

A Study on Volleyball Playing Abilities of Women Volleyball Players

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Abstract- Volleyball Game requires comprehensive ability including physical, technical, mental and tactical abilities. Among them physical abilities of players exert marked effects on the skills of the players themselves and the tactics of the team. A volleyball match provides a dazzling workout for the players' bodies because they constantly alternate between short bursts of high-intensity movements like jumping and spiking & low-intensity movements. Therefore, the athletes should have strong anaerobic and aerobic capacities. Women professional and nonprofessional players are selected for this sport based on their skills, performance levels, physique and muscular strength. While team court sports have been widely researched, no studies have been conducted on abilities of professional & nonprofessional women volleyball players. Moreover, the abilities is biomotor abilities, physiological and anthropometric. the investigator chose speed, strength, flexibility, & agility from the many biomotor skills; from the many physiological factors, resting pulse rate, VO2 max, mean arterial blood pressure, & breath holding time; and from the many anthropometric factors, standing height, weight, arm length, & leg length.

Keywords- Biomotor Skills, Physiological abilities, Anthropometric measures physiological variable.

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INTRODUCTION

Volleyball is a popular sport in several Indian states & several official tournaments are held around the country. Approximately 70 years ago, volleyball was introduced to India by physical education teachers from abroad. Volleyball is played with a lot of energy and there are some smart ricochets and bounces involved. Volleyball is played all year round in all sections of the country since it is such an easily accessible diversion. Some academic institutions and the military in India play volleyball. In 1958, the year the distraction first featured at the Asian diversions in Tokyo, the Indian Volleyball squad won bronze. (Evans and Quaterman 2000)

Volleyball provides numerous opportunities to enhance your explosive strength, speed, agility, and flexibility. Movements requiring neuromuscular control & coordination, such as jumping, running, bending, and so on. In today's game, height & reach are crucial. The game is dominated by players with abnormally large statures, such as those measuring over 2 meters. Spiking, blocking, or setting the ball higher than your opponent's net is crucial. Volleyball players need to be able to spike, block, set, and even serve (hit) the ball as high as possible because of the height at which the action takes place. There are telltale signs in a player's anthropometric profile that suggest whether or not they have what it takes to compete at the highest levels of their sport. the game's many physical demands

present sufficient opportunities to enhance one's muscular & neuromuscular strength, speed, endurance, agility, and coordination. Movements like sprinting, jumping, bending, stretching, & so on all demand equilibrium and carryout values, making this a superb kind of physical exercise. It has been suggested that professional volleyball players' improved speed, strength, and fitness is the consequence of year-round training & development of skills that increase strength, power, and fitness specific to their sport (Scates 2003).

Success in sports can be predicted by measuring anthropometric & physical characteristics. However, research with pre-adolescent athletes shows that it is impossible to identify excellent performers using anthropometric & physical parameters before the adolescent growth stage because of their instability. Anthropometric & physiological measures are essential for talent detection & identification models, but only if they are measured after it is established that the relative values of the relevant variables between individuals are stable. It would also be important to account for gender differences in the timing of peak values. Since many factors, such as posture, flexibility, & speed, that are acknowledged as being vital to success in numerous sporting activities have not been examined systematically, developing such models would be difficult. Furthermore, due to the significant association that has been shown between the number of years of

focused practice and success, the delayed identification of persons into sports would likely be rejected. While previous studies have shown that anthropometric and physical talent detection & identification models are better at predicting actual performance than potential, more recent studies have cast doubt on the validity of using these characteristics to differentiate between athletes. (Vujmilovic Aleksandra 2014)

Volleyball is a sport that people of all ages and genders enjoy, whether they play indoors or outdoors. Extreme fitness & competitiveness are prerequisites. When compared to other sports, competitive volleyball is nonstop action, with no players sitting on the sidelines as unwilling spectators. Volleyball has gained in popularity over the past two decades, and it is continuing to gain steam at the professional, collegiate, and high school levels (Scates and Linn, 2003). Both the number of registered players & number of spectators at games attest to the sport's prominence. Volleyball, the beautiful game we know and love today, began as a casual pastime. But in the last several decades, it has risen to prominence as one of the world's most exciting sports. (Devi S. 2017)

Exercise efficiency is influenced by a wide variety of parameters, including body weight & composition. Athletes' chances of success in a specific sport may be influenced by the combination of these two elements. An athlete's strength, agility, and looks can all be affected by their body composition in addition to their weight, which can affect speed, endurance, and power. Low body fat percentages are frequently emphasized in many sports because most athletes require a high strength-to-weight ratio to achieve peak athletic performance. It has been suggested that professional volleyball players' improved speed, strength, and fitness is the consequence of year-round training & development of skills that increase strength, power, and fitness specific to their sport (Scates 2003).

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HISTORY OF VOLLEYBALL IN INDIA

The YMCA School of Physical Management in Madras (now Chennai) was the first to train its students in the discipline, which later gradually extended to other regions of the nation. The Indian Olympic Association first oversaw the programme, and between the years 1936 and 1950, the Interstate Volleyball Title was established at regular intervals. In a sense, the Title at the time was supervised for male players. The Volleyball Coordinated effort of India was established in the year 1951, and from that point forward and into the not too distant past, the national gathering had appreciated a few generally speaking titles like Asian Title, Ward Redirections, and Asian Diversions, and so forth. The first Indian National Title was won in 1952 at Chennai, following Indian poise. The two people were immediately confined to the redirection. At the renowned Asian meet held in Japan in 1955, the Indian volleyball team achieved Gold advancement. No volleyball players received any Arjuna respects in the districts of 1963 and 1963, which were regarded as significant occasions for the sport of volleyball in India. (Gangta Kushwant Singh 2012)

PLAYING VOLLEYBALL IN INDIA

The Y.M.C.A. Men initially introduced volleyball in India at the beginning of the 20th century. The Y.M.C.A School of Physical Training Chennai 6 was the main Organization to take up Volleyball their educational programs of Physical Instruction. Thus, the Physical Instruction educator prepared these have taken up this amusement all finished India. Later on the various Physical Instruction establishments incorporated this diversion in their general educational modules. Today, this amusement is played all through India in every one of the Schools, Universities, Colleges, Open playfields, clubs, and so forth and countless are playing in the provincial territory of our nation. Since, the diversion end up well known in India number of competitions Rivalry, training camps are led consistently. Numerous games lodgings, Embraced schools, SAI preparing focuses, SAI lead focuses and so forth are working both in local and state government bodies. Promote exceptional games individual in Volleyball are sans given boarding and cabin in a considerable lot of the Schools and Universities all through India. Government has reported motivating forces and money grants for the mentors and players of all games and diversions which incorporates volleyball as well. (Bag A. 2015)

The Volleyball Organization of India (VFI) was framed in the year 1950. It is the controlling body in India which elevates the diversion up to National level. It additionally co-ordinates with a considerable lot of exercises of number of affiliations This VFI is directing the National V/B title for Men, Ladies, Young men and Young ladies of all classes since 1952. The main National group was chosen in the year 1952 at Calcutta National. This group took part in the second V/B big showdown held at Moscow and Secured eighth position. The main Asian V/B Title was held at Tokyo in 1955. India turns into the victor of the Title first time in India outside Ladies group like Cuba, Russia, Italy, and Korea went by India at Chennai amid the year 1998 for world fabulous prix Cuba champ, Russia Sprinter up, Italy III and Korea IV position. This further expanded ubiquity and mindfulness among young ladies and ladies, now numerous young ladies and women began playing V/B. Numerous outside V/B Mentors went by to preparing up our Indian V/B group and bombed in accomplishing the outcome in the worldwide title. Our Indian Jr V/B group secured second position in the Lesser Asian V/B Title held at Iran amid 1994 under the table instructing 7 of Mr. Syam Sunder Rao an Arjun awardee and Dronacharya grant holder brought for our nation. Amid his chance the Lesser Indian V/B group for the Asian qualifying title for the interest of world and accomplished the world support. These Lesser Indian young men moved toward becoming seniors and won the SAF recreations Gold Award amid the year 1995 held at Chennai, Pakistan moved toward becoming Sprinters up into above said title up to 1997. These Indian Volleyball players overwhelmed in all the significant universal V/B title including 'Rasheed' Global V/B title As of late in the Asian qualifying V/B title for the world interest held at Thailand in 1999, be that as it may, the lesser class players of India neglected to qualify by only losing one set in the set normal, though Japan and Chinese Taipei could qualify in that. A section from the above data every single state they have framed V/B Affiliations and these affiliations conducts title each year in each state for all class. These Affiliations additionally direct camps which is vital for the advance of V/B nations. In India a games foundation has been built up in the year 1961, for the advancement of games and recreations. In this organization V/B mentors and other teach tutors are readied. By and by the amusement is getting an extremely imperativeness of games by the true endeavors of mentors. Further, in these establishments for the improvement of diversion both Indian and outside mentors are endeavoring to accomplish best outcomes for nations National player are instructed hear that is way this organization is considered as focuses of Brilliance in India. (Devi S.2017),

VOLLEYBALL AMONG WOMEN

Women were the most enthusiastic among the early players and the game has never lost favour with the fair sex. Volleyball has become a favorite game among

women in many parts of the world. Trained women players spike hard and adopt the techniques used by men. At the first World Volleyball Championship for Women held at Moscow in 1952, the U.S.S.R. emerged victorious. The second World Championship was held at Paris, in 1956, and U.S.S.R. again emerged victorious. Women's Volleyball was introduced in Olympics, at Tokyo, in 1964. The inclusion of women's division has become a regular feature in all-international tournaments. Women's Volleyball was introduced in India some years ago and is currently making commendable progress. The first National Championship was held, in 1953, at Jabalpur and it was won by Uttar Pradesh. In 1979, a competition known as Federation Volleyball Tournament was introduced. (Bag A. 2015)

The game of Volleyball evolved from purely a recreational sport, turned into an extremely exciting competitive event in a span of ten decades. This evolution resulted in significant changes in the requirements placed on the participants. Volleyball can be played by older people without much effort, but it requires a high level of motor abilities to be played competitively. If one is to achieve peak performance, these abilities must be optimally developed. This development requires scientific planning, purposeful training, and periodic evaluation. The processes designed and put into place for a player's psychological, social, and physical development are referred to as sport preparation. Any competitive sport requires a specific kind of athletic training to ensure that the participant reaches the highest level of motor skills and psychological qualities necessary to be fit for demanding tasks. (N. Sorir 2019)

The primary purpose of this preparation is to make the participant reach his maximal performance level and maintain it in order to excel his opponents in the sport. Preparation for competitive Volleyball aims to achieve this purpose. The main goals of training for competitive volleyball are to develop the physical and mental toughness needed for skill and endurance, to perfect the game's techniques and tactics, to develop the qualities needed to adjust actions and maneuvers based on the circumstances, including the characteristics of opponents and the outside environment, to acquire the theoretical knowledge needed to comprehend and analyze various movements, and to develop the mental, social, and emotional qualities needed to deal with a variety of environmental conditions. (Hosler, W.W.1978)

Different terms have been used in sport sciences to indicate the different aspects of preparation It has been customary to refer to the practices used to develop health and physical fitness as "physical preparation.". Procedures followed to improve the abilities to execute different skills of the game

flawlessly in different game situations constitute technical preparation.

The development of abilities required to change the intended movements and actions at vaults according to the conditions and situations is termed tactical preparation. Procedures followed to impart theoretical knowledge of the game constitute theoretical preparation. As for the service in Volleyball, it is one of the most important attacking skills, which significantly influences the results in modern volleyball competition. Service is the primary skill. Service is the act of putting the ball of play by the right back player from the service area. A team can only score when it is serving. For this reason, it is essential that the service is legal so that the team is in a position to make use of it to score a point. The most important of the fundamental skills that contribute to success in Volleyball include serving, passing, boosting and reception. (Ayuso Juan Mielgo 2015)

Nichollos stated that the serve is the first chance a team has to attack. In modern Volleyball, service is not only a means for beginning the game, but also a means of bringing attack. For this reason, every player should be able to make hard and exact service. There are several reasons why the service is regarded so important. First the rule says a team must be serving in order to score points. A team with strong service has an advantage in getting to offence for scoring points systematically. Secondly, when a team is serving, it can, to some extent, force the opponent to play i.e. to pass the ball. (Gangta Kushwant Singh 2012)

Emery Courtis Ray (1960) points out that the best service is one which can reach the end line occasionally or at least make trouble for the receiver. The importance of serving skill in Volleyball can be made very clear by the fact that only serving team can score. According to James C.D. Weese (1960) team with strong server has an advantage in getting its offensive under way and keeping it under way. He says, "The better teams try to hit a deceptive, or hard service that will nullify their opponents' chances of getting a good set-up and spike. Service will be effective when accurately force and correct technique are applied. To make use of the weaker player in receiving, to upset the five-one systems of the opponents where one player will be a moving booster, to minimize the chances of direct set-up from first player in the game situation, and to upset the defense formation of the opponents, suitable service should be set. Priority can be given to accuracy, which is, one of the important tactics in service. This is of the basic pass in volleyball. In some countries it is referred as overhead or chest-pass or face-pass. It is an accurate pass mostly used in the game situations. The volley pass can only be used when the ball is moving slowly and high enough off the ground for the player to play the ball when it is above his head. It can be described as the receiving of a ball with two hands simultaneously just above and in front of the head then changing its direction without the ball coming to rest in

the hands. The volley or overhead pass is used in general play of passing, in setting up and in playing long high balls to the opponents' back court and occasionally to drop the ball safely just over the net. The success of the pass mainly depends on the selection of the right court and body position to play the ball. This can be accomplished by the experience of an individual. "The overhead pass is the most preferred pass for the free ball because this technique provides a longer contact period and allows for better accuracy and control since this pass must be played above the forehead" (Sue Gozansky 1987).

As for as forward distance is concerned, one should also be able to pass the ball for about nine meters, because in Volleyball game, day by day, many combinations of attacks are being introduced to deceive the blockers. In that case one should make a correct and accurate pass to the attackers wherever necessary. The overhead pass occupies a vital place among the skills of modern Volleyball. From the early part of this century, Volleyball enthusiasts have been emerged in the task of devising a suitable method of passing and the technique as such has one through a process of trial and error. Today, there is no internationally accepted pattern, and variations and peculiarities in the technique are prevalent in different countries. If in case the attackers are not getting success it means, there is something wrong with the pass. In the game situation, ball will be coming with different height, different force and in different angles. So it is the duty of the player to judge the ball and make correct pass for the next action. For this one should have sufficient strength, flexibility, concentration, agility and etcetera to get perfection in the skill. This is the basic skill of Volleyball. (Schaal M., Ransdell 2013)

MOTOR FITNESS

The capacity of an athlete to execute well in their chosen sport is referred to as motor fitness. Speed, agility, balance, coordination, power, which includes speed & strength, and response time are the components of motor fitness. The ability of an athlete to execute well during sports or other physical activity is referred to as motor fitness. The capacity of the body to move quickly and in multiple directions is referred to as agility. It is frequently described as an athlete's ability to change directions quickly while engaged in competition on the court or in a field. (Benefice et al. 1996).

BIOMOTOR ABILITY

The term "biomotor ability" is used to describe the range of skills and attributes involved in doing a specific motor task. Success in a wide range of sports depends heavily on the components of biomotor ability. Strength is the foundation for all other biomotor talents, which in turn can influence one another but cannot alter strength directly. This is why it's important to prioritise strength as a biomotor

skill. There are a number of aspects that contribute to a player's success on the pitch, but biomotor components stand out as the most important. " The leading sporting nations of the world place a premium on fitness because of the expected role it will play in their future success in competition," said Thakur and Sinha.

PHYSIOLOGICAL VARIABLES

The study of physiology focuses on how the human body works. Human physiology is the study of the mechanical, physical, & biochemical processes that occur in healthy individuals, their organs, and the cells that make them up. The majority of physiological information is based on the study of human physiology and experiments on animals. The physiological factors are crucial for achieving high level athletic performance. The term "physiological variables" refers to variables that have a direct relationship to different physiological systems, such as the heart rate, blood pressure, vital capacity, and respiration rate. When choosing volleyball players, physiological factors like cardiovascular efficiency, body fat percentage, vital capacity, and others should be taken into physiological variable.(Gladden & Colacino, 1978).

ANTHROPOMETRICAL MEASURES

Measurement of the human body's dimensions in terms of bone, muscle, & adipose tissue is the subject of this study. In order to evaluate gross structure and function, anthropometry has been used. The performance of a sportsman is influenced by a variety of things. It is well recognized that the physical makeup & body composition, including size, shape, and form, significantly influence this. Anthropometric profiles may help in determining a player's fit for volleyball, especially at the elite level. The selection of athletes for many sports can be influenced by body type and morphological traits, according to reports from earlier branches of anthropometrical research. Cross-sectional anthropometric studies tend to suggest that body composition (fat, mass, muscle mass), physique (somatotype), & athletic performance are related. have a substantial impact (Carter, 1984).

VOLLEYBALL ABILITIES

The Ready Position is one of the most fundamental aspects in volleyball. Any player should be motivated to react more quickly and get to the volleyball quicker if this manoeuvre is executed precisely. The motor skills required for this job are essential for the volleyball court's advancement strategies. According to the accompanying diagram, the volleyball players' prepared position:

The knees are twisted and the weight is forward, showed hands, maintain a balanced perspective on rivals while selecting a position. (Gangta Kushwant Singh 2012)

Serving

A volleyball game begins with a serve. For Kiwi volley, there are generally two serving styles: over-arm & under-arm. The greatest course of action for players to start taking in this inclination is under-arm serving. A little bit at a time as players end up being surer they will bit by bit change in accord with over-arm serving.

1. Foot somewhat ahead of other
2. Ball sitting in non-hitting hand
3. Adjusting Looking Forward
4. Hit arm behind stomach.
5. Slanting forward with a slight waist bend.
6. Knees bowed

Action

1. Back to front development
2. Finish progression
3. Arm moves past stomach and hits ball with straight wrap-up.
3. Contact the ball with a vital hand advance over the wrist.
4. Maintain solid hand and wrist.
5. Ball must remain on non-hitting hand until hit.

General Slip-ups

1. Make use of a full hand or fingers passing on the ball
2. No finish = no partition
3. Hitting arm isn't straight = ball will go unfortunate way
4. Ball is held above waist height = serve will go in figure not expel

Over arm serve

Body improvement for overarm service is frequently equal to underarm service. The player must always lean forward & hit the ball with all of his or her strength directed at the intended target. This requires a more complicated arm motion for over arm, and the ball must be thrown.

Key focuses

1. Throw the ball as high as needed.
2. Throw the ball far from the body (towards the court) to ensure it remains stationary before the server when they advance.
3. The striking technique involves turning the shoulder and storage compartment, flexing the elbow, and then contacting the ball with the elbow.
4. Hit the ball to the back, not under it.
5. The server should always be adjusted during the serve.
6. Lower arm pass

The lower arm pass is also called a burrow, knock, or pass. It is a key skill that all players employ, yet it may be the hardest to discern. The restriction's standard serve or aggressive hit is the lower arm pass.

1. Focus on the ball
2. Players should adjust to the technique for making contact with the ball.
3. Level phase occurred. It should be flat like a pancake.
4. Knees bowed one foot before the other.
5. Strike the ball with lower arms coordination.
6. Complete the path of the ball. Common Misunderstandings
7. Players find it challenging to track or judge the ball's method.
8. Players avoid slapping or swinging at the ball upon contact.
9. Players sprint off the ball to drop or pass it on.
10. Players will let the ball touch their lower arms without upgrading to pass it.

Playing the Burrow

1. The players must be ready when the ball starts moving around them.
2. Players must quickly decide whether to burrow or set the ball based on its speed and stature.
3. For high balls, setting is preferred for greater accuracy, while for rapid balls, a burrow is preferred for greater impact on lower arms than fingers.
4. Players should move quickly when the ball is visible to ensure proper positioning for play.
5. The burrow should be high enough for another player to play the ball.
6. In other plays, players should call 'mine' while taking the ball.

Overhead Pass or 'set'

After the tunnel in a volleyball rally's second play, the set positions the ball for the spiker to hit over the net. The set is a basic skill since a ball is easier to manage than a tunnel. It takes your whole body to execute the shot on an above-average set.

SKILL PERFORMANCE

Passing

When moving, maintain your body's center of gravity. Basically, you want to be quick on your feet when preparing to pass. Being able to take steps without bouncing off the ground is important because it's harder to focus on the ball when you're bouncing up and down. Strong eccentric quadriceps strength leads to a better ability to absorb the force from the ground when taking steps.

Setting

Get to the target. The second ball is always the setters. Seeing as though they know this ahead of time, setters should be lined up properly and ready to move to the target. Be ready to move from the target. If possible, take your first step directly to where the ball is being passed. The setter will perform better in getting straight to the ball's destination if they make wise decisions. They will take the wrong route and take longer to arrive if they depart too soon or if they make a poor decision.

Attacking

Make sure your gait is consistent. Three or four steps make up the volleyball technique approach. The three-step attack for right-handed attackers would be left-right-left, and for left-handed attackers, right-left-right. It might be best to focus on the final two steps alone before teaching players to develop a consistent four-step or three-step approach. The final two steps are the most important. Prior to working on three or four step approaches, concentrate on learning the last two.

Blocking

Volleyball strategy for blocking involve learning to see the court and making quick action at the net when preparing to block. Making wise choices while keeping an eye on the setter, the ball, and the hitters is a sign of having good court vision. excellent court vision. Often, by observing the ball after it has passed, you can determine where the seer will place it. You can more accurately predict what the setter will do with the ball if you can judge where it is being passed. (Evans and Quaterman 2000)

COURT POSITIONS IN VOLLEYBALL

Right Back

The player that is right back is in the rotation position in the backcourt on right side of the court. At the start of the rally, this is the player that starts in Zone 1. When a team rotates, the player who returns to the right back position serves first.

Right Front

The player that is right front is in rotation position at the net on right side of the court. At the start of the rally, this is the player that starts in zone 2. When a team rotates, it's the player rotating to the right back position that goes back to serve.

Middle Front

The player that is middle front is in the rotation position at the net in the center. At the start of the rally, this is the player that starts in Zone 3.

Left Front

The player that is left front is in the rotation position at the net on left side of the court. At the start of the rally, this is the player that starts in Zone 4.

Left Back

The player that is left back is in the rotation position in the backcourt on the left side of the court. At the start of the rally, this is the player that starts in Zone 5.

Middle Back

The player that is middle back is in the rotation position in the backcourt in the middle. At the start of the rally, this is the player that starts in Zone 6.

CONCLUSION

In this study had body height, lower body weight, body fat percentages. To examine the association between the previously researched variables and volleyball performance, in addition to fitness & physiological characteristics, more research is required. Future research on player selection, talent spotting in the sport of volleyball, and the development of its training regimen may benefit from the study's conclusions. The study analyzed biomotor, physiological, & anthropometrical abilities of professional and non-professional women volleyball players. The subjects were calculated of their bio motor, physiological, anthropometric and volleyball playing ability using standard methods. The criterion variables selected were speed, strength, flexibility, agility, resting heart rate, VO₂ max, mean arterial blood pressure, breath holding time, standing height, weight, arm length, leg length and volleyball playing ability. The biomotor, physiological and anthropometric variables were measured using standard tests and volleyball playing ability was measured through three experts in the field subjectively.

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