

UNIVERSITI TEKNOLOGI MARA

**CORE STABILIZATION EXERCISE VERSUS
DYNAMIC STRETCHING IN REHABILITATION OF
LOWER BACK ACHE PATIENTS**

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A research dissertation submitted
in partial fulfillment for the degree of
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AUTHOR'S DECLARATION

I hereby certify that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. I declare that this is the true copy of my dissertation and that no part of this dissertation has been submitted to any other academic institution or non-academic institution for any degree or qualification.

I hereby acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Chronic low back pain (CLBP) affects most adults at some point in their lives. Rehabilitation therapy for CLBP has emerged over the time. The present study investigates acute and chronic effects of core stability exercise and dynamic stretching among lower back ache patients. Forty-three participants aged from 19-67 years old, who had a primary complaint of lower back ache of at more than 6 weeks duration were assigned into three groups, core stability exercise group ($n=17$), dynamic stretching group ($n=16$) and control group ($n=12$). Four tests (pre, acute, ongoing, post) were administered to evaluate the participants' lumbosacral range of motion (ROM), functional disability, pain level and the deep core neuromuscular control. The acute-effects showed that both the intervention group; core stability exercise and dynamic stretching has significant improvement in lumbosacral ROM; $F(12, 72) = 3.94$, $p < .05$; Wilk's $\Lambda = 0.364$, partial $\eta^2 = .397$. Nevertheless, significant changes in pain level were only found in dynamic stretching group ($p < .05$), while significant change in deep core neuromuscular control were only noted for core stability exercise group ($p < .05$). The chronic-effects showed that the intervention group (core stability exercise and dynamic stretching) were both significantly effective ($p < .05$) in improving lumbosacral ROM, pain-level, functional disability and deep core neuromuscular control. In summary, dynamic stretching are proven to be superior to core stability exercise in relieving pain and improving functional ability which is the primary goal in rehabilitation. Furthermore, dynamic stretching is also found to improve neuromuscular function of the deep core muscles which play an important role to stabilize the spine. Nevertheless, the dynamic stretching requires longer period of time for neuromuscular adaptation of the deep core muscles compared to the conventional core stability exercise. Based on the finding of the present study, it is suggested for health practitioners to recommend CLBP patients to perform dynamic stretching in the early stages of treatment and progressively introduce core stability exercises in the later stages.

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