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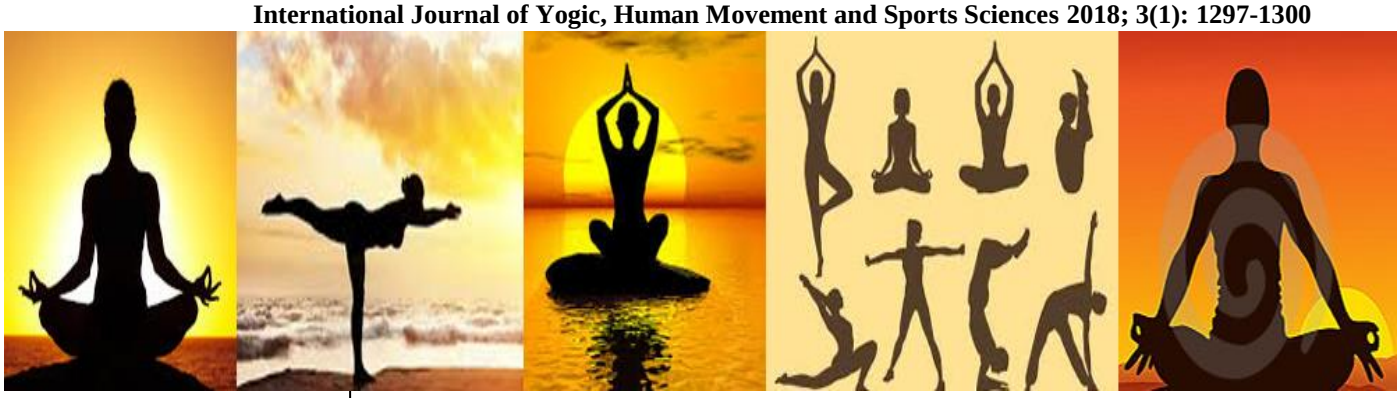

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Relationship of anthropometric variables with hockey performance of female junior national hockey players, of Gwalior

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Abstract
The purpose of this study was to describe the Anthropometric Variables (Weight, Height, Leg length, Arm length, Palm length.) of female junior national hockey players of academy, Gwalior. The analysis of facts accumulated on the overall number of subjects for this study, (N=50) female players of junior national level, from female hockey academy Gwalior. The training age of the subjects was of minimum 3 years. Subjects was provide written, voluntary, informed consent prior to participation and all players were regular and accustomed to high levels of exertion. Anthropometric Variables (Weight, Height, Leg length, Arm length, Palm length.) statistical analysis of data collected female hockey players of junior national level, from female hockey academy Descriptive Statistics was used to mean score, were applied. The data analysing tools SPSS- 21 software was used. The level of significance was set at 0.05 level. It was significance Mean score of Anthropometric variables like Weight, Height, Leg length, Arm length, Palm length for the female junior nation hockey players of hockey academy, Gwalior. The strongly indicate that there were significant relationship in relation to the selected anthropometric variables, two variables Leg length, and Palm length. And three variables was no significant relationship of Weight, height, and Arm length, with hockey performance, for the female junior nation hockey players of hockey academy, Gwalior.

Keywords: Hockey, academy, Gwalior, anthropometric etc.

Introduction
Hockey is a technical recreation in which overall performance is primarily based on capabilities and strategies in which unique difficult factors are concerned such as excessive degree of bodily and psychological abilities. Sports psychology helps a lot in assessing the overall performance of hockey players. Though bodily and physiological variables play an essential position in improving hockey overall performance however ultimately it is the psychological element that decides the triumphing and dropping off the team. Hockey is a skilful recreation and because strategies and methods are modified very often and hence it will become a thought game. Presently coaches and bodily educators and involved in the psychological and sociological factor of sports activities instead of relying on only physiological health and capabilities of a range of activities. They realized that the physiological and sociological traits of the participant make contributions greater closer to their success than mere bodily fitness. Serves to realign the lift.

Anthropometric
anthropometric measurements as well as how and why you might use these measurements to motivate clients and track their progress and the Parametric literally means to measure a human therefore anthropometric measurements are used to assess the size shape and composition of the human body we divide these measurements into two categories body composition and body size body composition identifies the relative percentages of fat mass to fat free mass with this type of measurement we are simply trying to identify the difference between fat mass and fat free mass in the body on the other hand body size assesses the dimensions of the human body by looking at the height weight and circumference this is helpful to determine a client's health and fitness status but does not assess body composition

when beginning an exercise program we want to take into Prometric measurements since simply knowing a person's weight does not reveal much about their overall condition during a weight loss program there are going to be times when the rate or amount of weight loss slows stops or even reverses however individuals can still be losing fat and gaining lean body mass so you'll want to be able to identify that different as with other assessments taking these measurements can help to gather baseline information assess program effectiveness serve as a motivational tool identify a client's health risk for excessively high or low levels of body fat promote a client's understanding a body fat and monitor changes in body composition there are a variety of methods for measuring body composition and some are more accurate and others however oftentimes the most accurate methods require expensive equipment and can be invasive or unpleasant to perform typically the method that you will see in a gym is the skin fold measurement which yields fairly accurate results and doesn't require a lot of time or equipment we will now walk you through a demonstration of a skin fold measurement

Objectives of the study

1. To describe the Anthropometric Variables (Weight, Height, Leg length, Arm length, Palm length.) of female junior national hockey players of academy, Gwalior.
2. The relationship the Anthropometric Variables (Weight, Height, Leg length, Arm length, Palm length.) of female junior national hockey players of academy, Gwalior.

Methodology

The analysis of facts accumulated on the overall number of subjects for this study, (N=50) female players of junior national level, from female hockey academy Gwalior. The training age of the subjects was of minimum 3 years. Subjects was provide written, voluntary, informed consent prior to participation and all players were regular and accustomed to high levels of exertion. Anthropometric Variables (Weight, Height, Leg length, Arm length, Palm length.). The statistical analysis of data collected female hockey players of junior national level, from female hockey academy Descriptive Statistics and Pearson correlation coefficient (Multiple correlations) was used to mean score, and relationship with the hockey performance were applied. The data analyzing tools SPSS- 21 software was used. The level of significance was set at 0.05 level.

Criterion measure

Procedure of testing and collection of data

The subjects was instructed about all the test items was used in the study to measure the entire variable and give demonstration how to perform test items. After that the tests was administered and data was collected. The test was conducted three times and mean score of three trial was taken and best result was considered.

Anthropometric Variables

Height

Purpose: The purpose of this test was to measure the standing height.

Equipment: A studio meter (stable, accurate measuring device) with a moveable headboard is used.

Administration: The subjects was instructed to stand upright, with the back against the wall and the head erect (horizontal plane), facing forward, and looking straight ahead. Subjects the heels placed together; buttocks and shoulders were in contact with the measuring device. The moveable headboard was lowered gently until it touches the top of the head. No socks or shoes was worn at the time of measurement.

Scoring: The measurement was recorded from the audiometer's eye to the nearest half of a centimetre.

Weight

Purpose: The purpose of this test was to measure the Total Body Weight.

Equipment: Standard Tanita (Body Composition Analyser) Company weighing machine.

Administration: The subjects was instructed to stand rectangular foot platform of the balance with equal weight on both feet of the machine. Minimum cloth i.e a short and a t-shirt was worn at the time of measurement. No socks or shoes was worn at the time of measurement, when Tanita Body Composition Analyzer machine was used. Machine is digital. The zero error of the machine was checked before the subjects stand on its platform. (Note - The BMI was calculated with help of Body Composition Analyser in which the height data was feeded manually by the researcher.)

Arm length Purpose: To measure the arm length.
Equipment: steel tape, record sheet and pencil.

Procedure: A measurement is made from the point of the shoulder to the tip of the little finger.

Scoring: The Arm length was recorded in centimeter.

Leg length Purpose: To measure the leg length.
Equipment: Steel tape, record sheet and pencil.

Procedure: A measurement is made from the anterior superior iliac spine, to the tip of the medial malleolus.

Scoring: The leg length was recorded in centimeter.
Palm length Purpose: To measure the palm length.
Equipment: Steel tape, record sheet and pencil.

Procedure: A measurement is made from length of the inner surface of the hand from the wrist to the base of the fingers.

Scoring: The palm length was recorded in centimeter.

Height

Purpose: To measure the standing height.
Equipment: studio meter, record sheet and pencil.

Procedure: standing height is the measurement the maximum distance from the floor to the highest point on the head. Shoes should be off, feet together, and arms by the sides. Heels, buttocks and upper back should also be in contact with the wall when the measurement is made.

Scoring: The height was recorded in centimeter.

Weight

Purpose: To measure the weight of the body.

Equipment: weighing machine, record sheet and pencil.

Procedure: the person stands with minimal movement with hands by their side. Shoes and excess clothing should be removed.

Scoring: The weight was recorded in kilogram.

Statistical technique

In this study Descriptive statistics and Pearson correlation coefficient (Multiple correlations) for Anthropometric Variables (Weight, Height, Leg length, Arm length, Palm length.). with hockey performance of female junior national hockey players of academy, Gwalior.

Table 1: Descriptive statistics of anthropometric variables for the talent identification of female junior national hockey players of hockey academy Gwalior. Anthropometric variables

S.N.	Anthropometric Variables	Mean	Std. Deviation	Minimum	Maximum
1	Weight	50.4	3.4	43.0	61.0
2	Height	157.7	9.0	132	174
3	Leg length	90.3	7.2	78	106
4	Arm Length	49.2	3.3	42	56
5	Palm Length	11.4	1.9	8	17

Table 1 this study was carried results Anthropometric Variables for the talent identification of female hockey players of hockey academy Gwalior. The heights mean and standard deviations let me lean this up here standard deviations are extremely helpful in analysing the data sets, hence, that 1 table, group Statistics, this table includes descriptive statistics mean and standard deviations for each Anthropometric Variables (Weight, Height, Leg length, Arm length, Palm length.) of female junior national hockey players of academy, Gwalior. In detail table includes that the mean and standard deviations of Anthropometric Variables for the show Weight (50.4±3.4), Height (157.7±9.0), Leg length (90.3±7.2), Arm length (49.2±3.3), Palm length (11.4±1.9). And the relationship for the various Anthropometric Variables is presented in table – 2.

Table 2: Relationship of selected anthropometric variables of female junior national hockey players of hockey academy, Gwalior anthropometric variables

S.N.	Anthropometric Variables	Hockey Performance
1	Performance	1
2	Weight	-.219
3	Height	-.109
4	Leg length	-.310*
5	Arm Length	.159
6	Palm Length	-.291*

From the correlation results, we found that coefficient between hockey performances and selected Anthropometric Variables (Weight, Height, Leg length, Arm length, and Palm length.) Independent variables. The relationship of Leg length (-.310*), Palm Length (-.291*) and no significant relationship between Weight, Height and arm length with dependent variables hockey performance tabulated value 0.273, (df is 49, 1) is more than the calculated value and p-value for two-tailed significance set at 0.05 level.

Discussion of Findings

After the data analysis to find out the Mean and Standard Deviation score of identify, recruit and develop talented female hockey players in hockey academy in Gwalior who are potential junior A medal standard athletes for future World Championships and Olympic Games. The selected Anthropometric Variables (Weight, Height, Leg length, Arm length, and Palm length.) of female junior national hockey players. The reason of these differences can be associated with above results this is probably due to the different nature of the physical components training and pre-requisite for students. Number of participation and level of participation. The reason may be attributed that the physically trained student or level of achievements and taken deferent types nutrition food. These results may be due to a small sample of size and other factors such as different types of body, differences in body composition. These results may be nutrition diet schedule deference. The reason may other Psychological variables like stress, sports fear, self-confidence, attention concentration etc.

Conclusions

According to objectives of the study the following conclusions were drawn

- It was significance Mean score of Anthropometric variables like Weight, Height, Leg length, Arm length, Palm length for the female junior nation hockey players of hockey academy, Gwalior.
- The strongly indicate that there were significant relationship in relation to the selected anthropometric variables, two variables Leg length, and Palm length. And three variables was no significant relationship of Weight, height, and Arm length, with hockey performance, for the female junior nation hockey players of hockey academy, Gwalior.

Recommendations

In the light of the conclusions drawn; the following recommendations are made

1. Similar types of study may be conducted on male players or Students.
2. Similar types of study may be conducted for different games and sports, body composition and other anthropometric measurements, skinfold measurements where the important role of players such as different games and sports inter college, intervarsity, all India University etc.
3. The study may be conducted utilizing the college level students of different university of other states.
4. Similar types of study may be conducted for different games and sports, where the body composition and biomechanical variables, skinfold measurements and BMI role of players such as different games and sports and deferent level of achievements or college, intervarsity, senior National and International level players etc.
5. Similar types of study may be conducted for different games and sports, where the group body composition and anthropometric measurements, skinfold measurements role of players such as different games and inter college, all India university etc.

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