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Comparative analysis on selected anthropometric and psychological variables of inter collegiate kho-kho and kabaddi players

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Abstract

This study compares selected anthropometric and psychological variables among inter-collegiate Kho-Kho and Kabaddi players. A sample of 200 players, 100 from each sport, was assessed using standardized measurement techniques. Participants were selected using simple random sampling method. The standard questionnaires of stress and Anxiety were used for the collection of data. It was hypothesized that, there will be significant difference on stress and anxiety among the Players of Kho Kho and Kabaddi. The analysis of the data was done by applying 't' test.

Keywords: Stress, anxiety, anthropometrics

Introduction

Sports have developed into a distinct scientific discipline in itself and each nation vying with each other to competitions. Now a day sports has become an essential part of life millions of fans follow different sports events all over the world within enthusiasm boarding on devotion. Stress and anxiety are integral aspects of the human experience, influencing both mental and physical health. Stress is the body's response to perceived threats or challenges, activating the "fight or flight" response. This physiological reaction is designed to enhance survival by increasing alertness, energy, and strength. However, chronic stress can lead to numerous health issues, including cardiovascular diseases, weakened immune system, and mental health disorders.

Anxiety, while related to stress, is characterized by persistent, excessive worry that is difficult to control. It often manifests in physical symptoms such as increased heart rate, sweating, trembling, and fatigue. Anxiety disorders, which include generalized anxiety disorder, panic disorder, and social anxiety disorder, are among the most common mental health conditions worldwide. They can significantly impair an individual's daily functioning and quality of life.

Anthropometry is the scientific study of the measurements and proportions of the human body. It has its roots in physical anthropology and is widely used in various fields such as ergonomics, clothing design, sports science, and medicine. The primary aim of anthropometry is to understand the variations in human body size, shape, and composition, which can be influenced by factors such as genetics, nutrition, and physical activity.

Anthropometric measurements include variables such as height, weight, Body Mass Index (BMI), limb circumferences, and skinfold thickness. These measurements can provide valuable insights into an individual's health status, nutritional condition, and physical capabilities. For instance, BMI is often used to classify individuals as underweight, normal weight, overweight, or obese, which can help in identifying risks for diseases like diabetes and hypertension.

In the realm of sports, the interplay between stress, anxiety, and anthropometric factors is of particular interest. Athletes often experience high levels of stress and anxiety due to the demands of training, competition, and performance expectations. These psychological states can have profound effects on their physical health and performance. For example, high levels of stress and anxiety can impair concentration, disrupt sleep, and increase the risk of injuries. Anthropometric variables play a crucial role in determining an athlete's suitability for different sports. For instance, sports like basketball and volleyball often favor individuals with taller stature; while wrestling and gymnastics may benefit from more compact and muscular builds.

Understanding these physical attributes can help in talent identification, personalized training programs, and optimizing performance.

Moreover, the psychological well-being of athletes can influence their anthropometric outcomes. Chronic stress and anxiety can lead to changes in body composition, such as increased fat mass and decreased muscle mass, due to the physiological effects of cortisol, a stress hormone. Conversely, maintaining a healthy psychological state can contribute to better physical health and performance.

Methodology

200 Subjects were selected from the affiliated colleges of Barkatullah university Bhopal (India) 100 Kho Kho, 100 Kabaddi, Age of the subjects ranging from 18-28 years. The subjects were taken by simple Random sampling method. They were the current Kho Kho and Kabaddi players of affiliated colleges of Barkatullah university Bhopal (India) in the year 2023-24. The tests were administered on each player with the help of standard scientific Questionnaire.

Collection of data

The data obtained from Kho Kho and Kabaddi players was taken by Standard Questionnaire. The data for Height, Weight, Girth was measured by Stadiometer, weighing machine and Measuring Tape and the data for psychological variables was collected by standard questionnaire. After that collected data was put into Microsoft Excel to develop Master Chart and then 't' test was used for the statistical treatment.

Statistical techniques

The data was analyzed by using (t) test and interpretations will be drawn.

Table 1: Comparison of height between inter-collegiate kho-kho and kabaddi players

Group	Mean	S.D.	M.D.	S.E.	df	Obtained 't'
Kho-Kho	160.889	4.29	1.35	0.724	98	1.863
Kabaddi	162.239	5.84				

Table 2: Comparison of weight between inter-collegiate kho-kho and kabaddi players

Group	Mean	S.D.	M.D.	S.E.	df	Obtained 't'
Kho-kho	9.053	0.469	0.212	0.061	98	4.277
Kabaddi	9.265	0.383				

Table 3: Comparison of biceps circumference between inter-collegiate kho-kho and kabaddi players

Group	Mean	S.D.	M.D.	S.E.	df	Obtained 't'
Kho-kho	9.053	0.469	0.212	0.061	98	4.277
Kabaddi	9.265	0.383				

Table 4: Comparison of calf girth between inter-collegiate kho-kho and kabaddi players

Group	Mean	S.D.	M.D.	S.E.	df	Obtained 't'
Kho-kho	11.302	0.685	0.032	0.097	98	0.328
Kabaddi	11.334	0.693				

Table 5: Comparison of anxiety between inter-collegiate kho-kho and kabaddi players

Group	Mean	S.D.	M.D.	S.E.	df	Obtained 't'
Kho-kho	21.21	3.474	0.87	0.488	98	1.783
Kabaddi	20.34	3.426				

Table 6: Comparison of stress between inter-collegiate kho-kho and kabaddi players

Group	Mean	S.D.	M.D.	S.E.	df	Obtained 't'
Kho-kho	61.78	9.251	1.47	1.33	98	1.103
Kabaddi	63.25	9.58				

Table 7: Comparison of selected anthropometric measurements between inter-collegiate kho-kho and kabaddi players

Anthropometric measurements							
Height		Weight		Biceps circumference		Calf girth	
Kho-kho	Kabaddi	Kho-kho	Kabaddi	Kho-kho	Kabaddi	Kho-kho	Kabaddi
160.889	162.239	66.28	68.93	9.053	9.265	11.302	11.334

Justification of hypothesis

On the basis of available literature searched and the researcher's own perception it was hypothesized that there will be significant difference in selected anthropometric measurements and psychological variables of inter-collegiate Kho-Kho and kabaddi players. The anthropometric measurements viz. height, weight, biceps circumference and calf girth and psychological parameters viz. anxiety and stress were used for this study. The researcher compared each anthropometric measurement and selected psychological variables separately.

Conclusion

In summary, the intricate relationship between stress, anxiety, and anthropometry underscores the importance of a holistic approach to health and performance, particularly in the context of sports. By addressing both psychological and anthropometric measurements athletes can achieve optimal well-being and performance. Future research and interventions should continue to explore these connections to develop comprehensive strategies for health promotion and performance enhancement. Within the limitations of the study and from the statistical analysis the following conclusion is drawn.

1. There is significant difference in height of Inter-collegiate Kho-Kho and Kabaddi players
2. There is significant difference in weight of Inter-collegiate Kho-Kho and Kabaddi players.
3. There is significant difference in biceps circumference of Inter-collegiate Kho-Kho and Kabaddi players.
4. There is insignificant difference in calf girth of Inter-collegiate Kho-Kho and Kabaddi players.
5. There is significant difference in anxiety of Inter-collegiate Kho-Kho and Kabaddi players.
6. There is insignificant difference in stress of Inter-collegiate Kho-Kho and Kabaddi players.

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