

The Comparison of Trunk Stabilization, Flexibility, Endurance and Quality of Life Between Disabled and Healthy Shooter Athletes

Asude Arık¹, Zafer Erden¹, Filiz Can¹, Çiğdem Öksüz²

¹Hacettepe University, Faculty of Health Sciences, Physiotherapy and Rehabilitation Department, Ankara, TURKEY, ² Hacettepe University, Faculty of Health Sciences, Occupational Therapy Department, Ankara, TURKEY

Objectives: Disabled athletes need proper trunk control and balance, enough flexibility and better muscle endurance to carry on activity of daily life and sports activity. In the literature, the studies which compare these parameters in disabled shooters are quite few. The purpose of this study was to compare trunk stabilization, flexibility, endurance and quality of life between disabled and healthy shooter athletes.

Methods: 15 disabled and 15 healthy athletes (aged between 18-55 years) who perform shooting at least one year were included in the study. Disabled athletes suffered from unilateral and bilateral poliomyelitis, bilateral congenital hip dislocation or paraplegia. The athletes' demographic characteristics, muscular endurance, flexibility, sitting balance and quality of life were evaluated. Sit-ups and Modified Push-ups Test have been used for evaluation of trunk flexion and extension endurance, Sit and Reach Test has been used for evaluation of flexibility. Upper extremity flexibility has been measured by shoulder internal rotation. Sitting balance has been evaluated by Modified Functional Reach, Bilateral and Lateral Reach Tests. Quality of life has been evaluated by Nottingham Health Profile. Mann-Whitney-U Test was used for the statistical analysis.

Results Results of Sit-Ups and Modified Push-Ups Tests were lower in the disabled group ($z_1 = -3.84$, $z_2 = -3.76$; $p < 0.05$). It has been found that the disabled athletes were more flexible according to Sit and Reach Test ($z = -2.22$; $p < 0.05$). No difference in right and left shoulder internal rotation was found between the healthy and the disabled group ($z_1 = -0.56$, $z_2 = -0.91$; $p > 0.05$). Differences were found in favour of the healthy group at Modified Functional Reach, Bilateral Reach, Right and Left Lateral Reach Tests to evaluate sitting balance (eyes-open and eyes-closed) ($z_1 = -3.38$, $z_2 = -3.86$, $z_3 = -3.42$, $z_4 = -3.51$, $z_5 = -3.40$, $z_6 = -3.55$, $z_7 = -3.13$, $z_8 = -3.65$; $p < 0.05$). Differences were found in favour of the healthy group at Nottingham Health Profile total point, energy level, pain and physical activity parameters ($z_1 = -3.17$, $z_2 = -3.09$, $z_3 = -3.48$, $z_4 = -4.63$; $p < 0.05$). Emotional reactions, social isolation and sleep parameters were similar ($z_1 = -0.24$, $z_2 = -0.89$, $z_3 = -0.83$; $p > 0.05$).

Conclusion: It has been concluded that disabled shooters have weak trunk flexion and extension endurance level and sitting balance according to healthy athletes; but their flexibility is better. While their energy level, pain and physical activity level related to quality of life were less than healthy athletes, their emotional reactions, social isolation and sleep level were similar. Quality of life as total score was less in disabled shooters. All these results are quite important to determine both sport performance level and planning of rehabilitation program for increasing performance level in disabled shooters.

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