

“A study of effect of dance aerobic training on muscular strength of the students dwelling in non-slum and slum in greater Mumbai”.

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1. Introduction

Slum Population in India simply refers to people living in slum areas below the poverty line. As India is still on the path of development, there is large number of people living below the poverty line. These people usually live in slum areas connected to the city. According to Government sources, the Slum Population of India has exceeded the total population (India Guide, 2015). Modern industrialization and explosion of growth in human population jeopardizes the homeostasis of healthy life and peaceful living. This, in turn, disturbs Public health that has become a burning problem among the world wide nation.

Before 1950 slums were predominantly found around the mills, on the western part of the island, predominantly in an area called Byculla (Mumbai). They were mostly industrial workers in one room tenements. Health and provisions to these areas were issues that were ignored by the head policy makers. Instead of going away, the slums have just spread. From 1950 to 1968 the population of slums increased 18%, in the 1970s they had a huge surge and by 1980 slum dwellers were half of the entire city's population. Despite the fact that the city underwent slum clearance, implemented by the Municipal Corporation in 1954, the BMC (Bombay Municipal Corporation) reported today slum dwellers make up 60% of Mumbai's population that is approximately 7 million people. Eventually spread into the areas neighboring Byculla, such as: Mahim Creek, Parel, Dadar and Matunga, Sion and wherever else they can find space, even on roads. The conditions in the slums are terrible, this affects the growth and development of children. Growth and development of children is a natural process but there are many factors that contribute for growth and development. Normal growth of a child's height, structure, outlooks, organic functions etc. depends upon heredity and its nutrition, nature of learning, attitude, behavior, emotion, personality etc. have common base mostly on the environment.

Concept of Health Related Physical Fitness

Health-related physical fitness is defined as fitness related to some aspect of health. This type of physical fitness is primarily influenced by an individual's exercise habits; thus, it is a dynamic state and may change. Physical characteristics that constitute health-related physical fitness include strength and endurance of skeletal muscles, joint flexibility, body composition, and cardio respiratory endurance. All these attributes change in response to appropriate physical conditioning programs, and all are related to health (Hoeger, 2011).

According to (Kansal, 1996) Health Related Fitness is a physical state encompassing cardio respiratory endurance, muscular strength and endurance, muscular flexibility and body composition are defined respectively as:

- * Cardio respiratory endurance: the ability of the heart, lungs, and blood vessels to supply oxygen to the cells to meet the demands of prolonged physical activity (also referred to as aerobic exercise)
- * Muscular strength and endurance: the ability of the muscles to generate force
- * Muscular strength: Ability to exert maximum force against resistance.

* Muscular endurance: Ability of a muscle to exert sub-maximal force repeatedly over a period of time.

* Muscular flexibility: the achievable range of motion at a joint

* Body composition: the amount of lean body mass and adipose tissue (fat mass) in the human body

CONCEPT OF AEROBIC EXERCISE

Aerobic exercise is any physical activity that makes you sweat, causes you to breathe harder and gets your heart beating faster than at rest. It strengthens your heart and lungs and trains your cardiovascular system to manage and deliver oxygen more

quickly and efficiently throughout your body. Aerobic exercise uses your large muscle groups, is rhythmic in nature and can be maintained continuously for at least 10 minutes.

Aerobic exercise is physical exercise of low to high intensity that depends primarily on the aerobic energy-generating process. Aerobics literally means

"relating to, involving, or requiring free oxygen", Aerobic refers to a variety of exercises that stimulate heart and lung activity for a time period sufficiently long to produce beneficial changes in the body.

Aerobics or endurance exercises are those in which large muscle groups are in rhythmic repetitive fashion for prolonged periods of time. Dance exercise is a form of aerobics that has been popular almost since the inception of aerobics in the late 1960s. Dance aerobics is a motivational and fun aerobics session for both men and women of mixed abilities. All sessions include a cardiovascular workout section, as well as body conditioning exercise and stretching.

All the dance moves are based on simple dance step which build into daily routines movements that are fun and easy to follow and with its constant movement to a music soundtrack, the aerobics exercise form almost begged for the incorporation of dance moves. The first essential ingredient of an aerobics class is music, which is one reason that dance aerobics has enjoyed such a long run of popularity in all over the world. A typical aerobics class involves warm-up and stretches, approximately 20 to 30 minutes of exercise to raise the heart rate to a desired range (depending on health and age), then a cool-down with stretching and sometimes body sculpting.

BENEFITS:

* Improves your circulation and helps your body to use oxygen better

* Increases energy

* Increases endurance, which means you can work out longer without getting tired

* Helps reduce the risk of developing heart disease

* Helps reduce the risk of developing diabetes

* Helps reduce body fat

* Helps you reach and maintain a healthy weight

* Helps reduce stress, tension, anxiety and depression

* Improves sleep

2. Significance of the study

- The results of the study may provide a set of aerobic training for improving components of health-related physical fitness.

- The study may give an opportunity and encouragement to the interested researcher to conduct further studies on efficacy of aerobic training in relation to other variables.

3. Objective of the study

- To compare the adjusted mean scores of muscular strength of school boys of non-slum group and slum group by taking pre-muscular strength as covariate.

4. Hypothesis of the study

H01: There is no significant difference in the adjusted mean scores of muscular strength of school boys of non-slum group and slum group by taking pre muscular strength as covariate

5. Design of the Study

- The design of the study is non-equivalent control group design.
- The subjects in the experiment were divided into two groups; one Non slum group and Slum group; each consisted 30 subjects. Aerobic training has been given aerobic training programme for the period of 8 weeks.

6. Selection of subject or sample

The subjects (n=30) from slum area Sarvajanik Bal Mandir, Opp. Kalachowki Police station, Kalachowki, Mumbai and Non slum (n=30) from Chembur high school, Chembur Naka, Chembur, Mumbai were selected for the study. Both the Group were given aerobic training programme for the period of 8 weeks.

7. Reliability of tools

Standard equipment's were used for this study.

- The instruments and tools used belong to B.P.C.A's College of Physical Education, Wadala. The tools are sophisticated and reliable.

8. Reliability of test

The reliability of the data was checked by the test-retest, correlation technique (same subject is measured by the same testers two time).

9. Statistical procedure to be used

One-way ANCOVA was used

10. Treatment wise comparison of adjusted mean score of muscular strength by taking muscular strength as covariance

The first objective was to compare the adjusted mean scores of muscular strength of school boys of Non-slum group and slum group by taking pre-muscular strength as Co-variate. The data were analysed with the help of One Way Ancova and results are given in Table.

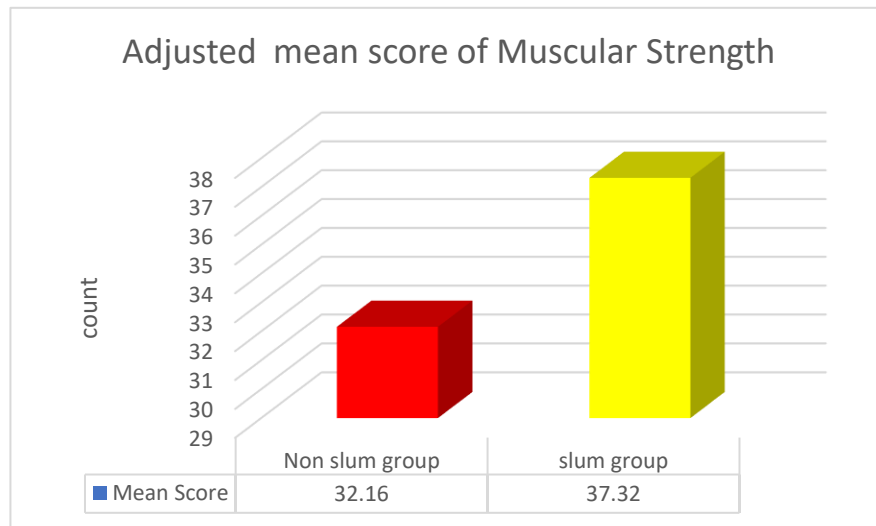
TABLE: Summary of One way ANCOVA of Muscular Strength by taking Pre-Muscular Strength.

Sources of variance	Df	SSy.x	MSSy.x	Fy.x	Remark
Group	1	10258.484	10258.484	23.223	p<0.01
Error	57	13694.002	441.724		
Total	59				

From table it can be seen that adjusted F-value is 23.22 which is significant at 0.01 level with df=1/57 when Pre Muscular Strength was taken as covariant. It shows that adjusted mean scores of Muscular Strength of Non-slum group and slum group differ significantly when Pre-muscular strength was taken as covariate. Thus, the Null Hypothesis that there is no significant difference in the adjusted mean score of Non-Slum group and Slum group by taking pre-muscular strength as covariate is rejected. Further the score adjusted mean score of muscular strength of Non-slum group is 32.16 which is significantly higher

than that of slum group where adjusted mean score of muscular strength is 37.32. It may, therefore, said that aerobic training was found to be effective in improving Muscular strength of school students of slum group than non-slum group where pre-muscular strength was taken as covariate.

Figure: Group wise comparison of Adjusted mean scores of muscular strength.



11. Findings

From the above analysis and interpretation of data following finding may be drawn-
There is significant improvement in Muscular Strength due to specific aerobic training programme.

12. Discussion on findings

In case of Muscular Strength of Experimental group, it is found that there is significant difference as compare to control group hence the hypothesis sought that H01 there is no significant difference in adjusted mean score of muscular strength of Pre and Post test of experimental and control group is rejected.

13. Recommendations

The following recommendations have been forwarded in the light of present study.

- A similar comparative study may be undertaken by selecting anaerobic variables of slum and non-slum groups girl students.
- Similar study can be undertaken by selecting other variables.
- A similar study can be conducted on Girls and boys belonging to different groups.

14. References

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