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AN EXAMINATION OF THE PHYSICAL ATTRIBUTES OF SCHOOL BOYS NETBALL AND VOLLEYBALL PLAYERS

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ABSTRACT

Objective

Goal of this investigation was to look into the variance in bodily performance indicators among boys in high school netball and volleyball players.

Materials and Methods:

This research included 28 boys (14 netball players and 14 volleyball players) who volunteered to take part. Any player who had a lower extremity neurological injury in the previous 90 days was ruled out of the investigation. The mean lifetime of the athletes was 15.56±0.68 yrs, their body mass was 50.94±10.71 kg, their height was 148.20±5.41 cm, and their BMI was 21.37±4.13. Anthropometric variables were assessed using a bioelectrical impedance analyzer, and bodily performance measures (muscular endurance of boys , lower extremity power of boys , stability of motion , quickness, and speed) were set on using a battery of functional tests. Except for speed (p=0.015) agility (p=0.041) variables, No statistically significant dissimilarity in physical performance statistics between netball and volleyball schoolboys.Some physical performance parameters, regardless of sport, showed a significant positive relationship.

Conclusion:

The investigation outcome suggests that bodily performance characteristics in boys netball and volleyball players do not differ considerably. When preparing players for competition, team coaches and physiologists must take functional test results into account. Individual training programmes should also be based on test results in order to increase performance.

Keywords: Mobility, basal rate of metabolism (BMR), dynamic stability, endurance of muscles, speed, power, and the amount of water in the body (TWB)

INTRODUCTION

Netball is played by 2 groups of 7 players each. Elevated goal rings are located at either end of the court's rectangular shape. The object of the sport is to secure goals by banging a ball from inside a predetermined area into a ring placed to a 3.05 grammes per square m (10 feet) high post. Positions are assigned to players, defining their responsibilities in the group and limiting their motion to certain zones of the court. A sportsman who holds the ball during normal play has 3 seconds to attempt a goal or pass the ball to one more player. The victorious team is the one with the most goals scored. Netball contests normally run 60 minutes, despite changes attempted to speed up the sport and appeal to a larger audience. More than eighty countries play netball, with the Commonwealth countries being the most popular. There are about twenty million players worldwide. Most of the women who carry it out are female. The International Olympic Committee (IOC) accepted netball as an Olympic sport in 1995.With an estimated one million players nationally, netball is the most popular sport for women in Australia. There

is no reason why it cannot be done, even though women's teams have historically played it. and more boys and men are getting involved. The object of volleyball, a sport that consists of two teams of 6 players each, is to smash. Try to get the ball to touch the court inside your opponent's playing area before returning it while passing the ball back and forth over a high net. Prior to the ball touching the court, a player on the other team will pass it up and in the direction of a teammate to stop this from happening. The subsequent option for that teammate is to either volley the ball across the net once again or pass it to a third teammate who will volley it across. Prior to having to return the ball over the net, a team has three touches on the ball.

MATERIALS AND METHODS

Experimental design

The performance skills of school netball and volleyball boys players were evaluated using an experimental study approach.

Sampling technique

The probability sampling strategy was utilized for this study. All participants were given general information about the investigation. Only individuals who wished to play willingly , meet all of the inclusion and exclusion criteria were chosen. Participants This study included 28 boys who freely participated (fourteen netball players and fourteen volleyball players). Fourteen participants in one group were deemed satisfactory for demonstrating a link between the two groups (80% at P 0.05). All of the competitors were high school players with at least three years of playing experience. Prior to the analysis, all the selected candidates were briefed on the need of the research as well as the risks and injuries that might happen during the experiment. They completed a formal informed consent form after their verbal agreement. The mean age of the athletes were 15.56±0.68 yrs , their weight was 50.94±10.71 kg, their height was 148.20±5.41 cm, and their BMI was 21.37±4.13. Any selected candidate who had a musculoskeletal injury in the lower extremity or a history in the previous three months was ruled out of the study.

Measurements

Anthropometric evaluations To measure height, a Stadiocum weighing scale was utilized. Tanita i010BIA bioelectric impedance study was used to calculate Body Mass Index and PBF.

Muscular endurance test

Situps and pushups were used to assess muscular endurance.For situps and pushups, the maximum number of repetitions allowed in a minute was used to determine the score. To test the strength of the abdominal muscles, knee-bench sit-ups were utilized. Participants were told to bend their knees while lying on their backs, rest their fingertips on their backs, elevate their torsos as close to their thighs as they could, and then lower them to the floor as if to take a stance. The situps were performed as many times as possible without stopping inside a minute. The number of precise situps completed in a minute was used to calculate the score. Upper body muscular endurance (arm and shoulder) was assessed using pushups. The patient was told to perform push ups while lying facedown on the floor with their knees bent and their hands spread wide. Arms extended, raise the body off the floor, and then lower it until the breasts are in touch with the ground. Without stopping, push ups were executed as many times as possible. Precise pushups completed in a minute were used to calculate the score.

Explosive power

The vertical squat jump (Double leg) test was designed to examine the explosive strength of the lower body limbs. The participant was instructed to stretch her arm and use one hand to touch the highest vane possible while standing firmly on the ground. At this height, the stance height was measured. Participants leapt with both legs to the highest vane possible. The average was obtained after each participant attempted three times. Maximum vertical jump was calculated as the dissimilarity b/t standing reach height and maximum leap height, which was then translated to lower leg muscle explosive strength.

Dynamic stability

The Y Balance Test (YBT) was used to evaluate stability of motion. A functional test called the YBT evaluates dynamic stability in the anterior, posterolateral, and postmedia planes. Inter-rater reliability for the YBT is good (ICC = 0.80-0.85). The subject was advised to wait for additional instructions from the researcher while standing barefoot on the center platform during the YBT test. Selected candidates were told to outstretch with the free leg 3 times in the anterior, 3 times in the posterolateral,

and 3 times in the posteromedial directions while standing on one leg. In each experiment, the farthest reach distance was recorded.Every time a participant stumbled, lifted his foot off the platform, or used a support, the trial was thrown out and redone.The total of the maximal outstretch distances in each direction was split by three trails to get the absolute outstretch distance, which was used to gauge the overall efficacy of the YBT test. The ratings of dominant legs were used for additional data processing.

Flexibility test

The sitting and reaching test was implemented for testing lower abdominal and hamstring flexibility. The test was performed with a regular sit and reach box (40 cm 40 cm 34.5 cm.). A scale was installed on the box's lid. The selected candidates sat on the ground , knees totally lengthen, shoulders apart, and feet in dorsiflexion. selected candidates stretch their arms ahead as far as they can hold the posture using a single hand over the other for three seconds. Scores of the 3 trials were averaged. Centimeters were used to measure the distance.

Agility test

It was decided using Getchell's 1979 Illinois Agility Run Test, which assesses agility. The experiment was done in a 10 m 5 m specified area with 8 cones. The start, turn, and end positions have been identified with four cones. Four additional cones were placed in the centre each 3.3m apart. The participants were told to lie down in front of the starting cone.The chosen candidates rapidly rise up and sprint 10 meters forward, 10 meters back, 10 meters around four cones, and then 10 meters forward and back towards the final cone.The time (in seconds) elapsed between the start and end of the run was recorded.

Speed test

A 40m dash test was used to determine the participant's speed. This exam accurately measures speed, agility, and acceleration. This test requires a measuring tape, Cones, 40m marked floor, a one stopwatch, Exam consists of a single 20-meter sprint at top speed. This test should be completed as quickly as possible by the participant. The average time (in seconds) for two trails to complete the 20m distance was recorded. Participants were permitted to complete both a general and a customized warm up before each exam. Every test was carried out in accordance with recognised guidelines.

Statistical analysis

IBM SPSS was utilized for all statistical investigations. The facts were inspected for missing data, outliers, normality using the Shapiro-Wilk test, and homo scedasticity with the Bartlett criterion prior to analysis.The data for all parameters have a regular distribution and homo scedasticity. The boys t test was used to examine if there were any major dissimilarity in age of boys , height of boys , weight of boys, BMI of boys , and PBF of boys between school volleyball netball male players. The Student's t test was used as well to figure out whether there were any statistically significant distinctions between volleyball and netball players in terms of muscular stamina (top and low body), power with explosiveness, stability in motion,flexibility, quickness and speed. To establish the correlations between all physical performance metrics, a Pearson correlation coefficient test was also done. To establish statistical significant differences, Plevel 0.05 was utilized, while Plevel 0.001 was used to determine the association b/t physical performance metrics.

RESULTS

Table 1: Anthropometric features of participants (Mean±SD)

	Netball players (n=14)	Volleyball players (n=14)	Both (n=28)	Significance (P=0.05)
Age of Boys (years)	15.54±0.74	15.58±0.62	15.56±0.68	0.881
Body weight (kg)	50.75±9.26	51.14±12.16	50.94±10.71	0.357
Height (cm)	150.62±5.35	145.79±5.47	148.20±5.41	0.912
BMI (kg/m)	21.25±3.52	21.49±4.74	21.37±4.13	0.669
PBF (%)	27.32±5.69	27.85±7.56	27.59±6.57	0.828

Table 1 demonstrates that there were no differences in the anthropometric traits of netball and volleyball players for aged (P = 0.881), weight of the body (P = 0.357), heights (P = 0.912), body mass index (B (P = 0.669), and a PBF (P = 0.828).

Table 2: Physical performance indicators of netball and volleyball players were subjected to a normality test.

	Sports	95 % C I (lower – upper)	S	D	Significance
Muscle endurance (upper)	Netball	38.02-43.83	0.973	14	0.909
	Volleyball	36.67-42.04	0.910	14	0.159
Muscle endurance (lower)	Netball	24.99-29.15	0.952	14	0.588
	Volleyball	21.29-27.85	0.965	14	0.810
Power	Netball	1610.94-1767.06	0.961	14	0.741
	Volleyball	1594.26-1720.74	0.938	14	0.389
Dynamic stability	Netball	17.11-18.02	0.962	14	0.757
	Volleyball	18.36-19.02	0.976	14	0.943
Flexibility	Netball	18.21-24.78	0.822	14	0.009
	Volleyball	15.34-21.08	0.846	14	0.019
Agility	Netball	3.14-3.47	0.946	14	0.498
	Volleyball	3.41-3.91	0.827	14	0.011
Speed	Netball	84.70-92.68	0.912	14	0.170
	Volleyball	83.60-91.54	0.936	14	0.374

Table 2 indicates no discernible differences between volleyball and netball players in terms of top and low body muscle endurance, strength, stability in motion , or flexibility. Since the parametric test was used for additional analysis, we can guess that the figures for the chosen framework were normally distributed.

DISCUSSION

In order to better understand how schoolboy netball and volleyball players' physical performance parameters—including top and low body muscle endurance, strength , stability in motion, flexibility, quickness, and speed—differ and relate to one another. Players of volleyball had a top body muscle stamina score of 42.04 4.17, whereas netball players had a score of 43.83 3.75. Both volleyball players and netball players had low body muscular stamina measurements of 29.15 3.48 and 27.85 5.21, respectively. In volleyball players and netball players, the lower leg muscles had a power of 1720.74 108.67 W and 1767.06 134.33 W, respectively.

The results of the dynamic stability test for volleyball players were 21.08 6.91 and 18.02 6.87 for netball players. In comparison to volleyball players, netball players had hamstring and back muscular flexibility of 24.78 5.68 cm and 21.08 4.96 cm, respectively. The agility for volleyball players was 3.91 0.78 s while for netball players it was 3.47 1.14 s. Netball players ran the 50 m sprint in 92.68 + 0.42 s and volleyball players in 91.54 + 0.28 s. The results of the independent sample test revealed no significant differences in top and low body muscle endurance, strength, stability in motion , or flexibility between schoolboy netball and volleyball players. In addition, there is a noticeable difference in agility and quickness between schoolboy volleyball players and netball players. The sport's inherent characteristics were responsible for this notable variance. When all individuals were compared, strength of muscles (the top and low body), strength, stability in motion, and flexibility all showed a positive association independent of their sport. Agility and speed also showed a negative correlation with all other measures.

CONCLUSION

Results of this research data will help coaches, team managers, and trainers identify talent, choose sportsman, create fixed training regimens that take anthropometric characteristics and physical performance indicators into consideration. One to one coaching should also be based on functional testing findings; this is more likely to result in improved performance. More research is needed to determine the impact of physical performance metrics and anthropometric traits on performance results.

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