Effects of High-Intensity Interval Training and Strength Training On Levels of Testosterone and Physical Activity among Women with Polycystic Ovary Syndrome.

ClinicalTrials registration no: NCT04942366

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Study Protocol:

Informed consent had been taken from the participants before inclusion in the study. Baseline assessment was done before the start of the session. Both groups performed the warm up and cool down session. Group A performed High intensity interval training and Group B performed strength training exercises. The total length of this planned study was 36 sessions in 12 weeks i.e. three sessions per week. For baseline assessment, Laboratory test for total serum testosterone was performed, skinfold measurement for body fat had been taken by the chief examiner and International physical activity questionnaire for physical activity measurement was filled by the subjects. At the end of the last intervention session, all outcome measures were reassessed (post- intervention). All the activities were supervised by a physical therapist.

Warm Up:

A total of 10 minute warm up of light to moderate intensity cardiorespiratory activity for HIIT group A and muscular endurance activity for ST group B.

High Intensity Interval Training:

High intensity interval training for group A was performed thrice a week using a treadmill. The protocol of each session that was followed is four sets of 4 minute interval session (at 90%-95% of the individual HR max calculated by using the karvonen method) and each set had been followed by 3 minute of moderate intensity exercise (at 70% of individual HR max, calculated through karvonen method). Each session was of 45 minutes duration including warm up and cool down period. To ensure that the correct exercise intensity is

performed; subjects wore heart rate monitors during training sessions.

Strength Training:

Strength training for group B was performed thrice a week, each session comprised of 8 dynamic drills (with resistance of 60 – 70 % of1 repetition maximum). Eight exercises on the major muscle groups were included in this session (Squats, deadlift, lunge, standing bent rowing, shoulder press, bench press, push-ups, and abdominal crunches). Each drill consisted of 10-12 repetitions x 3 sets. Each set was separated by one minute rest. Equipment like dumbbells had been provided. Each individual was assessed and according to that progression of strength training had been considered, weight (kg) was increased according to 1RM method that had been assessed after every week. 1RM method is the gold standard for dynamic strength assessment, it is the maximum weight that can be moved in one repetition. 1RM is determined through four trials that starts with gradually increasing resistance of 2.5kg-20kg until the subject is unable to complete repetitions. The final weight achieved is selected as absolute 1-RM. Total exercise time for this session was 45 minutes, warm up and cool down period included.

Cool Down:

A total of 10 minute cool down of light to moderate intensity cardiorespiratory activity for HIIT group A and muscular endurance activity for ST group B.

Exercise termination criteria:

Exercise based intervention were prematurely terminated when anyone of the following occurred as per the American College of Sports Medicine Criteria (2013),

- Modified Borg dyspnea scale is at level 8 or higher.
- Decrease in oxygen saturation at less than 90%.
- On the request of the patient.