



Effect of High-Intensity Interval Training on Agreeableness of Physical Education Students

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Abstract

A time-efficient exercise concept to boost psycho-physiological parameters, like fitness and high blood pressure, and control psychological factors such as conscientiousness and agreeableness is generated by a high-intensity interval training (HIIT) programme that involves fear and pain. Conversely, students can improve their acceptance of HIIT. Purpose of the study was to study the effect of High-Intensity Interval Training (HIIT) on Agreeableness Psychological variable of Physical Education students. Methodology: 40 male and 40 female students were randomly selected from the Department of Physical Education, Swami Vivekananda Subharti University, Meerut. The age group of subjects was haphazardly included from 20 to 25 years, and subjects were divided equally into two groups, i.e., the experimental (EG) category and the control (CG) category; the experimental group underwent HIIT training for 12 weeks, and the CG group continued with their usual daily routine. Pre and post-test data of agreeableness were collected and three-way ANCOVA applied. Results: The training showed no significant improvement on agreeableness, psychological variable of Physical Education Students.

Keyword: HIIT, Agreeableness, Psychological, Training, Physical Education.

Introduction

Physical education movements are crucial for a child's health, proper growth and development. Regular fitness manoeuvres started in infancy can heighten bone development and detain osteoporosis, subjugating the risk of heart disease. There is strong evidence that regular physical activity improves physical fitness and physiological variables of individuals.

In the words of Clarke, it's necessary to acknowledge physical education as a basic need to guarantee optimum fitness for boys and girls of all age groups. This identification should be a determination to formulate and execute an effectual fitness program for them. Even within the civilizations of Sparta, Athens, and Rome, the history books have stressed the importance of fitness or physical coaching and recommended it to be an indispensable part of the educational program. High-Intensity Training (HIIT) is a concept that refers to a series of relatively brief sporadic exercise sessions that are frequently conducted at a "all-out" commitment or at a level that elicits Vo_2 . A single effort will last anywhere from a few seconds to several minutes, depending on the training intensity, with several attempts differentiated by upwards to a few minutes of rest or low-intensity exercise. HIIT is normally linked with activities including certain cycling or running and does not cause pronounced fibre hypertrophy, in comparison to strength training, which is usually done against a high resistance to increase skeletal muscle mass. The Wingate test, which involves 30 seconds of all-out maximal cycling against a high braking force on a sophisticated ergometer, is a typical HIIT intervention and the model used in our recent studies. The Wingate test was repeated four to six times, separated by four minutes of rest, for a total of just two to three minutes of the really intense exercise per practice session, with three practice sessions conducted per week for two to six weeks. The most unusual feature of the job has been the extremely low training volume, which equates to around 300 kJ of extremely strenuous exercise per week. (Driller, 2009).

"In essence, sports psychology is the science of the psychological factors which affect performance and how participation in sports affects the player cognitively and physically. Many psychological expanses are highly applicable to sports; motivation, social dynamics, and anxiety are all critical in such a highly competitive team sport with enormous exposure across the world. The ramifications of sports psychology are vast. A frequently studied area within the field is the influence of personality on performance. Jones et al found that self-efficacy – the self-belief and the renowned 'winning mentality' – blossoms from a combination of confidence, intrinsic motivation, robust focus, and composure under pressure. From this, player recruitment can encompass these factors during the scouting process, while coaches and sports psychologists can help synthesize these components to help stimulate the winning mentality needed to conquer the inevitable adversity a team faces during a season".

Methodology

Selection of Subjects

To reach the aim of the research a total of 40 male and 40 female, Urban and Rural were picked at random from the Department of the Physical Education Department, and U.P. The age group of subjects were from 20 to 25 years. The subjects were selected after seeking their permission for the same.

Selection of Variables

Human beings are different from other entire living organisms due to their different shape of the body and emotions involved while performing any activity. Mainly, Psychological variables aid in the working of muscles together in different situations. Following Psychological variable was selected.

Agreeableness

Administration of Tests

(BFI INVENTORY)

Purpose: To measure the mental factors which are more likely to be cranky and volatile, experience of anger, stress, apathy, indignation, distrust, dejection, disappointment, fault, or dissatisfaction.

Equipment: A (BFI) Inventory questionnaire was administered to assess the psychological variable.

HIT Training (Twelve weeks)

The High Intensity Interval Training Program Performed by Physical Education Students

Weeks	Workout schedule
1	15:15 × 4 reps × 4 sets 100% MAS = 63.15 m in 15 s, followed by 15 s REST & 2-min rest between sets. Time spends at 100% MAS = 240 s and Session length = 10 mins.
2	20:20 × 3 reps × 3 sets 100% MAS = 84.2 m in 20 s, followed by 20 s REST & 3-min rest between sets. Time spends at 100% MAS = 180 s and Session length = 09 mins.
3	15:15 × 4 reps × 3 sets 110% MAS = 69.46 m in 15 s, followed by 15 s REST & 2-min rest between sets. Time spends at 110% MAS = 180 s and Session length = 07 mins.
4	20:20 × 3 reps × 2 sets 110% MAS = 92.62 m in 20 s, followed by 20 s REST & 3-min rest between sets. Time spends at 110% MAS = 120 s and Session length = 05 mins.
5	15:15 × 6 reps × 2 sets 120% MAS = 75.78 m in 15 s, followed by 15 s REST & 2-min rest between sets. Time spends at 120% MAS = 180 s and Session length = 05 mins.
6	20:20 × 3 reps × 2 sets 120% MAS = 101.04 m in 20 s, followed by 20 s REST & 3-min rest between sets. Time spends at 120% MAS = 120 s and Session length = 05 mins.
7	15:15 × 6 reps × 2 sets 130% MAS = 82.09 m in 15 s, followed by 15 s REST & 2-min rest between sets. Time spends at 130% MAS = 180 s and Session length = 05 mins.
8	20:20 × 3 reps × 2 sets 130% MAS = 109.46 m in 20 s, followed by 20 s REST & 3-min rest between sets. Time spends at 130% MAS = 120 s and Session length = 05 mins.

Table 01

Descriptive Statistics (Unadjusted) of Agreeableness by Groups, Gender and Geo- Conditions

Groups	Gender	Geo conditions	Mean	Std. Deviation	N
Experimental	Male	Urban	37.20	2.82	10
		Rural	35.90	2.76	10
		Total	36.55	2.79	20
	Female	Urban	34.90	2.02	10
		Rural	35.90	2.84	10
		Total	35.40	2.45	20
	Total	Urban	36.05	2.66	20
		Rural	35.90	2.73	20
		Total	35.97	2.66	40
Control	Male	Urban	36.00	2.53	10
		Rural	36.00	3.52	10
		Total	36.00	2.99	20
	Female	Urban	37.50	2.50	10
		Rural	35.70	2.62	10
		Total	36.60	2.66	20
	Total	Urban	36.75	2.57	20
		Rural	35.85	3.03	20
		Total	36.30	2.81	40
Total	Male	Urban	36.60	2.68	20
		Rural	35.95	3.08	20
		Total	36.27	2.87	40
	Female	Urban	36.20	2.58	20
		Rural	35.80	2.66	20
		Total	36.00	2.60	40
	Total	Urban	36.40	2.60	40
		Rural	35.87	2.84	40
		Total	36.13	2.72	80

Table 01 revealed the descriptive statistics (Mean and Standard Deviation) of agreeableness by Groups (Experimental and Control), Gender (Male and Female) and Geo-conditions (Rural and Urban). The mean and standard deviation in context to agreeableness of males belongs to urban area and experimental group was 37.20 ± 2.82 , whereas for females was 34.90 ± 2.62 . For males belongs to rural area and experimental group was 35.90 ± 2.76 , whereas for females was 35.90 ± 2.84 . On the other side, the values of mean and standard deviation in context to agreeableness of males belongs to urban area and control group was 36.00 ± 2.53 , whereas for females was 37.50 ± 2.50 . For males belongs to rural area and control group was 36.00 ± 3.52 , whereas for females was 35.70 ± 2.62 .

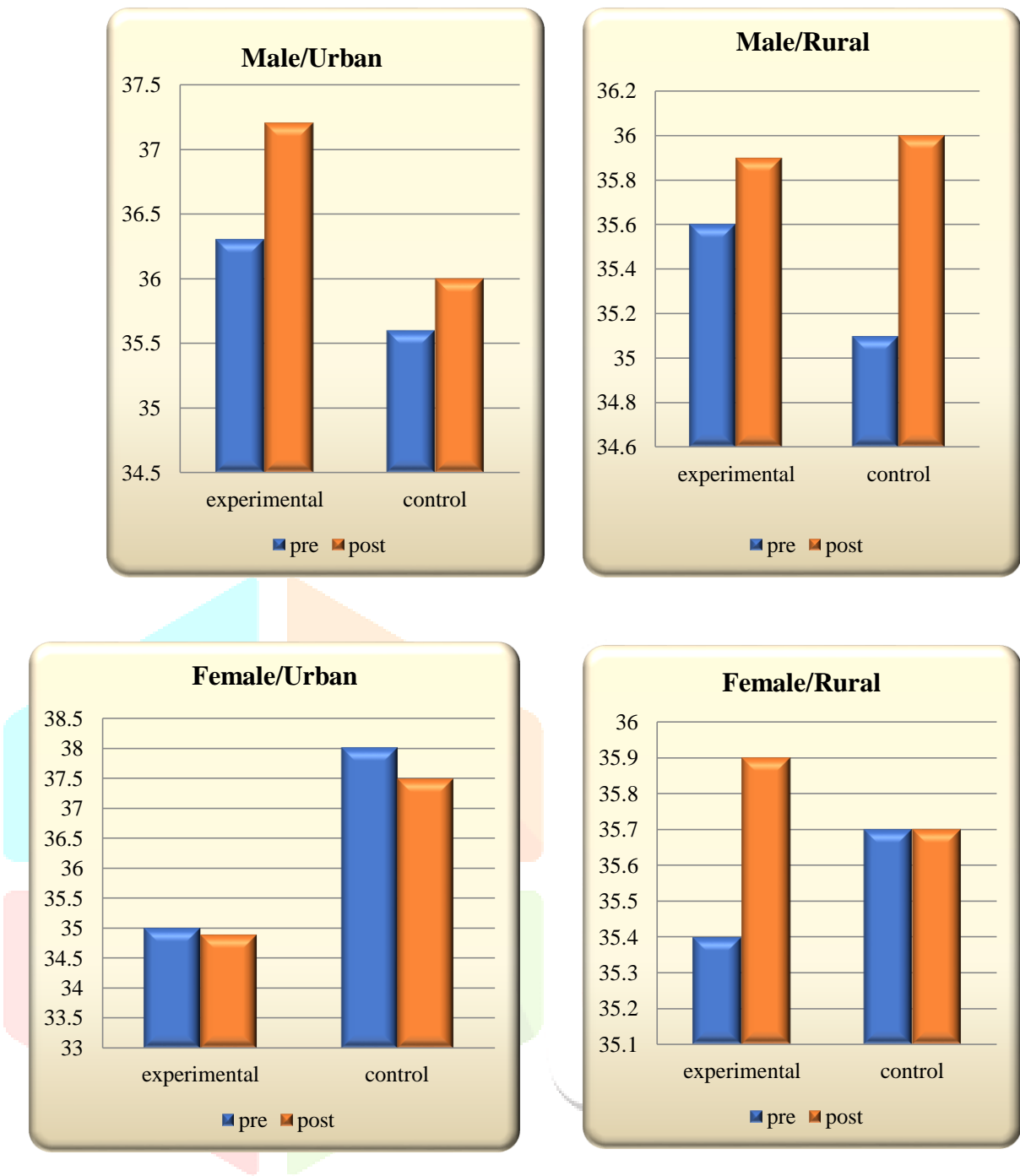


Figure 9
Agreeableness

Table-02

Three-way ANCOVA table for the data on Agreeableness in different groups during treatment

Source	Sum of Squares	df	Mean Square	F	p-value
Pre_Agree	287.921	1	287.921	81.451	.000
Groups	.026	1	.026	.007	.932
Gender	5.655	1	5.655	1.600	.210
Geo_Condition	.001	1	.001	.000	.985
Groups * Gender	.196	1	.196	.055	.815
Groups * Geo_Condition	.060	1	.060	.017	.897
Gender * Geo_Condition	1.203	1	1.203	.340	.561
Groups * Gender * Geo_Condition	5.444	1	5.444	1.540	.219
Error	250.979	71	3.535		
Total	105061.000	80			
Corrected total	587.488	79			

Table 02 revealed that there was no significant difference among genders, groups and geo-condition as the p-value is more than 0.05. So, presenting other estimate tables and further analysis become meaningless.

H₀: it was hypothesized that there will be no significant effect of HIT on Psychological variable Agreeableness of Physical Education students.

Results revealed that agreeableness of urban area male and female students was not found significant, where for this variable null hypothesis was accepted at 0.05 level of confidence.

It showed that the applied 12 weeks training of HIIT were found less effective on Agreeableness of rural and urban area Physical education students. The findings of this study were similar to the previous studies conducted by (**Kaiseler, 2012**). Type D was associated with poorer performance (reduced distance; more errors), decreases in pre-performance self-confidence and more use of maladaptive resignation/withdrawal coping. So, we can say that type of personality also plays an important role in adopting training and responses. As in the context of agreeableness straining effect was found better in both the gender of urban area students. Whereas the male students of urban and rural area in control groups was found equal. It shows that the applied 12 weeks training of HIIT were found less effective on agreeableness of rural and urban area students.

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