



Association on Strength and Flexibility with Anaerobic Performance of Female Athletes

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ABSTRACT

The sports are a world-wide phenomenon today. In the world history sports was a popular organization and important as today. It has been an interesting aspect for human amusement and a cultural phenomenon at great magnitude It has gat mass participation, as it attracts people either for recreations, physical fitness or performance. The present study was designed to find out Association of strength and flexibility with the anaerobic performance of female Athletes. For the purpose of the study 30 female sprinters were selected Purposively from Zonal school Athletics Championship, Burdwan, North 24 Parganas, Purba Midnapur West Bengal. Age range of the subjects was 12-15 years. To find out the relationship of Aerobic Performance was measured by 100 Meter Run, strength was measured by Explosive leg Strength and Flexibility was measured by Hip Flexibility. For the analyzing of the collecting data and find out the relation of two variables Mean. Standard deviation and Product moment correlation of coefficient was used at 0.05 level of confidence. The result showed that there was Positive in significance - relationship of Aerobic performance with Strength and Flexibility.

Key Words: Strength, Flexibility, Aerobic performance, Zonal school Athletics

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I. INTRODUCTION

Sports can be generally defined as activities involving physical exertion and skill which are governed by a set of rules or customs and participated in by individuals as a means of recreation or competition. The first sports most likely involved fishing or hunting for survival purposes or presentations of strength and agility to show physical superiority. Sport seems to involve basic human skills being developed and exercised for their own sake, in parallel with being exercised for their usefulness. The practice of sports teaches respect for rules, tolerance and solidarity, helps to develop the body and the spirit and gives joy, pride and feeling of wellbeing. The sport traces its origins to Greece where athletes received physical training in a special arena, in addition to many other disciplines including the arts, philosophy and literature. Since Koroibos of Elis won the 192-m stadium sprint run Olympic Games in Olympia (776 BC), sport has received considerable scientific attention. The superior performance of modern sprinters is the result of a complex blend of many factors, such as genetic endowment, training and an athlete's health status.

The participation of women in sports has been controversial for many years. Earlier they were not allowed to participate in sports; even they were not allowed to watch the ancient Olympic Games. The main hurdle in the participation of women in various sports had been cultural pressures and a fear of great muscular development causing lack of feminists. There is no activity in sports that women are actually unable to tackle, even including boxing and wrestling. But, in later women play a major role in Olympic as well as other games. The female athletes under investigation will be consist of those athletes who took part in the inter school athletics Championship (2015-2016). It has been a part of the games since ancient times.

Strength has been considered as the most important conditional ability. It has been the most significant factor to enhance sports techniques and performance. Development of strength also contributes to indirect development of other conditional ability namely speed and endurance. Since all sports strength is an important

component of various conditional abilities, skill and technical action. Strength is the ability of a muscle to get over resistance. Strength training puts high demand on muscle, tendon, ligament and joint and therefore it is important that these demands should exceed the capacity of the sports person.

Strength is the ability of the body or its segments to apply force. Muscular strength may be defined as amount of tension (kg or pound) a muscle or a group of muscle can exert. There is a very high relation of muscular strength to general health, physical fitness or capacity for activity. Without strength, there can be no physical activity. Moreover, when muscular strength is low, all other life functions are handicapped (Cureton and Larson, 1941). High level of strength is essential for good performance in almost all sports. Its relative significance varies depending on the nature of the particular activity on all apparatus.

The use of strength training designed to increase underlying strength and power qualities in elite athletes in an attempt to improve athletic performance is commonplace. Although the extent to which strength and power are important to sports performance may vary depending on the activity, the associations between these qualities and performance have been well documented in the literature. The purpose of this review is to provide a brief overview of strength training research to determine if it really helps improve athletic performance. While there is a need for more research with elite athletes to investigate the relationship between strength training and athletic performance, there is sufficient evidence for strength training programs to continue to be an integral part of athletic preparation in team sports.

Strength has been considered as the most important conditional ability. It has been the most significant factor to enhance sports techniques and performance. Development of strength also contributes to indirect development of other conditional ability namely speed and endurance. Since all sports strength is an important component of various conditional abilities, skill and technical action. Strength is the ability of a muscle to get over resistance. Strength training puts high demand on muscle, tendon, ligament and joint and therefore it is important that these demands should exceed the capacity of the sports person

Flexibility is another component which needs to be considered equally important. It may be defined as the degree to which an individual is able to move the joints of the body through their complete range of motion. Physical activities and sports involve vigorous movements, the joints and muscles need a tremendous amount of flexibility to facilitate efficient and desired movements. Diving, hurdling, modern dance require great flexibility in certain body region in order to demonstrate good form, however, a gymnast requires sufficient flexibility in all parts of the body to perform movements accurately.

STATEMENT OF THE PROBLEM

The present study is designed to find out “Association on Strength and Flexibility with Anaerobic Performance of Female Athletes”

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II. METHODOLOGY

For the purpose of the study 30 female Anaerobic Athletes were purposively selected from Zonal school Athletics Championship from Burdwan, North 24 Parganas and Purbo Midnipur District of West Bengal. Age range of the subjects were 12-15 Years.

To find out the relationship of Aerobic Performance was measured by 100 Meter Run, strength was measured by Explosive leg Strength and Flexibility was measured by Hip Flexibility. For the analyzing of the collecting data and find out the relation of two variables Mean, Standard deviation and Product moment correlation of coefficient was used at 0.05 level of confidence.

III. FINDING

Table-01

Mean, Standard Deviation and Standard Error of Mean of Strength and Flexibility and Sprinting Performance of Inter School Championship Female sprinters

Variables	Mean	Standard deviation	Standard Error
Strength	1.765	0.138	0.068
Flexibility	2.440	1.968	0.256
100 Meter Run	15.995	0.965	0.179

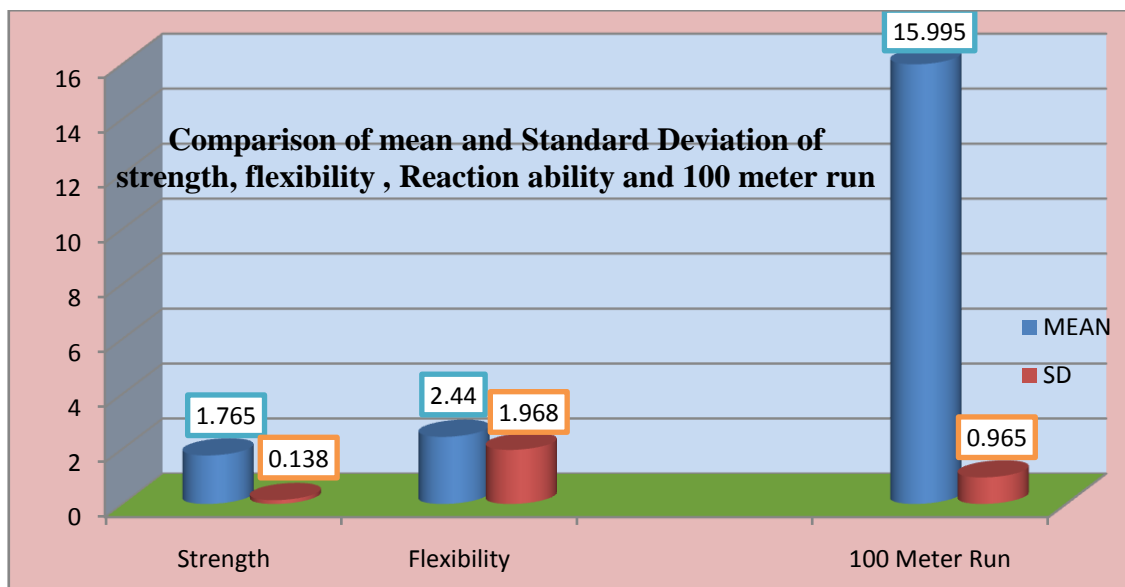


Fig: Mean and SD of strength, flexibility and Sprinting Performance

Table-02
Relationship of sprinting performance with strength, flexibility and of Inter school Championship female sprinters

Sprinting Performance	Motor Abilities	'r' value
100Meter Run	Strength	0.293
	Flexibility	0.207

From the above Table -2 it is clearly revealed that not significance relationship is found of Sprinting Performance in relation to strength(0.293), flexibility(0.207). Further this table indicate that Positive in significance - relationship is found in respect of strength and flexibility Tab $r_{0.05}(58) = 0.361$.

IV. DISCUSSION OF FINDINGS

The 100m sprint requires the athlete to have a quick reaction time to an auditory signal, explosive starting and acceleratory strength, high velocity stride frequency and the power to generate maximum force in the right direction to generate both vertical and horizontal propulsion (Bird, 2002; Young 2007). This requires technical training in efficient sprint mechanics as well as physical training for speed, strength and power. Sprinters do not require any tactical decision making skills within the event, however having a detailed and specific warm up and call room routine could be seen as tactical in achieving desired race outcomes.

The psychological strength of the athlete is tested through the rigors of training and competition. As the athlete moves forward through the rounds (heats, semi-final and final), it is my experience that this has a significant role in the success of the athlete.

Psychological strength is required in the training leading up to a major event, in the call room, behind the start line, and in the maintenance of composure by staying relaxed through the event.

The sprint start involves near maximal activation and complex, functional movements of an athlete's gross musculature. A powerful start is crucial to attaining an optimal standard of performance in a sprint race. Three key contributors to the sprint start are reaction time, movement time, and response time. Minimizing the duration of each of these components can contribute to a faster start time, and ultimately a better sprint performance.

Statistical calculation of gathered data of this study indicates that the sprinting performance with strength, flexibility had not significance relationship with school Championship Female Sprinter. That was probably due to the fact that participating lower level competition without training, growing age level, not proper Athletic Diet and as well as no clear idea about structure of movement of the activity which helped her to performed better sprinting performance. This study is consonant with Dureha (1984), Nimphius et al. (2010), Davis Kyle (2011) and inconsonance with the study of TheophilosPilianidis (2012), Tønnessen et.al (2013), Toor (1996), Jan Vích (2015), Vescovi&McGuigan (2008), B.Chittibabu (2014).

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