

Effect of modified high intensity interval training on fat loss

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INTRODUCTION & AIMS

The incidence of obesity and its related diseases has dramatically increased worldwide in the last few decades. Currently, along with behavioral and nutritional counseling, involvement in regular physical activity serves as the first line of defense in preventing obesity. Despite the well-established benefits of routine physical activity for improving such cardio-metabolic health, it remains difficult for health care professionals to get individuals to adhere to current physical activity guidelines of at least 30 min per day of moderate intensity exercise 5 days per week or vigorous exercise for 20 min per day 3 days a week.

Therefore, given that 'lack of time' is the most commonly cited barrier to exercise adherence, more recent studies have focused on identifying a more time-efficient mode of exercise training. High Intensity Interval Training (HIIT) addresses the time issue effectively. HIIT exercises significantly reduce subcutaneous fat, total body mass while improving VO₂ max and insulin sensitivity main barrier.

Currently, the World is experiencing an extraordinary, life altering challenge with COVID-19, where self isolation and quarantine requirements are leading to decreased physical activity.

Considering all these factors into account, we aimed to induce a home based exercise program where a modified HIIT exercise involving whole body functional training was prescribed.

METHODOLOGY

A total of 12 men and 12 women participated in this study . A detailed medical diagnosis was performed. People who were overweight and obese were considered for the study. Unhealthy people with co- morbids(such as musculo-skeletal injuries, cardiac patients, etc) and unwilling participants were excluded from our study. All participants' participated voluntarily and adequate knowledge regarding the study setting was explained to them.

The participants (n=24) characteristics included age (M=37.63±12.79 years), Height (M=163.42±10.04) Weight (M=80.58±12.90 kg), Body Mass Index (30.30±2.62 kg/m²), Waist to Hip Ratio (M=1±0.10) and sum of skin folds fat (M=160.08±24.65).

Skin folds were measured using a Harpenden skin fold caliper and a seven-site ISAK method (Biceps, Triceps, Subscapular, Abdomen, Supra Iliac, Mid Thigh and Calf) was used to calculate the sum of skin fold fat value. All the population were considered as overweight/ obese according to the BMI and skin fold measurements.

HIIT exercise were prescribed for four days per week until six weeks. The exercises consisted of floor based high intensity functional exercises followed by a short period of complete rest.

a series of whole body modified HIIT exercises comprising of jumping jacks, squats, pushups, crunches, triceps dips, plank, same spot high knee running, lunges, side plank, v-sit hold, mountain climber and burpees .

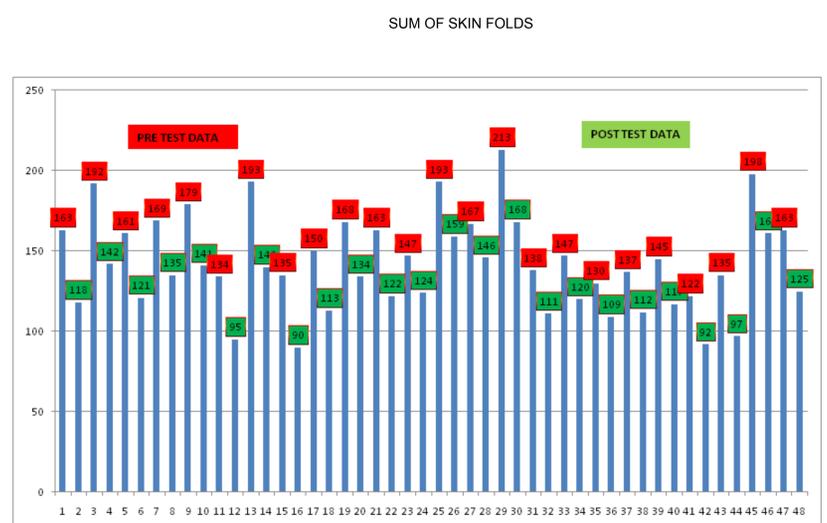
Each participant underwent a series of exercises protocol as follows:

1. Warm up = 5 minutes
2. Modified HIIT exercises = 15 minutes
3. Stretching and cool down = 5 minutes

RESULTS

Variables such as body weight, waist-hip ratio (WHR), body mass index (BMI) and sum of skin folds were analysed for an inter group comparison. Statistical significance was found between the variables of BMI, WHR, Body weight and Sum of Skin Fold values.

The results showed that after exercise interventions there is considerable decrease in the level of adiposity and body weight as well. Moreover, we noticed that there was 77.8% decrease (Figure-1) in the subcutaneous skin fold fat levels after the completion of 6 weeks of exercise regimen.



	Paired Differences							
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pai Weight_1 - r 2 Weight_2	3.83333	1.00722	0.20560	3.40802	4.25865	18.645	23	0.000
Pai WHR_1 - r 3 WHR_2	.02958	0.02836	0.00579	0.01761	0.04156	5.111	23	0.000
Pai BMI_1 - r 4 BMI_2	1.72292	1.30812	0.26702	1.17055	2.27529	6.452	23	0.000
Pai Sum_SF_1 - r 5 Sum_SF_2	35.41667	8.84119	1.80470	31.68336	39.14997	19.625	23	0.000

Paired Samples Test

* p ≤ 0.05 significance of pre test vs post test

CONCLUSION

This preliminary study suggests that supervised six weeks of high intensity interval training connotes in achieving loss of adiposity among a diversified age group. The subcutaneous fat lost due to modifications in musculoskeletal parameters through six weeks of exercise training was firmly supported by significant decrease in anthropometric parameters as well. A multi dimensional exercise regimen such as this could pave way for more time saving yet result oriented protocols in controlling obesity in the near future.

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