

# Reframe the Pain: A Systematic Review of Occupational Therapy Interventions to Promote Quality of Life for Adults with Fibromyalgia

Alyssa Armstrong OTS, Jonathan Forkin OTS, Emma Jablonski OTS, Shelby Moyer OTS, Suzanne Sager OTS

Faculty Mentor: Teal Benevides PhD, MS, OTR/L

Presented in Partial Fulfillment of the Master of Science in Occupational Therapy degree at Thomas Jefferson University

## Objectives:

1. **Define** clinical presentation and three common characteristics of fibromyalgia (FMS) as it impacts quality of life (QOL).
2. **Recognize** the importance of an occupational therapy (OT) approach as an alternative to current practice methods.
3. **Identify** at least three effective EBP interventions within the scope of OT to address quality of life for individuals with FMS.

**PICO:** What is the evidence to support the effectiveness of interventions within the scope of OT on improving quality of life for adults diagnosed with fibromyalgia?

Methods	
<b>Databases:</b> CINAHL, PubMed, Ovid PsychInfo, Other <b>Search Terms:</b> fibromyalgia [MeSH], occupational therapy, therapy, quality of life, quality of life [MeSH], QOL	
<b>Inclusion</b> <ul style="list-style-type: none"> <li>● Adults older than 18 years old</li> <li>● Male or female</li> <li>● Primary or Secondary Fibromyalgia</li> <li>● Human Subjects</li> <li>● English language</li> <li>● Publication date 01/01/2006-12/31/2015</li> <li>● Levels of evidence I, II, III &amp; High Level Qualitative Designs</li> <li>● QOL Outcome Measure</li> <li>● Within OT scope of practice</li> </ul>	<b>Exclusion</b> <ul style="list-style-type: none"> <li>● Primarily pharmaceutical intervention</li> <li>● Systematic review/ meta-analyses</li> <li>● Dissertations/Theses</li> </ul>
<b>Critique:</b> 2 researchers reviewed and appraised each article in full text using the Critical Review Form to assess strength and quality of articles. Law M., & MacDermid, J.C. (2014). <i>Evidence Based Rehabilitation: A Guide to Practice</i> , 3rd Ed. Thorofare, NJ: Slack Inc.	
Identified <b>554</b> articles from databases and search, after duplicates and screened for eligibility, <b>19</b> articles included in synthesis.	

Results	
Theme 1: Aquatic Therapy <sup>1, 10, 17, 18</sup> (n=4)	<b>Strong</b> evidence for the use of aquatic therapy to improve QOL -4/4 articles showed statistically significant improvement in emotional problems and pain according to the SF-36 -Aquatic based interventions showed clinically significant improvements in QOL compared to control group
Theme 2: Aerobic Therapy <sup>2, 5, 14, 15</sup> (n=4)	<b>Strong</b> evidence for the use of aerobic therapy interventions which include strengthening, flexibility, and belly dancing -3/4 articles showed statistically significant improvements in quality of life when comparing pre and post intervention <sup>2, 14, 15</sup> -1 article showed clinical significance in quality of life <sup>5</sup>
Theme 3: Complementary Alternative Methods <sup>6, 7, 13, 16, 19</sup> (n=5)	<b>Mixed</b> evidence for the use of interventions such as yoga, meditation, mindfulness, tai chi, and Qigong -3/3 articles resulted in clinically significant improvements in QOL with breathing and movement interventions -3/5 articles showed statistically significant improvements in QOL <sup>6, 7, 19</sup>
Theme 4: Multidisciplinary Approach <sup>3, 8, 9</sup> (n=3)	<b>Strong</b> evidence supports use of multidisciplinary approach in QOL intervention -2/3 articles showed significant improvement compared to pharmaceutical intervention <sup>8, 9</sup> -3/3 articles showed significant improvement when comparing pre/post intervention -0/3 studies report OT as provider
Theme 5: Physical Agent Modalities (PAMs) <sup>11, 12</sup> (n=2)	<b>Mixed</b> evidence for use of PAMs such as ultrasound with interferential and TENS -1/2 articles showed significant improvement in QOL <sup>11</sup> -Moderate support of ultrasound/interferential used 1x/week may be as beneficial as administration 2x/week <sup>11</sup> -Moderate support of TENS. No significant differences between exercise and exercise + TENS <sup>12</sup>
Theme 6: Virtual Reality (VR) <sup>4</sup> (n=1)	<b>Insufficient</b> evidence for use of VR to improve QOL -VR group reported significant improvement in perceived QOL and behavioral strategies -Secondary outcomes including pain intensity and depression did not improve -Participants report enjoyment in VR treatment approach for QOL

## References

1. Arcos-Carmona, I. M., Castro-Sánchez, A. M., Matarán-Peñarrocha, G. A., Gutiérrez-Rubio, A. B., Ramos-González, E., & Moreno-Lorenzo, C. (2011). [Effects of aerobic exercise program and relaxation techniques on anxiety, quality of sleep, depression, and quality of life in patients with fibromyalgia: a randomized controlled trial]. *Medicina clínica*, 137(9), 398-401.
2. Baptista, A. S., Villela, A. L., Jones, A., & Natour, J. (2012). Effectiveness of dance in patients with fibromyalgia: a randomized, single-blind, controlled study. *Clin Exp Rheumatol*, 30(6 Suppl 74), 18-23.
3. Carbonell-Baeza, A., Aparicio, V. A., Chillón, P., Femia, P., Delgado-Fernandez, M., & Ruiz, J. R. (2011). Effectiveness of multidisciplinary therapy on symptomatology and quality of life in women with fibromyalgia. *Clinical and Experimental Rheumatology-Incl Supplements*, 29(6), S97.
4. Garcia-Palacios, A., Herrero, R., Vizcaíno, Y., Belmonte, M. A., Castilla, D., Molinari, G., ... & Botella, C. (2015). Integrating Virtual Reality With Activity Management for the Treatment of Fibromyalgia: Acceptability and Preliminary Efficacy. *The Clinical journal of pain*, 31(6), 564-572.
5. Gavi, M. B. R. O., Vassalo, D. V., Amaral, F. T., Macedo, D. C. F., Gava, P. L., Dantas, E. M., & Valim, V. (2014). Strengthening exercises improve symptoms and quality of life but do not change autonomic modulation in fibromyalgia: a randomized clinical trial. *PloS one*, 9(3), e90767.
6. Grossman, P., Tiefenthaler-Gilmer, U., Raysz, A., & Kesper, U. (2007). Mindfulness training as an intervention for fibromyalgia: evidence of postintervention and 3-year follow-up benefits in well-being. *Psychotherapy and psychosomatics*, 76(4), 226-233.
7. Haak, T., & Scott, B. (2008). The effect of Qigong on fibromyalgia (FMS): a controlled randomized study. *Disability and rehabilitation*, 30(8), 625-633.
8. Martín, J., Torre, F., Padierna, A., Aguirre, U., González, N., Matellanes, B., & Quintana, J. M. (2014). Interdisciplinary Treatment of Patients with Fibromyalgia: Improvement of Their Health-Related Quality of Life. *Pain Practice*, 14(8), 721-731.
9. Martín, J., Torre, F., Padierna, A., Aguirre, U., González, N., García, S., ... & Quintana, J. M. (2011). Six-and 12-month follow-up of an interdisciplinary fibromyalgia treatment programme: results of a randomised trial. *Clinical and experimental rheumatology*, 30(6 Suppl 74), 103-111.
10. Matsumoto, S., Shimodozono, M., Etoh, S., Miyata, R., & Kawahira, K. (2011). Effects of thermal therapy combining sauna therapy and underwater exercise in patients with fibromyalgia. *Complementary therapies in clinical practice*, 17(3), 162-166.
11. Moretti, F. A., Marcondes, F. B., Provenza, J. R., Fukuda, T. Y., Vasconcelos, R. A., & Roizenblatt, S. (2012). Combined therapy (ultrasound and interferential current) in patients with fibromyalgia: once or twice in a week?. *Physiotherapy Research International*, 17(3), 142-149.
12. Mutlu, B., Paker, N., Bugdayci, D., Tekdos, D., & Kesiktas, N. (2013). Efficacy of supervised exercise combined with transcutaneous electrical nerve stimulation in women with fibromyalgia: a prospective controlled study. *Rheumatology international*, 33(3), 649-655.
13. Rosenzweig, S., Greeson, J. M., Reibel, D. K., Green, J. S., Jasser, S. A., & Beasley, D. (2010). Mindfulness-based stress reduction for chronic pain conditions: variation in treatment outcomes and role of home meditation practice. *Journal of psychosomatic research*, 68(1), 29-36.
14. Sañudo, B., Galiano, D., Carrasco, L., de Hoyo, M., & McVeigh, J. G. (2011). Effects of a prolonged exercise programme on key health outcomes in women with fibromyalgia: a randomized controlled trial. *Journal of rehabilitation medicine*, 43(6), 521-526.
15. Sanudo, B., De Hoyo, M., Carrasco, L., McVeigh, J. G., Corral, J., Cabeza, R., ... & Oliva, A. (2010). The effect of 6-week exercise programme and whole body vibration on strength and quality of life in women with fibromyalgia: a randomised study. *Clin Exp Rheumatol*, 28(6 Suppl 63), S40-5.
16. Stuijbergen, A. K., Blozis, S. A., Becker, H., Phillips, L., Timmerman, G., Kullberg, V., ... & Morrison, J. (2010). A randomized controlled trial of a wellness intervention for women with fibromyalgia syndrome. *Clinical Rehabilitation*, 24(4), 305-318.
17. Tomas-Carus, P., Gusi, N., Häkkinen, A., Häkkinen, K., Raimundo, A., & Ortega-Alonso, A. (2009). Improvements of muscle strength predicted benefits in HRQOL and postural balance in women with fibromyalgia: an 8-month randomized controlled trial. *Rheumatology*, 48(9), 1147-1151.
18. Tomas-Carus, P., Häkkinen, A., Gusi, N., Leal, A., Häkkinen, K., & Ortega-Alonso, A. (2007). Aquatic training and detraining on fitness and quality of life in fibromyalgia. *Medicine and science in sports and exercise*, 39(7), 1044-1050.
19. Wang, C., Schmid, C. H., Ronés, R., Kalish, R., Yinh, J., Goldenberg, D. L., ... & McAlindon, T. (2010). A randomized trial of tai chi for fibromyalgia. *New England Journal of Medicine*, 363(8), 743-754.