Volume-4, Issue-10, Oct-2015 • ISSN No 2277 - 8160

Research Paper PHYSICAL EDUCATION

Somatotype Characteristics of College Kho-Kho Players

Dr.R.Arjunan Associate Professor, Department of Physical Education and Health Sciences Alagappa University Karaikudi - 630004.

ABSTRACT

The purpose of the study was to find out the somatotypes of college Kho-Kho players. The subjects for this study were selected from the Engineering College Kho-Kho players who participated in the Tamilnadu Inter-Engineering sports organized and conducted by Alagappa Chettiar Engineering College, Karaikudi. Thirty men college Kho-Kho players were selected from the teams which qualified to quarter finals stage. The study was a status study of Kho-Kho players with purposive sampling. The investigator utilized Heath-Carter measurement system to assess dependent variables endomorph, mesomorph and ectomorph. The obtained scores and the t-test on Kho-Kho players in endomorphic, mesomorphic and ectomorphic components indicated Kho-Kho players were predominantly mesomorphic in nature. The Kho-Kho players are predominantly muscular; the bones are large and covered with thick muscles and heavily muscled throughout.

KEYWORDS : Kho-Kho, Somatotype, Endomorph, Mesomorph and Ectomorph,

INTRODUCTION

It is a fact that no two human bodies are exactly alike in physical characteristics. In the study of mankind Hippocrates classified the human physique into two fundamental types (Mathews, 1973). Kretschmer frequently referred to as the father of modern somatotyping, revived the Greek term Pyknic, implying a compact body; and Asthenic literally interpreted as without strength. He added a third component, the Athletic type, implying as contender for prize (Sheldon, 1954).

The three components of body build are type, size and composition. A system, developed by Sheldon (1940), uses the terms ectomorph, endomorph, or mesomorph to describe the body build of an individual. People with different body shapes, tend to be good at different sports. Most top level athletes will have a body shape which leans towards the mesomorph end of the scale as most sports require a good deal of strength. They will then have either ectomorph or endomorph features, depending on how lean they are and how weight affects their sport.

Somatotype is a taxonomy developed in the 1940s, by American psychologist William Herbert Sheldon (1954), to categories the human physique according to the relative contribution of three fundamental elements. Somatotypes, named after the three germ layers of embryonic development: the endoderm, (develops into the digestive tract), the mesoderm, (becomes muscle, heart and blood vessels), and the ectoderm (forms the skin and nervous system). His initial visual methodology has been discounted as subjective, but later formulaic variations of the methodology, developed by his original research assistant Barbara Heath, and later Lindsay Carter and Rob Rempel (2002) are still in academic use.

Success as an athlete comes from a combination of athletic ability and body build. The Olympic athletes have comprehensively been studied by various scientists for their somatotyping. Physical education manifests interest in somatotyping on relating body type to success in various sports. This is why "physiognomy" receives primary consideration at the time of selection of sportsmen in different games and sports (Clark, 1975). Appropriate quantification for these aspects of physique can lead to better understanding of the relationships between physique and performance. This knowledge helps the athletes who wish to achieve success in sports at a high level to compare their physique with those of the elite athletes and can consider whether further changes in physique such a lower body fat or increase muscle mass would help or hinder performance (Clark, 1975). In the modern days of competition, coaches are also making all out efforts to select person of particular physique and body composition suitable for various activities.

Hence the trend in the field of games, sports and physical education is to assess the related components as a part of the total body build and size of such athlete and also to interpret how these components are helpful to performance in games and sports under competitive conditions (Johnson, 1984).

Kho-Kho is a tag sport played by teams of twelve players, of which nine enter the field, who try to avoid being touched by members of the opposing team. (Tripura KHO KHO Association, 2015) It is one of the two most popular traditional tag games of the Indian subcontinent, the other being Kabaddi. Apart from the Subcontinent, it is also played in South Africa (sowetanlive.co.za, 2015).

METHODOLOGY

The purpose of the study was to find out the somatotypes of college Kho-Kho players. The subjects for this study were selected from the Engineering College Kho-Kho players who participated in the Tamilnadu Inter-Engineering sports organized and conducted by Alagappa Chettiar Engineering College, Karaikudi. Thirty men college Kho-Kho players were selected from the teams which qualified to quarter finals stage. The study was a status study of Kho-Kho players with purposive sampling.

MEASURING SOMATOTYPE

Somatotype is most commonly measured using the Heath-Carter measurement system (2002), in which ratings for endomorphy, mesomorphy and ectomorphy are calculated using various anthropometrical measurements. In each of the three categories someone is generally classified on a scale from 1 to 7 (though higher ratings are possible), though one cannot score highly on all three. The three numbers together give a somatotype number, with the endomorphy score first, then mesomorphy and finally ectomorphy. The investigator utilized Heath-Carter measurement system.

Endomorphy component of Somatotype was calculated from the sum of sub scapular, triceps and super lilac skin folds using Heath-Carter (2002) anthropometric rating scale.

Mesomorphy component was calculated using Heath-Carter (2002) anthropometric rating scale from humorous breadth, femur breadth, calf circumference and calf circumference in relation to height.

Ectomorphy component was obtained from Heath-Carter (2002) anthropometric rating scale using Ponderal Index. Ponderal index was calculated dividing height by cube root weight.

The collected data were tested for significance using t-ratio.

RESULTS

The descriptive statistics of Kho-Kho player on endomorph, mesomorph and ectomorph components are resented in table 1

TABLE 1
THE DESCRIPTIVE STATISTICS OF KHO-KHO PLAYER ON ENDOMORPH, MESOMORPH AND ECTOMORPH COMPONENTS

	Endomorph	Mesomorph	Ectomorph
Mean	2.68	5.70	2.68
Standard Deviation	0.56	0.67	1.00

The obtained scores of Kho-Kho player on endomorph, mesomorph and ectomorph components were 2.68, 5.70 and 2.68 respectively. The obtained score of 5.70 against the possible score of seven in mesomorphic component was higher than the endomorphic components which were 3.08 and 2.68 respectively. The obtained 3.08 against the possible score of seven in endomorphic component was high. Hence the investigator was interested to find out whether there was any significant difference between the endomorphic, mesomorphic and ectomorphic component. For this purpose t-test was employed.

The't' ratio between endomorphic and mesomorphic, mesomorphic and ectomorphic components of college Kho-Kho players are presented in table 2.

TABLE 2
COMPUTATION OF 'T' RATIO BETWEEN ENDOMORPHIC AND MESOMORPHIC, MESOMORPHIC AND ECTOMORPHIC COMPONENTS OF COLLEGE KHO-KHO PLAYERS

Component	Mean	Standard deviation	Difference in means	Standard error	't' ratio
Endomorph	3.08	0.56			
Mesomorph	5.07	0.67	2.62	0.14	18.71
Ectomorph	2.68	1.0	3.02	0.20	15.10

Significant at 0.05 levels (table value 2.045, df, 29)

The obtained t-value between endomorphic and mesomorphic component was higher than tabulated value. Hence there was significant difference between endomorphic and mesomorphic component. The obtained t-value between endomorphic and ectomorphic component was higher than tabulated value. Hence there was significant difference between ectomorphic and mesomorphic component.

DISCUSSION

The obtained scores and the t-test on Kho-Kho players in endomorphic, mesomorphic and ectomorphic components indicated Kho-Kho players were predominantly mesomorphic in nature. The Kho-Kho players are predominantly muscular; the bones are large and covered with thick muscles and heavily muscled throughout.

CONCLUSION

Kho-Kho players were predominantly mesomorphic in nature. Hence it is recommended to select such type of players for Kho-Kho game.

REFERENCES

1. "Tripura KHO KHO Association @ Tripura4u". Retrieved 2 October 2015. 2. A trip through SA's indigenous games. sowetanlive.co.za Retrieved 2 October 2015. 3. Beashel, P and Taylor, J (1997) Fitness for Health and performance 4. Carter, J. E. L. (2002). The heath-carter anthropometric somatotype-instruction manual. San Diego, USA. 5. Carter, J.E. Lindsay; Heath, Barbara Honeyman (1990). Somatotyping-development and Applications. Cambridge University Press. ISBN 0521351170 6. Heath, B.H. J. E. and Carter, J.E.L. (1967) A modified somatotype method. American Journal of Physical Anthropology, 27 (1), p. 57–74 7. Mathews, Donald K., (1973) Measurement in Physical Education (W.B. Saunders Company:. Philadelphia. 8. Sheldon, W.H. And Stevens, S.S. And Tucker, W.B. (c.1940) The varieties of human physique. Oxford, England: Harper 9. Sheldon, William Herbert (1954). Atlas of Men: A Guide for Somatotyping the Adult Male at All Ages. New York: Harper. 10. Vertinsky, P (2007). "Physique as destiny: William H. Sheldon, Barbara Honeyman Heath and the struggle for hegemony in the science of somatotyping". Canadian Bulletin of Medical History 24 (2): 291–316. PMID 18447308