Supplementary online-only material for Gopal A, Sydow R, Block V, Allen DD: Effectiveness of physical therapy in addressing sexual dysfunction in individuals with multiple sclerosis: a systematic review and meta-analysis. Int J MS Care. 2021;23(5):213-222.

Table S1. Summary of studies

		N				Disease					
Study	Design	Control	Experimental	Participant Characteristics	Age (years)	Duration (years)	EDSS Score	Intervention	Study Duration	Outcomes	Level of Evidence
Ahmadi et al ³³	RCT	10	11	Females with MS	34.35 +/- 9.05	4.85 +/- 4.47	2.11 +/- 1.15	Yoga	8 weeks	MSQOL- 54	2b
Alexander et al ³⁶	RCT	10	10	Females with MS*	46.7+/- 8.7	13.7 +/- 7.7	-	CVSD, V	12 weeks	FSFI, FSDS	2b
Foley et al ³⁸	Quasi- experimental	18	18	Nine couples, one partner with diagnosis of MS	45.7 (9.9)	-	4.70 (2.46)	Counseling	12 weeks	MAT, MSI	2b
Lúcio et al ³¹	RCT		G1: 6 G2: 7 G3: 7	Females with RRMS	G1: 44.5 G2: 47 G3: 47	G1: 15 G2: 12 G3: 11	G1: 3.5 G2: 4.5 G3: 4	PFMT, NMES, TTNS	12 weeks	FSFI	2b
Mosalanejad et al ³⁷	RCT	23, 23	24	Married females with MS in remission	35.7 (6.5)	4.89 +/- 3.16	-	PFMT, mindfulness	8 week intervention, 12 week follow-up	FSFI	1b
Najafidoulatabad et al ³⁴	RCT	30	30	Females with MS	31.6 +/- 8	-	-	Yoga	12 weeks	SS Likert	1b
Sutherland et al ³⁵	RCT	11	11	Males and females with MS	46.32 +/- 4.9	10.77 +/- 6.88	<5	Aquatic aerobic exercise	10 weeks	MSQOL- 54	2b
Hocaloski et al ³⁹	Cohort study	-	7	Females with MS or SCI^	47.9 (11.2)	2.5-42	-	Counseling	10 weeks	FSFI, FSDS	2b

Abbreviations: CVSD: clitoral vacuum suction device, EDSS: Expanded Disability Status Scale, FSDS: Female Sexual Distress Scale, FSFI: Female Sexual Function Index, MS: multiple sclerosis, MSI: Marital Satisfaction Inventory, MSQOL-54: Multiple Sclerosis Quality of Life-54, NMES: neuromuscular electrical stimulation, PFMT: pelvic floor muscle training, RCT: randomized controlled trial, RRMS: relapsing-remitting multiple sclerosis, SCI: spinal cord injury, SS: sexual satisfaction, TTNS: transcutaneous tibial nerve stimulation, V: vibration

^{*} Study also included individuals with spinal cord injury but this review only uses data reported for participants with MS

[^]Six out seven participants had diagnosis of MS

Supplementary online-only material for Gopal A, Sydow R, Block V, Allen DD: Effectiveness of physical therapy in addressing sexual dysfunction in individuals with multiple sclerosis: a systematic review and meta-analysis. Int J MS Care. 2021;23(5):213-222.

Table S2. Summary of between-group comparison with effect sizes and 95% CIs

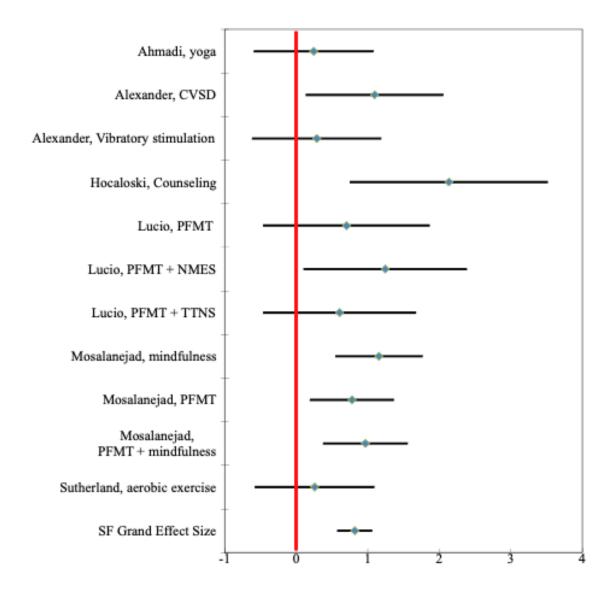
Outcome	Study (outcome measure)	Evmovimontal	Control	Post-test experimental		Post-test control		- Effect Size (SE)	050/ CI
Outcome	Study (outcome measure)	Experimental	Control	n	Mean (SD)	n Mean (SD)		-Ellect Size (SE)	95% CI
Sexual Function	Ahmadi (MSQOL-54)	yoga	wait-list control	11	75.75 (32.8)	10	85.01 (17.9)	-0.35 (0.44)	-1.21 to 0.52
	Alexander (FSFI)	CVSD	V	9	28.2 (7.25)	10	23.16 (5.02)	0.82 (0.48)	-0.12 to 1.76
	Lucio (FSFI)	PFMT +NMES	PFMT + NMES sham	7	29.5 (6.37)*	6	24.6 (14.44)	0.45 (0.56)	-0.65 to 1.56
	Lucio (FSFI)	PFMT + TTNS	PFMT + NMES sham	7	24.9 (7.19)*	6	24.6 (14.44)	0.03 (0.56)	-1.06 to 1.12
	Mosalanejad (FSFI)	PFMT + mindfulness	PFMT	24	25.3 (5.4)	23	23.7 (5.1)	0.30 (0.29)	-0.27 to 0.88
	Mosalanejad (FSFI)	PFMT + mindfulness	mindfulness	24	25.3 (5.4)	23	26.9 (4.8)	-0.31 (0.29)	-0.89 to 0.26
	Sutherland (MSQOL-54)	aerobic exercise	no intervention	11	10.9 (3.8)	11	10.7 (4.0)	0.05 (0.43)	-0.78 to 0.89
	Grand Effect Size							0.08 (0.15)	-0.22 to 0.37
Sexual Satisfaction	Ahmadi (MSQOL-54)	yoga	wait-list control	11	77.27 (26.11)	10	80 (22.97)	-0.11 (0.44)	-0.97 to 0.75
	Alexander (FSFI)	CVSD	V	9	4.8 (1.48)	9	4.24 (1.23)	0.41 (0.48)	-0.52 to 1.35
	Foley (MSI)	Counseling	wait-list control	9	16.17 (5.01)	9	13.22 (4.21)	0.64 (0.48)	-0.31 to 1.58
	Lucio (FSFI)	PFMT + NMES	PFMT + NMES sham	7	6 (0.74)*	6	5.0 (2.22)	0.59 (0.57)	-0.53 to 1.70
	Lucio (FSFI)	PFMT + TTNS	PFMT + NMES sham	7	5 (1.48)*	6	5.0 (2.22)	0.0 (0.56)	-1.09 to 1.09
	Mosalanejad (FSFI)	PFMT + mindfulness	PFMT	24	4.7 (1.7)	23	4.2 (1.5)	0.31 (0.29)	-0.26 to 0.89
	Mosalanejad (FSFI)	PFMT + mindfulness	mindfulness	24	4.7 (1.7)	23	4.7 (1.7)	0.0 (0.29)	-0.57 to 0.57
	Najafidoulatabad (Likert scale)	yoga	no intervention	30	1.4 (1.5)	30	21. (1.2)	0.20 (0.26)^	0.0 to 1.03
	Grand Effect Size							0.29 (0.13)	0.03 to 0.55
Emotional Wellbeing	Ahmadi (MSQOL-54)	yoga	wait-list control	11	66.36 (19.15)	10	57.2 (19.41)	0.48 (0.44)	-0.39 to 1.34
	Sutherland (MSQOL-54)	aerobic exercise	no intervention	11	22.4 (4.1)	11	20.8 (6.7)	0.29 (0.43)	-0.55 to 1.13
	Grand Effect Size							0.38 (0.31)	-0.23 to 0.98

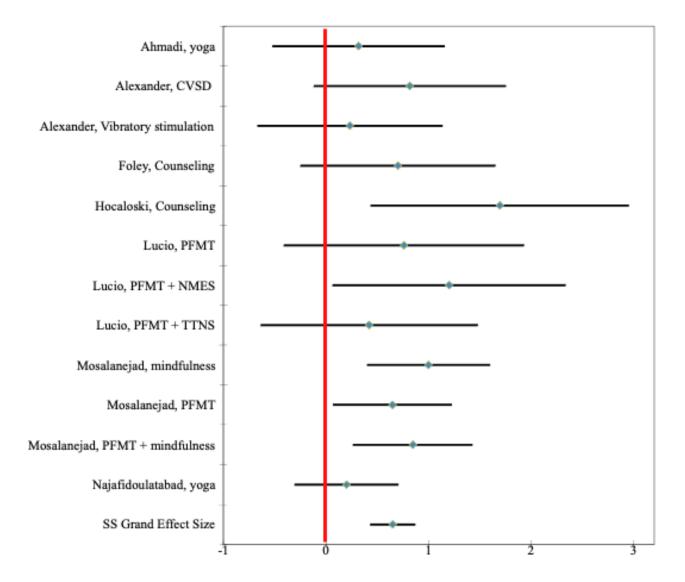
Abbreviations: CBT: cognitive behavior therapy, CVSD: clitoral vacuum suction device, FSFI: Female Sexual Function Inventory, NMES: neuromuscular electrical stimulation, MSI: Marital Satisfaction Inventory, MSQOL-54: Multiple Sclerosis Quality of Life-54, PFMT: pelvic floor muscle therapy, TTNS: transcutaneous tibial nerve stimulation, V: vibratory stimulation

^{*}Mean and SD not reported. Median and interquartile range were used to estimate mean and SD for meta-analysis purposes.

[^]Likert scale where 1 = very satisfied and 5 = very unsatisfied. Effect size sign reversed for consistency. Higher effect size demonstrates improvement.

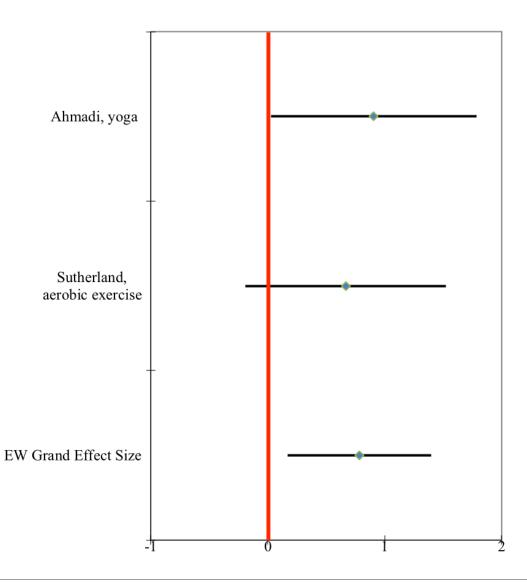
Figure S1. Forest plot of within-group individual and grand effects with 95% confidence intervals for A) sexual function, B) sexual satisfaction, and C) emotional well-being A)





Page **4** of **8**

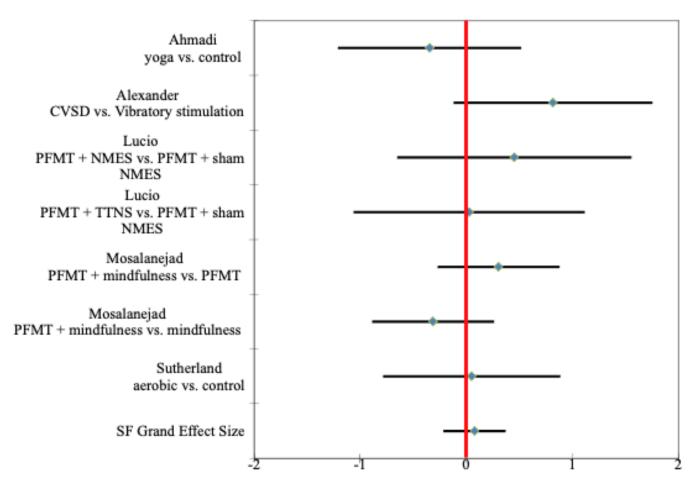
C)

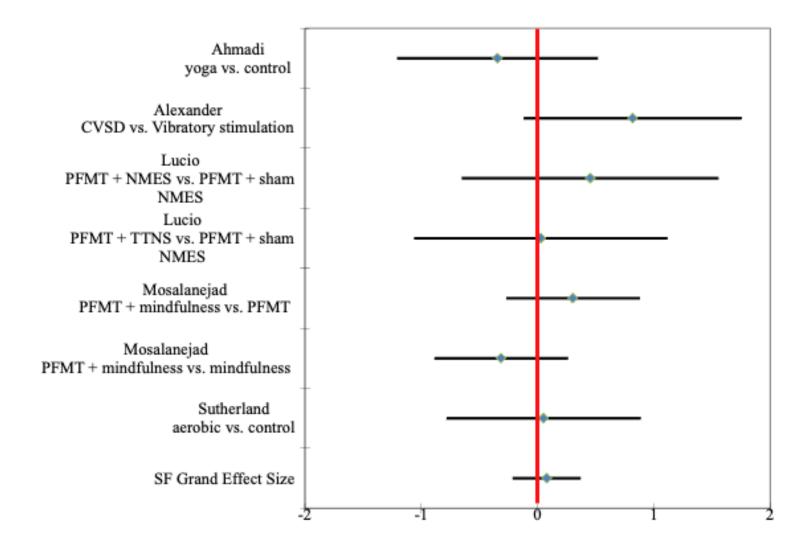


Within-group analyses for A) sexual function, B) sexual satisfaction, and C) emotional well-being with individual effect sizes, 95% CIs and grand effect sizes.

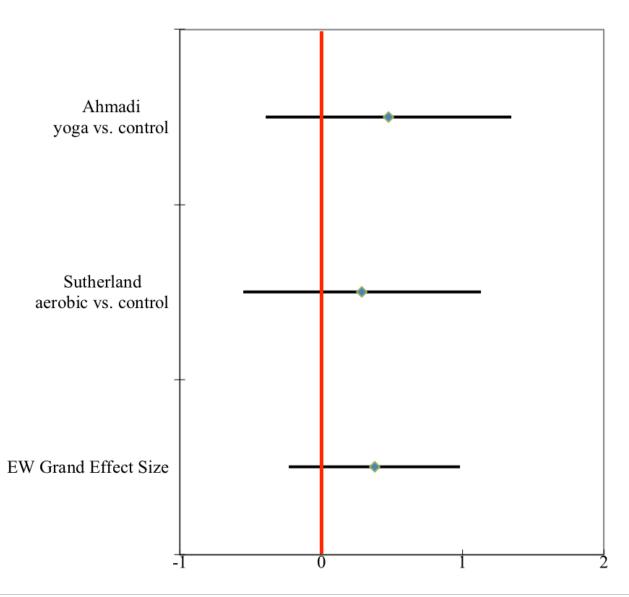
Abbreviations: CVSD: clitoral vacuum suction device, EW: Emotional well-being, NMES: neuromuscular electrical stimulation, PFMT: pelvic floor muscle training, SF: sexual function, SS: sexual satisfaction, TTNS: transcutaneous tibial nerve stimulation, V: vibratory stimulation

Figure S2. Forest plot of between-group individual and grand effects with 95% confidence intervals for A) sexual function, B) sexual satisfaction, and C) emotional well-being A)









Between-group analyses for A) sexual function, B) sexual satisfaction, and C) emotional well-being with individual effect sizes, 95% CIs and grand effect sizes.

Abbreviations: CVSD: clitoral vacuum suction device, EW: Emotional well-being, NMES: neuromuscular electrical stimulation, PFMT: pelvic floor muscle training, SF: sexual function, SS: sexual satisfaction, TTNS: transcutaneous tibial nerve stimulation, V: vibratory stimulation