

EFFECT OF CALISTHENICS AND NON-CALISTHENICS EXERCISES ON PHYSICAL FITNESS

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ABSTRACT

Physical fitness is an essential quality for learning motor skills and to lead happy and prosperous life, every one of us require, some degree of fitness to perform his daily routine. The general purpose of the study was to find out the comparative effects of calisthenics and non-calisthenics on physical fitness. A sample of seventy-five B. P. Ed. Students from Shri Shivaji College of Physical Education, Amravati, Maharashtra, was selected randomly for the study. The age of students were ranging from 19 to 29 years. The data for the present study was collected through AAHPER Youth Physical Fitness Test. Mean, S. D., 't'-value and Co-relation were used to analyse the data. Following were the main findings of the study: - 1) Calisthenics exercises are helpful in improving physical fitness of the students. 2) Non-calisthenics exercises i.e., exercise with weight are equally good for improving the physical fitness of the students. 3) Calisthenics exercises were more effective than non-calisthenics exercises, in improving physical fitness. 4) A regular systematic training programme making of two experimental variable namely calisthenics and non-calisthenics might bring about change in the physical fitness of the students.

Keywords: Calisthenics exercises, Non-calisthenics exercises, Physical fitness , College- age students.

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INTRODUCTION

Physical fitness is a positive and dynamic quality on a continuum from abundant life to death. It is related to the ability to meet the demands of the environment specially to preserve to withstand stress to resist fatigue and to possess the energy for abundant life. Physical fitness is minimal in the highly conditioned person. Kennet, (1977) pointed out that intelligence and skill could function at the peak of their capacity only when the body was healthy and strong and it was physical fitness that played the most important key to a healthy body. Thus physical fitness is the basis of dynamic and creative intellectual activity. While energy demands of daily tasks vary for individual's. some position between these minimal and maximal poles is satisfactory for most people. It is vital for the every individual to maintain neuro-muscular, cardiovascular, motor movements and other organic systems.

Besides developing physical fitness are must also be socially and mentally fit to be able to adopt himself to the demands of his environment. The process of adaptation involves than the social, mental, as well as the physical phase of health, physical fitness involves both the qualities of man and his ideas. Gloria, (1942) said that the picture of the man who is physically fit reveals unmistakable sign of confidence, courage, alertness, initiative, pride, discipline and good posture.

The greater enemy of a player is fatigue not the opponent. The way to keep a way this enemy of body is developing and maintaining top physical condition. Free hand exercise is one of the factor contributing to total fitness. The contribution of free hand exercise to fitness includes the development and maintenance of strength, speed, agility, endurance and skill in person who are physiologically sound. Cole, (1966) compared the effect of isometric and calisthenics exercises on the physical performance of boys. It was found out that the isometric exercise group improved significantly more only in abdominal strength. Gharote, (1979) concludes that yogic exercises were effective in bringing about improvement in general physical fitness as measured by Fleshman's Battery.

Regular exercises has also a profound effect upon circulation, heart action, respiration, so one must continue to exercise in order to maintain fitness. Hooks, (1962) believed that advantages of calisthenics programme aim to improve metabolism, circulation, relaxation and general muscular development. It is true that many of those aim can be attained in sports performance. Taddonio, (1966) compared physical fitness of two groups, one with 15-minute daily period of calisthenics and other with no physical fitness programmes. She concludes that the groups with callisthenic programme improved significantly. Harryman, (1964) concluded that physical was related to the level of intensity to the level of intensity of physical activity. Non-participants in physical activity led to gradual decrease in levels of physical fitness.

Typical calisthenics exercises are limited to the development of increased flexibility. Their contribution to other components of physical fitness is minimal depending on the degree of intensity, duration of repetition. They should be used primarily for warm-up on stretching. Hoffmann, (1977) found that physical fitness and general motor ability of a student can be improved by specially designed exercise programme by physical education classes, by circuit training and by combination of isometric and isotonic exercises. If the intensity, duration and repetition are at overload level, they can also contribute to the other components of physical fitness.

Thus physical fitness is an essential quality for learning motor skills and to lead happy and prosperous life, every one of us require, some degree of fitness to perform his daily routine.

MATERIAL AND METHODS

Selection of Subjects:

Seventy-five B.P.Ed. Students of Shri Shivaji college of Physical Education, Amravati, Maharashtra were selected as the subjects for the study. The age of students were ranging from 19 to 29 years. The subjects were selected by using random method of sampling, through the use of random numbers. The subjects were divided into three equal groups following matching process, each groups were comprised of twenty-five subjects.

Research Design:

Equated groups design was employed for comparatively analyzing the effect of calisthenics and non-calisthenics i.e., exercise with weight on physical fitness. The subjects were divided into three equal groups following matching process. Each group was comprised of twenty-five subjects. All the three groups were administered AAHPER Youth Physical Fitness Test before and after an experimental period of eight week. Out of these three groups the group A and B were experimental and group C was control. Group A had undergone calisthenics exercise where as experimental group B performed some exercise with weight where as group C served as a control group. All this was done on the basis of random method.

Training Program:

Progressive training schedule was administered while following the adoption period of two weeks. The training was carried out thrice a week for each group, i.e., calisthenics exercise on every Monday, Wednesday and Friday and exercise with weight (non-calisthenics) on every Tuesday, Thursday and Saturday under the careful supervision of researchers.

Training Exercises:

The following Callisthenic and non Callisthenic exercise were included : Calisthenics: High Jump, Side Straddle Hop, Stationary Run, Rowing, Push-ups, Straddle Pull-ups, Trunk Twister, Short Bridge, and Full Bridge. Non-Calisthenics or Exercise with Weight: Leg Raise, With Iron Shoes,

Squat, Bench Press, Snatch, Step-up with dum-bells, Good Morning and Seated Wrist Curling.

Criterion Measure:

The performances of the subject were measure through AAHPER Youth Physical Fitness Test, which was also used as a tool for data collection. Description of the items in included in AAHPER Youth Physical Fitness Test: 1) Pull-ups: number of completed pull-ups for to measure arm strength. 2) Sit-ups: number of bent knee sit-ups for measure muscular endurance of the abdomen. 3) Shuttle-run: shuttle run performance in seconds to determine agility. 4) Standing Broad Jump: standing broad jump performance in inches to determine muscular power. 5) 50 -Yard Dash: Fifty-yard dash run time in seconds to determine speed. 6) 600 Yard run/walk: Six hundred yard run/walk performance in minutes and seconds to measure the cardiovascular endurance.

Reliability of the Data:

The test-retest method was followed for establishing the reliability of the data. For this purpose 50 students were retested under similar conditions on the initial test. The reliability of data was found out by correlating scores of the initial test and those of the retest in each item separately by using product moment correlation. The coefficient of reliability obtained for each reliability obtained for each items of AAHPER Youth Physical Fitness test of calisthenics, non-calisthenics and controlled groups are presented in Table -1.

TABLE 1
RELIABILITY COEFFICIENT OF TEST-RETEST SCORES OF AAHPER YOUTH PHYSICAL FITNESS TEST

S No.	Test Item	Co-efficient of Experimental Group-A	Co-efficient of Experimental Group-B	Control Group
1	Pull-ups	.87	.87	.89
2	Sit-ups	.95	.82	.96
3	Shuttle-run	.94	.85	.80
4	Standing Broad Jump	.84	.89	.81
5	50 Yard Dash	.88	.92	.82
6	600 Yard run/walk	.82	.80	.88

The above Table 1 shows the value of co-efficient of reliability for all the items of AAPHER Youth Fitness Test of two experimental group i.e., calisthenics, non-calisthenics and control groups were considered to be sufficiently high as the obtained 'r' in each of the item was above .80. This indicated that the subject were consistent in their performance.

RESULTS AND DISCUSSION

To find out comparative effect of calisthenics and non-calisthenics exercise on physical fitness. The raw score of the test were converted into standard score with the help of T-scale. After that, composite scores were formed. To find out the significant difference between initial and final means of calisthenics exercise group, non-calisthenics group and control group. means, standard deviations and t-test were computed and data pertaining to this have been presented in Table 2 to 4 and depicted in figure 1 to 3.

TABLE 2

SIGNIFICANCE OF DIFFERENCE OF MEANS OF INITIAL AND FINAL TEST OF CALISTHENICS EXERCISES (EXPERIMENTAL GROUP-A)

ON AAHPER YOUTH PHYSICAL FITNESS TEST

Test	N	Mean	MD	σ DM	t -value
Initial Test	25	280.41	85.75	6.15	13.94*
Final Test	25	366.16			

*Significant at .05 level

t .05 (48)=2.02

From the above Table 2 reveals that there is a significant difference (13.94*) found in between calisthenics initial score i.e., mean of calisthenics group before undergoing training programme on AAHPER Youth Physical Fitness Test and calisthenics final scores on AAHPER Youth Physical Fitness Test after training programme of eight weeks.

TABLE 3

SIGNIFICANCE OF DIFFERENCE OF MEANS OF INITIAL AND FINAL TEST OF NON-CALISTHENICS EXERCISES (EXPERIMENTAL GROUP-B)

ON AAHPER YOUTH PHYSICAL FITNESS TEST

Test	N	Mean	MD	σ DM	t -value
Initial Test	25	273.55	46.78	7.88	5.93*
Final Test	25	320.33			

*Significant at .05 level

t .05 (48)=2.02

The table 3 shows that there is a significant difference found in between initial and final scores of Non-Calisthenics on AAHPER Youth Physical Fitness Test i.e., mean of Non-Calisthenics group before undergoing training programme and mean of Non-Calisthenics group after training programme of eight week.

TABLE 4
SIGNIFICANCE OF DIFFERENCE OF MEANS OF INITIAL AND FINAL
TEST OF CONTROL GROUP ON AAHPER YOUTH PHYSICAL
FITNESS TEST

Test	N	Mean	MD	σ DM	t -value
Initial Test	25	281.21	3.5	6.50	0.538
Final Test	25	277.71			

Non-significant at .05 level

t .05 (48)=2.02

It can be observed from table 4 that there was no significant difference (0.538) found in between initial and final scores of control group on AAHPER Youth Physical Fitness Test i.e., initial scores of control groups before eight weeks of training programme and final scores after of eight weeks without administering any training programme.

DISCUSSION

The application of 't'- test revealed that physical fitness of the group trained through 8 weeks calisthenics exercises programme was improved significantly. Researcher believed that advantages of calisthenics programme

The findings also suggests that non-calisthenics exercise i.e., exercise with weight are also good for developing the physical fitness of the students because exercise with weight cause more static and dynamic contraction in muscle ultimately helpful in developing strength, endurance and other components of physical fitness. But calisthenics exercises are comparatively better exercise for developing physical fitness of the player then non-calisthenics exercises.

The insignificant difference between initial and final scores of control group may be attributed to fact that principle of law of use and disuse. It is evident from results that physical fitness of students can be improved by participating in a calisthenics exercise and non-calisthenics exercise with weight.

CONCLUSION

The findings lead to conclusion that systematized calisthenics and non-calisthenics exercises training programme might be helpful for the sustainable developments of physical fitness.

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