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Effect of aerobic training on flexibility among endomorph students

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Abstract
The purpose of study was to find out the effect of aerobic training on flexibility among endomorph students of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad. Data was collected on individually through 30 Control and 30 Experimental group of subjects. The age range between 18±28 years was selected as the subject for the study. The instruction of training was given by researcher every day before starting the training in Dr. Babasaheb Ambedkar Marathwada University, Aurangabad. purposive sampling was used for collection of data. The data were analyzed using descriptive and t test. Only one variable of Physical fitness component was selected as the independent variable i.e. flexibility and sit and reach test was used for this study. The mean value and standard deviation of control group and experimental group in relation to flexibility of endomorph students was (1.75#4.03pre), (2.01#3.82post) and (2.21#3.53pre), (4.11#3.82post) respectively. Calculated t–ratio of control and experimental group was found 0.257 and 2.054 in relation to flexibility. The results of this study on the basis of statistical analysis states that the significant results were drawn. The experimental group have more efficient flexibility level than of the control group. Further the study reveals that aerobic training has all the essentials to improve flexibility level.

Keywords: aerobic training, flexibility and endomorph

1. Introduction
Without adequate flexibility, daily activities, such as getting out of bed, lifting a child or squatting to pick something up can become more difficult to do. In addition, inadequate flexibility can affect your athletic performance by preventing you from reaching the full potential, strength and power of your muscles. Flexibility is defined as the range of motion of your joints or the ability of your joints to move freely. It also refers to the mobility of your muscles, which allows for more movement around the joints. Range of motion is the distance and direction your joints can move, while mobility is the ability to move without restriction. Aerobic exercises/training gets your heart pumping, causes you to break a sweat and allows you to burn many calories within a short time period. Running, swimming, jumping rope and cycling are examples of aerobic activities. You can also get a good aerobic workout playing a variety of sports, including tennis, volleyball and soccer. Endomorphs tend to struggle with their weight, gaining weight easily and losing weight with difficulty. Female endomorphs are soft and curvaceous, and have a very feminine body shape. Male endomorphs have soft and round bodies, but when in shape tend to look more like mesomorphs. The Endomorph more commonly has more fat storage, particularly around the midsection commonly referred to as fat, overweight, or obese.

2. Objective of the study
The main objective of this study was to find out the effect of aerobic training on flexibility among endomorph students of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

3. Material and methods
Sixty endomorph students from Dr. Babasaheb Ambedkar Marathwada University, Aurangabad were purposively selected for the presented study and their age ranged from 18 to 28 years. Necessary instructions were given to the subjects. Flexibility level of the subjects was measured by sit and reach test. For the presented study, modified tools were used for data collection Sit and Reach test, Steel Scale, and wooden Table. Only one variable was selected as independent variable for the presented study i, e,. Flexibility. The subjects were divided into two groups (30 in Experimental group and 30 in Control group). The six week training program was conducted. Some selected aerobic exercises were given to the experimental group according to the researcher's training program and on the other hand control group has given no any training. The data was obtained from both the groups (Experimental and Control group) before and after the training. The subjects were under gone to a 4-week aerobic training programme. The training was consisting of a variety of aerobic exercises.

Table 1: Experimental group perform selected aerobic exercises weekly on alternate days as per time schedule given below:

S. No.	Aerobic exercises	1st week	2nd week	3rd week	4th week
1	Push ups	3 min x2	4 min x2	4 min x2$^{1/2}$	4 min x3
2	Running on treadmill	3 min x2	4 min x2	4 min x2$^{1/2}$	4 min x3
3	Jumping jacks	3 min x2	4 min x2	4 min x2$^{1/2}$	4 min x3
4	High knees	3 min x2	4 min x2	4 min x2$^{1/2}$	4 min x3
5	Sit-ups	3 min x2	4 min x2	4 min x2$^{1/2}$	4 min x3
6	Bicycling	3 min x2	4 min x2	4 min x2$^{1/2}$	4 min x3
7	Burpees	3 min x2	4 min x2	4 min x2$^{1/2}$	4 min x3
8	pull-ups	3 min x2	4 min x2	4 min x2$^{1/2}$	4 min x3

4. Results and discussion

Table 2: Statistical Comparison of Pre and Post Test of Control and Experimental Group for Flexibility

Variable	N	Group	Test	Mean	S. d	T-ratio
Flexibility	30	Control group	Pre-test	1.75	4.03	0.257
			Post-test	2.01	3.82	
	30	Experimental group	Pre-test	2.21	3.53	2.054
			Post-test	4.11	3.82	

*Significant at. 05 level of significance

The above table-2 indicates flexibility level of endomorph persons of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, in which mean and standard deviation of Control and Experimental group were (1.75#4.03pre), (2.01#3.82post) and (2..21#3.53pre), (4.11#3.82post) respectively. The obtain't' of Control group was 0.257 whereas obtain't' of experimental group was 2.054 which was found to be significant at 0.05 level of confidence. This indicates that significant difference found between the control and experimental group. This shows that significant effect of aerobic training on flexibility among endomorph students of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad was found.

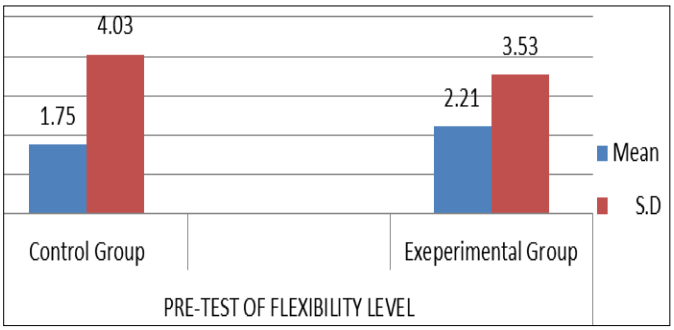

Fig 1: Graphical representation of mean and standard deviation of pre- test of control group and experimental group of Flexibility Level of Endomorph Students

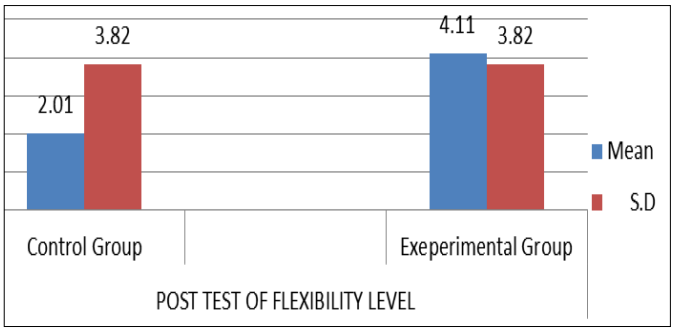

Fig 2: Graphical representation of mean and standard deviation of post-test of control group and experimental group of Flexibility Level of Endomorph Students

5. Conclusion

On the basis of the above finding and discussions, the following conclusions were drawn.

Experimental group were significantly positive correlated with the flexibility level but negatively with control group. This indicates that significant effect of aerobic training on flexibility among endomorph students of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad was found.

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