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Effectiveness of progressive resistance exercises versus endurance exercises on quality of life and biochemical parameters in obese paraplegic wheelchair users lined with saudi qol program 2020 (A single-blinded randomized clinical trial)

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Background and Objective: Spinal cord injury (SCI) lead to a permanent impairment of motor, sensory and/or autonomic functions. The increase in the number of wheelchair users among Saudi population has been observed over the last decade. Studies have found that 10% of patients with spinal cord injuries have motor impairment in the lower limbs, making them dependent on a manual wheelchair for mobility and activities daily livings (ADLs). Regular exercise training is essential to help wheelchair users to be independent. However, there is no clear information regarding type, intensity and frequency of the appropriate exercise program. The objective of the study was to compare the effects of progressive resistance exercises (PRE) compared with endurance exercises (EE) and measure how it affects the handgrip strength and quality of life among the obese paraplegic wheelchair's users.

Material and Methods: Thirty obese paraplegic wheelchair users with SCI whose BMI of >30 kg/m2 were included in this study and were randomly assigned to either of the two groups. Participants were equally assigned into two equal groups. Group (A) received diet regimen in addition to endurance exercise (EE) program by using arm ergometer cranking machine, (50 rpm) for 30 minutes/ day for 8 weeks, whereas group (B) received diet regimen in addition to progressive resisted exercise (PRE) program by using multi-resistance therapeutic bands where 8 exercises with different patterns, were performed 8-10 times of 3 sets per day for 8 weeks. Measurements of quality of life, handgrip strength, glycosylated hemoglobin (HBA1c) and Homeostasis Model Assessment-Insulin Resistance (HOMA-IR), Triglycerides (TG), Total cholesterol (TC), Low Density Lipoprotein Cholesterol (LDL-c) and High Density Lipoprotein Cholesterol (HDL-c) were done before the study and after 8 weeks.

Results: The mean values of The World Health Organization Quality of Life Assessment Instrument-Short Version, high-density lipoprotein cholesterol (HDL-cholesterol) and handgrip strength were significantly improved in both groups. While the mean values of triglycerides, total cholesterol, low-density lipoprotein cholesterol (LDL-cholesterol), total cholesterol (TC), triglycerides and BMI were reduced significantly in both groups. In addition, differences between both groups were significant at the end of the study, with more significant changes in group (A)

Conclusion: The current study provides evidence that diet regimen in addition to endurance exercise (EE) program is an effective treatment policy to improve quality of life and biochemical parameters among obese paraplegic wheelchair users with spinal cord injury.

Biography

Abdullah Abdulrahim Al-Ghamdi A graduate student of the master's degree in the field of physiotherapy and rehabilitation. Advisor to the Faculty of Medical Rehabilitation at King Abdulaziz University – Jeddah

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