



A STUDY OF MINIMUM MUSCULAR STRENGTH ON DEGREE COLLEGE STUDENTS IN FARRUKHABAD DISTRICT

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Abstract

A study was carried out on one hundred sixty students (n=160), age ranged from 16-18 years, belonging to private degree college at Farrukhabad 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 16-18 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 160 students 82.22percent were passed in all the six items of Kraus Weber test whereas 17.78 percent were unable to pass all the six items. Thus this study conclude that the minimum muscular fitness of the students belonging to private degree college were good and they can do their daily task in a useful manner.

Keywords: Kraus-Weber Tests, Flexibility and Muscular Fitness

Introduction

Muscular strength may be defined as the maximal muscular force or tension used in the creation or prevention of the movement in one maximal effort of a muscle group. Muscular strength is produced by four basic types of muscular contraction. 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. Muscular fitness is one of the most important components of physical fitness. Many of the health hazards and most of the disorders could be checked by maintaining a certain level of 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 degree college, age: 16 to 18 years, of Farrukhabad city. In reality, since this population in Farrukhabad city is large, this study was delimited to 160 male school children (n=160) of same age group belonging to private degree college of Farrukhabad 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 KrausWeber 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 degree college of Farrukhabad 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	81	19
Strength of Abdominal Minus Psoas muscles	83	17
Strength of Psoas and Lower Abdominal muscles	81	19
Strength of Upper Back muscles	77	23
Strength of Lower Back muscles	81	19
Trunk flexibility and the strength of back and hamstring muscles	70	30



Table2
PERCENTAGE-WISE RESULT OF MUSCULAR STRENGTH FITNESS IN
DEGREE COLLEGE STUDENTS

Parameters	% of students status in muscular strength variable	
	Pass	Fail
Composite Score of all the six items	78.83	21.17

Result on Strength of Abdominal Plus Psoas muscles:

The result on strength of abdominal plus psoas muscle indicate that 81% of the students are passed in the test and 19% 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 83% of the students are passed in the test and 17% 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 81.% of the students are passed in the test and 19% of the students are fail. This indicate that strength 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 77% of the students are passed in the test and 23% 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 81% of the students are passed in the test and 19% 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 70% of the students are passed in the test and 30% 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 21.17% could not pass all the test items whereas 78.83% of the students had passed all the six test items.

Discussion

Student'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 degree college students. Nevertheless, to our knowledge this is the first attempt in Farrukhabad city to evaluate the muscular strength fitness of degree college students.



Conclusion

The findings of present study showed that Selected minimum muscular fitness appears to be good among degree college students in private college. The college going students 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.

References

- Kulkarni SD. Assessment of Muscular Fitness in School Children Using Kraus-Weber Tests. NJIRM, 2010; 1(4).
- Bhat, Ishtiaq Ahmad, Bashir, Sakeena, Comparative study of minimal muscular fitness among rural and urban students of Kashmir. International Journal of Physical Education. 2013; 6(2).
- G. W. Heath, M. Pratt, C. W. Warren, and L. Kann, (1990), "Physical activity patterns in American high school students. Results from the Youth Risk Behavior Survey". Archives of Pediatric and Adolescence Medicine, 148, 1994, pp.1131–1136.
- Moorthy A.M., (1980), Survey of minimum muscular fitness of the school children of age group 6 to 11 years and comparison of the influence of selected yogic exercises and physical exercises on them. A Ph.D. Thesis, Poona University,
- Gharote M.M. (2000), Minimum muscular fitness in school children. Indian Journal of Physiology and Pharmacology; 44(4): 479-484
- S. Y. Kimm, N. W. Glynn, A. M. Kriska, B. A. Barton, S. S. Kronsberg, S. R. Daniels, et al. "Decline in physical activity in black girls and white girls during adolescence". New England Journal of Medicine, 347, 2002, pp.709– 715.
- B. Bergkvist., G. Hedberg, V. Janlert, and E. Jansson, (1996), "Physical activity pattern in men and women at the ages of 16 and 34 and development of physical activity from adolescence to adulthood. Scand J Med Sci Sports, 6, pp. 359-370.
- L. H. Epstein, R. A. Paluch, K. J. Coleman, D. Vito, and K. Anderson. (1996), "Determinants of physical activity in obese children assessed by accelerometer and selfreport". Med Sci Sports Exerc, 28, 9, , pp. 1157-1164.
- D. J. Aaron, A. M. Kriska, S. R. Dearwater, R. L. Anderson, T. L. Olsen, J. A. Cauley and R. E. Laporte, (1993) "The epidemiology of leisure physical activity in an adolescent population". Med Sci Sports Exerc, 25, 7, , pp.847-853.
- T. J. Bungum and M. L. Vincent, (1997), "Determinants of physical activity among female adolescents". Am J Prev Med, 13, 2, , pp.115-122.
- Hazmat K., (2008), "Reliability of Kraus-Weber Exercise Test As An Evaluation Tool In Low Back Pain Susceptibility Among Apparently Healthy University Students", Published Dissertation in African Journal for Physical, Health Education, Recreation and Dance, Vol. 14.
- Hoshikawa, Y., Muramatsu M., (2006), "Influence of the Psoas Major and Thigh Muscularity on 100-m Times in Junior Sprinters", Published Dissertation in Journal of Applied Sciences Physical Fitness and Performances, , Vol. 38
- Phillips M, et al. Analysis of results from KrausWeber tests of minimum muscular fitness in children. Research Quarterly 1955; 26: 314-323.
- Rupiper OJ. Physical fitness of 7th grade children. Research Quarterly 1961; 32: 420.