

**Table S1.** Search Strategy

<b>PubMed (113)</b>
1. intervention [Mesh] OR Education [Mesh] OR Health Promotion [Mesh] OR Health Education [All fields] OR Caregiver Program [All fields] OR Coping [All fields] OR adaptation [All fields]
2. "caregivers" [All fields] AND " Multiple sclerosis " [Title/Abstract] OR "MS" [Title/Abstract] OR "PwMS" [Title/Abstract]
3. Randomized [Title/Abstract] OR randomly [Title/Abstract] OR trial [Title] OR "Clinical Trials as Topic" [Mesh] OR "Controlled Clinical Trial" [Publication Type] OR "Randomized Controlled Trial" [Publication Type] OR "Pretest/ Posttest"[Publication Type], "Quasi-experimental" [Publication Type]
4. #1 AND #2 AND #3
<b>Scopus (156)</b>
<b>Web of Science (98)</b>
<b>All: 367</b>

**Table S2.** Study Quality Based on the Downs and Black Checklist

Studies	Reporting										External validity			Internal validity: bias						Internal validity: confounding (selection bias)						Power	Total score	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			26
Coles et al, 2007	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0	0	0	1	0	20
Finlayson et al, 2009	1	1	1	1	0	1	1	0	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	0	0	0	0	15
Pahlavanzadeh et al, 2015	1	1	1	1	0	1	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0	1	0	21
Mohseni Takalu et al, 2017	1	1	1	1	0	1	1	0	0	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	0	0	18
Rakhshan et al, 2018	1	1	1	1	0	1	1	0	0	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	0	0	19
Khzaeili et al, 2019	1	1	1	1	0	1	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0	0	1	20
Jafari et al, 2020	1	1	1	1	0	1	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	1	22
Martindale-Adams et al, 2020	1	1	1	1	0	1	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0	0	0	1	0	19
Banitalebi et al, 2020	1	1	1	1	0	1	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	1	22
Halstead et al, 2020	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0	0	0	1	0	20
Potter et al, 2021	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	24
Azimian et al, 2021	1	1	1	1	0	1	1	0	0	1	1	1	1	0	0	1	0	1	1	1	1	0	1	0	0	0	0	16

Note: 2, criterion fully met; 1, criterion met or partially met; 0, criterion not met.

Downs and Black Checklist item descriptions: 1, hypothesis/aims/objectives reported; 2, main outcome measures reported; 3, participant characteristics reported; 4, intervention details reported; 5, principal confounders reported; 6, main findings reported; 7, variability in main outcomes reported; 8, adverse events reported; 9, loss to follow-up reported; 10, probability values reported; 11, source population representative of entire population; 12, study population representative of source population; 13, study setting representative of usual care; 14, participants blinded to intervention; 15, outcome assessors blinded; 16, no retrospective subgroup analysis; 17, analysis adjusts for different lengths of follow-up of participants; 18, statistical tests are appropriate; 19, reliable compliance with intervention; 20, outcome measures are valid and reliable; 21, recruitment of study groups from same population; 22, recruitment of participants over same period; 23, randomization of participants; 24, allocation concealment; 25, adjustment for confounding variables in main analysis; 26, adjustment for loss to follow-up in main analysis; 27, inclusion of sample size calculation.

**Table S3.** Studies in the Review

First author, year	Study design	Sample size, EG/CG	Type of intervention	Aim of study	Duration	Outcome measures
Jafari et al, 2020	Quasi-experimental with CG.	35/35 All caregivers.	Educational intervention based on the Family-Centered Empowerment Model; CG received no intervention.	Effect of education on caregiver health literacy and self-efficacy.	Five sessions over 1 mo	Test of Functional Health Literacy in Adults, Self-Efficacy Questionnaire of Caregivers
Rakhshan et al, 2018	Clinical RCT	60/60 Half patients and half caregivers in each.	Educational intervention based on Collaborative Care Model stages; CG had "routine treatment" and were given educational handbook.	Effect of the Collaborative Care Model on hope in patients with MS and their caregivers.	Eight sessions over 12 wk	Adult Hope Scale (Snyder)
Banitalebi et al, 2020	Quasi-experimental with CG	35/35 All caregivers.	Self-management program including self-management processes and the educational and skill needs of family caregivers.	Impact of self-management on self-concept of family caregivers for individuals with MS.	Ninety-minute sessions twice a week for 4 wk	Coopersmith Self-Concept Questionnaire
Mohseni Takalu et al, 2017	Semi-experimental study, pre- and post-test design with CG	15/15 All caregivers.	Solution-focused group therapy; CG did not receive any intervention.	Efficacy of short-term solution-focused therapy for reducing stress, anxiety, and depression in caregivers of individuals with MS.	Six weekly 90-minute sessions	Depression, Anxiety and Stress Scale
Khazaeili et al, 2019	Quasi-experimental study with CG	15/15 All caregivers.	Mindfulness-based intervention (combination of mindfulness-based cognitive therapy and mindfulness-based stress reduction) via web conferencing.	Effect on reduction of anxiety, depression and burden for caregivers of individuals with MS.	Eight 2-h sessions	Beck Anxiety Inventory, Beck Depression Inventory, Caregiver Burden Inventory, 5-Facet Mindfulness Questionnaire
Pahlavanzadeh et al, 2015	Quasi-experimental study with CG	35/35 All caregivers.	Group psycho-education program.	Effects of program on burden for familial caregivers of individuals with MS.	Seven 90-minute sessions once a week for 6 wk	Zarit Burden Interview
Finlayson et al, 2009	Pre-experimental, pre-post intervention without CG	12 caregivers.	Group-based educational and problem-solving program.	Effects of program on self-efficacy, preparedness, coping skills.	Five 2-h weekly sessions	Caregiver Problem-Solving Self-Efficacy Scale, Coping with MS Caregiving Inventory, Caregiver Preparedness Scale

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Azimian et al, 2021	Quasi-experimental study with CG	30/30 Half patients and half caregivers in each.	Group hope therapy training.	Evaluate effectiveness of training on quality and meaning of life in individuals with MS and their family caregivers.	Eight 2-h sessions over 4 wk	Iranian Quality of Life Questionnaire, Meaning in Life Questionnaire
Martindale-Adams et al, 2020	Pre-post design with no CG	25 caregivers.	Behavioral intervention based on Stress/Health Process Model focused on information and skills to help caregivers diminish, tolerate, or master situational demands.	Testing the integration of a validated behavioral caregiving intervention into clinical practice.	Six individual hour-long sessions by telephone or in person over 3 months (approximately every 2 weeks)	Generalized Anxiety Disorders Scale, 9-item Patient Health Questionnaire, Zarit Burden Interview
Potter et al, 2021	Parallel, 3-armed RCT	11/8 All caregivers.	Acceptance and Commitment Therapy (ACT).	Evaluate feasibility of ACT self-help (with and without telephone support) compared with a usual care group.	ACT self-help text covered over 8 wk	Modified Carer Strain Index, Caregiver Health-Related Quality of Life in Multiple Sclerosis instrument, Service Use Questionnaire, Acceptance and Action Questionnaire
Halstead et al, 2020	Pre-experimental, pre-post intervention	25 caregivers/26 individuals with MS.	Included both education on and practical skills in 10 topic areas.	Evaluate feasibility of the intervention, participant satisfaction with the program, and potential benefits of the intervention.	Six 45-minute weekly sessions	Connor–Davidson Resilience Scale, 5-item General Life Satisfaction Survey, Positive and Negative Affect Schedule, Burns Relationship Satisfaction Scale, Hospital Anxiety and Depression Scale, Perceived Stress Scale, Modified Social Support Survey, General Self-Efficacy Scale, Sense of Competence Questionnaire, Zarit Burden Interview
Coles et al, 2007	Single-group, longitudinal design	20 children; 14 parents with MS	Residential camp program.	Evaluate intensive psychosocial intervention for children with a parent with MS; targeted knowledge and understanding of MS, social support, appraisal processes, and coping strategies to enhance adjustments in multiple domains and reduce negative impacts of early caregiving.	6 daily 1- to 2-h sessions	For children: stress appraisal, 6-item Brief Social Support Questionnaire, social support (aie, wareness of community resources), Coping Inventory, 12-item Knowledge of MS Scale, Young Caregiver of Parents Inventory, 18-item Benefit-Finding Scale, 1 forced-choice question (ie, children’s satisfaction with the intervention)  For parents: ADL Scale, 29-item MS Symptom Inventory Short Form, 7-item Parental Perceptions of Child  For both: Cohesion and Conflict subscales from the Family Environment

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						Scale, Brief Symptom Inventory-18, modified Bradburn Affect Balance Scale, 5-item Satisfaction with Life Scale
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CG, control group; EG, experimental group; MS, multiple sclerosis; RCT, randomized controlled trial.