

Additional Table 3 Characteristics of included studies

Study	Type of study	Sample size	Fibromyalgia description	Age (mean ± SD or range)	Gender	Pain intensity (mean ± SD)	Pain tool/scale	Depression score	Anxiety score	Pain catastrophizing score	Type of control/intervention comparison
Hoeger Bement et al. (2014)	RCT/cross-over	15	Diagnosed by a Rheumatologist	53.7 ± 9.9	15 F	47.8 ± 18.8	Fibromyalgia Impact Questionnaire	N/A	N/A	N/A	Quiet rest
Deitos et al. (2018)	Cross-over	27	According to the 2010 American College of Rheumatology criteria	FM: 50.5 ± 8.7 HC: 43.7 ± 9.4	27 F	7.1 ± 1.8 – last 24 h 7.9 ± 1.9 – last 7 d	VAS	Beck Depression Inventory II	State and trait anxiety	Brazilian Portuguese Catastrophizing Scale	Healthy subjects
Mhalla et al. (2011)	RCT	40	According to the 2010 American College of Rheumatology criteria	Active rTMS: 51.8 ± 11.6 Sham rTMS: 49.6 ± 10.0	40 F	Active rTMS: 6.2 ± 1.4 Sham rTMS: 6.5 ± 1.8	Brief pain inventory	21-item Hospital Anxiety and Depression Scale and 13-item short form of the Beck Depression Inventory	21-item Hospital Anxiety and Depression Scale	Pain Catastrophizing Scale	Sham rTMS
Mhalla et al. (2010)	RCT	67	According to the 2010 American College of Rheumatology criteria	50.8 ± 10.3	67 F	Patients being treated with psychotropic drug: 6.2 ± 1.5 Patients without treatment: 5.5 ± 1.3	Brief pain inventory	21-item Hospital Anxiety and Depression Scale and 13-item short form of the Beck Depression Inventory	21-item Hospital Anxiety and Depression Scale	Pain Catastrophizing Scale	Healthy subjects and treatment with a psychotropic drug
Mendonca et al. (2016)	RCT	45	Modified criteria from the American College of Rheumatology criteria	47.4 ± 12.1	44 F/1 M	tDCS/AE: 7.3 ± 1.75 AE: 6.8 ± 2.0 tDCS: 7.2 ± 1.27	VNS	Beck Depression Inventory	VNS for anxiety	N/A	Sham aerobic exercisend sham tDCS
Schwenkreis et al. (2010)	RCT	62	According to the 2010 American College of Rheumatology criteria	MD: 41.0 ± 10.4 FM: 48.7 ± 8.4 HC: 37.7 ± 11.5	32 F/ 30 M	N/A	N/A	N/A	N/A	N/A	Muscular dystrophy and Healthy control
Izquierdo-Alventosa et al. (2020)	RCT	49	2016 American College of Rheumatology: generalized pain for at least 3 months and a widespread pain index ≥ 7 and symptom severity scale ≥ 5 or a	53.30 ± 7.86	49 F	Physical exercise group (n = 16): 6.13 ± 2.22. Hyperbaric oxygeny therapy (n = 17): 7.35 ± 1.66. Control: 5.63 ± 1.75	VAS	N/A	N/A	N/A	Subjects not submitted to the interventions.

Cardinal et al. (2019)	Cross-sectional	63	widespread pain index of 4-6 and a symptom severity scale score \geq 9] 2016 American College of Rheumatology: generalized pain for at least 3 mon and a widespread pain index \geq 7 and symptom severity scale \geq 5 or a widespread pain index of 4-6 and a symptom severity scale score \geq 9]	FM: 50.5 ± 8.7 MDD: 45.2 ± 15.9 HC: 43.8 ± 13.0	63 F	6.7 (5.8-8.2)	VAS	Beck Depression Inventory II	State and trait anxiety	Pain Catastrophizing Scale	Major depressive disorder and Healthy controls
Caumo et al. (2016)	Cross-sectional	114	According to the 2010 American College of Rheumatology criteria	FM: 50.42 ± 8.84 MPS: 46.13 ± 12.10 OA: 64.42 ± 7.81 HS: 32.43 ± 10.81	114 F	Last 7 days: FM: 7.94 ± 1.89 MPS: 7.23 ± 2.19 OA: 6.26 ± 2.15 HS: N/A Last 24 h: FM: 7.10 ± 1.88 MPS: 6.11 ± 2.59 OA: 5.37 ± 2.47 HS: N/A	VAS	Beck Depression Inventory II	N/A	Pain Catastrophizing Scale	Myofascial pain syndrome ; Osteoarthritis and Healthy subjects
Ciampi de Andrade et al. (2017)	Cross-sectional	47	According to the 2010 American College of Rheumatology criteria.	54.2 ± 9.9	47 F	22.8 ± 7.2	VAS	N/A	N/A	N/A	Healthy controls
Kaziyama et al. (2020)	Cross-sectional	43	According to the 2010 American College of Rheumatology criteria	Symmetrical FM: 49.4 ± 6.2 Asymmetrical FM: 55.0 ± 13.7	43 F	Symmetrical FM: 22.7 ± 7.5 Asymmetrical FM: 28.3 ± 3.9	BPI VAS	21-item Hospital Anxiety and Depression Scale	21-item Hospital Anxiety and Depression Scale	N/A	Symmetrical Fibromyalgia; Asymmetrical fibromyalgia and Health controls
Uygur-Kucukseymen et al. (2020)	Cross-sectional	26	According to the 2010 American College of Rheumatology criteria	53 (47 to 58)	23F/3 M	5.98 ± 2.01	VAS	Beck Depression Inventory	VAS for anxiety	N/A	Combined aerobic exercise and tDCS
Salerno et al. (2000)	Cross-sectional	31	According to the 1990 American College of Rheumatology criteria	FM: 50.07 ± 5.6 RA: 50.04 ± 5.1	31 F	N/A	N/A	N/A	N/A	N/A	Healthy controls (age-matched) and Rheumatoid Arthritis

Tiwari et al. (2021)	Cross-sectional	64	2016 American College of Rheumatology: generalized pain for at least 3 mons and a widespread pain index) ≥ 7 and symptom severity scale ≥ 5 or a widespread pain index of 4-6 and a symptom severity scale score ≥ 9]	FM: 40.6 ± 8.7; Pain-free controls: 36.5 ± 9.2	64 F	N/A	N/A	N/A	N/A	N/A	Pain-free controls
Antal et al. (2010)	RCT/cross-over	23	Diagnosed by a neurologist at least two years before the start of the study	28-70	6 M/17 F	7.11±1.2 – Anodal tDCS; 7.0 ±1.5 – Sham tDCS; 5.8 ±2.2/2.95 ±2.2 – Active and sham tDCS	VAS	N/A	N/A	N/A	Sham tDCS

Note: AE: Aerobic exercise; BPI: brief pain inventory; F: females; HC: healthy controls; FM: fibromyalgia; M: males; MD: muscular dystrophy; MDD: major depression disorder; MPS: myofascial pain syndrome; N/A: not available or not applied; OA: osteoarthritis; RA: rheumatoid arthritis; RCT: randomized controlled trial; rTMS: repetitive transcranial magnetic stimulation; tDCS: transcranial direct current stimulation; VAS: visual analogue scale; VNS: visual numeric scale.