

THE EFFECT OF EXTRACORPOREAL SHOCKWAVE, ULTRASOUND THERAPY AND SHORT-WAVE DIATHERMY IN NON-SPECIFIC LOW BACK PAIN

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ABSTRACT

Background: Low Back Pain (LBP) cases are common musculoskeletal disorders, and their management is crucial to prevent them from becoming chronic, which can have significant impacts on the health and economy of society.

Objective: This study aims to examine the effectiveness of using physiotherapy modalities such as Extracorporeal Shockwave Therapy (ESWT), Ultrasound Therapy (UST), and Shortwave Diathermy (SWD) in the management of LBP cases at the Exercise Therapy Clinic, HSC UNY.

Methods: This study employed a 2x3 factorial randomized control trial experimental design involving a total of 38 non-specific LBP patients, divided into two groups (acute+subacute and chronic). Each group received one treatment session from either ESWT, UST, or SWD protocol. Variables measured included pain level assessed using the Numeric Rating Scale (NRS) and range of motion of the spine (flexion, extension, lateral flexion, and rotation) measured with a goniometer before and after treatment. Analysis was performed using split plot Repeated Measures Anova to assess the effects of the type of disorder and type of therapy on pain, function, and range of motion before and after treatment. Effect size was also calculated in the form of Hedge's Correction Cohen D to estimate clinical effects.

Results: Out of 45 research subjects, 27 were male (60%). There was no significant difference in gender proportions between treatment groups. Overall, most subjects had a low risk level of LBP (60%). There was no significant difference in risk level proportions between treatment groups. Characteristics such as age, anthropometry, vital signs, and quality of life did not differ significantly between groups.

Results of the split plot RM ANOVA showed a significant time effect, with a reduction in pain, improvement in function, and range of motion after treatment. There was no significant difference in phase and different types of therapy. Clinical effect size estimated by Hedge's Correction Cohen D indicated a small time effect for some parameters like left flexion, right rotation, left rotation, and flexion. For pain and some function parameters, the effect size ranged from small to large.

Conclusion:

The results of this study demonstrate that the use of physiotherapy modalities such as ESWT, UST, and SWD is effective in reducing pain, improving range of motion, and function in LBP patients. While the time effect appeared small for some parameters, the overall clinical effects were positive.

Kata Kunci: *physical therapy modalities, range of motion, low back pain*