SUMMARY

Sports have become a highly specialized competitive area of human activities. Every ration is trying hard to produce sports persons who would bring laurels home in various competitions at international level. Such honours in sports have already acquired a certain prestige value for participative nations. It is natural therefore, that improving, the standard in the field has become a focal point of attention. In the efforts on the part of physical educators, coaches. Trainers and Player themselves must adopt new techniques and training method based on psychology, anthropometry, Physical sciences, physiology of organs and general education etc, to make a good achievement level of sports person in the international competitions.

Recognition of the role of scientific training in modern day sports are inevitable, It is not possible no feasible, to excel at world level without proper involvement of sports scientists and medical expects. After the 1982 Asian games at new Delhi, it was realised that sports also contributes towards the prestige of a nation, through, creation of sports, infrastructure, some attention is being, paid by government towards sports; although earlier it was a much neglected item on the national agenda. The importance of the role of science was realised and efforts started in the right direction. However, the pace set-by us was quite slow as compared to the other nations. The sports bodies and national sports federations. In consultation with sports authority of India, started
preparing long term development programmes which was basically desired to prepare sports persons between the period from one Asian games to the next Asian games. However as these policies were adopted without proper backup from the scientific and medical angles nothing was achieved except disappointment.

In competitive sports, there is inter play of numerous factors, physique and condition of health, psychic various, general physical fitness, technical an tectical efficiency, specific capacity of the organism, along with comp titive experience are some of the principal factors, which influence results attained by sports persons. The present state of com pitive sports that is the peak performance of numerous sportsmen in the great majority of sports disciplines come close to the prevailing world record is a proof that high. Performance in sports is no longer a primarily question of advisable facilities and even less, often the results of purely individual effort. But the out-come of deliberately planned scientifically based advanced training techniques designed to improve the standard of performance. Now it has become a necessity to identify the select a future elite sports persons right in childhood or adolescence, it takes many tears of intensive regular training till an inter national sports performance level is achieved.

At present there are a very few experts in India. Who can lead our sports persons to a respectable level of performance. Our methods continue to be obsolete, we are working on a trial and error method and it will be very difficult to achieve results in the absence other acknowledge of latest research on the subject.

Succors have many stories and each story leads to a new theory, although the principle followed is each theory is the same. Lot of
research work has been done to streamline the training methods. In modern day sports it is well said that a suitable person should be selected for suitable sports said sports language.

Researches in the field of Physical education & sports have considerably reduced the role of coaches in modern day sports. It is now believed that high level of performance can be achieved with a combined efforts, which include apart from the sports person. The coaches, scientists, doctors psychologists etc.

Sports are any form at playful competition whose outcome is determined by physical skill, strategy or chance employed. Hand ball & Basket Ball are also no exception and also has considered as major game & sports. Use of physical skill and strategy the both games are in the sense to fined here, by Almond (1986) the both games primary rules or a game identify how these games are to be played and now winning can be achieved. The primary rules of a game make these games as a games and sports.

Basket Ball & Hand Ball:

In modern day, preparation of a sports men for competition are carried out-through joint efforts among the sports scientists, the practioners and coaches. It is recognised by present day that supervisory method of performing sports person for competitive are one which are based on proven scientific principles rather on trail and error on empirical judgment performance. Improvement are most events of sports and games including basket ball and hand ball observed in recent years are credited to the merger of talent of coaches & scientists. Basket Ball which is a physical activity is considered as fast test-games the world after lec Hockey. The Basket-Ball can be played out door and indoors. It
is composed of 12 players, an objective of the basketball is to score or make basket in maximum number on the opponents. All over fundamentals are used to help players to get an opportunity to score in the opponent’s basket. No higher premium is placed on any phase on the game than shooting and scoring. The game basketball has got various fundamental skill like players stance ball handling, passing, dribbling, shooting, rebounding, pivoting tackling and individual defense along with based on attending and defensive.

Hand Ball: is a popular spectacular and dynamic sports. It requires speed, strength, power stamina, endurance fitness and above all team work. It is a wonderful mixture of soccer, Basket-ball and few water polo tactics. It is a game played between the two teams having seven players each side. Playing ground measuring 40 x 20mts in length & width. As per rules players can carry, dribble and throwing the ball with hands only. The team who score more goals on the opponents becomes victorious. The duration of the game is 25 minutes each half with 10 mints interval.

**Justification & Problems**

In India after 70 years, we still believe in traditional method of training, which did not apply for the development of sports. For instance, we still continue to believe that a person with heavy body can be a good wrestler, Thrower or Kabadi player. A person who has slim structure can be a good runner or a good volleyball or basket-ball player. Contrary, on the other leading country recognizes the role of a scientific training in a long back. It is neither possible nor feasible to excel at the international level without proper involvement of the sports scientists and method of scientific training.
We did not get any fruitful results because still we are lacking scientific angles in training and I have no hesitation in stating that sports in our country is still a far cry. We may not get good results in the absence of scientific knowledge of the subject. The high level of performance can be achieved only with high efforts which includes sports person (Players) coaches, trainers, doctors, psychologists and scientists of the elide are and we have to streamline the training method. Sports persons have to pass the rough various stages to come up to the highest-level a competition he or she has to excel to make himself/herself eligible for a high level of competition. The judgment of improvement in performance is not always objective means an individual performing better than his/her opponent dual or individual sports. To meet this requirement the trainers coaches and sports person need to evolve some methods which may measure the task easier and free from subjectivity. Though a person can be well educated is traditional training methods. The experienced coaches or trainers can provide the evolving scientific criteria for training, which may be helpful to change the behaviour of players and human capabilities. It is also important to understand the role of different sportive factors that influence performance in combination and individually. Performance is ultimately linked with scientific based curriculum and at such with factors connected with physical performance of human being.

The purpose of this study is to compare the anthropometry measurement, Psychological variables and physiological potentiality among the women hand ball & basket-ball players. As those considered the most important factor for designing the norms to select talent for the games of hand ball & basket ball players. Without proper identification
of talent, it is impossible to achieve the desired good right-physical, physiological and physiological parameters for these games under observation will certainly help technical cadre like trainers coaches etc to identify right talents for their matching games.

**Statement of the problem**

The investigator has planned to compare the anthropometry psychological and physiological variables among the women Hand Ball & Basket -Ball players at inter college and State level participation. So the specifically stated problem of this investigation is as under:-

"Comparative study of selected anthropometric psychological and physiological variables between women hand ball and Basket Ball players"

**Objectives of the study**

The objective of the present study are formulated as under.

To compare the selected Anthropometric, Psychological and Physiological variables among the women Hand Ball & Basket-Ball players at inter college and State level participation.

**Hypothesis**

The Hand Ball & Basket Ball players do have significant difference in Anthropometric, Physiological and Psychological variables parameters between the two grope of women players.

**Significant of the study**

It is presumed that results of this study would serve the following purpose in the games of Hand Ball & Basket Ball and in the field of physical education & sports.

1. The results obtained from this research work would have some
important implication for teachers of physical, education, coaches, administrators and other officials who are working specially in the field of Hand Ball & Basket Ball games evolving effective and scientific criteria for the selection of their games players of any sex to have maximum performance.

2. The study with be useful for bringing not psychological and physiological development of these game players. It will also be useful for the development physical structure of the players.

3. Performance in skill execution for Hand ball & Basket Ball players would be known.

4. The nature of anthropometric measurement along with psychological & physiological variables of Hand Ball & basket Ball players at college and state level will help the trained coaches to selected the talent as per their higher level or presently requirement for these games.

5. Information for future investigation in the area would be available for the researcher.

**Delimitation:**

The present study was delimited to the following conditions. The women players of Hand Ball & Basket Ball who are the sample of this study were taken on the purposive sampling basis from the Haryana State belonging into colleges and Distt. Association All the players of these games have played up to inter-college, inter Distt. (State level championship being a bonfire resident of Haryana a state of India.

Among the groups of Hand Ball & Basket Ball players only few selected factors were considered from each of the above said group of
performance and their selected anthropometric, psychological & physiological were faction for the study.

Limitations

The present study was conducted with the following limitations.

1. Number of subject for both the group was not adequately large. This was because the numbers of active teams of these games within the justification of Haryana, Chandigarh, Punjab their colleges and Distt. Association. These games for a inter college & state (Distt) level are limited teams of players in selected college & Distt. Head quarters. Where cemented (paccka) basket ball court and Hand Ball grounds are available.

2. It was not possible to collect data for the subject in all the parameters (anthropometric, Psychological and physiological) on the same day. So the data was collected from two three days in one college and Head Quarters Distt. for the both games.

3. The variation on weather conditions though not very much difference was a limiting factors.

4. Non-availability of highly sensitive scientific equipment and finance were also a limiting factors.

5. Execrate the selected psychological & physiological factors, diet, sleep, social environment, economic condition and life style of the subject and many other factors related to personal habits of the subject could not be controlled during the collection of the data, hence these were also accepted as limitations.

The influence of above factors on anthropometric measurement, psychological variables and physiological variable could not be
controlled and assessed. Hence, these were also considered as the limitation of the study.

Selection of Subjects

The investigator looked 200 females hand ball & basket ball players of state and university level as subjects these game. They were in the age group of 17-24 and are. Bonafied players of state and had players in these games at inter college & state (inter Disttt) Tournaments as resident. Some of colleges and Disttt Head Quarters do not adequate team in those games. So only subject were taken from the colleges & Disttt. Head Quarters coaching canters, who had the facilities for these games of Hand ball & Basket Ball.

The research scholar collected the list of players from principles of college through, Lect of Physical education and Secretary Disttt Head Quarter/Disttt. Coaches at coaching centers (where coaches of hand ball & basket ball are working): All the players of those games are having six year training age and are eligible to play inter college & state level championship. Subject with lower level & higher level of participation were not taken for study. Because they would did not make the homogeneous group on the basis of performance & participation.

Tool Used

For collecting data the following tools and instrument were used.

Anthropometry variables:

1. To measure anthropometric variables, anthropometry instruments manufactured by anand agencies Pune, India was used. This is a standard equipment used by research scholar in the various bodies of India.
2. Diameters were taken with the help of venires calipers and anthropometric campas.

3. The ‘Skin fold caliper was used to measure the skin fold thickness.

4. Standard stops watch manufactured by Anglo Swiss watch company, standard weighing machine as approved by Govt. of India, Standard Steel or Cotton tape (Free man company) far measuring the time, body weight etc.

5. All the anthropometric measurement was taken to the left side of individual on the standard techniques described for each measurement by wiener and Laurie (1969). At the measurement of anthropometric were recorded to nearest centimeters and 1/10 of the second for physiological measurement.

6. In addition to above instruments the following tests of psychological variants and physiological variables were used.

**Psychosocial Variables**

7. Adjustment inventory by H.S. Asthana published by Rupa Psychological center were used to measure total adjustment amongst the Hand Ball & Basket Ball players. Anxiety inverting Martin and Spialbery et al; adopted by Sharma & Singh (1973) in India to Measure Anxiety level of players.

**Physiological Variables**

1. To measure blood pressure (Both) Standard Sphygmomanometer and Stethoscope and Stop watch.

2. Pulse rate to measure by standard stop watch.

3. Respiratory rate and Breath holding was measured by standard equipment and manometers i.e. Flow meter scale a mug of water, a
piece of cloth, pen & Score card.

**Statistical Design:-** The chapter IV has been divided in three sections between the selected anthropometric variables, psychological variables and physiological. Variables and Comparison made among the 4 groups of Hand Ball vs Basket Ball State, hand Ball & Basket Ball inter College and their comparison amongst each group by of correlation. To confirm the main deference critical ration was used with each group (Anova) was used.

To compare the psychological variables and physiological measurements the two groups of Hand Ball Basket Ball were made in stead of 4 group and mean, S.D. and t ratio was applied to find out the significant difference was set at 0.01 level which was considered appropriate for the purpose of this study, because the present research. Process did not invoice highly sophisticated equipment demanding in application of more stringent level of Significance in section 4-1 to 4.3. The chapter IV.

**MAIN FINDINGS**

Anthropometric measurement: The subjects were taken into four groups 2 for Hand Ball (State & Inter college) 2 for Basket-ball (State & Inter college) and their data of anthropometric measurements were compared by appearing the technique of analysis of variance (Anova) and critical ratio to know the significance difference among these two game players. The level of significance to check the significance difference was set on 0.01 level. Which was considered appropriate for the purpose of this study because the present research process did not invoice highly sophisticated equipment demanding the application of more stringent level of significance in sector 4.1 of the chapter.
On the basis of the discussion of the results indicated in 4th chapter, the following discussion were made. In the anthropometric measurement age, height weight and leg length have significance difference between the Hand Ball & Basket Ball players. The Basket-ball and Hand Ball players inter college level have positive significance difference statistically against the Basket-Ball & Hand Ball State level players. The results show that arm length has negative significance difference statistically.

In the girth measurements the upper arm, Fore arm and calf girths, both groups have significance difference. But no significance differences were found in high girth in the group when compared statistically.

While analysing the diameters of body part. It diameters that elbow, wrist, knee and ankle diameters have significance difference analysis groups of Hand Ball & Basket Ball Players.

Similarly when studied the skin fold data. The data reveals biceps, triceps, sub scapular supra-illiac, high and calf skin fold of basket ball and Hand Ball players inter college level have significant difference in scoring statically against hand ball & Basket ball state level women players.

It is generally known that the performance of sports man in any game is depended upon various characteristics of physiology, morphology and body composition. The competitive Basket Ball and Hand Ball are a technical and tactical sports. The requirement of performance in this game is development of high. Degree of co-ordinative abilities specially coordinative process of central nervous system are variables extent. The role of anthropometry as a sports science specialties, perhaps one of the most essential for physique, body
position, physical growth and for motor development. The high level players of Basket Ball were taller, heavier with bigger trunk longer upper extremities and broader shoulder as compared to players of hand ball specially at lower levels.

The demand profile of Basket-Ball players include skill, physique having good height useful and slim with good muscular physical conditions mobility movements such as jumping, running, change in direction and acceleration ability, speed strength, endurance, flexibility, co-coordinative ability, temperamental ability, motivation desire making ability and co-operative ability with team mates.

To further confirm the comparison in the anthropometric measurements. Amongst the hand ball & basket-ball women player, the investigator has grouped the players into four groups as per their game status i.e. 2 group for hand ball state & inter college 2 groups for basket-ball state & inter college that again indicates when players research in maturity age their capacity of physical and physiological level improves their optimum capacity of performing skills. The Basket Ball inter college women players shows higher and motive age ranging between 17 years to 24 years, which is known to be age of learning skill.

The height and weight of two players of different games have significant difference in the female players of hand Ball & Basket Ball players of inter college level have been found taller and higher as compared with their counter part i.e. hand Ball & Basket Ball state level players.

Arm length leg and leg length are helpful to execute the techniques and to cover sports fields in a shorter period. The results indicate that arm length and leg length of inter college Basket-Ball and Hand Ball
women players having a better critical ratio against hand ball & Basket-Ball state level group respectively. The findings of the study reveals that upper arm and fore arm circumferences critical ratio again goes in favour of inter college Basket Ball and Hand Ball player than their counterpart hand ball & basket ball state level player. The circumference of calf muscles, lean body must and thigh musculature is indicated that inter college level players of Basket ball and Hand ball are better in these variables as a high performance group than the lower performance group. Such as state hand ball & basket ball players.

In diameters elbow, wrist, ankle were found having significance difference with the higher performance group in the comparison with the low performance group but knee diameter indicate no significance reference among all the group & female Hand ball & Basket ball players.

In the skin fold measurement higher performance group i.e. inter college Hand ball & Basket ball players when compared with the low performance group i.e. Hand ball & Basket ball state level has been found to possess significant difference of biceps, triceps, top scapular, supra-iliac, thigh and calf skin fold. The result in favor of inter college level player & Basket ball and Hand Ball.

**Psychological & Physiological variables**

Section 4.2 and 4.3

These section includes the significance differences of psychological variables two in Number i.e. adjustment and anxiety, four physiological variables i.e. blood pressure (Both systolic and diastolic) pulse rate, respiratory rate & breath holding. The data collected as a result of testing programme & Psychological & physiological testing programme were first arranged on the basis of their games i.e Hand ball
& basket groups as 100 band ball and 100 basket ball women players, than, their standard deviation, (S.D.) mean, standard error were worked out and tabulated t value, to conduct the comparison on selected psychological variables and physiological variables among the women hand ball & basket ball players. Who participated in the state and inter college tournaments from Haryana State.

Psychological variables the findings of the present study have shown significant variation in their personal adjustment and anxiety amongst the hand ball & basket ball players. Here the investigator found that inter college basket ball & hand ball groups have better adjustment and anxiety level in comparison to their counter part the Hand ball & Basket ball state level.

Again in physiological variables the investigator found that basket ball players women are having better capacity of pulse rate respiratory rate and Breath holding as compared to Hand ball women players except in blood pressure where both group have no significant difference. This indicate that basket ball girls have better maturity and have improved that capacity of performing, physical, physiological and variables as they appears to be more experienced and having a better playing ability and skill than the hand ball women players. In this research study the player age 17 to 24 years, which is known to be age of learning Skills and physiological level improve their optimum capacity of performing skills.

Testing of the Hypotheses:-

Our all three hypothesis were significant difference would exist in anthropometric, psychological & physiological variables amongst the women Hand ball & basket ball player. The significance differences were found in all the three variables amongst these two game were confirmed
by the present investigation and their fall in line with the three hypothesis, confirming it.

**Conclusion**

On the basis of main findings and with in the limiting scope of study the following conclusion were made and appeared to be justified as per the results obtained.

In anthropometric, psychological and physiological, measurements, the results the study indicate that high level female Basket ball and Hand Ball players inter college level group were found significantly better statistically in all the 15 anthropometric measurements, psychological variables i.e. adjustment and anxiety, physiological variables only in & blood pressure systolic better than state level basket ball, hand ball are inter college having lesser blood pressure than state level groups of players.

**Recommendation**

On the basis of conclusion drawn in this study the following suggestions and recommendation are made.

Similar type of studies can be conducted with the men Hand ball & Basket ball players as subjects and it is recommended that future investigation for further research.

It is suggested that relationship among anthropometric measurements, psychological, physiological variables physical fitness and training programmes on the defiant age groups and studies can also be conducted on both sex.

Studies of similar nature can also be planned on others games and sports.
The investigator in her humble efforts could undertake to compare the anthropometric measurements, psychological measurements and physiological variables of female handball & basketball players only. The investigator could not control few factors which might have affected the results of the study. In her modesty the investigator is of the opinion that future researcher in this field can use these results to have a better problem related to these games.

The study may also be conducted with objects belonging to different States of India and it can also be used as prediction of playing ability amongst the different States on comparative basis.

Comparison with other sports activities can also be taken into account. This study can help the coaches, physical education teachers, advisory bodies, administrators, parents, sports personals and handball & basketball players themseles to prepare the selects different level of the state, national teams to participate in the different tournaments of these game and provide training according.

The investigator her self in her humble submission and also convinced that she is far from offering the optimal solution but does hope that her analysis combined with some of the suggestions listed above may help to establishing an acceptable platform for future works related to these game. The personal experience and her observation about the performance of various handball & basketball players at different levels has inspired the investigator to design this research work for these game players which could be useful for coaches, trainees physical educationists and players & these games for both see and this could open a new vista in the fixed of Handball & Basketball games.