Original Paper

Effect of three resistance training programs with different intensities on pulmonary function, physical function and body composition in overweight females

Raheleh Kermanizadeh (B.Sc)[1], Amirhossein Haghighi (Ph.D)*[2], Roya Askari (Ph.D)[3]

[1]M.Sc Student of Exercise Physiology, Faculty of Sport Sciences, Hakim Sabzevari University, Sabzevar, Iran.
[2]Associate Professor of Exercise Physiology, Faculty of Sport Sciences, Hakim Sabzevari University, Sabzevar, Iran.
[3]Assistant Professor of Exercise Physiology, Faculty of Sport Sciences, Hakim Sabzevari University, Sabzevar, Iran.

Abstract

Background and Objective: Obesity and overwight affects on respiratory phyological indeces including pulmonary voulume, spirometery function, mechanical function of air ways neuro-muscular functions and capacity of exchange of gases. The obese and overwight subjects have high risk in reduction respiratory valume syndrome. This study was done to compare the effects of three resistance training programs with different intensities on pulmonary function, physical function and body composition in overweight girls.

Methods: In this quasi - experimental study, thirty overweight inactive girls were non-randomly divided into 3 equal groups (n=10) of resistance training with different intensity based on their 1 RM (light, 55-65%, moderate, 65-75%, and heavy, 75-85%, repsctively). The training progams were done for 9 weeks (3 sessions per week). Each session consists of 5 stations with 3 sets while rest intervals between the repetiotions and stations were 60-90 seconds and 90-120 seconds, respectively. Before and after the end of the training programs, spirometry, body composition, muscular strength and endurance of the upper body and VO2max were measured.

Results: 9 weeks resistance training program with 55-65%, 65-75%, and 75-85% 1RM intensities had no significant effect in the spirometry parameters, body weight, body mass index, upper body muscular endurance and VO2max. Fat percentage in 55-65% group significantly reduced in compared to those of 65-75%, and 75-85% 1RM groups ($P<0.05$). The upper body muscular strength in group with 75-85% 1RM significantly increased in compared to groups with 55-65% and 65-75% 1RM ($P<0.05$).

Conclusion: Overweight girls can apply resistance training with 55-65% 1RM to reduce the percent of body fat, and enhance the upper body strength through trainings with 75-85% 1RM. In relation to pulmonary function indices and indices of physical function and body composition, there was no dference between three training programs.

Keywords: Resistance training, Pulmonary function, Body composition, Physical performance, Overweight

*** Corresponding Author: Haghighi A (Ph.D), E-mail: ah.haghighi292@yahoo.com**

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Raheleh Kermanizadeh (https://orcid.org/0000-0001-6085-9325), Amirhossein Haghighi (https://orcid.org/0000-0002-7258-9737)

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