MRT-EFFECTS OF NEUROMUSCULAR EXERCISE ON LUMBAR MOVEMENT CONTROL, FITNESS AND WORK-RELATED PHYSICAL FACTORS IN FEMALE NURSING PERSONNEL WITH SUB-ACUTE, RE-CURRENT LOW BACK PAIN – RANDOMIZED CONTROLLED TRIAL

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Introduction: Low back pain (LBP) is common in nursing personnel with physically demanding work. Exercise programs to reduce LBP and prevent recurrences are recommended, but there is no consensus of the contents of exercises.
Purpose was to examine effects of 6-month pilates-type neuromuscular exercise (NME) on lumbar movement control, fitness and work-related physical factors (pain, lumbar exertion, recovery, functional ability in heavy nursing task) at 6- and 12-month follow up in female nursing personnel with sub-acute recurrent LBP.
Methods: 219 health-care workers with LBP, age 30-55 years, were originally allocated to four groups (combined exercise and counselling, either alone, control), the present study combining exercisers (n=110) vs. others (109). NME (intervention group) was performed twice a week (a' 60min, once in a supervised group, once at home with video) in three progressive levels during 6 months. Control of the lumbar neutral zone was emphasized in NME. The main outcome was change in lumbar movement control; other outcomes including musculoskeletal/aerobic fitness, pain interfering work (SF-36), work-induced lumbar exertion, recovery from work and difficulties in heavy nursing tasks (patient lifting/transferring). Between group differences were analyzed by the generalized linear mixed model according to intention to treat principle.
Results: Mean exercise attendance rate was 26.3 (SD 12.2) out of 46 in 23 weeks, 67% exercising 1–2 times a week. 80% (n=176) participated in 6-month, and 72% (n=157) in 12-month follow-up measurements. The NME intervention reduced impairments in movement control tests (p=0.04), pain interfering work (p=0.03), lumbar exertion (0.04) and difficulties in patient handling (p=0.007), and improved recovery from work (p=0.04), but had no effect on fitness when compared controls.
Conclusion: Pilates-type NME was effective in reducing pain, impairments in lumbar movement control and improved work-related physical outcomes. Exercise compliance was low compared to target with no effect on physical fitness.