

Cátia Lucas¹, Inês Branco¹, Milena Silva¹, Paula Alves¹, Ângela Maria Pereira^{1, 2, 3}

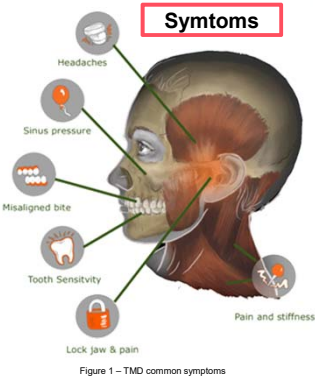
¹Physiotherapy, Escola Superior de Saúde Egas Moniz, ²Hospital Garcia de Orta; ³Centro de investigação interdisciplinar Egas Moniz, Almada, Portugal

Background



The most common affliction of the Temporomandibular Joint (TMJ) is a group of functional disorders with associated pain that occurs predominantly in women known as Temporomandibular Dysfunction (TMD) (1).

Patients with TMD most frequently present with pain (TMJ pain, masticatory pain), limited or asymmetric mandibular motion, and TMJ sounds (clicking, popping or crepitus) Common associated symptoms include earache and stuffiness, tinnitus, dizziness, neck pain, and headache (1,2). The TMD interfere with daily activities and can significantly impact quality of life, diminishing patients' capacity for work and/or ability to interact with their social environment (3,4).



Physiotherapy treatment for TMD addresses many different areas being used to relieve pain in the TMJ and masticatory muscles, and in the surroundings tissues, improve TMJ and cervical range of motion using physical modalities, exercises, and manual therapy techniques (MT) (3). MT has been used to restore normal range of motion, reduce local ischemia, stimulate proprioception, break fibrous adhesions, stimulate synovial fluid production, and reduce pain (5).

Therefore, the **objective** of this study was to evaluate the benefit of manual therapy in patients with TMD when compared with self-rehabilitating exercises at home in patients with TMD.

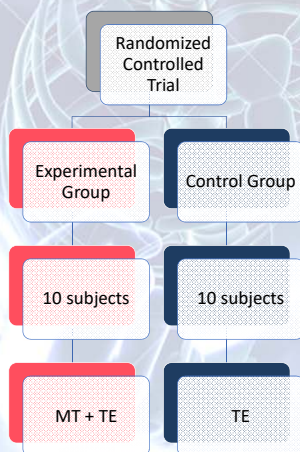
Methods

A randomized, controlled clinical trial was performed involving a group of 20 subjects with TMD. Subjects included in the trial had a history of pain from the masticatory muscles and/or TMJ, which was verified by interview and clinical examination. The clinical diagnosis was according to the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD).

The pain scores, perception of tinnitus/deafness, headache, joint noises, range of mandibular (vertical) motion were evaluated and recorded at stage 0 and at the end of the clinical trial for both groups by the same examiner.

A pre-teaching session for both groups was held to explain the therapeutic exercises (TE) at home and delivered a handout with the TE, before the start of the clinical trial.

This study took place in a 6 weeks period, in addition to the TE, the experimental group was submitted to 2 physiotherapy sessions per week, while the control group only performed the TE referred above.



Results

Graphic 1 – Mean of pain in the experimental group between evaluations

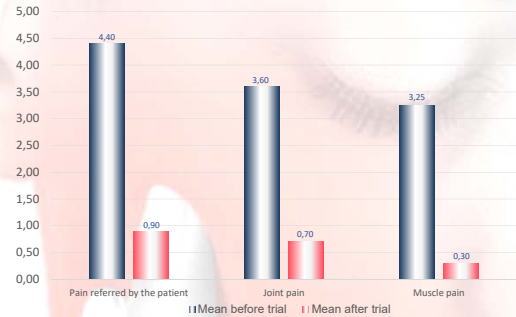


Table 1 – Mean of range of motion in the experimental group between evaluations

Experimental Group	Range of motion TMJ before trial	Range of motion TMJ after trial
	24,27mm	29,66mm

Graphic 2 – Mean of pain in the control group between evaluations

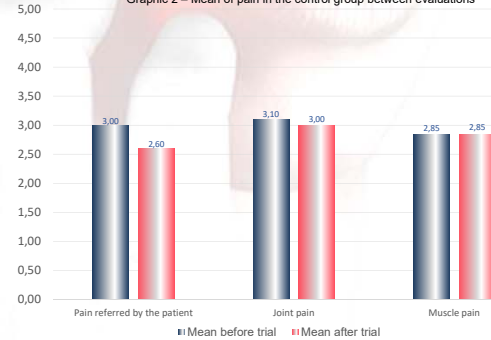


Table 2 – Mean of range of motion in the control group between evaluations

Control Group	Range of motion TMJ before trial	Range of motion TMJ after trial
	22,95mm	22,94mm

There was a decrease in all aspects of pain in the experimental group (pain referred by the patient: decrease of 3,5 values in *pain numeric rating scale* (PNRE), TMJ pain: decrease of 2,9 values in PNRE, muscle pain: decrease of 2,9 values in PNRE) In the control group there were no significant changes in the aspects of pain.

In the range of motion (ROM) there was an increment of 5,39mm in the experimental group, however the control group had a decrease of 0,01mm in the ROM.



Conclusions

Based on the results of this study, MT combined with TE showed promising results to treat TMD. The experimental group showed reduction of symptoms and increase of mandibular range of motion. However, the control group did not show significant improvements, the subjects remained overlapping compared with the first evaluation at stage 0.

Therefore, a therapeutic program with MT combined with TE brings promising effects in reducing symptomatology and improving quality of life.

References

- Scrivani SJ, Keith DA, Kaban LB. Temporomandibular Disorders. *N Engl J Med*, 2008;359:2693–2705.
- Sakaguchi K., Mehta NR, Abdallah EF, Forgione AG, Hirayama H, Kawasaki T, et al. Examination of the Relationship Between Mandibular. *Journal of Craniomandibular Practice*, 2007;25(4),15–18.
- Armijo-Olivo S, Magee D. Cervical musculoskeletal impairments and temporomandibular disorders. *J Oral Maxillofac Res*, 2013;3(4),1-18.
- Cardoso, L.M., Krachete, D.C. & Araújo, R.P.C. A relevância do apertamento dentário nas desordens temporomandibulares. *R. Ci. Med. Biol*, 2010;10(3), 277-283.
- Armijo-Olivo, S. & Pitance, L., Singh, V., Neto, F., Thie, N. & Michelotti A. Effectiveness of Manual Therapy and Therapeutic Exercise for Temporomandibular Disorders: Systematic Review and Meta-Analysis. *PHYS THER*, 2015;96(1), 1-112.