et al.</a> 2013<br/>USA<br/>Pre-post<br/>Level 4<br/>N=13</p> | <p><b>Objective:</b> To address which specific target EEG bandwidths in treatment should be recommended, the overall efficacy of neurofeedback treatment, and to assess chronic pain, physical functioning, psychological functioning, and sleep quality) in persons with SCI.</p> <p><b>Population:</b> 13 participants with SCI and experience physical pain on a daily basis<br/>3M, 7F<br/>Mean (SD) age 46.1 (12.6) years<br/>Mean (SD) time since injury 12.3 (9.0) years.</p> <p><b>Treatment:</b> Participants received four sessions each of three different neurofeedback protocols ([1] reinforce <math>\alpha</math> and suppress <math>\beta</math> at T3 and T4 [protocol A]; [2] reinforce 10–15 Hz and suppress <math>\beta</math> and <math>\theta</math> at C3–A1 and C4–A2 [protocol B]; and [3] reinforce 10–15 Hz and</p> | <p>1. There was a non-significant trend (<math>p=0.053</math>) of increase in fatigue from pre- to post-treatment that continued through the 3-month follow-up.</p> |

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|  | <p>suppress <math>\beta</math> and <math>\theta</math> at P3–A1 and P4–A2 [protocol C]) assigned in random order for a total of 12 sessions.</p> <p><b>Outcome Measures:</b> FSS was measured at pre-treatment, post-treatment, and at 3-month follow-up.</p> |  |
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