International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Consequence of Orange Theory Fitness Training on Selected Health Related Physical Fitness Variables Among Obese

Dr. V. A. Manickam[1], S. Harris Lamuel Prakash[2]

[1]Associate Professor, Department of Physical Education and Health Sciences, Alagappa University, Karaikudi.
[2]Ph.D Research Scholar (Regular), Department of Physical Education and Health Sciences, Alagappa University, Karaikudi.

Abstract
The main task of the study was to find out Consequence of orange theory fitness training on Selected Health Related Physical Fitness Variables among Obese. To achieve the task of the study Forty class-I obese school boys were selected from various schools in Tuticorin were selected as subjects and their age ranged from 12-15 years only. The selected subjects were divided into two equal groups namely experimental group (20) and control group (20). The experimental group participated in orange theory fitness training. Pre and post-test method were followed. The experimental training was adopted for eight weeks on three days a week and control group was not exposed to experimental treatment. The selected variables namely flexibility, cardio respiratory endurance and muscular endurance. The above selected variables were tested through Flexibility (sit and reach in centimetre), Cardio Vascular Endurance (1.6 mile run in five minutes), and Muscular Endurance (bent knee sit-ups). The collected data were statistically analysed using dependent 't' test. The level of confidence was fixed at 0.05 for all cases. The result of the study showed that there was a significant improvement in flexibility, cardio respiratory endurance and muscular endurance among class -I obese school boys due to orange theory fitness training.

Keywords: Orange Theory Fitness, Flexibility, Cardio Respiratory Endurance Muscular Endurance

Introduction

Orange theory fitness

Orange Theory Fitness is a high-intensity interval training (HIIT) workout that incorporates cardiovascular and strength training exercises. Each workout is designed to be a full-body workout that includes intervals of cardio and strength training, designed to boost your heart rate and burn calories. The workout consists of a combination of treadmill exercises, rowing exercises, and weight training exercises. The workout is led by a coach who motivates and guides you through the exercises. The workout is designed to maximize calorie burn and provide a full-body workout. The workout is also designed to be challenging and intense, so it is recommended that individuals consult with a doctor before beginning any exercise program.

Orange Theory Fitness (OTF) is a high-intensity interval training (HIIT) program that incorporates cardiovascular and strength training exercises. HIIT has been shown to improve cardiovascular fitness, body composition, and insulin sensitivity in obese individuals (1). Additionally, resistance training can

improve muscle strength and mass, which can aid in weight loss and metabolic health (2). Therefore, it is likely that OTF training could lead to improvements in health and fitness outcomes in obese individuals.

Health Related Physical Fitness

Health related physical fitness means that they are healthy and organic systems of the body are healthy and function efficiently, so that they are able to engage in vigorous tasks and leisure activities. It is an effective way to reduce several risks factors associated with cardiovascular diseases, back pain, diabetes, osteoporosis, and obesity (Swain & Leotholtz, 2007).

Flexibility

Flexibility is the ability of a limb to move freely around a joint through a full range of motion (Patricia, Anita & Pierre, 2007).

Cardio Respiratory Endurance

The ability of the lungs, heart rate and blood vessels to deliver adequate amounts of oxygen to the cells to meet the demands of prolonged physical activity (Wener & Sharon, 2009).

Muscular Endurance

Muscular endurance is the ability to a muscle group of exerts sub maximal force for extended periods (Vivian, 2010). Obesity

At their most basic, the words "overweight" and "obesity" are ways to describe too much body fat. (James, WP, 2005).

BMI Categories

BMI	CLASSIFICATION
<18.5	Under weight
18.5-24.9	Normal Weight
25.0-29.9	Over Weight
30.0-34.9	Class I Obesity
35.0-39.9	Class II Obesity
>40.0	Class III Obesity

Review of Literature

Bauer et al., (2022) assessed the impact of HIIT performed at school, i.e. both in connection with physical education (intra-PE) and extracurricular sports activities (extra-PE), on the physical fitness and health of children and adolescents. (1) healthy children and adolescents (5–18 years old) of normal weight; (2) HIIT performed intra- and/or extra-PE for at least 5 days at an intensity ≥ 80% of maximal heart rate (HR_{max}) or peak oxygen uptake (VO_{2peak}) or as Functional HIIT; (3) comparison with a control (HIIT versus alternative interventions); and (4) pre- and post-analysis of parameters related to physical fitness and health. The outcomes with HIIT and the control interventions were compared utilizing Hedges' g effect size (ES) and associated 95% confidence intervals. Eleven studies involving 707 participants who performed intra-PE and 388 participants extra-PE HIIT were included. In comparison with the control interventions, intra-PE HIIT improved mean ES for neuromuscular and anaerobic performance (ES jump

performance: 5.89 ± 5.67 (range 1.88–9.90); ES number of push-ups: 6.22 (range n.a.); ES number of sit-ups: 2.66 ± 2.02 (range 1.24–4.09)), as well as ES fasting glucose levels (− 2.68 (range n.a.)) more effectively, with large effect sizes. Extra-PE HIIT improved mean ES for neuromuscular and anaerobic performance (ES jump performance: 1.81 (range n.a.); ES number of sit-ups: 2.60 (range n.a.)) to an even greater extent, again with large effect sizes. Neither form of HIIT was more beneficial for parameters related to cardio respiratory fitness than the control interventions. Compared to other forms of exercise (e.g. low-to-moderate-intensity running or walking), both intra- and extra-PE HIIT result in greater improvements in neuromuscular and anaerobic performance, as well as in fasting levels of glucose in school children.

Methodology

The main task of the study was to find out Consequence of orange theory fitness training on Selected Health Related Physical Fitness Variables among Obese. To achieve the task of the study Forty class-I obese school boys were selected from various schools in Tuticorin were selected as subjects and their age ranged from 12-15 years only. The selected subjects were divided into two equal groups namely experimental group (20) and control group (20). The experimental group participated in orange theory fitness training. Pre and post-test method were followed. The experimental training was adopted for eight weeks on three days a week and control group was not exposed to experimental treatment. The selected variables namely flexibility, cardio respiratory endurance and muscular endurance. The above selected variables were tested through Flexibility (sit and reach in centimetre), Cardio Vascular Endurance (1.6 mile run in five minutes), and Muscular Endurance (bent knee sit-ups). The collected data were statistically analysed using dependent 't' test. The level of confidence was fixed at 0.05 for all cases.

Analysis of Data

The collected data were statistically analysed using dependent 't' test and presented in below table-I

Table-1 Mean, Mean Difference, Standard Deviation and 't' ratio for the Initial and Final Senre of Health-Related Physical Fitness for the Experimental and Control Group Among Class-I Obese School Boys

Variables	Groups	Test	Mean	S. D	M.D	"t" ratio
Flexibility	Experimental Group	pre	0.45	3.03	1.68	5.77*
		Post	1.23	2.53		
	Control Group	pre	0.03	1.06	0.02	1.48
		Post	0.07	1.01		
Cardio Vascular endurance	Experimental Group	pre	44.30	2.84	6.75	12.23*
		Post	37.55	2.39		
	Control Group	pre	43	1.65	0.85	1.65
		Post	43.85	1.98		
Muscular endurance	Experimental Group	pre	12.4	4.90	4.83	5.61*
		Post	17.3	3.46		
	Control Group	pre	8.43	3.70	0.91	1.98
		Post	7.43	3.92		

*Significant 0.05 level of confidence. Required table 't' value -2.04

The result presented in Table I indicates that the pre-test mean values of flexibility for experimental group were 0.45 and control group were 0.03 and Post test mean values of flexibility for experimental group 1.23 and control group were 0.07. As obtained table 't' value of 5.77 was greater than the table value of 2.04. Hence, it was proved that there was a significant improved in the flexibility of experimental group due to the orange theory fitness training. Since the obtained 't' value of control group was 1.48 lesser than the table value of 2.04. It was proved that there was no significant improve in control group on flexibility.
The result presented in Table I also indicates that the pre-test mean values of cardio respiratory endurance for experimental group were 44.30 and control group were 43. Post test mean values of cardio respiratory endurance for experimental group 37.55 and control group were 43.85. As obtained Table 't' value of 12.23 was greater than the table value of 2.04. Hence, it was proved that there was a significant improved in the cardio respiratory endurance of experimental group due to the orange theory fitness training. Since the obtained 't' value of control group was 1.65 lesser than the table value of 2.04. It was proved that there was no significant improved control group on cardio respiratory endurance.
The result also indicates that the pre-test mean values of muscular endurance for experimental group were 12.4 and control group were 8.43. Post test mean values of muscular endurance for experimental group 17.3 and control group were 7.43. As obtained table 't' value of 5.61 was greater than the table value of 2.04. Hence, it was proved that there was a significant improved in the muscular endurance of experimental group due to orange theory fitness training. Since the obtained 't' value of control group was 1.98 lesser than the table value of 2.04. It is proved that there was no significant improved control group on muscular endurance

Conclusions

1. The result of the study showed that there was a significant improvement in flexibility among class -I obese school boys due to orange theory fitness training.
2. The result of the study showed that there was a significant improvement in cardio respiratory endurance among obese school boys due to orange theory fitness training.
3. The result of the study showed that there was a significant improved in muscular endurance among obese school boys due to orange theory fitness training.

References

1. Bauer N, Sperlich B, Holmberg HC, Engel FA.(2022), Effects of High-Intensity Interval Training in School on the Physical Performance and Health of Children and Adolescents: A Systematic Review with Meta-Analysis. Sports Med Open, Apr 11;8(1):50.
2. Heyward, Vivian H., (2002), ***Advanced Fitness Assessment and Exercise Prescription***, (4ED), Champaign Illinois: Human Kinetics Publishers Inc.
3. Kirtania Tumpa, Subhashis Biswas and Ashok Goon(2022), Effect of progressive yogic practices on health related physical fitness of rural middle age women: A randomized pilot study, International Journal of Physical Education, Sports and Health, 9(4): 269-273.
4. Polsgrove M J, Eggleston BM, Lockyer RJ (2016), Impact of 10-weeks of yoga practice on flexibility and balance of college athletes. Int J Yoga, 9:27-34.
5. Scoubeau, C.; Bonnechère, B.; Cnop, M.; Faoro, V.; Klass, M(2022), Effectiveness of Whole-Body High-Intensity Interval Training on Health-Related Fitness: A Systematic Review and Meta-Analysis. Int. J. Environ. Res. Public Health, 19, 9559