ANTHROPOMETRIC AND PHYSIOLOGICAL CHARACTERISTICS OF SRI LANKAN NATIONAL LEVEL FEMALE SOCCER PLAYERS

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Abstract

This is focused on anthropometric and Physiological characteristics of Sri Lankan National female soccer players with a view to establishing their roles within talent detection, identification and development programmes. Top-class soccer players have to adapt to the Physiological demands of the game, which are multifactorial. Players may not need to have an extraordinary capacity within any of the areas of Physiological performance but must possess a reasonably high level within all areas. This explains why there are marked individual differences in anthropometric and Physiological characteristics among top players. Various measurements had used to evaluate specific aspects of the Physiological performance of female national soccer players. Seventy female national soccer players (goalkeeper: 10, defender: 20, midfielder: 25, and forward: 15) participated in this study. Players were selected by using a multistage sampling technique. The age of the players ranged from years 20-30 ($\pm$ 1). The playing ability was selected as the dependent variable and it was assessed by ratings of a judge's panel. Physiological variables taken were VO2 max, Resting Heart Rate, Breath Hold Time. The anthropometric measurements used were Height, Weight, Wrist Girth of wrist, Chest, Thigh, Calves & Ankle, Length of Arm, hand, leg & foot, Circumferences of upper arm, Forearm, waist & hip. To examine the relationship between performance ability and selected independent variables, a cluster analysis and Pearson correlation was calculated with SPSS 25 software. The findings of the research are mentioned below. Significant correlations were obtained for resting heart rate and Dribbling playing ability. The research concluded that there are significant correlations with the anthropometric variables namely; Height, Weight, Thigh girth and Calves circumference with the Dribbling playing ability of Soccer. This study concludes that there are impacts of anthropometric and Physiological characteristics of Sri Lankan national level female soccer players.

INTRODUCTION

Soccer

Soccer is the most popular sport in the world and is performed by men and women, children and adults with different levels of expertise. The soccer-specific training in young players may start as early as at 8 years of age with the first competitions starting not much later. Soccer performance depends upon a myriad of factors such as technical/biomechanical, tactical, mental and physiological areas. One of the reasons that soccer is so popular worldwide is that players may not need to have an extraordinary capacity within any of these performance areas, but possess a reasonable level within all areas. However, there are trends towards more systematic training and selection influencing the anthropometric profiles of players who compete at the highest level.

Identifying talent for soccer and other team games is more complex than in individual sports (e.g., in track and field, or swimming) where a single objective measure of performance exists. Furthermore, later success in soccer depends on a number of diverse factors, such as opportunities to practice, being prone to injuries, quality of coaching, and various psychological, social and cultural factors. To cope with the physiological demands of soccer, players must be competent across several fitness components. The use of fitness tests in the laboratory and field assist in examining soccer players' capabilities for performance both at the amateur and elite levels. Football's world governing body is the Federation International De Football Association (FIFA). It has 211 National member Associations. FIFA organized world cup tournament, is played every four years to the worldwide audiences.

Anthropometric measurements

Anthropometric estimations are a progression of quantitative estimations of the muscle, bone, and fat tissue used to survey the organization of the body. The center components of anthropometry are tallness, weight, weight file (BMI), body boundaries (midsection, hip, and appendages), and skinfold thickness. These estimations are significant on the grounds that they address demonstrative measures for corpulence, which essentially expands the danger for conditions, for example, cardiovascular sickness, hypertension, diabetes mellitus, and some

more. There is further utility as a proportion of nourishing status in youngsters and pregnant ladies. Furthermore, anthropometric estimations can be utilized as a pattern for actual wellness and to quantify the advancement of wellness.

Anthropometry is a technique for human sciences that alludes to the estimating and testing the human body and to the connection between the measures of its individual parts. Measures are the distance between certain focuses on the body (engine estimation) and the points created by specific planes and the lines of the body (goniometric estimation). The undertaking of anthropometry is as precisely as conceivable quantitatively describe the morphological highlights of the human body. A competitor's anthropometric and actual qualities may view as the one of the central considerations for fruitful interest in any games.
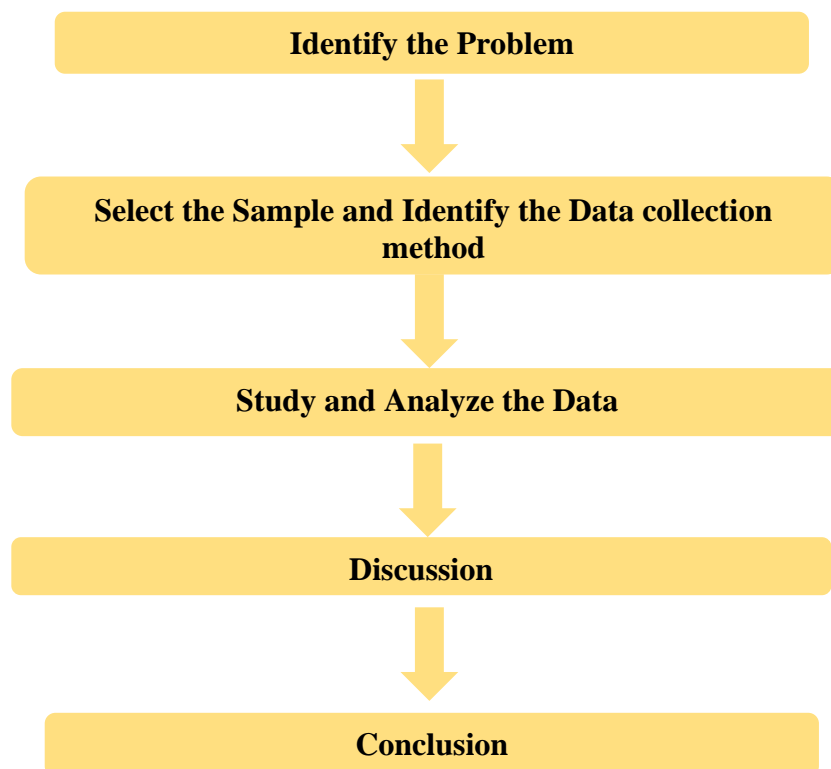
It tends to be accepted that a competitor's anthropometric attributes can here and there impact his/her degree of execution, simultaneously assisting with deciding an appropriate body for a specific sport(Masanovic et al,2018).Gender was discovered to be the absolute most significant supporter of fat designing:

female competitors have a higher limit/trunk fat proportion (Hosler, Morrow Jr and Morrow Jr 1978)When amount of six skinfolds was utilized as a solitary pointer, it was discovered to be the best adiposity marker to separate among level and position. In any case, when skinfold estimations were considered also, it gave the idea that skinfold designing better separated between groups (Malliaras, Cook and Kent 2006).

Physiological Characteristics

Physiological qualities allude to the actual elements of a human. As indicated by the basic speculation hypothesis, youngsters who have not arrived at the basic age are still actually and naturally juvenile and have neurological points of interest in learning language when contrasted with grown-ups (Lenneberg, 1967). Their discourse organs and minds are more adaptable which additionally make it simpler for them to talk with a more precise articulation and sound (Lenneberg, Penfield and Roberts, 1960). Grown-ups, then again, are less adaptable in their discourse organs and more restricted in creating local like capability in light of the fact that their tone and way to express a subsequent language are regularly influenced by their first language.

METHODOLOGY

Identify the Problem

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Select the Sample and Identify the Data collection method

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Study and Analyze the Data

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Discussion

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Conclusion

PURPOSE OF THE STUDY

The purpose of the study was to analyzing anthropometric and physiological characteristics of Sri Lankan national level female soccer players. To achieve this purpose the population and sample were identified from year of 2020 who are the players that participated for the soccer game. The seventy (70) female national soccer players were identified as subjects for this study. The age of the subjects ranged between 20 and 30 years as per the eligibility preform of the individual. The Football playing ability was selected as dependent variable and assessed by subjective rating. Anthropometric measurements such as; Height, Weight, Wrist Girth of wrist, Chest, Thigh, Calves & Ankle, Length of Arm, hand, leg & foot, Circumferences of upper arm, Forearm, waist & hip & Physiological variables such as; VO2 Max, resting heart rate and breath hold time were selected as independent variables and tested by standardized procedure. The data were collected for playing ability and other selected independent variables. In order to examine the relationship between playing ability and selected independent variables simple

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correlation was calculated (P>.05).

RESULTS

Table 1: Mean standard deviation and correlation between playing ability and selected predictor variables among Sri Lankan national level female soccer players.

NO	Variables	Mean	Std. Deviation	Correlation	Sig
01	Height	165.00	6.936	.494[*]	0.027
02	Weight	63.50	11.076	.548[*]	0.012
03	Wrist Girth	16.25	1.070	0.162	0.495
04	Chest Girth	94.95	2.012	0.302	0.196
05	Thigh Girth	57.45	5.772	.458[*]	0.042
06	Calves Girth	36.75	2.673	.454[*]	0.044
07	Ankle Girth	22.00	1.622	0.214	0.365
08	Arm length	55.80	3.518	-0.012	0.959
09	Hand length	18.50	0.827	0.105	0.660
10	Leg length	89.65	2.739	0.222	0.348
11	Foot length	19.65	1.565	0.111	0.642
12	Upper Arm Circumference	29.45	2.089	0.207	0.380
13	Fore Arm Circumference	26.10	1.518	0.371	0.107
14	Waist Circumference	81.60	8.574	-0.121	0.610
15	Hip Circumference	88.15	10.143	-0.060	0.802

H0: There would be a significant relationship between anthropometric and physiological characteristics of Sri Lankan national level female soccer players.

H1: There would not be a significant relationship between anthropometric and physiological characteristics of Sri Lankan national level female soccer players.

According to the table we can conclude that Height, Weight, Thigh Girth, Calves Girth have a correlation of 0.494, 0.548, 0.458, 0.454 with playing ability. Therefore, we can reject the null hypothesis for the above-

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mentioned variables. Therefore, statically conclude that Height, Weight, Thigh Girth, Calves Girth measurements are significantly correlated at 5% of significance level.

CONCLUSION

Based on the findings of this study, the following conclusions have been drawn.

The capital aim of this study was analyzing anthropometric and physiological characteristics of Sri Lankan national level female soccer players. Seventy female national soccer players age between 20-30($\pm$ 1) (goalkeeper: 10, defender: 20, midfielder: 25, and forward: 15) were used for this study. According to the analyzed results can identify there is a relationship between playing ability and selected Anthropometric, physiological variables of the selected sample.

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