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A STUDY ON SPEED AND EXPLOSIVE STRENGTH AFTER DIFFERENT DURATIONS OF WARMING UP OF SCHOOL STUDENTS



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Abstract :

The purpose of the study on speed and explosive strength after various durations of warming up on performance of speed and explosive strength of school students. For the purpose of this study 20 school students were selected as the subject of the study. The data was collected by administering 50 meter dash test for speed and standing broad jump for explosive strength. The speed and standing broad jump test items were administered consecutively on three days preceded 20 minutes warm up on the first day 25 minutes warm up on the second day and 30 minutes warm up on the third day. The level of significance was set at 0.05 level to check the speed and explosive strength of subjects. The one way ANOVA was applied as statistical procedure. There was no significant difference found between different durations of warming up on speed and explosive strength of school students.

KEY WORDS: speed, explosive strength, warming up.

INTRODUCTION:

The importance of warming up before exercise also extends to how it affects the bones and joints, which are other areas susceptible to injury during a workout or training. By warming up you will help fluids to reach the joints thus making them more subtle and prevent corrosion and locking. For something like running that places a lot of impact on the knees this is incredibly important. By stretching the spine and separating the disks in the spinal column you can also prevent serious injury to the back. It was through not warming up that Bruce Lee damaged his back in the gym and at one point he was told by doctors that he would never walk again. If it can happen to Bruce Lee it can happen to you – this should really hammer home the importance of warming up before exercise. Also highly important is the affect warming up has on the heart. After resting for long periods of time sudden activity can be enough to trigger a heart attack in those with heart problems or who are overweight. By warming up slowly then you can slowly get the heart working rather than shocking it into sudden action. If you're not used to exercising on a regular basis this becomes even more important than, warming up could in fact save your life. As said, after the warm up and the exercise a 'cool down' is also advisable. This will help you to stretch your muscles and encourage growth, will help your heart to slow down and will end the production of hormones such as adrenaline which can place strain on the heart and on the immune system. By stretching out the muscles you can also drain lactic acid, a fact that leads to stretching after every single exercise in activities such as Pilates. When you hold your breath, carbon dioxide builds up as your body uses up oxygen after a minute or two for most people, the result is an overwhelming urge to breathe. A component of some physiological tests of endurance e.g. the cardiopulmonary index. The subject inhales fully, exhales completely, and then takes another full inhalation and holds the breath as long as possible.

Speed is the ability to execute motor actions, under given conditions, in minimum possible time .In other words the capacity of moving limbs or parts of the body like lever systems or the whole body with the greatest possible velocity. The capacity of individual in the rate of making successive moments of the same kind.

Strength is the ability or the whole body with the greatest possible velocity. To overcome resistance or to act against resistance. Strength is not only a product of the muscles but also of the nervous system which control and regulates the muscular contraction. Muscular strength as the force that a muscle or group of muscles can exert against a resistance in one maximum effort.

Methodology

The objective of the study was to analyze the speed and explosive strength after different durations of warming up of school students. For this study twenty male students from Indra Vidya Mandir Higher Secondary School Indore were randomly selected. The age of the subjects was ranged from 15 to 17 years. The subjects was assigned to a single group and repeated measure single group design is used to analyse the speed and explosive strength after warming up on school students. The schedule for warming up was prepared by researcher which included 20 minutes of general were conducted on the subjects for analysing the speed and explosive strength/leg power. One day rest was given to the subjects after that on third day of the week. The warming up duration was increased by 25 minutes warm up was given to the subjects. Just after the warm up the data of 50 meter dash and standing broad jump was collected. The fourth day of week the subjects were given rest and on the fifth day of the week the duration of warming up exercises was increased by again five minutes i.e 30 minutes of warming up was done by subjects. Again just after the 30 minutes of warm up the 50 yard dash and standing broad jump tests were administered on the subjects for analysing the shoulder and

abdominal strength.

Results and Findings

In order to find out the speed and explosive strength of different durations of warming up of school students. The one way analysis of variance on 50 yard dash for speed and standing broad jump for explosive strength/leg power was applied. The findings of one way ANOVA were presented in the following table.

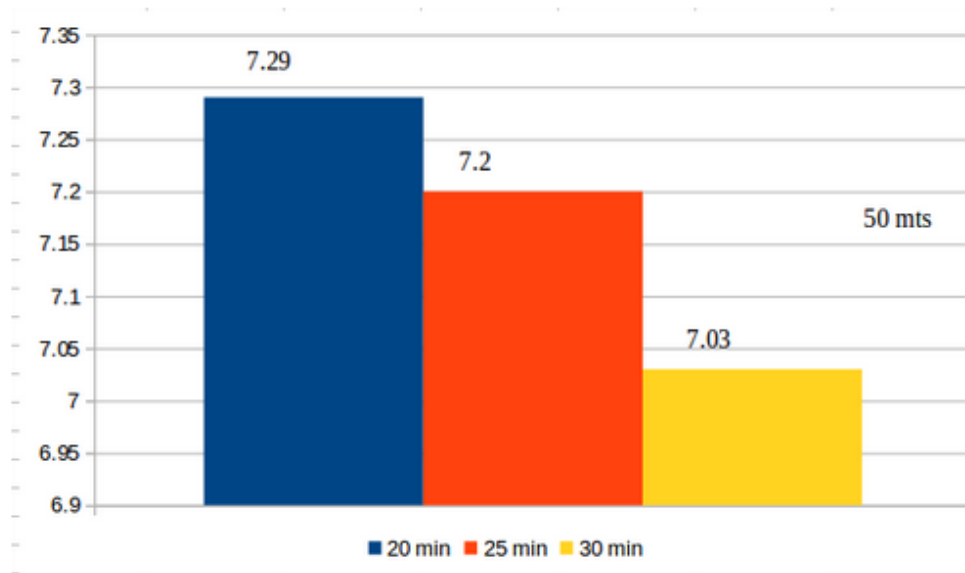
Significance difference between the different durations of warming up mean on speed of school students.

Source of Variance	df	Sum of squares	Mean some of squares	F – Ratio
Between Group	2	0.681	0.341	1.869
Within Group	57	10.389	0.182	

tab $F_{0.05}(2, 57) = 3.17$

Table indicates that the calculated value is 1.869 and tabulated value of .05 levels is 3.17. Hence it indicates that there was no significant difference between different durations of warming up on speed of school students. The graphical represent of the speed performance for different durations of warming up is presented below.

The graphical representation of different durations of warming up on speed of school students.



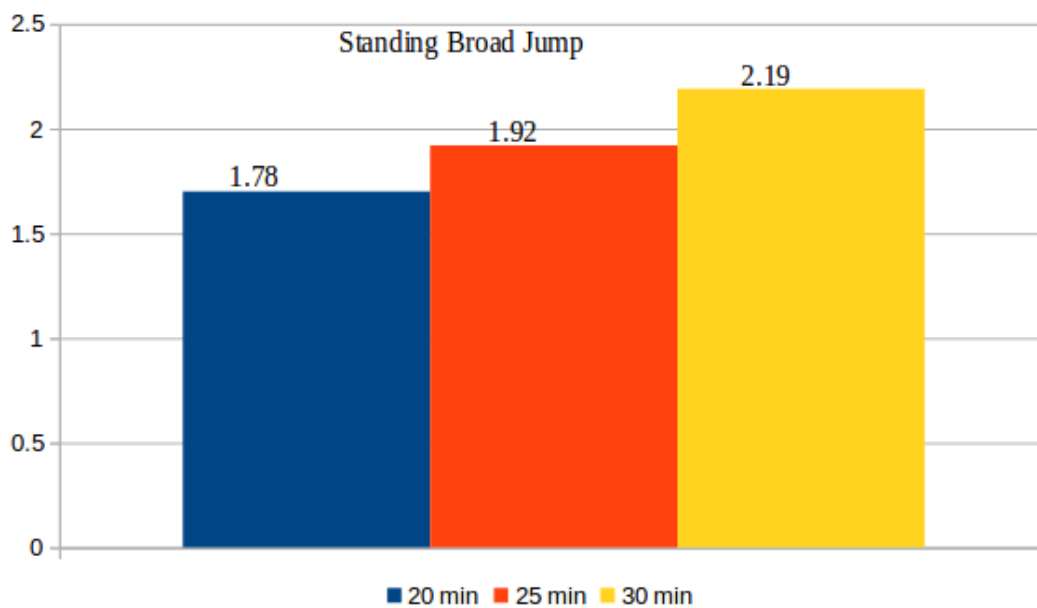
Significance difference between the different durations of warming up mean on explosive strength of school students.

Source of Variance	df	Sum of squares	Mean some of squares	F – Ratio
Between Group	2	10.033	5.017	
Within Group	57	322.983	5.666	0.885

tab $F_{0.05}(2, 57) = 3.17$

Table indicates that the calculated value is 0.885 and tabulated value of .05 levels is 3.17. Hence it indicates that there was no significant difference between different durations of warming up on explosive strength of school students. The graphical represent of the explosive strength performance different durations of warming up is presented below.

The graphical representation of different durations of warming up on explosive strength of school students.



CONCLUSION OF THE STUDY

The findings of the present study clearly indicated that there was no significant difference found in speed (50 yard dash) and explosive strength (standing broad jump) of school students after the test was administered consequently for three days proceeded by after 20 minutes warm up on the first day 25 minutes warm up on the second day and 30 minutes warm up on the third day respectively.

The results found insignificant because mostly young children are very active in their daily activities and they involve themselves in different games with their full energy and interest therefore the effect of different durations of warming up may not be significantly affected for speed and explosive strength. The results might be found insignificant because the regular conditioning programme might be more relevant for performance enhancement of speed and explosive strength rather than change in duration of warming up.

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