

Analyze the Various Factors Correlated with Sprinting Ability of Athletes from Selected Bio-Motor Variables among the College Male Athletes

¹Dr. N. R. Ram Kumar, ²Dr. V. Veeran

¹Director of Physical Education, AMET University, Chennai

²Director of Physical Education, Dr. Ambedkar Government Arts College, Vyasarpadi, Chennai.

¹ram.sportive@gmail.com, ²veeranvv@gmail.com

Article Info

Volume 83

Page Number: 1612 - 1615

Publication Issue:

March - April 2020

Article History

Article Received: 24 July 2019

Revised: 12 September 2019

Accepted: 15 February 2020

Publication: 15 March 2020

Abstract

The motivation behind the present examination was to break down the different elements corresponded with run capacity of competitors from chose bio-engine factors. To accomplish the motivation behind the investigation, 12 male bury university competitors were chosen haphazardly from Chennai schools. The age of the subjects extended from 17 to 25 years. The accompanying factors were chosen for this investigation, for example, speed, solid quality, hazardous power and adaptability.

The relapse condition for the forecast of run capacity for intercollegiate level competitors incorporates speed and dangerous power. As the different relationship of run capacity with the consolidated impact of these free factors is profoundly huge ($R=0.957$) it is obvious that the acquired relapse condition has a high prescient legitimacy measurably. There may be huge relationship among the indicator factors. The consequences of the examination produce noteworthy relationship among the indicator factors.

Keywords: Athletes, glycolysis, Speed, Perseverance, Muscle Contraction

1. Introduction

Run is running over a short separation in a constrained timeframe. It is utilized in numerous games that join running, regularly as a method for rapidly arriving at an objective or objective, or dodging or getting a rival. Human physiology directs that a sprinter's close top speed can't be kept up for more than 30–35 seconds because of the consumption of phosphocreatine stores in muscles, and maybe optionally to unreasonable metabolic acidosis because of anaerobic glycolysis.

Bio engine capacities

There are 5 bio engine capacities. They are quality, perseverance, speed, adaptability, Furthermore, parity or coordination.

Speed

Speed is the presentation pre imperative to do engine activities under given conditions development task, outside components, individual pre-essentials in least of time.

Strong Strength

The limit of a muscle to apply maximally once. This is a nearby muscle normal for multiple times communicated as 1RM.

Dangerous Power

It is the nature of a muscle to contract commandingly in the snappiest conceivable time.

Adaptability

Adaptability is an engine capacity which isn't plainly a restrictive or a coordinative capacity. It depends incompletely on vitality freedom forms and somewhat on vitality freedom procedures of the CNS.

2. Explanation of the Problem

The examination under scrutiny is planned to foresee the run capacity from chose bio-engine factors of understudies.

Speculations

To help the discoveries of the examination the accompanying speculations are detailed.

1. It is conjectured that the run capacity may be anticipated from the chose bio-engine factors.
2. It is theorized that there may be huge relationship among the indicator factors.

Delimitations

1. To accomplish the motivation behind the investigation, twelve male sprinters were chosen haphazardly from Chennai who took part in the Inter university athletic meet.
2. The age of the subjects ranged from 17 to 25 years.
3. The study will be restricted to the following bio-motor variables such as speed, muscular strength, explosive power and flexibility.
4. The selected variables were tested with standardized test items as mentioned in the methodology.
5. The data were collected during inter collegiate athletic meet.

Constraints

The accompanying constraints were considered while deciphering the consequences of the investigation.

1. The past experience of the subjects in the field of sports and games, which may be affecting on the information assortment, was not considered.
2. Mental components, nourishment propensities, rest period; way of life and so on couldn't be controlled.
3. The climate conditions, for example, environmental temperature, dampness and meteorological elements during testing period were additionally not considered.
4. In spite of the fact that the subjects were inspired verbally, no endeavor was made to separate the inspiration level during the time of testing.
5. Since the manual activity was made during transport run, the time was recorded in one tenth of a second.

Strategy

Choice of Subjects and factors

12 male entomb university competitors were chosen arbitrarily from Chennai schools. The age of the subjects extended from 17 to 25 years. The accompanying factors were chosen for this examination, for example, speed, strong quality, unstable power and adaptability.

3. Tools and Technique

Table 1: Tests Selection

S.No	Criterion Variables	Test items	Unit of Measurement
1	Muscular strength	Pull-ups	In Numbers
2	Speed	50 m run	In seconds
3	Explosive power	Standing Broad Jump	In metres
4	Flexibility	Sit and Reach Test	In centimeters

Table 2: Intra Class Co-Efficient of Correlation on Selected Dependent Variables

S.No.	Variables	'R' Value
1	Muscular strength	0.97*
2	Speed	0.92*
3	Explosive power	0.96*
4	Flexibility	0.93*

*Significant at 0.01 level of confidence.

(Table value required for significance at 0.01 level of confidence is 0.77)

Since the obtained 'R' values were much higher than the required value, the data were accepted as reliable in terms of instrument, tester and the subjects.

4. Results and Discussion

Table 3: Pearson Product Moment Correlation between the Selected Variables and Sprinting Ability of Intercollegiate Athletes

Dependent Variable	Independent Variables	Pearson r_{12} value
Sprinting Ability	1. Speed	-0.898*
	2. Muscular Strength	0.607*
	3. Explosive Power	0.704*
	4. Flexibility	0.361*

*Significant at 0.05 level with df 22 is 0.301.

It is clear from the table 3 that there was huge connection between dashing capacity and speed, strong quality, unstable power, and adaptability of competitors in every factor independently.

Various relapse condition was registered just if the different connections are adequately high to warrant expectation from it. At that point, the relationship recognizes the free factors to be incorporated and their request in the relapse condition. Numerous relationships were registered by forward determination technique on information acquired for the competitors and the outcomes were exhibited in table 4.

Table 4: Multiple Correlation Coefficients for the Predictors of Sprinting Ability of Athletes

S. No	Variables (Forward Selection)	R	R Square	Adjusted R Square	R Square Change
1	Speed	0.925	0.856	0.851	0.856
2	Speed & Ex. Power	0.957	0.915	0.909	0.059

From the table 4, it was discovered that the numerous connection coefficients for indicators, for example, speed and touchy power is 0.957 which produce most elevated various relationships with dashing capacity of competitors. R square qualities demonstrated that the level of commitment of indicators to the dashing capacity (subordinate variable) in the accompanying request.

1. About 86% of the variety in the dashing capacity was clarified by the relapse model with one indicator speed.

2. About 92% of the variety in the dashing capacity was clarified by the relapse model with two indicators, speed and unstable power. An extra 6% of the fluctuation in the run capacity is contributed by hazardous power.

Numerous relapse condition was figured and the outcomes were introduced in table 5.

Table 5: Regression Coefficients for the Predicted Variables with Sprinting Ability of Athletes

S. No	Variables	B	Std. Error	Beta Weights
1	(Constant)	3.482	1.369	
	Speed	0.155	0.012	0.925
2	(Constant)	56.51	12.263	
	Speed	0.083	0.019	0.498
	Ex. Power	-2.699	0.622	-0.492

From the table 5, the following regression equations were derived for high achievers in soccer with dependent variables.

1. Regression Equation in obtained scores form = X_c

$$X_c = 0.083 X_1 + (-2.699) X_2 + 56.51$$

Where, X_c = Sprinting Ability, X_1 = speed, X_2 = explosive power,

2. Regression Equation in standard scores form = Z_c

$$Z_c = 0.498 Z_1 + (-0.492) Z_2$$

Where, Z_c = Sprinting Ability, Z_1 = speed, Z_2 = explosive power,

The relapse condition for the forecast of dashing capacity of competitors incorporates speed and touchy power. As the different relationships on dashing capacity with the joined impact of these free factors are profoundly noteworthy, it is clear that the acquired relapse condition has a high prescient legitimacy. Hence, this condition might be effectively used in choosing intercollegiate competitors.

5. Conclusion

From the examination of the information, the accompanying ends were drawn.

1. The relapse condition for the expectation of dashing capacity for intercollegiate level competitors incorporates speed and dangerous power. As the numerous relationship of dashing capacity with the consolidated impact of these autonomous factors is exceptionally huge ($R=0.957$) it is obvious that the acquired relapse condition has a high prescient legitimacy factually. Accordingly the condition might be effectively used in choosing intercollegiate competitors.

2. There may be noteworthy relationship among the indicator factors. The consequences of the examination produce huge relationship among the indicator factors.

6. Suggestions

With the assistance of results got from the present examination, the accompanying proposals can be made.

The consequences of the present investigation can be particularly valuable for Physical Educators, mentors and coaches for screening and choosing potential competitors at entomb university level.

References

Journals

- [1] A.K. Ghosh, A. Ahuja and G.L. Khanna, "Pulmonary Capacities of Different Groups of

- Sportsmen in India", British Journal of Sports Medicine, 19:4, (December 1985), 232-234.
- [2] A.K. Ghosh, A. Ahuja, G.L. Khanna and S. Bhatnagar, "Lung Volumes and Physique : Inter Correlation in Sportsmen", SNIPES Journal, 7:3, (July 1984), 45-49.

Books

- [1] Gangopadhyay S.R., Physical Education Today and Tomorrow, (Delhi: Friends Publications, 1993), p-15
- [2] Hardayal Singh, Science of Sport Training, (New Delhi: D.V.S. Publications, 1991), p-156.
- [3] Harold M. Barrow and Rose Mary Mc. Gee, Practical Approach of Measurements in Physical Education, (Philadelphia: Lea and Febiger, 1979),p.18.