

Aure OF, Nilsen JH, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine 2003; 28:525-532.

Design: Randomized clinical trial

Population/sample size/setting:

- 49 patients (23 women, 26 men, mean age 40) on sick leave for low back pain seen in a university setting in Norway
- Eligible patients had been sick-listed between 8 weeks and 6 months due to back pain with or without leg pain
- Exclusion criteria included unemployment or early retirement due to back pain, disc prolapse with neurological signs requiring surgery, pregnancy, spondylolisthesis, spondylolysis, fractures, osteoporosis, previous back surgery, several medical comorbidities, or nonorganic symptoms

Main outcome measures:

- Randomized to manual therapy (n=27) or exercise therapy (n=22)
- Manual therapy (MT) and exercise therapy (ET) both consisted of 16 treatments, each lasting 45 minutes, administered twice per week for 8 weeks
- MT was restricted to spinal manipulation, specific mobilization, and certain stretching techniques
 - o MT patients also performed a subset of general and specific exercises for the spinal segments and pelvic girdle, each exercise program depending on the clinical findings of the patient
 - o Techniques included thrust manipulation at the junction of the thoracic and lumbar spine with the patient sitting and rotation-lateral flexion thrust from T10 to L5 with the patient supine
- ET consisted of 45 minutes of training: 10 minutes of aerobic warm-up on an exercise bicycle, with other exercises individually designed by the physical therapist, who observed and guided the patient in each session
- Spinal range of motion (ROM) was measured with the modified Schober test (tape measure method) before and after treatment; while both groups gained ROM, the mean gain in the MT group was 31 mm, and only 9 mm in the ET group
- Patient-reported outcomes included pain, Oswestry, general health, and return to work (RTW); these were taken at baseline and immediately after the 8 week treatment period; they were repeated at 4 weeks, 6 months, and 12 months after the end of treatment
 - o Both groups improved in pain, general health, and functional disability during treatment, and these improvements were maintained throughout the 12 month follow-up period
 - o The improvement in the MT group was greater than in the ET group for pain, function, and general health
 - o RTW was counted as having occurred if the patient had gone back to full-time employment; if they were partly or fully sick-listed, they were counted in the sick leave group

- At the end of 12 months, only 19% of the MT group was sick-listed, compared to 59% of the ET group

Authors' conclusions:

- MT and ET are both effective interventions for chronic nonspecific low back pain
- MT is more effective than ET in reducing pain, improving function, enhancing general health, and reducing sick leave
- The greater improvement in the MT group may have more than one explanation
 - The mobilization/manipulation in itself may be responsible
 - The more specific approach used by the manual therapists in general may account for the difference
 - The ET group might have reached similar results if it had had a more specific exercise regime
- The study cannot address whether patients with nonorganic signs or with back pain due to mental/psychological reasons would respond to MT or ET

Comments:

- The chief difficulty of interpretation lies in the comparison of the exercise components in the two groups
 - The MT group did have a specified set of 5 “general” and 6 “specific” exercises
 - However, the ET group had exercises which were individually tailored and supervised by the physical therapist
 - While it is difficult to be certain, the exercises appear to be similarly tailored to the clinical findings of the individual patient
- The spinal ROM was done with a tape-measure method that is best suited to conditions as ankylosing spondylitis, and its interpretation is not clear for nonspecific back pain
- The RTW was taken from self-report, and not from an administrative data base, which should have been feasible for a system in which sick leave is registered in a database
- It does appear reasonable to regard the exercise programs as being comparably beneficial, and to attribute the additional benefit of the MT group to the mobilization/manipulation interventions

Assessment: Adequate for evidence that manipulation/mobilization, including thrust techniques, may provide additional benefits on pain and function when used to supplement an individually tailored exercise program