

The Effectiveness of Global Postural Re-education in Reducing Chronic Non-Specific Low Back Pain and Improving Daily Function in Adults



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INTRODUCTION

Low Back Pain (LBP) is one of the most common complaints in adults. Pain lasting for longer than three months without diagnosis is considered non-specific or chronic low back pain^{1,2}. The best approach to treating LBP is not universally agreed upon, and many methods are selected to help with short term effects in segmental areas. Contemporary treatment for chronic LBP includes stretching, therapy, manual mobilizations, and medications. Global Postural Re-education (GPR) aims to treat the body as a whole and focuses on the combined anterior and posterior muscle chains, rather than treating cervical or lumbar segments individually. GPR involves placing patients in specific positions to elongate the anterior or posterior muscle chain, then strengthening that muscle chain with an isometric contraction in the lengthened position.

OBJECTIVES

The purpose of this critically appraised topic was to determine the effectiveness of GPR in reducing chronic low back pain and improving daily function as compared to traditional treatment methods.

METHODS

Search Strategy

- Global Postural Re-education
- Mezeires
- Posture
- Low back pain

Databases searched

- PubMed
- GoogleScholar
- EBSCO
- Medline
- Cochrane for controlled trials

Inclusion Criteria

- Studies evaluating chronic or non-specific low back pain
- Randomized controlled trials
- Studies specifically comparing GPR
- Pain as a primary outcome
- Studies available online or through inter-library loan

Exclusion Criteria

- Studies evaluating neck pain
- Studies not available in English
- Systematic and literature reviews
- Studies w/o GPR as an intervention
- Studies evaluating general postural education w/o a specific method

RESULTS

Study Authors	Castagnoli et. al. ¹	Matos et. al. ²	Kumar ³
Participants	90 subjects Partial random allocation 45 GPR - 30 subjects at 12 mo follow up 45 Physical Therapy (PT) - 30 subjects at 12 mo follow up	42 subjects Random allocation 21 GPR - 20 subjects after dropouts 21 Stretching Group (SG) - 19 subjects after dropouts	239 subjects Random allocation 116 GPR - 100 subjects after dropouts 123 Motor Control Exercise (MCE) - 100 subjects after dropouts
Interventions	Compared GPR to PT GPR group completed 3-4 GPR positions as determined by physician PT group completed exercises as assigned by physician that aligned with national guidelines for low back pain Subjects completed a total of 15 sessions, 2x/wk over 8 weeks. Sessions were 1 hour long Measurements taken at baseline, 15 days into treatment, and 12 months after final treatment	Compared GPR to Stretching GPR group completed "frog on the floor" position with cervical distraction applied by clinician The SG completed 5 static stretched for 3 sets of 10 seconds Subjects completed a total of 16 sessions, 2x/wk over 8 weeks. Sessions were 30 minutes long Measurements taken at baseline and conclusion of final treatment	Compared GPR to MCE GPR group completed 3 positions: standing with trunk flexion, lying with hip flexion, and lying with hip flexion and leg extension MCE group completed exercises as assigned by physician to isometrically engage the core while maintaining normal breathing patterns Subjects completed a total of 15 sessions, 3x/wk over 5 weeks. Sessions were 1 hour long Measurements taken at baseline and conclusion of final treatment
Inclusion/Exclusion Criteria	All inclusion criteria met No exclusion criteria found in study	All inclusion criteria met No exclusion criteria found in study	All inclusion criteria met No exclusion criteria found in study
Outcome Measures	Numeric Pain Rating Scale - GPR: 6.7±2.28; 3.73±2.68; 5.73±4.38 - PT: 7.2±2.25; 4.43±2.35; 6.5±2.03 Roland and Morris Disability Questionnaire - GPR: 10.97±4.38; 5.1±4.51; 9.67±6.13 - PT: 12.47±5.45; 6.43±5.03; 11.2±6.29	CR-10 Scale of BORG - GPR: 6.45; 1.88 - SG: 6.21; 3.16 Goniometry measurements Hip Flexion (HF) - GPR: 74.05; 89.35 - SG: 71.89; 77.74 Hip Extension (HE) - GPR: 17.85; 21.05 - SG: 17.05; 20.63 Lumbar Spine Flexion (LSF) - GPR: 16.90; 28.75 - SG: 17.63; 23.79	Numeric Pain Rating Scale - GPR: 4.98±1.26; 1.72±0.92; - MCE: 4.98±1.26; 4.25±1.23 Finger to Floor flexibility test - GPR: 18.12±4.67; 9.22±2.88 - MCE: 18.93±4.23; 16.26±3.99 Modifies Oswestry Low Back Pain Disability Index - GPR: 38.3±8.75; 20.3±4.81 - MCE: 37.46±7.41; 32.66±7.15
Results	Short term pain and function was significantly improved from baseline, but no significant differences between groups Long term pain and function was significantly improved for the GPR group	Pain, disability, and ROM (Hf and LSF) were significantly improved in both groups GPR showed more significant improvements than the SG	Pain and disability (function) was significantly improved in both groups GPR showed more significant improvements than MCE
Level of Evidence	2	1b	1b
Support for Answer	Yes	Yes	Yes

RESULTS

These three articles showed similar results that GPR decreased pain and disability more than traditional treatment for LBP. Additionally, Castagnoli et al¹ suggests that those who complete GPR may have improved function and pain up to a year after stopping treatment compared to other conservative methods. However due to the long follow up time period, there was poor retention of participants and it should be evaluated further. All three articles used slightly different instruments, but measured pain and function at each time point.

CONCLUSION

These articles support the use of GPR to be just as effective, if not more effective, at improving pain and daily function in adults with chronic LBP short-term. There is evidence that GPR may be more effective than traditional treatment methods at improving symptoms long-term, but the results were not conclusive. Future research should examine the long-term effectiveness of GPR and improve randomization, patient retention, and improvements with a control group.

RECOMMENDATION

There is level B evidence according to the SORT scale⁵ that GPR may be an effective treatment method for reducing chronic LBP short term compared to conventional treatment methods.

REFERENCES

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