

ANALYSIS OF SELECTED BODY COMPOSITION AND PHYSIOLOGICAL VARIABLES AMONG UNIVERSITY BASKETBALL AND HANDBALL PLAYERS

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The performance of players in various sports may be influenced by the anthropometric, physical and the physiological characteristics and may also aid in determining a suitable physique required for a sport. The Body mass index, systolic blood pressure and diastolic blood pressure have been selected to assess the body composition and physiological variables status of the basketball and handball players of different universities of Punjab. Data was collected from total 50 players and selected 25 each from both the basketball and handball players of Punjab. The results revealed that there is insignificant difference found in Body mass index and in systolic and diastolic blood pressure it was found that there is significant in both the variables between the basketball and handball players of Punjab region.

Keywords: Body Mass Index, Systolic blood Pressure, Diastolic Blood Pressure

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Introduction

Physical inactivity has a major donor to mortality. It has been reported that around 3.2 million deaths per year are attributable to physical inactivity (World Health Organization,2020). Many non-communicable chronic health conditions prevailing in both developed and developing countries are linked with physical inactivity. Five leading risk factors for death are smoking, high blood glucose, high blood pressure, physical inactivity and obesity. A glance at these risk factors reveals that high blood pressure and glucose levels as well as obesity are connected with physical inactivity (Taylor, 2014). Authorities generally conduct acknowledge that the normal body weight between ages of 25 and 30 years should not be exceeded throughout life. A weight in excess of 15 percent of that is considered as normal would be considered tending toward obesity whereas 25 percent above normal is grossly obese. Body mass index (BMI) is now the most widely used clinical standard to estimate underweight, normal weight, overweight and obesity. To determine a person's BMI, body weight in kilograms is divided by the square of body height in meter's/m²(Wilmore &Costil, 2004).

TABLE 1.1 Classification of overweight and obesity by BMI

Enclosed as Annexure 01

Even though BMI cannot be technically classified as a body composition measurement method it has revived widespread use with adults for clinical and epidemiological assessment. the BMI requires only of height and weight for its measurement it is well-defined as body weight divided by the square of the height expressed in kg/m². The development of BMI norms from large data bases permits the classifications of individuals into categories of underweight, normal weight and overweight and obese. (Koley, 2006)

Anthropometry is the measurement of body size and proportions. The measurements include body weight, height, circumference, skin fold thickness, bony widths and lengths of particular aspects(Heyward, 2006). Specific physical characteristics or anthropometric profiles are required for the highest level of performance in a specialized sport (Claessens et al., 1999). Anthropometric properties as well as appropriate physical fitness are important prerequisites

For outstanding performance of sports skills and play a distinguished role in sports successful achievements (Stamm et al., 2003). Basketball is an aerobic-based sport (Delextrat and Cohen, 2009; Meckell et al., 2009; Metaxas et al., 2009) which requires high intensity activities such as jumping (for rebounds, blocks and shots), turns, dribbles, sprints, screens and low intensity activities such as walking, stopping and jogging. Frequent stoppages in games allow players to recover between bouts of activity, thus allowing repeated high-intensity spells of play (Drinkwater, 2008).The purpose of this study is to compare anthropometric variables, aerobic and anaerobic fitness between university basketball and handball players. However, there is most of descriptive data concerning characteristics of handball and basketball players from America and Western Europe, although there is a lack of data from Eastern Europe and this study aims to check if this is true for Serbian athletes. Hence, many previous studies have evaluated ideal anthropometric profile of successful handball player.

Materials and Method

Study area

This study was conducted in Punjab on basketball and handball players of selected universities to observe the Body composition variable and Physiological variables,

The Study Design

The research design is descriptive where by the situation related to the performance of the basketball and handball players will be explained using descriptive statistical methods. Data will be collected one time from the study participants through different techniques to achieve the stated specific objectives.

Subject

The subject for this study will be selected by using stratified random sampling techniques. There are 26 universities in Punjab and out of which ten (10) universities are govt. funded and sixteen (16) universities are private universities (non-govt funded). The data will be collected from five (5) universities (4 government universities and 1 private universities). The total universities in Punjab are 26 and data will be collected from 5 universities. Therefore 5×10= 50 players will be the number of sample size in this study and their age range from 18 to 28 year.

Total sample size = 50 (basketball players -25 and handball players -25)

Inclusion Criteria

- Subjects who are currently playing regular basketball and handball in the university team will be taken in the study.
- Only male basketball and handball subjects will be included in the study.
- Subjects between the ages 18-28 years will be included in the study.
- Only fit players (free from injury or any type of disease) will be included in the study.

Exclusion Criteria

- Non-basketball and non-handball players will be excluded.
- Subjects greater than 28 years of age and less than 18 years will be excluded.
- Female players will be excluded.
- Unfit players (having injury or any kind of medical complication) will be excluded.

Selected Variables

Enclosed as Annexure 02

Statistical Analysis

With regard to the purpose of the study, unpaired t test was calculated for selected Anthropometric Variables among University Basketball and Handball Players. The level of significance was set at 0.05 level.

Result

The finding revealed that the mean and standard deviation of basketball players in the terms of Body Mass Index, Systolic and Diastolic blood pressure is showed 23.89± 4.26, 123.88±8.6370.04± 7.10 respectively and in the terms of handball players for Body Mass Index, Systolic and Diastolic blood pressure is 25.18±8.63, 126.56± 7.03 and 67.34±9.53 respectively. There was insignificant difference found in Body mass index variable chosen for the study and there was significant difference found in both the physiological variables i.e is systolic blood pressure and diastolic blood pressure.

1.1 Mean, Standard Deviation, Standard Error and 'T' Value of Body Mass Index measurement among University Basketball and Handball Players.

Enclosed as Annexure 03

Table 1.1 reveals the mean and standard deviation values with regard to Body Mass Index of basketball players is 23.8968± 4.26 whereas in the case of Body Mass Index measurements of handball players is 25.1884±8.05 respectively. The calculated t-value is 0.70 which is less than the tabulated t-value (1.067) at 0.05 level. So, it demonstrates that there is insignificant difference between the basketball and handball players for their Body Mass Index domain. The graphical representation shows mean, standard deviation, and standard error value of body is insignificant difference between the basketball and handball players for their Body mass index domain in fig 1.1a

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1.1a Mean, Standard Deviation, Standard Error and 'T' Value of Body Mass Index among University Basketball and Handball Players.

Enclosed as Annexure 04

1.2 Mean, Standard Deviation, Standard Error and 'T' Value of Systolic blood Pressure among University Basketball and Handball Players.

Enclosed as Annexure 05

Table 1.2 reveals the mean and standard deviation values with regard to systolic blood pressure of basketball players is 123.88± 8.63 whereas in the case of systolic blood pressure of handball players is 126.56±7.03 respectively. The calculated t-value is 1.20 which is more than the tabulated t-value (1.067) at 0.05 level. So, it demonstrates that there is significant difference between the basketball and handball players for their systolic blood pressure. The graphical representation shows mean, standard deviation, and standard error value of

Body is insignificant difference between the basketball and handball players for their Systolic Blood Pressure in graph 1.2a.

1.2a Mean, Standard Deviation and Standard Error Mean of basketball and handball players for their Systolic Blood Pressure.

Enclosed as Annexure 06

1.3 Mean, Standard Deviation, Standard Error and 'T' Value of Diastolic Blood Pressure among University Basketball and Handball Players.

Enclosed as Annexure 07

Table 1.3 reveals the mean and standard deviation values with regard to Diastolic blood pressure of basketball players is 70.04 ± 7.10 whereas in the case of diastolic blood pressure of handball players is 67.34 ± 9.53 respectively. The calculated t- value is 1.439 which is more than the tabulated t- value (1.067) at 0.05 level. So, it demonstrates that there is significant difference between the basketball and handball players for their Diastolic blood pressure. The graphical representation shows mean, standard deviation, and standard error value of body is significant difference between the basketball and handball players for their Diastolic Blood Pressure in graph 1.3 a.

1.3a A Mean, Standard Deviation and Standard Error Mean of basketball and handball players for their Diastolic Blood Pressure.

Enclosed as Annexure 08

Conclusion

The results authenticated that, there was insignificant difference found in Body mass index variable chosen for the study and there was significant difference found in both the physiological variables i.e., is systolic blood pressure and diastolic blood pressures of University Basketball and Handball Players of Punjab.

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