Research – Massage Therapy as an Intervention for Multiple Sclerosis

Brief	Confirm if any updated research has been published since last TAB advice, regarding the use of massage therapy as an effective intervention for maintenance of function. AAT request for advice regarding remedial massage therapy as reasonable and necessary support for a participant with Multiple Sclerosis, to improve mobility and/or maintain current function. Population – Applicant with MS Intervention – remedial massage therapy Comparison – no Specific outcome measure - no
Date	03/05/2021
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Cleared	N/A

Please note:

The research and literature reviews collated by our TAB Research Team are not to be shared external to the Branch. These are for internal TAB use only and are intended to assist our advisors with their reasonable and necessary decision-making.

Delegates have access to a wide variety of comprehensive guidance material. If Delegates require further information on access or planning matters they are to call the TAPS line for advice.

The Research Team are unable to ensure that the information listed below provides an accurate & up-to-date snapshot of these matters.

1 Contents

2 Summary

- Approximately one third of individuals with multiple sclerosis (MS) report they use massage therapy (MT) as an adjunct to their medical treatment, often because conventional treatments are not effective in managing their symptoms [1, 2].
- There is little experimental evidence supporting MT in improving symptoms or functional capacity [2, 3].
    - Studies investigating quality of life (QoL), self-reported health status, spasticity, fatigue, balance, mood/anxiety and walking speed often report differing results (see Table 1 for individual results).
    - Sample sizes are small and the methodological quality of the studies are often of low.

3 Cochrane Review of Non-Pharmacological Therapies

The Cochrane Collaboration has investigated the effectiveness and safety of non-pharmacological therapies for the management of chronic pain in people with MS [4]. Despite a comprehensive search of the literature, only 10 trials evaluating non-pharmacological treatments fulfilled the inclusion criteria:

- Transcutaneous electrical nerve stimulation (TENS)
- Psychotherapy (telephone self-management, hypnosis and electroencephalogram (EEG) biofeedback)
- Transcranial random noise stimulation (tRNS)
- Transcranial direct stimulation (tDCS)
- Hydrotherapy (Ai Chi)
- Reflexology.

Due to the quality of the published studies, many aspects of non-pharmacological interventions for MS pain remain unproven.

Other non-pharmacological interventions such as yoga, massage therapy and radial shock wave therapy were not included in the review as no published studies fulfilled the inclusion criteria. This criteria included randomised controlled trials (RCTs), cross-over studies that compared non-pharmacological therapies with a control intervention for managing chronic pain or clinical controlled trials (CCTs).

4 Literature Review

Table 1. Literature Review

Author	Aim/Objective	Methods	Results	Level & Quality of evidence
Backus, Manella [2]	To measure the effects of six weeks of a standardized massage routine on fatigue, pain, spasticity, perception of health, and QOL in people with MS.	**Pre-post case series** Convenience sample recruited via word of mouth. All participants received the intervention. <u>Outcome measures</u> • Modified Ashworth Scale (MOS) • Modified Fatigue Index Scale • Pain Effects Scale • Health Status Questionnaire • Mental Health Inventory (MHI) 6x 1 hour massages within an 8 week period	28 participants enrolled (4 dropped out). No adverse events reported. Significant improvement in fatigue ($p < .01$), MOS Pain ($p < .01$), MHI ($p < .01$), and Health status ($p < .01$), all with a large effect size (ES) (Cohen's d = -0.76, 1.25, 0.93, -1.01, respectively). No change in level of spasticity.	**Level: IV** **Quality: LOW** Small sample size, lack of a control group, pressure of massage not standardised/controlled and self-reported questionnaires used.
Finch and Bessonnette [5]	To examine changes in the self-efficacy of multiple sclerosis clients following massage therapy	**Randomised pre-test- post-test design** 15 participants were randomly assigned to treatment and waitlist control groups. 1 hour treatments per week for 8 weeks. <u>Outcome measures</u> • Multiple Sclerosis Self Efficacy (MSSE) survey	Statistically significant improvement in self-efficacy was noted between treatment (n = 8) and control (n = 7) groups at mid treatment series ($p < 0.02$), post treatment series ($p < 0.05$) and at four week follow up ($p < 0.02$).	**Level: III-2** **Quality: LOW** Small sample size, massage protocol used was not consistent and participants were self-selected which impacts

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		-survey conducted pre, mid and post intervention Student massage therapists performed	At the eight week follow up self-efficacy scores had decreased and there was no statistically significant difference between groups ($p < 0.2$)	on generalisability to the broader MS population. No difference in groups at 8 week follow up shows that treatment is not long lasting and needs to be consistently implemented.
Frost-Hunt [6]	To examine the effects of MT on mobility, fatigue, and oedema in a patient with MS	**Case study** 58-year-old female diagnosed with MS for 11 years. Presented with decreased mobility, fatigue, left ankle oedema, and occasional left lower leg muscle spasms 5x 50 minute treatments over a 6 week period. Performed by a student massage therapist. Outcome measures • Timed-Up-and-Go (TUG) • Modified Fatigue Impact Scale • Figure-8 ankle measurements	Massage therapy did not improve mobility Fatigue level and left ankle oedema, however, not clinically significant.	**Level: IV** **Quality: VERY LOW** Single case study and no discussion about clinical significance.
Hernandez-Reif, Field [7]	To evaluate the use MT in improving the	**RCT** Participants were randomly assigned to a massage therapy or a control group.	24 participants (18 women) recruited. 2 drop outs	**Level: II** **Quality: LOW**

Table 1. Literature Review

Author	Aim/Objective	Methods	Results	Level & Quality of evidence
	psychological and physical profile associated with MS	Assessment and treatment sessions were conducted at the participants' homes because they found it difficult to visit our facility Intervention *Control group*: standard medical care for MS from their primary care physician. *Experimental group*: 45 minutes of massage therapy twice weekly for 5 weeks in addition to their standard medical treatment. Outcome measures • Kurtzke Expanded Disability Status Scale • State Anxiety Inventory • Profile of Mood States Depression Scale • Self-perception measures • Functional status	Improved mood (p 0.001), decreased anxiety (p 0.05) in the massage group, fewer negative characteristics (p 0.02), and better self-esteem (p 0.01) and engaged in more social activities (p 0.01).	Methodological details are poor. Although randomised, no info on how this was performed or whether any blinding of examiners occurred. Main outcome measures were self-report. No power calculation ad small sample size.
Negahban, Rezaie [8]	To investigate the comparative effects of massage therapy and exercise therapy on patients with multiple sclerosis. The secondary aim was to investigate whether combination of	**RCT** Participants recruited via telephone through the local MS society. Convenience sample only. Inclusion criteria • clinically or laboratory confirmed relapsing–remitting or secondary progressive MS • Expanded Disability Status Scale between 2 and 6	Patients consisted of 10 females and 2 males in all experimental groups (n = 48). Massage therapy resulted in larger improvement in pain reduction (mean change 2.75 points, P = 0.001), dynamic balance (mean change, 3.69 seconds, P = 0.009)	**Level: II** **Quality: MODERATE** Small sample (only 12 in each group), examiners blinded to group allocation and appropriate

Table 1. Literature Review

Author	Aim/Objective	Methods	Results	Level & Quality of evidence
	both massage and exercise has an additive effect	• Ability to stand unassisted for at least 60 seconds (using aids if required) • Ability to walk 10 m safely even with an assistive device. <u>Exclusion criteria</u> • Severe relapse one month before the stud • Involvement in any physical therapy programme before beginning the study • Unstable cardiovascular condition • Diabetes • Lower limb arthritis • Other musculoskeletal or neurological conditions. Patients were matched based on age and sex and randomly assigned to four subgroups in equal sample proportions using a table of random numbers. The groups consisted of the massage therapy (group 1), exercise therapy (group 2), massage–exercise therapy (group 3) and control group (group 4). Group 1 & 3 received three 30-minute sessions of supervised intervention per week for 5 consecutive weeks in addition to their medical care. Standard Swedish massage by a trained massage therapist.	and walking speed (mean change, 7.84 seconds, P = 0.007) than exercise therapy. Patients involved in the combined massage– exercise therapy showed significantly larger improvement in pain reduction than those in the exercise therapy (mean change, 1.67 points, P = 0.001).	statistics/randomisation used. Results are positive, however, large scale studies are required to fully determine impact.

Table 1. Literature Review				
Author	**Aim/Objective**	**Methods**	**Results**	**Level & Quality of evidence**
		Exercise therapy group was given a combined set of strength, stretch, endurance and balance training exercises. Outcome measures • Pain (visual analogue scale) • Fatigue Severity Scale • Modified Ashworth Scale (spasticity) • Berg Balance Scale and Timed Up and Go • 10-metre timed walk and 2-minute walk tests • MS quality of life questionnaire		
Schroeder, Doig [3]	To determine if massage therapy will improve the leg function and overall QoL of MS patients.	**Case-Control (cross over design)** Participants recruited from hospitals and the local MS society. Inclusion Criteria. • MS patients rated between 3.0 and 7.0 on the Kurtzke Expanded Disability Status Scale • Ability to get themselves to and from the massage clinic Exclusion criteria • Chest pain (unstable angina) and/or a heart attack (myocardial infarction) during the previous month	24 participants with MS ranging from 3.0 to 7.0 on the Expanded Disability Status Scale. The results displayed no significant changes in 6MWT distances or HAQUAMS scores. However, the participant's perceived improvement in overall health as expressed in written comments.	**Level: IV** **Quality: LOW** Small sample size. Cross over design, no comparison to other gold standard treatments. Authors conclude that massage is a safe, non-invasive treatment that may assist MS patients in managing the stress of their symptoms.

Table 1. Literature Review				
Author	**Aim/Objective**	**Methods**	**Results**	**Level & Quality of evidence**
		• High blood pressure (blood pressure of 180 mmHg systolic over 100 mmHg diastolic) • Inability to attend regular massage appointments Each patient received 2 massages per week for 4 weeks. Assessments were conducted before and after the treatment intervention periods. Participants randomly assigned into one of two groups. Group 1 received massages in the first four weeks of the study while group 2 received no massages. During the last four weeks of the study, group 2 received massages while group 1 received no massages. Same standardized massage routine upon each visit. <u>Outcome measures</u> • Massage comparative questionnaire • Massage therapist questionnaire • Six-Minute Walk Test • Hamburg Quality of Life Questionnaire in Multiple Sclerosis • Expanded Disability Status Scale		Future studies with larger sample size and cortisol measures are warranted.

5 References

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