

## The Effects of an Exercise Program Integrated with the Transtheoretical Model on Pain and Trunk Muscle Endurance of Rice Farmers with Chronic Low Back Pain

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**Abstract :** Background and Purpose: In Thailand, rice farmers have the most prevalence of low back pain when compared with other manual workers. Exercises have been suggested to be a principal part of treatment programs for low back pain. However, the programs should be tailored to an individual's readiness to change categorized by a behavioral approach. This study aimed to evaluate a difference between the responses of rice farmers with chronic low back pain who received an exercise program integrated with the transtheoretical model of behavior change (TTM) and those of the comparison group regarding severity of pain and trunk muscle endurance. Materials and Methods: An 8-week exercise program was conducted to rice farmers with chronic low back pain who were randomized to either the TTM (n=62, 52 woman and 10 men, mean age  $\pm$  SD 45.0 $\pm$ 5.4 years) or non-TTM (n=64, 53 woman and 11 men, mean age  $\pm$  SD 44.7 $\pm$ 5.4 years) groups. All participants were tested for their severity of pain and trunk (abdominal and back) muscle endurance at baseline (week 0) and immediately after termination of the program (week 8). Data were analysed by using descriptive statistics and student's t-tests. The results revealed that both TTM and non-TTM groups could decrease their severity of pain and improve trunk muscle endurance after participating in the 8-week exercise program. When compared with the non-TTM group, however, the TTM showed a significantly greater increase in abdominal muscle endurance than did the non-TTM (P=0.004, 95% CI -12.4 to -2.3). Conclusions and Clinical Relevance: An exercise program integrated with the TTM could provide benefits to rice farmers with chronic low back pain. Future studies with a longitudinal design and more outcome measures such as physical performance and quality of life are suggested to reveal further benefits of the program.

**Keywords :** chronic low back pain, transtheoretical model, rice farmers, exercise program

**Conference Title :** ICKESS 2014 : International Conference on Kinesiology, Exercise and Sport Sciences

**Conference Location :** London, United Kingdom

**Conference Dates :** June 29-30, 2014