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Physical Education

A Study on Vital capacity and Peak flow rate of Kho-Kho and Kabaddi Players of Vidhya Bharti Schools

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Abstract

The Kho – Kho and Kabaddi are the traditional, popular and easy conducting Indian games, the Vidhya Bharti also emphasize for their development and popularity along with other important games. Present study was an effort to test and compare the difference between the vital capacity and peak expiratory flow rate of Kabaddi and Kho-Kho players of Vidhya Bharti School. For the purpose of this study (N=100) 50 male Kabaddi players and 50 male Kho – Kho players were selected from Inter School Kshetriya Vidhya Bharati Kabaddi and Kho – Kho Competitions. Z-test was applied to compare mean of Kho-kho and kabaddi players of vidhya Bharati Schools. Results of the study revealed that that mean vital capacity of Kho – Kho players is significantly greater than mean vital capacity of Kabaddi players whereas the mean Peak expiratory flow rate of kabaddi players was significantly greater than mean peak expiratory flow rate of kho – kho players of Vidhya Bharti schools.

Key words: ***Kho-Kho, Kabaddi, Vidhya Bharti, Vital Capacity and PEFR.***

Introduction:

The **Vidya Bharati** is the network of schools and institutions of higher education run by the **Rashtriya Swayamsevak Sangh**, the largest Hindu nationalist organization in India.

Vidhya Bharti is devoting the maximum efforts for extension of cultural moral and traditional values among children. Vidhya bharti has organized various physical and traditional exercise competitions so that children should be strong and fit, they should be good sportsmen and their physical capabilities should be adequately developed. Only such like children can bring glory to their country and their faith. All schools of Vidya Bharati have facilities and programmes for physical development of children. Regional Physical Training Centres have been established for specialized physical training. A National Sports Committee for Vidya Bharati has also been constituted. Vidya Bharati is affiliated to SGFI as a state.

The **Kho – Kho** and **Kabaddi** are the traditional, popular and easy conducting Indian games, the Vidhya Bharti also emphasize for their development and popularity along with other important games.

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Kabaddi is a combative team game, played on a rectangular court, either out-doors or indoors with seven players on the ground for each side. Each side takes interchange chances of offence and defense.

Kho – Kho can be played by men, women, and children of all ages. The game requires a very small piece of evenly surfaced ground, rectangular in shape.

The physiological factors limiting one's performance in sports are well known. It is the understanding of interaction of all these factors that helps in designing the way for selecting the children for appropriate game. The author desires a scientific basis of selection of athletes and sportsmen. One may not take it guaranteed that every child can be trained to be an Olympian, for there are a few persons who have a combination of the development of each requisite factor of the highest degree. The idea is to put the interested individual in a game or event in such a way so that he gives out the best of his abilities.

Vital capacity is the maximum volume of the air that can be expired with a maximum effort after a deep inspiration. The vital capacity varies with the type of work an individual does and the use to which he has put his respiratory apparatus. Athletes, swimmers, divers etc have a higher vital capacity it is also increased by practice. Vital capacity is maximum in the standing position. In sitting and supine postures there is muscular hindrance to maximum expiration of lungs.

Vital capacity and total lung capacity are related to body size and vary approximately as the cube of a linear dimension such as body height, upto the age of 25. The individual dimensions are, however, not exclusively decrease for the size of the lung volumes. The lung volumes are about 10 percent smaller in women than in men of the same age and size. Training during adolescence will eventually increase the vital capacity and total lung capacity. After the age of about 30, the residual volume and functional residual capacity increase and the vital capacity usually decrease **(Astrand and Rodahl 1986).**

The **peak expiratory flow** (PEF), also called **peak expiratory flow rate** (PEFR) is a person's maximum speed of expiration, as measured with a **peak flow** meter, a small, hand-held device used to monitor a person's ability to breathe out air. The lower values of PEFR were noted among the short distance runners (528.60 +/- 15.83) and jumpers (525.70 +/- 22.60). The PEFR values, when arranged according to height, were noted to be insignificantly increasing with the increase in age. The overall values of height, weight and PEFR were all found to be higher in these elite sportsmen when compared with their non-sportsman Indian counterparts (**De AK, Roy AS, Ray A, Debnath PK.-1991**).

The investigator in the present study made an effort to test this hunch to compare the difference between the vital capacity and peak expiratory flow rate of Kabaddi and Kho-Kho players of Vidhya Bharti School.

Selection of subjects

For the purpose of this study (N=100) 50 male Kabaddi players and 50 male Kho – Kho players were selected from Inter School Kshetriya Vidhya Bharati Kabaddi

and Kho – Kho Competitions those were held respectively in Keshaw Dham Sarswati Vidhya Mandir, Kakore (Bulandshahar) on dated 13-16 September 2016 and Swami vivekanand Sarswati Vidhya Mandir Sahibabad, Ghaziabad on dated October 20 – 24, 2016. The age group of players was under -14 year.

Collection of Data

1. **Vital Capacity:** Subject was made to sit in resting position and the mouthpiece of Spiro meter was put into the mouth between the lips. The subject was asked to breathe normally. Then, he was asked to take deep breath following by rapid and full expiration. The two values were taken and mean of the values was noted down.
2. **Peak Expiratory Flow Rate:** Subject was made to sit in resting position and the mouthpiece of Spiro meter was put into the mouth between the lips. The subject was asked to breathe normally. Then, he was asked to take deep breath following by rapid and full expiration. The two values were taken and mean of the values was noted down.

Statistical Procedure

Retreating the objectives of the study investigator applied Z – test for compare two mean (where N = >30) and other appropriate statistical procedure shall be applied for the analysis and interpretation of the data. The level of significance was .05.

Analysis of Data

Vital Capacity

Table – 1

Vital Capacity	Kho – Kho	Kabaddi	Z|Value
Mean	6120.00	5798.00	**2.783785***
Std. Deviation	530.88	622.20	

**Significant at .05 level* *Tab* $- t_{.05}(48) = 2.02$

Table Shows significant obtained Z value for one tail test, which leads us to conclude that the mean vital Capacity of kho – kho players is significantly greater, than the mean vital Capacity of Vidhya Mandir's Kabaddi Players.

Figure – 1

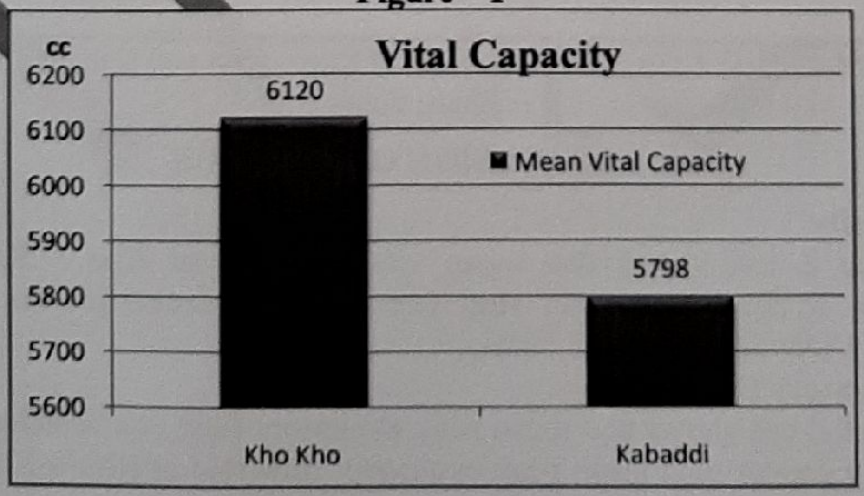

Fig.1. The Mean vital capacity of Kho – Kho and Kabaddi players of Vidhya Bharti Schools.

Peak Expiratory Flow Rate

Table – 2

PEFR	Kho – Kho	Kabaddi	Z|Value
Mean	466.26	519.6	**3.900558***
Std. Deviation	84.94531	46.20098	

**Significant at .05 level* *Tab – $t_{.05}$ (48)=2.02*

Table Shows significant obtained Z value for one tail test, which leads us to conclude that the mean peak expiratory flow rate of Kabaddi players is significantly greater, than the mean peak expiratory flow rate of Vidhya Mandir's kho – kho Players.

Figure – 2

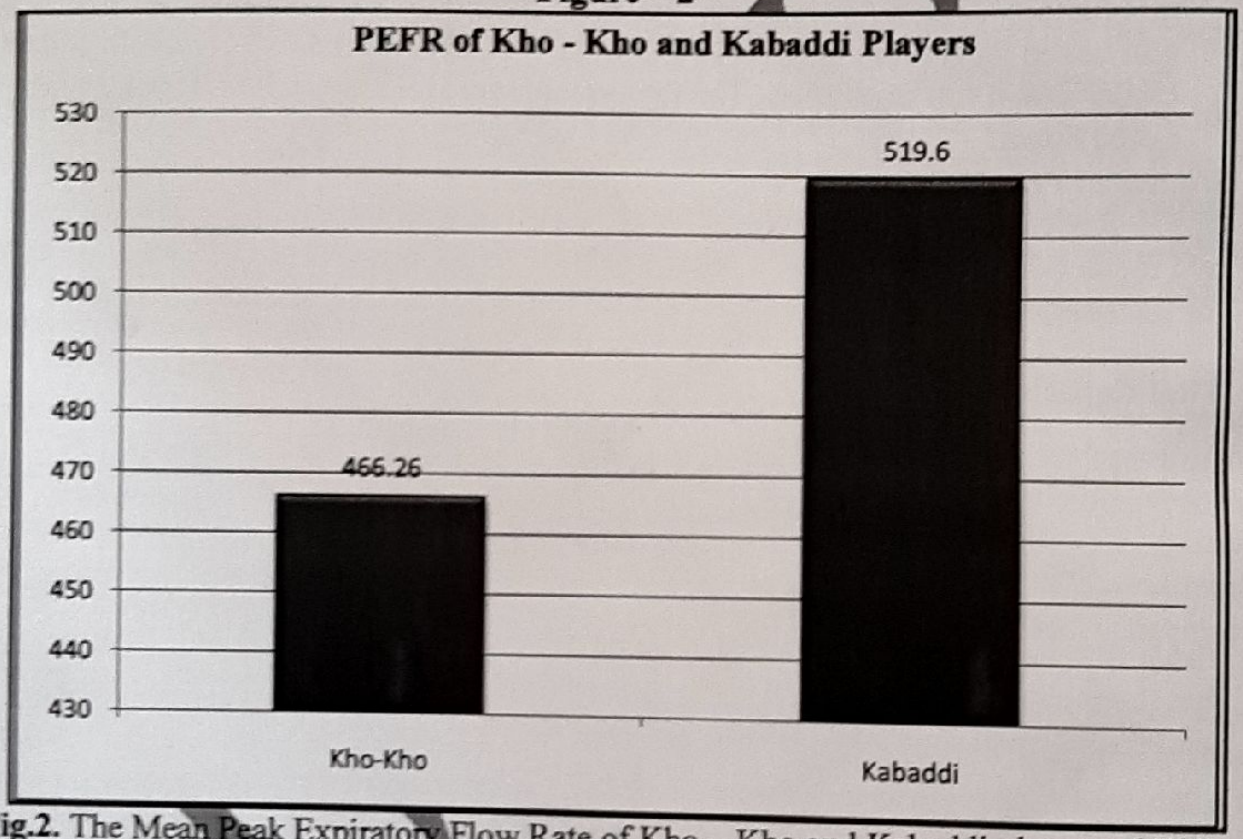

Fig.2. The Mean Peak Expiratory Flow Rate of Kho – Kho and Kabaddi players of Vidhya Bharti Schools.

DISCUSSION OF FINDINGS

Vital capacity

Since Z test shows that mean vital capacity of Kho – Kho players was significantly greater than mean vital capacity of Kabaddi players players of the students of Vidhya Bharati by 5.56%.

Peak Expiratory Flow Rate

Since Z test shows that mean peak expiratory flow rate of kabaddi players was significantly greater than mean peak expiratory flow rate of Kho – Kho players of the students of Vidhya Bharati by 11.43%.

Conclusion

We are able to conclude that mean vital capacity of Kho – Kho players is significantly greater than mean vital capacity of Kabaddi players whereas the mean Peak expiratory flow rate of kabaddi players was significantly greater than mean peak expiratory flow rate of kho – kho players of Vidhya Bharti schools.

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