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AN INVESTIGATION ON VARIOUS CHARACTERISTICS AND PROFILE OF KINTHROPOMETRIC: A CASE STUDY OF ACCURACY PERFORMANCE OF PLAYERS

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An Investigation on Various Characteristics and Profile of Kinthropometric: A Case Study of Accuracy Performance of Players

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Abstract – The purpose of the study was to determine the character tics of kinthropometric and their relation with handball skills .accuracy and also to know how accuracy can be developed among the university level handball players A handball players like other sports also requires of right type of physique and mental make up the player of handball must be good tall and having average height from 5.8' to 6' . In the light of fast growing realization of the imaginations of handball game and its contribution to wellbeing and fitness of human in general the study will helpful to know required and immediate. Kinthropometry variables or traits related for the development of fundamental skill like accuracy. It is in the height of spirits to take up the study. Concerning relation with playing ability and kinthropometry variables and accuracy. It is very clear from the results their these measurements have significant contribution to the accuracy performance of players of handball.

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INTRODUCTION:-

Sports and games is a way of maintaining physical fitness, apart from promoting recreation and showing one's upper-handiness over the other. Excelling the tactics of sport events, many legends have emerged in which led to its evaluation and development different events. Throwing some light on the reasons and circumstances would help us in better understanding the field of sports. Even before doing so, let us recognize some of exclusive points of sport and physical fitness that has been identified by the society, sports researchers, philosophers and captured in the pertaining literature.

Kinthropometry is the science of measuring human body and its parts. It aids the study of human body evaluation and variation. The study of human physical measurements, kinthropometry, has a wide application in the field of sports and selective diagnostics are considered for different game or sport. The body parameters such as height, arm length and leg length provide considerable advantage to many games and sports.

Various Kinthropometrical, Motor ability, physiological and Psychological variables have been studied for its influence on players' performance. Such studies help coaches in selecting players, providing training to different levels of players. Like for basketball players height can give a definite advantage, players with tall and strong stature have an advantage in Handball. These apart, strong kinthropometric measures lay a strong foundation for acquiring certain motor abilities also, that help in further improving player's performance.14**.** Handball is therefore a contact sport where jumping, running, and arm throwing are prominent features of performance.

Several authors have already discussed the importance of Kinthropometric variables in youth and adult team Handball players. In adult team Handball, back players are taller and have a greater body mass compared to wings, which helps when shooting from distance. Since, players positioned on the wing rarely engage in physical contact with the opposing defenders, a tall stature and high body weight are of less importance to successful performance in this position. Pivots play within the opponent's defensive formation with the back or flank facing the goal and the defenders themselves. To perform well on the pivot position, stated that a strong upper body and large total body mass may be needed to engage in physical contact for certain positions. Finally, the goalkeeper may need to possess a large stature and relatively long limbs. This helps in covering bigger goal areas and implementing save movements in parts of the goal. In conclusion, there appears to be a great difference in the KInthropometric characteristics of players playing in different field positions in adult Handball.

In complex kinesiological activities such as sport games, successful performance is determined by a number of factors, first of all by anthropologic features of the players. Motor abilities are the main

kinthropologic component that is responsible for kinesiological performance. In modern elite sports based on the scientific approach to the training process, athletes have been ever more aligned according to their motor, morphological and functional characteristics, thus psychological features becoming ever more important for achievement of top results. Kinesiologists are interested in motor abilities because some of them can to a considerable extent be modified via kinesiological operators, whereas Psychological characteristics, being mostly genetically determined, are more important in player selection. In sport games including handball, some playing positions that require appropriate kinthropologic types of players consistent with specific functions and needs of the position have been distinguished. According to playing positions, players mainly differ in their morphological features. Studies tackling differences in other kinthropologic and technical-tactical player properties according to playing position are lacking. Considering the role of motor and psychological characteristics in the player's performance in handball, and inadequate scientific knowledge of the respective variation according to particular playing positions.

An athlete's kinthropometric and physical characteristics may represent important prerequisites for successful participation in any given sport. Indeed, it can be assumed that an athlete's kinthropometric characteristics can in some way influence his/her level of performance, at the same time helping to determine a suitable physique for a certain sport. However, although studies have examined the anthropometric and physiological profiles of athletes from a variety of sports, it appears that few studies have examined the kinthropometric or physiological profile of volleyball players, particularly in relation to their positional role within the sport.

Somatotype analysis may be useful in terms of talent identification or development of training programmes, as somatotypes, as well as other physical characteristics, differ between sports and as a result of positional role and differences in requirements of play within particular positions.

It has also been suggested that somatotyping is superior to linear kinthropometric measures in differentiating between different competitive sport populations, as it combines adiposity, musculoskeletal robustness, and linearity into one rating.2 Previous research has also reported a range of differences in physiological and kinthropometric variables as a result of playing position in a variety of sports. Likewise, an awareness of the physiological characteristics of elite level athletes in a given sport may be beneficial in terms of optimising training programmes specific to the requirements of particular sports. They may also provide the athlete with information as to where training may be directed to compensate for areas where he/she may be below average in their specific sport.

MOTOR ABILITY AND PERFORMANCE

The concept of motor ability or motor fitness is the same term and counted both as an exclusive one although. It has been studied extensively ever the past several years several factors associated with the development of skill has erroneously been referred to as physical fitness components. It should be kept in mind that only these factors that relate to the development of health and increase functional capacity of the body should be classified as physical fitness components only those that are necessary for skillful performance of an activity should be classified as motor ability components motor ability and physical fitness both develop through movement and contribute to each other motor ability is directly related to physical fitness and also helps achieving ideal fitness.

Martin (1979), Mathew (1981), Hirtz (1985), Harre (1986), Meinel and Schanbal (1987) described motor fitness like motor ability is gauged by performance made up of many elements that are relatively static and enduring in contrast to the factors which Copper more dynamic and changeable. It is heavily weighted with endurance strength, flexibility and power. The dominant abilities would be enduring and persist ever a long period at time since they became a part of muscle. All the factors mentioned under the components of movement concern with motor ability. Each contributes interdependently in the successful performance of fundamental skills in hand ball. Johnson and Melson (1982) motor performance can be defined as a capacity to performance motor skills and qualities make up majority of motor performance test pattern include speed, power agility reaction time hand eye coordination balance and other physical fitness parameter such as endurance strength etc. far example.

SPEED - It is one of the essential components in hand ball to shoot and to travel from one corner to the fore court. It also depends on reaction time which a players move to score to the opponents and in the same way he is reacting on the return from the opponent court. Speed directly influences the capacity of hand ball player to exert the maximum force in the shortest possible time.

Cratty and Hution (1969) "speed is designed as capacity of individual to perform successive movement of the same pattern at a faster rate". It is also designed as the rate of change of position mean the ratio of distance travelled and the elapsed time.

POWER - It is a capacity to release the maximum force in shortest time quickly. A power player is not only strong but generates the force quickly. The hand ball player making a powerful shooting or power of legs when jumping to words for an attack and also available to clear the court from the back rear court. The power is also known as strength ability of the player is during the use of power in shooting, throwing

& passing. The players are used to have fall strength their body muscles of both lower and upper extremities.

Mathew (1970) defined power is the individual capacity to exert maximal muscular force to perform a specific job. The ability to activate maximal muscle fibers for forceful contraction.

MUSCULAR ENDURANCE - This is ability to use localized muscle groups of wrist, forearm, shoulder and leg. However, the game does not require one size movement as in golf for example where there is an adequate interval before the next swing. The same and other similar movement have to reported many kind and of to mean a hand ball match.

Kennath et al (1993) endurance is the result of physical capacity of an individual to sustain movement over a long group & muscles can exert against a resistance for a prolonged period.

FLEXIBILITY - This is the ability to move the body through a wide range of position. It is an ability to execute movement with large amplitude. Fakashinma (1981) flexibility is defined as the degree one is able to move the just of body thrust complete range of motion.

AGILITY - It is an ability to change direction accuracy and quickly while moving rapidly It is obviously necessary for successful hand ball player. The sudden change of direction the twisting and rapid running and forward running backward are the hall marks of quality players are simply example of agility.

REACTION TIME - It is the taken time between the initial perception of the stimulus and the players first muscular movement in response for example. The player is reacting on the movement of the opponent and in the same he is reacting on the ball from the opponent in the same way. To meet this requirement the player is reacting through his action on the players and ball direction is known as reaction time. For several years physical fitness elements and motor ability of the players were considered as general motorability. The coaches trainers and physical educationists also believe in the same way. In an effort to avoid confusion between term motor ability general motor ability and motor fitness. The investigator has collected the literature which will clear the concept of motor ability or motor fitness with physical fitness.

KINANTHROPOMETRIC

Its constitutes the earliest form of measurement in physical education as one might sumrise as study of the human physique and its proportions began many centuries age. The early beginning can be traced from the remote civilization of India, where a treatise called 'Silpi Sastri' analyzed the outline of the body by dividing it info 480 parts. So kinanthropometry evolved in the quest to determine the ideal body proportions, artists and sculptors directed their study to it as shown by the artwork in early civilizations. These measurements are for the assessment of physical status was expanded quite naturally to include consideration of body types and the relation of physique to one's health, immunity from disease, postures, physical performance and personality qualities. Hippocrates first realized and classified human being according to two basic physique long and thin or short and thick. Kretshmer the father of modern body or somatotype defined. Three types by adding an in between and referred to them as aesthetic (lean) athletic and Pyknic (Heavy). Presently kinanthropometry considers individuals differences appraises each subject to relative to this structural differences and determines has potentialities in light of these structural characteristics measurement of the body which include in size weight limb length, width and circumference. These specific measurements of the segments reveal the relationship between kinanthropometry and performance. These body segments helps the top athletes perform in aid require for the particular performance. Accordingly, the body segments have a significant place in the field of sports activities and in the field of sports activities and incorrect body proposition may lead to bad performance. The physical fitness parameters such as speed, agility flexibility, stamina and endurance help a sports person to make size and shape of the body to perform high skills of the game. The parameters accommodate the physical proportions and physiological efficiencies. A Hand ball players like other sports person also requires of right type of physique and mental makeup. The players of hand ball should have ecto-mesomorphic characteristics of the physique. Which can give the advantages to player for making shooting of the ball to the opponent goal post. Which have approximately 1½ mtr. height of the net. One of the mesomorphic characteristics is the height of the hand ball players. Which should be 5.10" to 6' with weight between 65 to 75 kg. along with the body strength, which dominate any kind of sports and executions of the skills. Human performance is a combination of many variables one of them is the structure of the body. All of the above factors that are age related, what is perfect form for less tall well built, motivated and dedicated players may prove inadequate as they mature into adulthood. As younger players, mature coaches may need to consider and introduce a lightly different techniques which take these changes into account. All in all can be said that in the light of the fast growing realization of the importance of Hand ball game and its contribution to the well-being and fitness of human in general. Performance in total sports and further development of participants, especially kinanthropometry and its traits related to hand ball

game. It is in the right of the spirit to take up the study concerning relation with playing ability and kinanthropometry variables and accuracy.

METHODOLOGY

The present study is a survey type study in which the survey were conducted on the hand ball players. Who participated upto intervarsity levels of competitions. To achieve the objective of the study the investigator has planned the entire process of the work in term of research design which is presented systematically under following way.

In the present study the hand ball players performing at intervarsity level of competitions were taken as subjects of the study where a total of 200 subjects at inter college and intervarsity level were surveyed for the collecting of data. The subject were male in the age group of 17-23 years belong to Haryana State specially studying in colleges affiliated to Kurukshetra University and nearby Distt. Coaching Centres. The random sampling techniques was utilized to collect the required data of the subject. The participants were keenly examined and tested. The data were collected doing the period of Sept. 2010 to Sept. 2011. The players were contacted at their respective colleges at Ambala, Kurukshetra, Panchkula, Kalka, Yamuna Nagar, Kaithal, Jind, Narwana, Hissar and during inter college held at Kurukshetra in the M.M. College Shahabad in the month of Nov. 2011. In this study the investigator has selected 200 male hand ball players as subject of the study. Which was planned to analyse the kinanthropometric variables. The investigator has examined the hand ball players playing abilities of each players with the judges rating scale. After investigation of hand ball ability the players of hand ball appeared for the following kinanthropometric measurement to collect the data.

KINANTHROPOMETRIC VARIABLES –

Age, body weight

Liner Measurement Height, total arm length, total leg length

Body circumference (girth) Chest, arm, abdominal hip, thigh calf and knee circumferences

Diameters Elbow, wrist, knee, ankle, shoulder and hip diameters

Skinfold measurement Biceps, triceps skinfold, sub scapular, superailic, chest, midauxiliary, thigh and calf skinfold.

TOOL USED - **1.**To measure kinanthropometric variables complete set of anthropometric rod and other equipments as manufactured by Anand Agencies Pune available at Kurukshetra University Physical Education Deptt. sports science lab. These equipments are standard equipment used by research scholar in India in various bodies. 2.Diameter were taken with the help of Vernies Caliper and anthorpometric campus. 3.The skinfold caliper was used to measure the skinfold thickness. 4.Standard weight machine, steel type etc. approved by Govt. of India for measuring body weight and distance. 5.All the kinanthropometric measurements were taken to the left side (grade) of the individual on the standard techniques described for each measurement by Weiner and Courie (1969). 6.All the measurement were recorded to the nearest of centimeter (1/10) millimeters.

PROCEEDURES-

At first personal data regarding name, age participation level, height, weight were recorded with the help of performa prepared by the investigator himself. In the first phase, the investigator and his panel of judges recorded the overall playing ability of hand ball which was judged in a competitive game situation at different centers. The players were being observed by the panel of judges in the game situations and were recorded by the investigator himself. The investigator with the help of team, colleges coaches and physical educators to measure the selected kinanthropometric measurements in the second phase.

ANALYSIS AND INTERPRETATION OF DATA–

The mass of data collected in accordance with the research methodology. The finding of the study were obtained and analysing and interpretation of data on the basis of main objective of this study were to examine the kinanthropometry variable in relation to their playing ability. For this investigator has taken 200 male hand ball players of Haryana State and their playing ability of hand ball were judged undo the performance situations on the playing ground.

CONCLUSION

The basis of main findings with in the limiting scope of the study the following conclusion were drawn and appeared to be justified as per result obtained.

1. It is very clear from the results that liner measurements i.e. height, leg length, thigh length, total arm length, upper arm length, hand length correlation have significant and positive. These variables contribute to the accuracy performance of players since length of bones and diameters of bones act as liver in the body which assist in the execution of playing skill of handball players.

2. Correlation of girth i.e. arm girth, chest girth, hip girth, thigh girth, & calf girth have positive and significant correlations which shows the

growth of various girths help in generating more force and hence increase the performance of the handball players.

3. Correlation of diameters i.e. elbow diameter, wrist diameter, & shoulder diameter as shown in results have positive and Significant correlation which shows that growth of various diameters of the joints help in making large & strong leverage which help in producing more force and hence increase the throwing performance of the players.

4. Multiple correlation of various variables i.e. height, leg length, total arm length, hand length, calf girth, wrist diameter, biceps skinfold, speed & muscular strength, taken together have significant correlation with accuracy performance of hand ball players and this multiple correlation is very high and hence the regression equation developed by this variables could be used for the prediction of the accuracy performance.

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