Physical Fitness Profile of the Under -17 Boys of Badminton Players of Uttrakhand

[1] Heera Singh Bisht, [2] Dr Rajesh Dhauta
[1] PhD Scholar, [2] Assistant Professor
[1,2] Amity University, Noida, Uttar Pradesh

Abstract : The purpose of the study was to find out the physical fitness profile of the under- 17 boys of badminton player of Uttrakhand. METHODOLOGY : There is forty male subject from the thirteen different district of Uttrakhand who participated in school state badminton championship in under 17 category held in Rudraprayag district of Uttrakhand in 22nd October to 25th October 2018 .35meter acceleration run test used for the measuring speed of the player. Illinios aglity test used to find out the agility of the player, sit and reach test used for the testing flexibility of the player and push ups test for checking the arm strength of the player. RESULT: The result revels that the mean score of the speed test is (5.69 ±1.540) which is fair according to the normative table of the speed. The mean score of the flexibility is(14.77±5.84) which is average according to the normative table. The mean score of the agility is (16.79±0.868) which is average according to the normative table and the mean score of the arm strength is (47.40 ±5.56)which is good according to the normative table. According to the result we can easily conclude that the state badminton players have fair speed, average flexibility and agility and good arm strength.

1. INTRODUCTION

Badminton is a popular fast-paced indoor sport, being played in almost every nation without exception. To be successful in badminton one need excellent court speed and agility, with a good flexibility and powerful arm. The fitness training for badminton should focus on speed, agility and endurance, with also strength and flexibility also important. Training should be according to the specific needs of the badminton player Speed training should focus of reaction time acceleration and agility because the movement around the badminton court is very short distance. There are drills to increase speed of the foot. Smash is one of the important skill in badminton .We use smash when we want to finish the rally. One need to have powerful smash in its skill. Arm strength is important for the powerful strength. Resistance exercise should focus on those which are actively involved in playing badminton. Player should be flexible because the badminton player uses their flexibility to reached to the shuttle and turn to cover all the parts of the court.the badminton player should stretch before each activity, plus other stretches such as PNF and active stretches , to increase the flexibility of specific muscle group. The quality or state of being fit is defined as fitness. The term "fitness" increase in western vernacular around 1950, perhaps consistent with the Industrial Revolution and the treatise of world war II. The modern definition of fitness describes either a person or machine's ability to perform a specific function or a holistic definition of human adaptability to cope with various situations. This has led to an interrelation of human fitness and attractiveness that has mobilized global fitness and fitness equipment industries. Regarding specific function, fitness is attributed to persons who possess significant aerobic or anaerobic ability, i.e. endurance or strength. A well-rounded fitness program improves a person in all aspects of fitness compared to practicing only one, such as only cardio/respiratory endurance or only weight training.

2. OBJECTIVE OF TE STUDY

The purpose of the study was to find out the physical fitness profile of the under-17 boys of badminton players of Uttrakhand.

3. METHODOLOGY

3.1 STUDY GROUP

For the study the subjects were selected during school state games 2018-19 of Uttrakhand who were participated in under 17 category which was held in Agastyamuni which is at the Rudraprayag district of Uttrakhand during 22nd to 25th October 2018.Forty male (n=40) selected from the thirteen district of Uttrakhand as a subject who participated in a category of under 17 in the tournament of School State Badminton Championship 2018-19. The thirteen districts were:

1-Dehradun
2-Pauri
3-Chamoli
4-Tehri
5-Rudraprayag
6-Haridwar
7-Uttarkashi
8-Udham Singh Nagar
9-Champawat

10-Nainital
11-Pithoragarh
12-Bageshwar
13-Almora

3.2 ADMINISTRATION OF THE TEST AND DATA COLLECTION

Administration of the test and data was collected in the following way

(i) SPEED: The test involves running a single maximum sprint over a set distance, with time recorded. After a standardized warm up, the test is conducted over a certain distance, such as 10, 20, 40 and/or 50 meters or yards, depending on the sport and what you are trying to measure. The starting position should be standardized, starting from a stationary position with a foot behind the starting line, with no rocking movements. If you have the equipment (e.g. timing gates), you can measure the time to run each split distances (e.g. 5, 10, 20m) during the same run, and then acceleration and peak velocity can also be determined. It is usual to give the athletes an warm-up sprints and practice first, and some encouragement to continue running hard past the finish line. The best performances of the players were recorded for the three trials by taking records from the two timers (Mehraein, Khabiri, Pouria, Rashidi & Hajifaraji, 2017). The best trial to the nearest 0.01 second were taken and compared for the best outcomes.

(ii) FLEXIBILITY: This test involves sitting on the floor with legs stretched out straight ahead. Shoes should be removed. The soles of the feet are placed flat against the box. Both knees should be locked and pressed flat to the floor - the tester may assist by holding them down. With the palms facing downwards, and the hands on top of each other or side by side, the subject reaches forward along the measuring line as far as possible. Ensure that the hands remain at the same level, not one reaching further forward than the other. After some practice reaches, the subject reaches out and holds that position for at one-two seconds while the distance is recorded. Make sure there are no jerky movements. See also video demonstrations of the Sit and Reach Test. The score of the players were recorded to the nearest centimetre as the distance reached by the hand. The level of the feet as the zero marks (Nadzalan, Mohamad, Low, Tan, Janep & Hamzah, 2017).

(iii) AGILITY: The length of the course is 10 meters and the width (distance between the start and finish points) is 5 meters. Four cones are used to mark the start, finish and the two turning points. Another four cones are placed down the center an equal distance apart. Each cone in the center is spaced 3.3 meters apart. Subjects should lie on their front (head to the start line) and hands by their shoulders. On the 'Go' command the stopwatch is started, and the athlete gets up as quickly as possible and runs around the course in the direction indicated, without knocking the cones over, to the finish line, at which the timing is stopped The time taken to complete the test by the player was taken as the record.

(iv) ARM-STRENGTH: Men should use the standard "military style" pushup position with only the hands and the toes touching the floor in the starting position. Women have the additional option of using the "bent knee" position. To do this, kneel on the floor, hands on either side of the chest and keep your back straight. Lower the chest down towards the floor, always to the same level each time, either till your elbows are at right angles or your chest touches the ground. The number of repetitions that were successfully completed by the players was regarded to be the score of the payers before they felt fatigue.

3.3. ANALYZING OF THE DATA

SPSS 20.0 program was used in the analysis of the data obtained in the study and and minimum, maximum, arithmetic mean, and standard deviation, skewness and kurtosis values were determined in the study.

4. RESULT

All result is shown in table 1.The total number of subject is 40(n=40). In the table 1 we can easily see that the range of the variable speed is 10.The maximum value of speed is 15 and minimum value is 5. Mean score of the speed is 5.69 with the standard deviation 1.54.Score of skewness is 5.940 which is positively skeweed and the value of the kurtosis is 36.710 which is greater than the value of 0.263 so the curve obtained is platykurtic

The variable flexibility is 30.The maximum value of flexiblity is 25 and minimum value is-5. Mean score of the flexibility is 14.77 with the standard deviation5.84.Score of skewness is -1.437 which is negatively skewed and the value of the kurtosis is 3.072 which is greater than the value of 0.263 so the curve obtained is platykurtic

TABLE -1

MEAN, RANGE, STANDARD DEVIATION,SKEWNESS AND KURTOSIS OF THE BADMINTON PLAYER PHYSICAL VARIABLES OF MALE BADMINTON PLAYERS(N=40)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SPEED	40	10	5	15	5.69	1.540	5.940	.374	36.710	.733
FLEXIBILITY	40	30.00	-5.00	25.00	14.7750	5.84188	-1.437	.374	3.072	.733
AGILITY	40	3.50	15.00	18.50	16.7925	.86806	.139	.374	-.822	.733
ARM STRENGTH	40	20	40	60	47.40	5.560	.451	.374	-.782	.733
VALID N (LISTWISE)	40									

Descriptive Statistics Of Physiological Variables .

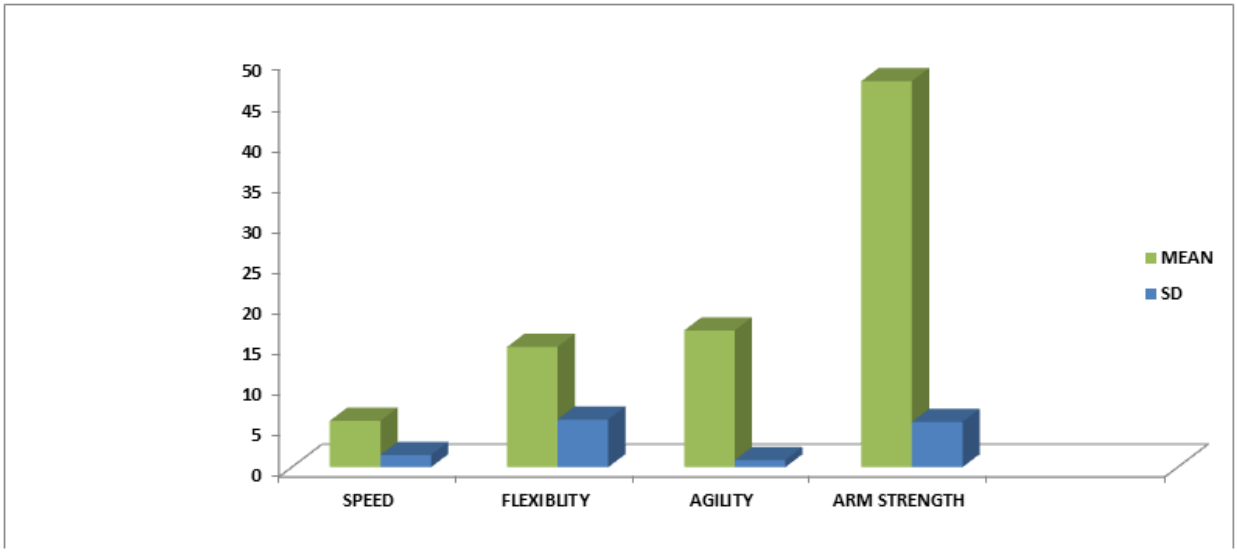

Fig1(A)Mean and Standard Deviation of Physical Variable

The range of the variable agility is18.50.The maximum value of agility is 15 and minimum value is 3.50. Mean score of the agility is 16.79 with the standard deviation0.868.Score of skewness is 0.139 which is positively skewed and the value of the kurtosis is -0.822 which is less than the value of 0.263 so the curve obtained is leptokurtic.

The variable Arm-strength 20.The maximum value of Arm-strength is 60 and minimum value is 40. Mean score of the agility is 47.40 with the standard deviation5.56.Score of skewness is 0.451which is positively skewed and the value of the kurtosis is -0.782

which is less than the value of 0.263 so the curve obtained is leptokurtic.

5. Discussion and Conclusions

This research is conducted to determine the physical profiles of under17 badminton team of Uttrakhand. Bringing some preliminary values obtained in the research into the literature, it was aimed to create a reference guide for the trainers, sport scientists and other shareholders. In context of the literature review completed, no researches were found regarding determining the physical and bio-motor features of the badminton players of uttrakhand state team.Therefore, the findings of this study will be useful and assessable for this sports branch and others. Within the context of the research, some test were determined regarding speed, flexibility, agility and arm-strength. In a study conducted to determine the physical profiles of badminton layer of Uttrakhand , The result revels that the mean score of the speed test is (5.69 ±1.540) which is fair according to the normative table of the speed. The mean score of the flexibility is(14.77±5.84) which is average according to the normative table. The mean score of the agility is (16.79±0.868) which is average according to the normative table and the mean score of the arm strength is (47.40 ±5.56)which is good according to the normative table. According to the result we can easily conclude that the state badminton players have fair speed, average flexibility and agility and good arm strength. Players need more training in Speed, Flexibility, agility and Arm- Strength so they can enhance their performance in higher level.

6. REFRENCES

[1] J. Wieczorek, A. Wieczorek, L. Jadczak, R. Sliwowski, M.Pietrzak. Physical activity and injuries and overstraining syndromes in sitting volleyball players, Stud Physical Cult Tourism, Vol.14, 299-305, 2007.
[2] D. Danis, W. Mikuła. Injuries and overstraining syndromesin wheelchair basketball players, Medycyna Sportowa, Vol.12, No.101, 15-17, 1999.
[3] F. Di Russo, A. Bultrini, S. Brunelli, A.S. Delussu, L.Polidori, F. Taddei, M. Traballesi, D. Spinelli. Benefits of sports participation for executive function in disabledathletes, Journal of Neurotrauma, Vol.27, No.12, 2309-2319, 2010.
[4] Y. Hutzler, A. Chacham-Guber, S. Reiter. Psychosocialeffects of reverse-integrated basketball activity compared to separate and no physical activity in young people withphysical disability, Res Dev Disabil, Vol.34, No.1, 579-587, 2013.
[5] D. R. Shapiro, J. J. Martin. Athletic identity, affect, andpeer relations in youth athletes with physical disabilities,Disabil Health J, Vol.3, No.2, 79-85, 2010.
[6] K. Akasaka, S. Kusano, M. Yamamoto, K. Takahashi.SF-36 Health survey in disabled sitting volleyball players in Japan, J Phys Ther Sci, Vol.15, No.2, 71-73, 2003.
[7] R. Vute. Scoring skills performances of the top internationalmen's sitting volleyball teams, Gymnica, Vol.29, No.2, 55-62, 1999.
[8] R. Vute. Teaching and coaching volleyball for the disabled:foundation course handbook (2nd Ed), Faculty of Education, University of Ljubljana, Ljubljana, 2009.[9] I. Mahmutovic, S. Delalic, S. Uslu, M. Ibrahimovic, A.Tabakovic. Impact of morphological characteristics on thesituational-motor abilities of sitting volleyball players,International Journal of Science Culture and Sport, Vol.3,No.1, 29-33, 2015.
[10] E. Zorba, Ö. Saygın. Fiziksel Aktivite ve Fiziksel Uygunluk.(2. Baskı), İnceler Ofset, İstanbul, 2009.
[11] R. Easterby, K. H. E. Kroemer, D. B. Chaffin. (Ed).Anthropometry and Biomechanics, Plenum Press, New Yorkand London,1982.
[12] A. S. Otman, H. Demirel, A. Sade. Tedavi HareketlerindeTemel Değerlendirme Prensipleri, Hacettepe ÜniversitesiFizik Tedavi ve Rehabilitasyon Yüksekokulu Yayınları,Ankara, 1995.
[13] N. Özünlü, N. Ergun. Trunk balance assessment inwheelchair basketball players, Fizyoter Rehabil, Vol.23,No.1, 44-50, 2012.
[14] M. E. Sahlberg, U. Svantesson, E. M. Thomas, B. Strandvik.Muscular strength and function in patients with cysticfibrosis, Chest, Vol.127, No.5, 1587-1592, 2005.
[15] D. Tomchuk. Companion Guide to Measurement andEvaluation for Kinesiology, Jones & Bartlett Learning, Canada, 2011.
[16] N. Ergun, G. Baltacı. Spor Yaralanmalarında Fiztoyetrapi veRehabilitasyon Prensipleri (2. baskı), Hacettepe Üniversitesi Fizik Tedavi ve Rehabilitasyon Yüksekokulu Yayınları,Ankara, 2006.
[17] M. Günay, K. Tamer, İ. Cicioğlu. Spor Fizyolojisi vePerformans Ölçümü (3. Baskı), Gazi Kitabevi, Ankara,2013.
[18] C. Adam. Eurofit: handbook for the Eurofit tests of physicalfitness, Italian National Olympic Committee, Central Direction for Sport's Technical Activities Documentationand Information Division, Rome, 1988.
[19] S. Dewhurst, T. M. Bampouras. Intraday reliability andsensitivity of four functional ability tests in older Women,Am J Phys Med Rehabil, Vol.93, No.8, 703-707, 2014.
[20] G. İnce, C. Şen, C. Türkeri, E. Kızılkanat, S. Özandaç.Oturarak voleybol Türkiye şampiyonasına katılan erkeksporcuların antropometrik profillerinin belirlenmesi. II.Ulusal Engelli Bireyler İçin Fiziksel Aktivite Çalıştayı,Çanakkale, 2010.
[21] J. Marszalek, B. Molik, M. A. Gomez, K. Skucas, J.Lencse-Mucha, W. Rekowski, V. Pokvytyte, I. Rutkowska,K.Kazmierska-Kowalewska. Relationships betweenanaerobic performance, field tests and game performance ofsitting volleyball players, Journal

of Human Kinetics, Vol.48,25-32, 2015.
[22] S. Hasanbegovic, S. Ahmetovic, S. Dautbasic. Effects ofprogrammed training on motor abilities of persons withmovement impairment in sitting volleyball, Homo Sporticus,Vol.13, No.1, 68-71, 2011.
[23] A. L. I. Amgad. The impact of weight training on thedefensive performances for the sitting volleyball players(Amputees), World Journal of Sport Sciences, Vol.3,1146-1150, 2010.
[24] [24] A. Aytar, N. O. Pekyavas, N. Ergun, M. Karatas. Isthere a relationship between core stability, balance andstrength in amputee soccer players? A pilot study, ProsthetOrthot Int, Vol.36, No.3, 332-338, 2012.
[25] J. Marszalek, B. Molik, M. A. Gomez. Game efficiency ofelite male sitting volleyball players with regard to athletes'physical impairment, International Journal of Sports Science& Coaching, https://doi.org/10.1177/1747954117716791, 2017.
[26] I. Morres, P. Mustafin, C. H. Katsis, E. Koutsi, C. H.Milanese, G. Papaioannou. Sitting-Volleyball MedicalClassification System. Contradictions & Recommendationstowards the Sport-Specific Classification Principles, [in:]Abstract booklet of VITA Conference IPC"Classification-solution for the future", 17-18, 2006.
[27] M. Hayrinen, M. Blomqvist. Match analysis of elite sittingvolleyball. Research Institute for Olympic Sports, KIHU.Retrievedfrom:https://www.researchgate.net/profile/MikkoHaeyrinen/publication/271208323_Match_analysis_in_elite_sitting_volleyball/links/54c1fe310cf25b4b8072b201.pdf,2006.
[28] M. Hayrinen, M. Blomqvist, H. Lehto, S. Heino. Matchanalysis of women's sitting volleyball at ınternational level.European Congress of Adapted Physical Activity(EUCAPA), Jyväskylä, 2010.Universal Journal of Educational Research