

A SURVEY OF MINIMUM MUSCULAR STRENGTH ON SCHOOL CHILDREN IN PUNE DISTRICT

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Abstract

A survey study was carried out on one hundred and fifty students (n=150), age ranged from 10-13 years, belonging to private schools at Pune city with a view to see their muscular strength status. The survey was carried out to see the minimum muscular fitness status of students aged 10-13 years by using kraus-weber test. The Kraus-Weber test of Minimum Muscular Fitness consists of six different components and it is a test that will help to measure a number of different muscle groups with regard to their strength and flexibility. The more the ratings are the greater is the level of fitness and better will be the muscle in body function. The findings revealed that out of 150 students 81.33 percent were passed in all the six items of Kraus Weber test whereas 18.67 percent were unable to pass all the six items. Thus this study conclude that the minimum muscular fitness of the students belonging to private schools were good and they can do their daily task in a useful manner.

Keywords: Kraus-Weber Tests, Flexibility and Muscular Fitness

Introduction

Physical fitness has remained a very essential requirement for the human being from time immemorial. History points to the facts that physical fitness has been the basics facts for survival of the fitness. Physical fitness is the ability to carry out daily tasks with vigour and alertness, without undue fatigue and with ample energy to engage in leisure pursuit and to meet emergency situation. Too little attention has been paid to the fact that the dropping of physical fitness more specifically muscle fitness below a certain minimum actually jeopardizes well-being and health. Our physical education needs a very definite expansion and active participation on a wider base not only in high school but also in middle school.

According to financial status of the family, the children opt to study in various schools like private and public. As there is difference in standards of schools and the students studying in these schools, it was assumed that there might be some difference in muscular strength

fitness among these students. Hence, this study (survey) has been undertaken to see, if the status of muscular strength fitness among these students differs significantly.

Materials and Method

The population of this study was the school children, age: 10 to 13 years, of Pune city. In reality, since this population in Pune city is very large, this study was delimited to 150 male school children (n=150) of same age group belonging to private schools of Pune city. Simple random sampling technique was employed for the purpose of the study.

Muscular Strength fitness status was measured by using Kraus-Weber test as adopted in India. The test consist of six different components and it is a test that will help to measure a number of different muscle groups with regard to their strength and flexibility. The more the ratings are the greater is the level of fitness and the better will be the muscles in body function. These Kraus-Weber Tests can be easily administered anywhere to anybody (without much pre-procedure preparation) by anyone (with a little training) with no apparent cost. They do not require any special equipment and the subject does not have to undergo a long and painful ordeal as in other more sophisticated tests. Each of these tests is a pass or fail test with a 'fail' in any of the 6 test items constituting a whole test failure.

- ◆ Test 1 is a test of the strength of Abdominal and Psoas muscles.
- ◆ Test 2 is a further test of Abdominal muscles without Psoas.
- ◆ Test 3 is a test for the strength of Psoas and Lower Abdominal muscles.
- ◆ Test 4 is for the strength of the Upper Back muscles.
- ◆ Test 5 is the test for the strength of the Lower Back muscles.
- ◆ Test 6 tests the length of Back and Hamstring muscles and is a test of flexibility.

Percentage-wise data analysis was computed to assess the status of minimum muscular fitness of the students belonging to private schools of Pune city.

Results

Results on percentage-wise Data Analysis – Minimum Muscular Strength Fitness Variables

Table 1
PERCENTAGE-WISE RESULT OF KRAUS WEBER TEST

Parameters	% of students status in muscular strength variable	
	Pass	Fail
Strength of Abdominal Plus Psoas muscles.	82	18
Strength of Abdominal Minus Psoas muscles.	84	16
Strength of Psoas and Lower Abdominal muscles.	82	18
Strength of Upper Back muscles.	78	22
Strength of Lower Back muscles.	82	18
Trunk flexibility and the strength of back and hamstring muscles.	71	29

Above table gives percentage value of Kraus Weber test performance of children. In case of Strength of Abdominal Plus Psoas muscles, Strength of Psoas & Lower Abdominal muscles and Strength of Lower Back muscles is only 18% get failed. In case of Strength of Abdominal Minus Psoas muscles only 16% get failed where as in case of Trunk flexibility and the strength of back and hamstring muscles 29% get failed.

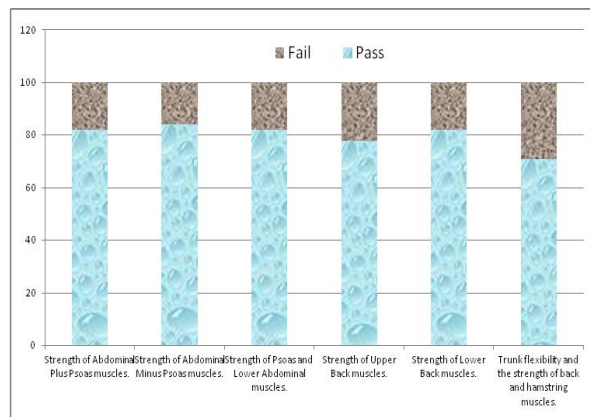


Fig.1 Graphical presentation on Percentage-Wise Result of Kraus Weber Test

Table 2.
PERCENTAGE-WISE RESULT OF MUSCULAR STRENGTH FITNESS IN SCHOOL CHILDREN

Parameters	% of students status in muscular strength variable	
	Pass	Fail
Composite score of all the six items	81.33	18.67

Composite score of all the six items

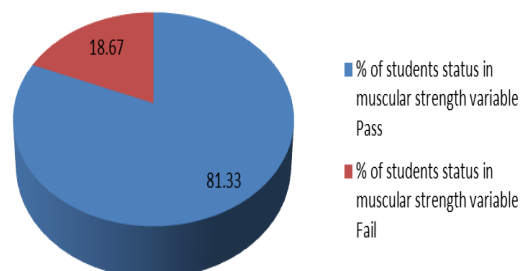


Fig.2 Graphical Presentation of muscular strength fitness in school children

Result on Strength of Abdominal Plus Psoas muscles: The result on strength of abdominal plus psoas muscle indicate that 82% of the students are passed in the test and 18% of the students are fail. This indicate that strength of abdominal plus psoas muscle in private schools are better.

Result on Strength of Abdominal Minus Psoas muscles: The result on Strength of Abdominal Minus Psoas muscles indicate that 84% of the students are passed in the test and 16% of the students are fail. This indicate that strength on abdominal minus psoas muscle in private schools are better.

Result on Strength of Psoas and Lower Abdominal muscles: The result on Strength of Psoas and Lower Abdominal muscles indicate that 82.44% of the students are passed in the test and 17.56% of the students are fail. This indicate that s tength of psoas and lower abdominal muscles in private schools are better.

Result on Strength of Upper Back muscles: Further, the result on Strength of Upper Back muscles indicate that 78.17% of the students are passed in the test and 21.83% of the students are fail. This indicate that strength of upper back muscles in private schools are better.

Result on Strength of Lower Back muscles: Further, the result on Strength of Lower Back muscles indicate that 82.17% of the students are passed in the

test and 17.83% of the students are fail. This indicate that strength of lower back muscles in private schools are better.

Result on Trunk flexibility and the strength of back and hamstring muscles:

However, the result on trunk flexibility and the strength of back and hamstring muscles indicate that 71% of the students are passed in the test and 29% of the students are fail. This indicate that strength of trunk flexibility and the strength of back and hamstring muscles in private schools are better

Overall Result of Kraus Weber test items:

However the overall result on kraus weber indicate that 18.67% could not pass all the test items whereas 81.33% of the students had passed all the six test items.

Discussion

Nowadays, children's participation in games and sports is being accepted as good quality towards development. Such a participation, in one side, helps to facilitate growth and maintain good health in providing recreation too, whereas many of them may become a talented sports person in the nation, on the other.

However, in India till-today, we are still mostly concerned with muscular strength fitness and in real sense the concept of physical fitness is lopsided. This investigation, in fact, reflects the importance of muscular strength fitness of school children. Nevertheless, to our knowledge this is the first attempt in Pune city to evaluate the muscular strength fitness of school students.

Conclusion

Selected minimum muscular fitness appears to be good among school children in private schools. The school-going children have been found to have the highest percentage of pass in Kraus-Weber Tests. This most probably is a consequence of hormonal changes taking place in the body during this phase of life.

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