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PICO Clinical Question:

In caregivers of patients with secondary-progressive MS (P), is caregiver training for transfers, mobility, and safe body mechanics (I) more beneficial than no caregiver training (C) for reducing caregiver burden (physical and psychological)?

Summary of 8 articles retrieved that met inclusion and exclusion criteria and were reviewed in full

Author (Year)	Risk of bias (quality score)	Level of Evidence	Relevance	Study design
Weir et al. (2021)	AMSTAR – 9/11	1 - Systematic review	<p>Moderate – non-specific to MS, broad inclusion of neurologic diagnoses including stroke. Addresses responsibility of physical therapists to provide mobility education to caregivers. Training has the potential to decrease caregiver burden and improve QOL for the caregiver and patient.</p> <p>3 of the studies included (non-randomized) had statistically significant and clinically meaningful results associated with physical mobility training.</p>	<p>7 out of 2372 searched articles were included in this review which addressed informal caregiver burden related to assisting individuals with neurological diagnoses and substantial motor challenges. Outcome measures included were caregiver burden scales and caregiver injury risk. HIV, cancer, and dementia diagnoses were excluded. In total, n=2779 caregivers were included in the review.</p> <p>Inclusion of non-randomized studies</p>
Parker et al. (2008)	AMSTAR – 10/11	1 - Systematic review	<p>Low – focused on psychological education</p> <p>Inclusion of individuals with dementia, non-specific to MS nor neurologic diagnoses. Includes broadly the support of caregivers in their role, care planning, and case management.</p> <p>Outcomes were depression, health, well-being, self-</p>	<p>40 of 685 papers were included based on inclusion criteria. Contains a mix of RCTs and systematic reviews</p>

			efficacy, and burden.	
Turner et al. (2013)	CASP checklist – 5/11	4 - Case study	<p>Low- non-neurologic population</p> <p>Over 5 sessions, patient and caregiver were able to achieve goal of demonstrating safe transfers. Wife's confidence and independence with transfers improved.</p> <p>Educated on asking doc for PT referral if txs became more difficult</p>	68 year old hospice patient who had a fall was referred to physical therapy following staying in bed for 5 weeks due to caregiver fear of patient falling. Sessions focused on caregiver training in addition to patient strengthening and transfer training.
Finlayson et al. (2008)	STROBE checklist – 16/22	3 - Non-randomized cross sectional study	<p>High – Investigated the effect of a pilot training program for informal caregivers of individuals with multiple sclerosis</p> <p>MS specific, middle to older age</p> <p>1003 caregivers of people with MS asked for interview to identify unmet needs, 343 randomly selected. Age 45-65+</p> <p>Out of 5 sessions, 1 session was dedicated to "skills to manage changes in disability over time"</p>	Three-phase, cross-sectional, mixed method approach. Phase 1, 302 caregivers of people with MS were interviewed by telephone. Phase 2 involved a systematic review of existing caregiver education programs. Phase 3, which involved the development of a new program.
Rajachandrakumar et al. (2021)	AMSTAR 8/11	1 - Systematic review	<p>Moderate – Identified several gaps in knowledge regarding unpaid, informal caregivers to guide future research.</p> <p>Limited evidence is available discussing caregiver experiences and outcomes, particularly relating to tasks performed by caregivers that can negatively impact the caregiver. Several positive aspects of</p>	<p>Database search of studies that focus on informal caregiving provided by a family member or friend. A total of 108 studies met inclusion criteria.</p> <p>Most studies included measurements of caregiver burden and negative consequences of caregiving. None of the studies reported information about the gender identity of caregivers. Less than half of the</p>

			caregiving, including role satisfaction, emotionally rewarding, personal growth, and mastery of skills, etc. should be discussed in addition to negative effects of caregiving.	studies reported information about the characteristics of the care recipients.
Aronson et al. (1995)	CASP checklist 8/10	1 - Generalizable qualitative study	Low - Of the 65% of people with MS who reported they have a caregiver, 75% of those have a caregiver who is their spouse. 60% of caregivers are reluctant to use available services to assist with person with MS. Caregivers report helping mostly with ADLs and housekeeping. The study did not record time that the caregiver spent helping the person with MS perform exercises. Home visits and referral to recreational activities was ranked the lowest importance from caregivers. Respite care is underutilized by caregivers. Needs need to be taken into account to prolong home care and postpone early institutionalization of people with MS.	Cross sectional survey of people with MS and their caregivers. Random selection of patients with MS from MS society database and from 5 MS clinics in Ontario, representing a broad population of urban and rural dwellers. A survey was sent by mail and included responses from 697 people with MS and 345 caregivers.
Patten et al. (2012)	CASP checklist 7/10	3 - Descriptive qualitative study	Moderate - People with MS reported more caregivers and more unmet health needs compared to people without MS and with disability. Unmet needs are only partially met by current healthcare services.	Participation and Activity Limitation Survey (PALS) was a post-census survey collected in Canada in 2006. 22,513 responses were collected from individuals with impairments, 245 of which had MS.
Dunn et al. (2010)	JBI critical appraisal	2 - Narrative/expert review	Moderate - Caregiver burden could potentially be	Examines studies from 1980-2009 related to needs and impact of caregiving for patients

	checklist for text/opinion 6/6		decreased with prolonged independence and mobility of loved one, either by pharmacologic or rehab intervention. Memory loss, depression, and difficulty walking contribute to caregiver burden. One main goal of treatment should be to train the caregiver as the caregiver is often not adequately prepared for the physical skills required for transfers while preventing injury to themselves.	with MS. Included studies focusing on mobility impairment and loss of independence impact on caregiving from the caregiver or patient perspective. An exhaustive search was not conducted.
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Citation List:

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3. Rajachandrakumar R, Finlayson M. Multiple sclerosis caregiving: A systematic scoping review to map current state of knowledge. *Health Soc Care Community*. Published online December 22, 2021. doi:10.1111/hsc.13687
4. Parker D, Mills S, Abbey J. Effectiveness of interventions that assist caregivers to support people with dementia living in the community. *Int J Evid Based Healthc*. 2008;6(2):137-172. doi:10.1097/01258363-200806000-00002
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6. Dunn J. Impact of mobility impairment on the burden of caregiving in individuals with multiple sclerosis. *Expert Rev Pharmacoecon Outcomes Res*. 2010;10(4):433-440. doi:10.1586/erp.10.34
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8. Aronson KJ, Cleghorn G, Goldenberg E. Assistance arrangements and use of services among persons with multiple sclerosis and their caregivers. *Disabil Rehabil*. 1996;18(7):354-361. doi:10.3109/09638289609165894