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Effect of cross fit training on selected corporeal variables among women students with polycystic ovary syndrome

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Abstract

The purpose of the study was to find out the effect of Cross Fit training on selected corporeal variables among women students with polycystic ovary syndrome. To achieve the purpose of the study, thirty (30) women students with polycystic ovary syndrome were selected randomly 18 to 25 years of age from departments and affiliated colleges of Bharathiar University, Coimbatore, Tamil Nadu. The selected subjects were divided into two equal groups namely experimental and control group of 15 subjects each. The training period was limited to twelve weeks and for five days per week. The Cross Fit training was selected as independent variables and muscular strength and endurance, body composition, pulse rate, O₂ saturation and breath holding time were selected as dependent variables and it was measured by modified sit and reach, Skinfold Calipers, Pulse Oximeter and Manual Nose Clip respectively. All the subjects were tested two days before and immediately after the experimental period on the selected dependent variables. The obtained data from the experimental group and control group before and after the experimental period were statistically analyzed with dependent 't'-test to find out significant improvements. The level of significance was fixed at 0.05 level confidence for all the cases. Significant improvement was found on muscular strength and endurance, body composition, pulse rate, O₂ saturation and breath holding time of experimental group due to the effect of Cross Fit training when compared to the control group.

Keywords: Muscular strength and endurance, body composition, pulse rate, O₂ saturation and breath holding time

Introduction

Polycystic ovarian syndrome (PCOS) is a common disorder seen in women at their reproductive age with a prevalence rate of 4 to 12%. Diagnosis of hyperandrogenism or chronic anovulation without any adrenal or pituitary conditions can be called as PCOS. The condition was first described by Stein and Leventhal in 1935, which was a combination of oligo-amenorrhea and polycystic ovaries often associated with hirsutism, obesity or acne. Thus the key findings in subjects with PCOS are hyperandrogenism and chronic anovulation. Clinical features also include acanthosis nigricans and male pattern alopecia.

The diagnostic criteria put forward by Rotterdam workshop (2003) consider two of the three following criteria to be present; chronic anovulation or oligomenorrhea, polycystic ovarian morphology, and hyperandrogenism. Hyperinsulinaemia due to insulin resistance leading to the production of excess ovarian androgen is considered to be one of the aetiology of PCOS. This may predispose to non-insulin dependent diabetes as well as cardiovascular diseases in their later life.

Cross fit training

Cross Fit training is an alternative modality to high-intensity functional training (HIFT). Due to its constantly varied functional movements performed at relatively high intensity through metabolic conditioning, gymnastics, and weightlifting, this modality has been increasing in its popularity across the world. The basic tasks are consisted of little to no resting periods during the activity in order to complete a task as fast as possible (for time) or achieve the greatest number of repetitions in a certain period of time (as many repetitions as possible, AMRAP).

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The high intensity of CrossFit workouts improves muscular endurance and strength, fitness level, as well as body composition. The huge number of participants and increasing competition and professional athletes of CrossFit allowed us to characterize it as a training program and sport of fitness.

Methodology

For the purpose of this study, altogether thirty (30) women students with polycystic ovary syndrome were chosen on random basis from departments and affiliated colleges of Bharathiar University, Coimbatore, Tamil Nadu. Their age group ranges from 18 to 25 years. They were divided into two groups of 15. The Experimental group would undergo CrossFit training. The second group Control group. Pre – test and post –test would be conducted. Treatment would be given for twelve weeks. It would be find out finally the effect of CrossFit training on the polycystic ovary syndrome in scientific methods.

The selected tests were measured by following units for testing:

Table 1: The selected tests were measured by following units for testing

Criterion Variables	Test Items	Unit Measurements
Muscular Strength Endurance	Modified Sit Ups	Counts
Body Composition	Skinfold Calipers	Millimeters
Pulse Rate	Pulse Oximeter	Beats Per Minute
O2 Saturation	Pulse Oximeter	Percent (%)
Breath Holding Time	Manual Nose Clip	Seconds

Training programme

The following schedule of training was given for the Cross Fit training group.

Table 2: The following schedule of training was given for the Cross Fit training group

Group	Design of the Training
Experimental Group	Cross Fit training
Control Group	Did not do any Specific Training
Training Duration	60 Minutes
Training Session	5 Days a week
Total Length of Training	Twelve weeks

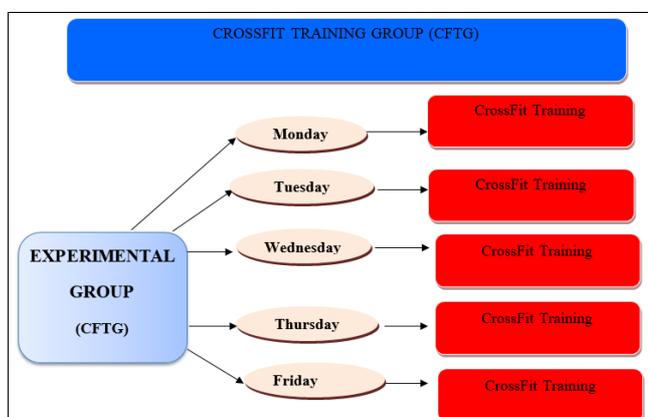


Chart 1: Experimental treatment adopted for experimental group

Physic Physical Training al Training Experimental design

The experimental group was given CrossFit training exercises

after taking an initial test. After the initial test selected CrossFit training exercises were given for twelve weeks in all days except Saturday and Sunday. The time of practice was from 6.00A.M to 7.00 A.M. The control group were not participating in any of the special training programme. However they were allowed to participate in their regular education classes in the school as per their curriculum.

Statistical technique

The achieved data since the experimental group and control group previously and subsequently the experimental dated were statistically evaluated with dependent t-test to discovery obtainable significant development. The level of significance was secure at 0.05 level of confidence for all the cases.

Results and Discussions

The effect of independent variables on each criterion variables was considered by dependent ‘t’ – test on the data achieved for muscular strength and endurance, body composition, pulse rate, O2 saturation and breath holding time. The pre-test and post- test means of experimental group and control group have been analyzed and existing in Table 3 & 4.

Table 3: Mean and dependent ‘t’ – test for the pre and post tests on muscular strength and endurance, body composition, pulse rate, o2 saturation and breath holding time of experimental group

S. No	Variables	Pre test Mean± SD	Post test Mean± SD	SE	‘t’ – ratio
1.	Muscular Strength Endurance	7.73±1.46	9.2±0.52	0.13	11.00*
2.	Body Composition	31.28±2.07	29.20±3.23	0.83	2.48*
3.	Pulse Rate	82.53±8.53	74±7.01	1.80	4.71*
4.	O2 Saturation	87.40±5.54	86.27±5.47	.13	8.50*
5.	Breath Holding Time	26.07±4.73	30.8±2.85	0.73	6.45*

*Significance at 0.05 level of confidence (2.14)

Table 4: Mean and dependant ‘t’ – test for the pre and post tests on muscular strength and endurance, body composition, pulse rate, o2 saturation and breath holding time of control group

S. No	Variables	Pre test Mean± SD	Post test Mean ± SD	SE	‘t’ – ratio
1.	Muscular Strength Endurance	7.66±0.00	7.4±0.51	0.13	1.23
2.	Body Composition	30.32±1.02	31.35±1.48	0.37	1.74
3.	Pulse Rate	86.86±2.60	84.26±2.18	0.55	1.56
4.	O2 Saturation	86.47±2.50	86.33±2.41	0.13	1.00
5.	Breath Holding Time	25.86±1.20	24.66±1.17	0.29	1.11

*Significance at 0.05 level of confidence (2.14)

The table 3 and 4, shows that, the obtained ‘t’–ratio between the pre and post-test means of experimental group were 11.00,2.48,4.71,8.50 and 6.45 and control group were 1.23,1.74,1.56,1.00, 1.11 respectively. The table values required for significant difference with df 1, 29 at 0.05 level of confidence. Since the obtained ‘t’ – ratio value of experimental and control group on muscular strength and endurance, body composition, pulse rate, O2 saturation and breath holding time were greater than the table value 2.14,it was concluded that Cross Fit training had significantly

improved muscular strength and endurance, body composition, pulse rate, O₂ saturation and breath holding time of experimental group.

The pre and post- test mean value of experimental and control

group on muscular strength and endurance, body composition, pulse rate, O₂ saturation and breath holding time were graphically represented in the figure 1.

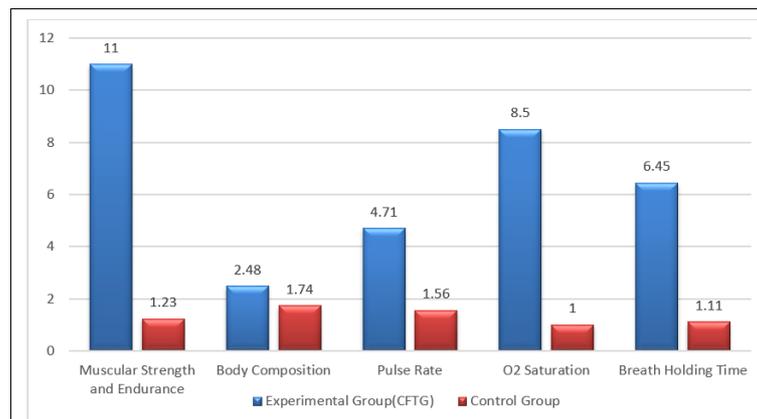


Fig 1

Discussion on findings

The finding of the study reveals that the followed by CrossFit training group cause significant improvement in their corporeal variables. In the view of control group there was no significant improvement in their corporeal variables. The findings of the study they stated that Cross Fit training on exercise developed corporeal variables.

Conclusions

It was concluded that improvement of muscular strength and endurance, body composition, pulse rate, O₂ saturation and breath holding time was found significantly on experimental group due to the effect of corporeal variables followed by Cross Fit training when compared to the control group.

References

1. Rhiannon K. Patten, russell a. Boyle, trine moholdt, ida kiel, william g. Hopkins, cheryce l. Harrison and nigel k. Stepto has conducted research on Exercise interventions in polycystic ovary syndrome: a systematic review and meta-analysis; c2020.
2. Afsaneh Khademi MD, Ashraf Alleyassin MD, Marzieh Aghahosseini MD, Leila Tabatabaefar MD, Mehrnoosh Amini MD. Has conducted research on The Effect of Exercise in PCOS Women Who Exercise Regularly; c2010.
3. Luis Leitão, Marcelo Dias, Yuri Campos, João Guilherme Vieira, Leandro Sant'Ana, Luiz Guilherme Telles, Carlos Tavares, *et al.* Has conducted research on Physical and Physiological Predictors of FRAN CrossFit® WOD Athlete's Performance; c2021.
4. Gerald T Mangine, Matthew T Stratton, Christian G. has conducted research on Physiological differences between advanced CrossFit athletes, recreational CrossFit participants, and physically-active adults; c2020.
5. Barfield JP, Anderson A. has conducted research on Effect of CrossFit™ on Health-related Physical Fitness: A Pilot Study; c2014.
6. Maha Hasan Moslem, Alaa Khalaf Hayder. has conducted research on The effect of cross-fit exercises on the development of the force characteristic of speed for the precision skill of shooting with hand ball; c2020.
7. Essam Ahmed Helmy Mohamed Abou Gamil. Has conducted research on The Effect of a Cross-Training

Program on the Body Composition, the Physical Working Capacity and the Record Level of 5000 m Runners; c2017.

8. Yankun Han, Syed Kamaruzaman Bin Syed Ali, Lifu Ji. Has conducted research on Effects of CrossFit intervention on students' physical fitness in physical education: a systematic review and meta-analysis; c2021.
9. Leanne M Redman Ph.D., Karen Elkind-Hirsch Ph.D, Eric Ravussin Ph.D. Has conducted research on Aerobic Exercise In Women With Polycystic Ovary Syndrome Improves Ovarian Morphology Independent Of Changes In Body Composition; c2012.
10. Rachel M Gregory, Hasan Hamdan, Danielle M Torisky, Jeremy D Akers. Has conducted research on A Low-Carbohydrate Ketogenic Diet Combined with 6-Weeks of Crossfit Training Improves Body Composition and Performance; c2017.