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Relationship Of Selected Anthropometric And Physical Variables With Performance Of Dead Lift In Powerlifting

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Abstract

The basic aim of this study was to determine the relationship of dead lift performance in powerlifting with selected anthropometric and physical characteristics. Ten male power lifters who participated in All India inter university served as participants for the study. The selected anthropometric characteristic i.e., Body weight, standing height, Leg length, Thigh circumference and Calf circumference were measured, and the physical characteristics were back strength and leg strength. The data was analyzed by using Pearson's product moment correlation coefficient to ascertain the relationship. For testing, the level of significance was set at 0.05. Findings revealed that there were significant relationships in case of body weight, leg length, thigh circumference and leg strength along with the performance. However insignificant relationship was seen in case of standing height, calf circumference and back strength with the performance.

Key words: Dead lift, Powerlifting, Anthropometric characteristic, Physical characteristics, Quality education.

Introduction

The dead lift is a standout amongst the most as often as possible utilized activities in the field of quality and molding. It has biomechanical and neuromuscular likenesses to an extensive variety of athletic developments and in this manner is incorporated as a center exercise in numerous games schedules intended to improve athletic execution. It additionally is a fundamental segment in the games of aggressive weightlifting and powerlifting and is

broadly viewed as a preeminent trial of lower-body quality. Advantages related with dead lift execution are not restricted to the athletic populace. Given that most exercises of everyday living require the synchronous composed association of various muscle gatherings, the dead lift is viewed as a standout amongst other activities for enhancing personal satisfaction in view of its capacity to enroll different muscle bunches in a solitary move. The game of strongman is moderately new and little data exists in the logical writing with regards to the determinants of effective strongman execution. It is outstanding that maximal quality is a main consideration in deciding execution over an assortment of games, particularly in games, for example, weightlifting and powerlifting. In any case, what are not notable with respect to strongman is the thing that sorts of quality are most identified with execution and how this may be impacted by an assortment of anthropometric attributes. Seeing how quality and anthropometry identify with execution of a particular occasion or game is a key issue in augmenting the exchange of preparing to execution and in this way enhancing preparing effectiveness (Paul W. Winwood, 2012).

Considering the multifaceted nature of the activity and the numerous factors identified with execution, understanding about the anthropometric and physical factors identified with dead lift is of extraordinary significance both for accomplishing ideal strong improvement and also diminishing the possibility of a preparation related damage. Accordingly, the motivation behind this investigation is 2-crease: to begin with, to look at what are the anthropometric and physical factors identified with dead lift and second, to give proposals in light of these anthropometrical and physical variables for improving activity execution.

Methodology

For the purpose of study ten male power lifters of age ranging between 23±2 years, who have participated in All India Inter University were selected. The Anthropometric Characteristics were as Body weight, Standing height, Leg length, Thigh circumference and Calf circumference and Physical variables were back strength and leg strength.

Criterion Measures:

- Performance of dead lift was administered following the standard procedure and the average of three attempts was recorded in kilograms.

TABLE -1 ADMINISTRATION OF THE TEST AND COLLECTION OF DATA

	Variables	Equipments used	Units
	Body weight	Weighing Machine	In kg
	Standing Height	Anthropometric Rod	In Cm
	Leg Length	Anthropometric Rod	In Cm

Anthropometric Characteristics	Thigh Circumference	Gulick Tape	In Cm
	Calf Circumference	Gulick Tape	In Cm
Physical Variables	Back Strength	Back dynamometer	In kg
	Leg Strength	Leg dynamometer	In kg

Reliability of Data:

The obtain reliable measurements, the instruments which were used for the present study were all standard instruments as available in the laboratory of LNIPE, Gwalior and hence their reliability was ensured and thus the data collected for the study were considered reliable.

Statistical Technique:

In order to find out the relationship of selected anthropometric characteristics and physical characteristics of the participants with performance of dead lift, Pearson's Product Moment correlation was calculated. The level of significance was set at 0.05.

Results

TABLE-2 RELATIONSHIP OF DEAD LIFT PERFORMANCE IN POWER LIFTING WITH THE SELECTED ANTHROPOMETRIC & PHYSICAL CHARACTERISTICS

S.No	Variables	Coefficient of correlation'r'
1	Body Weight	0.68*
2	Standing Height	0.61
3	Leg Length	0.78*
4	Thigh Circumference	0.76*
5	Calf Circumference	0.59
6	Back strength	0.56
7	Leg strength	0.82*

Level of significance, $r_{0.05}(8) = 0.632$

Discussion & Findings

As shown in Table 2 the obtained values of correlation for body weight, thigh circumference, leg length and leg strength with the performance of dead lift in powerlifting were found to be significant as the calculated values of correlation coefficient were found to be greater than

the tabulated value 0.632 at 0.05 level of significance. However, the obtained values of correlation coefficient in other variables were less than the required value at selected level of significance; therefore, these selected anthropometric variables i.e. standing height, calf circumference and back length have shown insignificant relationship with the performance. The significant correlation seen in the case of four variables such as body weight, thigh circumference, leg length and leg strength along with the dead lift performance may be attributed to the reason that a higher Body Weight results in increased stability needed for a power lifter in dead lift and an increased Thigh circumference in case of power lifters signifies developed muscular mass and thus better muscular strength required for optimum performance. Whereas the insignificant results shown by the other three variables i.e. Standing Height, calf circumference and back strength along with the performance may be due to the fact that an increased in the Standing Height and suggests an increase in the height of Center of Gravity of an individual resulting in lesser stability. Moreover the lifter has to move greater distance due to the increased height and limbs resulting in more effort.

Conclusion:

The significant correlation seen in the case of four variables such as body weight, thigh circumference, leg length and leg strength along with the dead lift performance suggests that these variables may be quite contributory in determining the performance of dead lift in powerlifting and while the other three variables i.e. Standing Height, calf circumference and back strength seems to be less contributory in enhancing the dead lift performance.

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