

Comparison of high-intensity interval training (HIIT) vs. moderate-intensity continuous training (MICT) effect on body composition, physical fitness, exercise enjoyment, cardiovascular health of the obese postmenopausal women

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Regular physical activity is one of the ways for controlling the adverse effects of menopause. By regular physical activity, women are physically and mentally reinforcing their ability to cope with the complications of menopause. The purpose of this study was to compare the effect of eight weeks of High Intensity Interval Training (HIIT) and Moderate Intensity Continuous Training (MICT) on ed body composition and physical fitness, cardiovascular health indicators factors and physical activity enjoyment on obese postmenopausal women. 32 obese women in Bandar Anzali (mean height 157.31 ± 3.73 cm, mean age 52.55 ± 2.61 years and mean weight 79.22 ± 4.94 kg) were ed by available sampling as a statistical sample of this study. Subjects were randomly divided into HIIT (n = 16) and MICT (n = 16) groups. The HIIT exercise consisted of a 20-minute Ergometer with a maximum heart rate of 90% (MHR). Each case was divided into two phases 20 minutes: activity phase and recovery phase (10.5 seconds, respectively). During the activity phase, the subjects acted at a maximum speed of 100 rpm or higher and reduced their speed during the recovery phase to 50 rpm. The MICT exercise consisted of a 40-minute continuous Ergometer with a maximum heart rate of 75-60%, and the subjects performed the exercise at a speed of 60 rpm. The subjects worked in both groups for 5 minutes to warm up and 5 minutes to cool down at a low intensity (40% MHR) per day of Ergometer. The MHR was recorded every five minutes during the cycling cycle.

The research variables included weight, body mass index and body fat percentage, hip ratio (body composition indexes), bleeding power, flexibility, coordination and balance (physical fitness indicators), index Cardiovascular health including HDL, LDL, TG, estradiol and testosterone was a measure of enjoyment of physical activity. In order to analyze the findings, SPSS software version 22 was used. To test the hypotheses, paired-sample and one-sample t-test was used. The results of this study showed that there is a significant difference in weight ($P=0.005$), body mass index ($P=0.004$), body fat percentage ($P=0.000$), anaerobic power ($P=0.000$), fasting blood glucose ($P=0.000$), estradiol ($P=0.004$) and testosterone ($P=0.001$) levels in the HIIT group before and after intervention. MICT exercises had a significant effect on body fat percentage ($P=0.003$), anaerobic power ($P=0.002$), fasting blood glucose ($P=0.003$), estradiol ($P=0.002$) and testosterone ($P=0.000$) levels. By comparing the effect of two training methods, we found a significant difference between the two groups in terms of weight ($P=0.001$), BMI ($P=0.004$), flexibility ($P=0.002$), consistency ($P=0.004$), and static balance ($P=0.003$). No significant difference was found between the two groups in terms of cardiovascular health indicators and physical activity enjoyment ($P=0.397$). In general, according to the results of the research, it can be said that high intensity interval training has a more effective effect on body composition, physical fitness, and cardiovascular health in obese menopausal women than moderate intensity continuous training. **Keywords** High intensity periodic exercises, moderate intensity exercises, body composition, cardiovascular health

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