CHAPTER – I

INTRODUCTION

1.1 Introduction

Sports give players so many opportunities to develop their skills that they boost the team's overall performance. In the spirit of the game, they learn to accept both success and failure. In terms of physical prowess, our forefathers in the past shown exceptional abilities. The world of sports and gaming has developed to take on a professional character, accompanied by strong competition. The human race participates in a variety of sports for both enjoyment and competition, regardless of age. Sports in the modern world are fiercely competitive. It takes more than involvement or practice to become successful. Physiology, sociology, psychology, biomechanics, sports training, sports medicine, training, and computer applications are just a few of the many variables that might affect performance **(Vikram Singh, 2010).**

The level of competition in sports has risen dramatically in recent years, with records being broken on a regular basis. A person's success is not determined by their mere involvement or by a few days of practice, but rather by their consistent and diligent training throughout childhood, which has a significant impact on anthropometry. Athletes today encounter some unusual difficulties. These days, the bar has been raised, the going is harder, and more is at stake. Sports scientists and physical educators have always voiced a strong desire to learn more about the anthropometric factors that can help players' motor skills.

People may utilise their skills to the fullest extent, work as a cohesive team, and experience the thrill and occasionally the suffering of winning and losing through sports. In terms of physical prowess, our forefathers in the past shown exceptional abilities. The world of sports and gaming has developed into a professional dimension, accompanied by ferocious competition. The human race participates in a variety of sports for both enjoyment and competition, regardless of age. Sports in the modern world are fiercely competitive **(Baechle, 1994).**

In today's society, sport is quite significant. It matters to a person, a team, a country, and the entire planet. An athlete's overall personality is reflected in and expressed via their athletic achievement. Physical strength, social adjustment, psychological growth, and physiological efficiency are typically four aspects that have

an impact on an athlete's development and his ability to compete at a high level. The demands on the bodies circulatory, respiratory, metabolic, neurological, and temperature regulating systems vary depending on the activity **(Anaheim, 1987).**

Sport and physical education have become incredibly popular worldwide in recent years. Physical education and sport are becoming more and more popular, and this positive trend is expected to last into the future. Sport and physical education have earned their proper position in society and have grown to be significant social and cultural activities in the modern day.

Physical education, which has a lot to do with the human body in addition to the intellectual and sociological aspects of life, is now referred to as the "human engineering" process. In order to recognise the body's best uses, physical educators must have a good understanding of the physical performance of the body. The physical educator or coach will currently not have much talent in the field of athletic training and high-performance games and sports without using the updated scientific information of the pertinent legislation.

From one day to the next, the idea of sport has evolved. There are currently many scientific ways to improve each quality that affects performance in each game and sport as a result of the advancements made by the many sports sciences in the realm of sports. Based on the pace of demand for each game and sport, the development time is constant. Performance standards are rising steadily as a result of this.

Sports competition and activity are designed as persuasive social communication tools between various social classes, racial groups, and nations, opening the door to greater understanding between social classes and nations. Sports rivalries that involve cooperation allow different societal groups and nations to engage in healthy competition. A country gains notoriety in the country advisory group if it can win the most medals in an international competition **(Hardayal Singh, 1991).**

People's health and wellbeing can significantly benefit from sports and physical activity in developing nations. Physical activity is an efficient way for people to maintain their physical health and is an economical way for countries to improve the public health of their citizens.

Most games and sports demand physical fitness in order to be effective. An individual won't be able to resist the stress and strain that different games and sports inflict on the body if they don't have a high level of physical fitness. Exercise not only enhances performance in games and sports, but it also helps avoid chronic ailments **(Uppal, 1992).**

The foundation of the sport is being in good physical shape. Athletes who maintain high physical health not only learn sports skills more quickly, but they also experience fewer accidents and injuries related to movement. Physical exercise, particularly physical quality exercise, is very effective at reducing slope-related damage. Balance ability can not only prevent injury but also diminish it after it occurs, decreasing the likelihood of injury. Strength quality enhancement plays a crucial role in delaying tiredness and reducing sports injuries. The coordination of quality improvement can be flexible training and improve the body's stress tolerance as well as the coordination of protection of the flexibility of the joints and muscles, improve regulation against the central nervous system's muscles, and increase the capacity for tension and relaxation. This is a crucial role that cannot be ignored. Reducing sports injuries has a significant impact as well.

Speed, strength, endurance, and flexibility are the foundational elements of fitness that can be developed via a variety of training techniques. There are many different sports training techniques, including strength training, plyometric training, continuous training, interval training, repetition training, competitive and test techniques, circuit training, fartlek training, isometric training, and more **(Jha and Gupta, 2010).**

Physical fitness is the ability to carry out daily tasks without becoming overly exhausted and to have enough energy left over for unexpected situations. The ability of the heart, blood vessels, lungs, and muscles to function at their best is known as physical fitness.

According to the Inter-Agency Task Force on Sport for Development and Peace study, physical activity benefits young people by promoting the growth of strong bones, effective heart and lung function, as well as better motor and cognitive skills. Functions Women's hip fractures can be avoided with exercise, and osteoporosis' consequences

can be lessened. Physical activity can enhance an older person's functional capacity and support independence and quality of life maintenance.

Thanks to advancements in human abilities, strength and endurance, and scientific training, the bar for performance is raised with each Olympics and new records are broken. It is also partially a result of equipment and track improvements. Mechanical and physiological research has led to a rise in the efficiency of techniques. However, the athletes themselves are primarily responsible for the improvement. It's difficult to avoid the conclusion that the modern athlete is truly physically talented and better adapted for this specific duty when it comes to sprints, jumps, and throws. Technique improvements have also been made in events like the shot put. It is obvious that the hunt for superior men has been fruitful **(Tanner, 1960).**

The significance of the mental component of athletic performance has recently come to the attention of coaches and athletes in a range of sports. More precisely, those who participate in organised sport today recognise that, in order to perform at their peak level of efficiency, athletes must acquire and make use of a number of psychological skills. This is also true in the realm of athletics, where coaches and athletes have developed an interest in enhancing their athletes' psychological skills. Almost all performance is based on one's capacity to use psychological strategies while playing a game. Better performance is frequently influenced by greater mental capacity. Sport psychology is widely regarded as a crucial factor of sports performance and has long been acknowledged as a fundamental component of all physical activities.

A person's physical condition typically determines how well they perform in sports. Every activity has a certain level of fitness requirement, so it is crucial to develop numerous fitness-related talents like strength, speed, coordination, endurance, and flexibility of sports instruction.

Instead of training for a specific activity, coaches think that players should train to get stronger and more powerful overall. Others believe that in order to use their strength and power in their sport, athletes need to increase it. For all athletes to get stronger and more effective in their chosen sport, it is more crucial to strike a balance between athlete- and sport-specific training.

The key component of sports training is to maximise performance in any sporting event and maintain it for an extended length of time. A highly gifted athlete no longer has the financial means to prepare for top-tier performances in a variety of sporting events. Sports training is a serious activity that aids in achieving great performance in a competition, not just a casual game or leisure activity.

Sports training is a scientifically grounded and pedagogically organised procedure that aims for sporting perfection and performance improvement as well as competition competency through a planned and systematic effect on performance capacity and performance preparation sports.

Sports training is a unique method of preparing athletes that is based on scientific principles and is intended to increase and maintain a higher level of performance in a variety of sports activities. It is a specific kind of training intended to enhance one's physical condition and sporting prowess. It consists of cardiovascular and conditioning activities, strength training, corrective and restorative exercises, and strength training. Additionally, it offers guidance on nutritional values as well as mental and psychological training.

A change in the capacity to act and sophisticated motor sports behaviours are carried out by measures of content, methods, and organisation throughout sports training in order to attain a purpose **(Sing, 1991).**

Sports conditioning is a fundamental step in improving performance through physical activity. It is founded on scientific ideas meant to increase learning and performance. Sports activities involve movement and motor action, and the proper execution of these actions is crucial to the activities' success. Techniques for teaching and increasing tactical effectiveness are essential components of the training process **(Fox, 1984).**

Every elite athlete's daily routine should include training because it is so crucial. Training enables the body to develop strength and endurance over time, enhance skill levels, and increase motivation, ambition, and self-assurance. Athletes can learn more about their sport through training, as well as the value of maintaining a healthy body and mind. Regular exercise enhances strength, agility, and flexibility, promotes healthy circulation, increases muscle tone, and speeds up the body's process of getting rid of

waste materials. Regular exercise also shortens the time it takes for the body to recuperate afterward, improving the body's ability to handle the rigours of training and increasing its resistance to illness and injury. The instruction is also advantageous for mental wellness.

Success in team play is generally thought to be more closely tied to technical proficiency, tactical competence, and performance qualities. As a result, predicting potentially talented players becomes challenging. Age, sex, physical development, physiological, biochemical, biomechanical, genetic, anthropological, and psychological variables are just a few that might affect an athlete's performance **(Carter, 1970).**

Ball games require detailed skill, including physical, technical, mental, and tactical aspects. Among them, the physical abilities of the players significantly affect their game intelligence and team tactics, because ball games require repeated maximum effort. That is why players must have physical skills to strengthen their aerobic and anaerobic capacities to perform fast and hard movements and have lasting offensive and defensive efficiency **(Tsunawake et al., 2003).**

Today, a high level of physical and physiological efficiency, as well as a degree of perfection in the necessary skills and knowledge, technique, and tactical training, characterise an athlete's preparation to achieve first-level results. Only after thorough training does an athlete reach this point. In order to affect an athlete's development and guarantee the required degree of involvement, training athletes today involves a complicated process of efficient use of collective activity.

Volleyball:

Volleyball is a fantastic all-around team sport that is now widely recognised as both a highly competitive and leisure activity on a global scale. In 1895, the game was created by WG Morgan of the YMCA. Due to its high adaptability, the game has the additional benefit of being appropriate for players of both sexes, regardless of age and physical ability. The sport of volleyball only really spread internationally in the late 1950s. Volleyball was included as an Olympic event in 1957 by the International Olympic Committee (IOC) in preparation for the Tokyo Olympics in 1964. With 220 associated

member nations, the FIVB (Federation of International de Volleyball) is the largest sports association in the world **(Reeser, 2003).**

One of the first places to teach volleyball was the YMCA institute of Physical Education in Madras, and graduates from the institute have spread the sport throughout India. Today, the game is played all over the nation in public parks, schools, universities, and on a massive scale in both urban and rural areas. **(Dhanaraj ,1969)**

Early players were mostly female, and the game lost favour with the more attractive sex. In India and other countries throughout the world, volleyball has become the sport that women most like playing.

Millions of people play volleyball all around the world. It has been categorised as a highly competitive sport in many nations. Each person will enjoy this fascinating game. Volleyball is a thrilling sport, as everyone knows. One of the indoor recreational games is this one. It's a game where the whole body, including the mind, is involved in receiving and hitting the ball in addition to the hands. When it comes to movement and accuracy, volleyball is arguably the most significant ball game in the world. Anything can happen at any time in this game, regardless of the result.

In addition to having thousands of fans and players worldwide, volleyball is a competitive sport that may be played on courts that are either indoors or outside. According to **Gortsila et al. (2013),** indoor volleyball is played on a hard, flat surface that is typically composed of wood or synthetic materials.

Around the world, volleyball has become one of the most well-liked sports. It is the second-most popular sport in the world and a multi-national game that calls for high levels of ability and complicated strategy, but it can be played at any skill level and is always enjoyable **(Dumpy & Wilde, 2000).**

Indoors and out, men and women of all ages and genders enjoy playing volleyball. It demands a high level of fitness and is very competitive. Unlike other games, competitive volleyball is an action sport where neither player plays the role of an unaware spectator. In the past two decades, volleyball's popularity has increased, and the sport is still growing at all competitive levels **(Scates & Linn, 2003).**

In addition to many effective educational outcomes, volleyball provides possibilities for the development of strength, endurance, speed, agility, and neuromuscular ability. Volleyball players must undergo a fitness regimen to improve their flexibility, muscular strength, power, and agility, all of which must be combined for peak performance.

Any volleyball coach will find it difficult to oversee practices and skill development. To remove the guesswork and improve the effectiveness of your practices so you can develop the skills of your players through drills and effective practice methods, we developed this guide.

A Volleyball Training Prospectus:

Volleyball is an extremely difficult sport that requires the finest player to maintain their performance throughout the match. A crucial aspect of playing volleyball is jumping. A volleyball player's jump should be as high as possible.

The towering net that separates the two teams keeps the volleyball players on their respective sides of the court. This fundamental set-up distinguishes volleyball as a game and has an impact on the qualities a good volleyball player must possess.

High levels of fitness, coordination, and agility are needed for volleyball due to its intense competition. It demands a great level of fitness, coordination, and agility and is fiercely competitive gives ample opportunity for the development of the body's strength, speed, endurance, agility, neuromuscular skills, and coordination through a variety of physical activities like stretching, stooping, jumping, and running. A training plan that develops muscle strength, power, flexibility, and agility is necessary for any player to perform at their best when doing actions that call for balance **(Smith, Timothy, 1982).**

Fast-paced, athletic volleyball calls for a high level of physical and mental stamina. Quickness, agility, and a variety of technical volleyball skills are necessary for good volleyball players. Volleyball players should practice frequently and vigorously to develop their abilities and physical fitness.

Short, frequent bursts of high-intensity exercise, alternating with periods of low-intensity activity, and recuperation time are characteristics of volleyball. Players jump

both defensively and offensively in the attacking zone during these bursts of high-intensity action. Both horizontal jump approach movements and non-approach movements are a part of these exercises. Both countermovement leaping ability and the capacity to focus jump height are regarded as crucial performance markers in volleyball due to the tactical nature of jumping activities and how frequently they occur in a regular game **(Journal of Strength and Conditioning 2008).**

Agility, movement speed, and explosive leg strength are among the key motor skills for every volleyball player. Strength and movement speed combine to create power, the explosive component of strength. While physical strength is crucial to performance, most sports, including volleyball, place a greater emphasis on power.

The physical state of an athlete generally determines how well they perform in a sport; as a result, the primary objective of sports training is to enhance various aspects of physical fitness or motor skills.

However, an athlete's capacity to perform depends on a variety of factors, including speed, strength, flexibility, stamina, and coordination skills. This ability is complex in nature.

In terms of technique, any sporting activity requires specific movement patterns to do a given objective; when this technique is learnt and honed, it is referred to as skill.

If we use gymnastics and diving as an example, which require more technical training than track events do, then we can see how different technical training is from sport to sport.

Athletes of any age and ability level can use this volleyball training programme to improve their game and get the results they want. Any parent who reads the guide will be better able to comprehend what goes into the complete athletic development of volleyball athletes. Being a great volleyball player requires a lot of practice, perseverance, and talent. If an athlete aspires to compete at the highest level, playing volleyball is not enough. I'll say it again being a great volleyball player requires more than just year-round play. A volleyball player needs to practice, deviate from a training regimen, and compete. Simply said, the player must get their body ready for the

demands of the game, which they may achieve with a thorough volleyball training schedule. The five concepts in this volleyball training programme guide help readers comprehend why volleyball players need to work out in the weight room by starting with common volleyball ailments. It then raises awareness of the tools required to strengthen volleyball athletes with progressive development and periodic programming, as well as other considerations when athletes of volleyball train for total athleticism. These considerations are made when evaluating and selecting the athlete before introducing them to a structured volleyball training programme development.

Jumping by the players is a crucial part of volleyball play and is used to attack, block, and do other specific abilities. Due to the necessity of this motor skill, scientific coaching was initiated to improve jumping ability, and as a result, jump development exercises were initiated.

Players in volleyball must move fast in a variety of directions throughout the game, so speed is crucial. In order to make swift lateral, forward, backward, and vertical movements, volleyball players need to be able to accelerate in all directions. Players can respond quickly in any direction the ball is struck thanks to their quick feet, which help keep the ball from touching the ground. Moving swiftly across the volleyball court will help the player's hitting, blocking, setting, and digging abilities.

Speed is the most significant physical performance indicator out of all of them. Volleyball is a modern sport where speed is a growing trend. Athletes that play with speed must be able to change positions on the floor rapidly. Quickness is a defining characteristic of volleyball as it is played now because to the fundamental aspects of speed and agility in tactics **(Huang, 1992).**

Al Scates and Mike Linn, authors, claim that in order to react to the ball, volleyball players occasionally need to be able to quickly shift direction in the air. Drills that involve volleyball mobility or agility should be based on what you could encounter during a match. The best-of-five rule in volleyball allows for lengthy matches, which could be even longer if there are extended rallies. Long periods of low-intensity activity can be used to build endurance.

For the majority of sports, muscular strength is crucial. In volleyball, a player's level of achieved explosive power (vertical leap height) is a crucial component. A crucial component of an effective athletic performance is leg muscular power, particularly for vertical jump performance **(Canavan & Viscovi, 2004).** When examining the player's actions at the net, the attack from the field, and the crushed serve, the relationship between the explosive power and the technical and tactical level of the player is particularly clear. Therefore, specialised power training is needed for the best use and conversion of the muscular force that has been acquired into "explosiveness" of the main lower limb muscle groups that take part in takeoff **(Bompa and Carrera, 2005).** The capacity to jump is a very crucial skill to possess.

"The player's vertical jump, which is typically the key to winning points, dominates the corresponding explosive type strength, which is referred to as the spike and block actions." Well. Volleyball requires agile movements. "Given that volleyball players' height cannot be altered while they are training, sport training can be used to raise the height at which a spike or block can be made."

In volleyball, developing jumping ability is given a lot of attention because it is a complicated manifestation of the leg and thigh muscles' strength and quickness of contraction. Coordination between the different muscle groups and in all motions involved in the action may undoubtedly be achieved.

The Japan Volleyball Association has shown a strong association between volleyball players' competitive skill and their vertical leap index. The number of dunks and the overall success rates of dunks, blocks, and serves in a game were found to be positively connected with jumping ability **(Tian, 2006).**

A standard test to gauge athleticism and power is the vertical jump. It is also a tool used in the recruitment and selection of athletes. Most sports require the ability to jump vertically, therefore working on your vertical jump is time well spent. This article outlines an eight-week programme that you may use to improve your vertical jump and covers numerous key exercises for training it.

For a Vertical Jump to be successful, a number of traits are necessary. An athlete needs a strong base before they can perform a solid handstand. This is due to two important

factors. One, power is the swift application of force, hence the athlete must increase their force application. Second, stronger athletes benefit more from the majority of power exercises like plyometrics. The second trait is the capacity to exert power swiftly. To put it another way, having strength is great, but you also need to know how to apply it. Numerous exercises can help you develop it, as we will discuss. Good technique is the third attribute. Since this is a skill, it must be honed through practice.

Toe and block technique, strength, and speed all play a role in how high you can jump vertically. Strong strength training is undoubtedly one of the most important elements in successfully enhancing leaping speed.

Because it gives them more tools for both offence and defense, volleyball players value the ability to jump high. For both spiking the ball and defending against an opponent's spikes, vertical hops are crucial. Some athletes are naturally gifted with an excellent vertical jump. Most people must learn and practice it just like any other sports skill. You can develop a strong vertical jump by doing a few easy exercises and using some simple approaches.

Uneven left and right-side strength and power, how to land better to prevent knee injuries, how to jump higher when playing volleyball by increasing the vertical of the standing/approach jump, and how to move more quickly and dynamically on the volleyball court are all topics covered in the volleyball training exercises.

According to the aforementioned study's findings, volleyball players' performance will undoubtedly increase if they practice correctly and methodically.

We are aware that plyometric exercise is crucial to the sport of volleyball. Jump training (plyometrics) should be a crucial part of every volleyball player's overall training programme. In volleyball, having a high vertical jump is an excellent talent to have both offensively and defensively. For a player who lacks physical height, being able to jump higher can provide them a better angle and perhaps even greater strength to slam the ball. It can also assist in protecting a spike ball from an adversary. The volleyball player is engaging in plyometric exercises to increase leg strength and heighten leap height. As was stated in the first section of our volleyball plyometrics, adding resistance to these drills forces athletes to exert more effort with each movement, hence increasing

performance. Layers will also get a better cardiovascular workout than they would without resistance, which will help them stay energised throughout the entire game. Plyometric training includes jump training for strength and speed.

Speed-Jump Training:

Explosive speed, jump, and reaction training are all combined in speed-jump training. Exercises for explosive strength are intended to increase the movement's speed or height. When it comes to this exercise, movement speed, especially at the start of the action, is typically more significant than the load involved.

For a Jump to be successful, a number of traits are necessary. An athlete must first have a strong base in order to have a decent vertical. This is due to two important factors. One is that power is the swift application of force, so the athlete must improve this capacity. Second, stronger athletes benefit more from the majority of power exercises like plyometrics. The second quality is the fast application of strength. In other words, having strength is advantageous, but you also need to know how to apply it. You can build this through a variety of exercises, as we'll detail. Good technique is the third attribute. This is a skill, so it needs to be honed via practice. In light of this, the activities listed below can help you build the skills required for a successful jump.

The training load will be increasing and intense as well, depending on how well the guys are performing right now. The notion of easy to difficult training chains will be applied to ensure proper training adaption.

Strength-Jump Training:

The capacity to swiftly absorb and transmit pressures is known as strength-jump. Plyometric exercises, medicine ball tosses, and heavier barbell cycles will all be a part of this program's strength jump training. The training load will be increasing and intense as well, depending on how well the guys are performing right now.

Physics holds the key to high jumping. It all comes down to one straightforward idea: Increase your overall power-to-body weight ratio. Your vertical jump will theoretically have to improve if you can pull this off.

When it comes to the vertical jump, force and velocity refer to an individual's greatest strength and speed, respectively. Your vertical leap will improve if you increase your strength and your speed relative to your body weight. The general rule that has been adhered to by millions of professional athletes. That's how easy it is. The complete Olympic back squat, front squat, power-lifting squat, box squat, and dead lift are the best exercises to use to gauge your strength when it comes to the vertical jump. Your vertical leap will rise if you can lift more weight in any of these workouts relative to your body weight.

Skill of Volleyball:

A difficult game requiring little talent is volleyball. The inclination of volleyball players to embrace the method, processes, and general physical performance has also been demonstrated in recent years. Volleyball requires a player's complete potential as well as technical, tactical, intellectual, and physical prowess. Among them, the players' physical attributes have a noticeable impact on both their own talents and the crew's strategies. In actuality, volleyball players frequently employ techniques like the top run, power jump serve, back line run, and competitive blocking. These put more of a strain on the volleyball players' bodies and specific physical fitness. The most important factors that influence a volleyball team's ability to compete successfully are technical and tactical skills, anthropometric traits, and character-body performance capacities **(Hakkinen, 1993).**

In volleyball, the successful use or efficacy of techniques heavily influences performance. The various volleyball styles each have a unique set of physical requirements. To achieve peak performance, it is necessary to fully develop each technique's unique physical components. As a result, the players must engage in a comprehensive training regimen to improve their biomotor skills **(1981 Gionet).**

For players and viewers alike, the spike is one of volleyball's most thrilling and exhilarating attacking features. A crucial offensive talent for effective individual and team performance in the game of volleyball is the ability to execute a strong and well-placed dunk.

The first line of defense for a team is blocking. The block is a very dramatic and explosive move with multiple purposes. The primary purpose of the screen is to deflect an incoming ball up and into the court defense or return it to the attacking team's court for a point. Protecting specific parts of the court and affecting the opponent's attack is another crucial job of the block. Protecting certain sections of the court, influencing the opponent's attack direction, and minimising the area of the court that the ground defense must cover are all crucial functions of the block **(Zeigler, 1982).**

The successful use of motor skill components contributes both independently and interdependently, claim **Natraj and Kumar (2006).** It is impossible to dispute the importance of motor skills in good athletic performance. All sports require the development of coordination, strength, endurance, speed, flexibility, and agility. Volleyball players' skill performance is favorably connected with physical attributes such speed, leg power, agility, stamina, and flexibility **(Vileep & Virupaksha, 2017).** In sports training, it's critical to maintain and improve these elements. **(Yadav & Malik, 2015)** looked at the many elements affecting power play, particularly fitness characteristics related to speed and stamina, which are crucial for volleyball players' skill performance.

Based on the aforementioned research, the scholar determined that the most desirable talents for any volleyball player competing in intensely competitive tournaments and matches were serving, catching, volleying, setting, pinching, and blocking. All or most of the skills must be had by each participant. You need to be strong, active, graceful, dexterous, and able to handle the ball carefully to be a superb volleyball player on the court. This range of requirements necessitates a special training programme. All of the exercises in this study, including the speed jump and power leap, are crucial to the execution of volleyball abilities.

Need for the Study:

Volleyball players must possess high levels of speed, agility, muscular strength, and aerobic power (Sattler et al. 2015). As a result, volleyball coaches and professionals are curious about the efficiency of various training regimens because it is well recognised that improving conditioning capabilities is one of the key factors in success.

According to the results of the prior literature, there aren't enough research on the impact of speed and strength jump training on female volleyball players. The current study project compares physical fitness characteristics for speed-jump and speed-strength, which further leads to a comparison of these jumps with volleyball leaping performance. Such a comparison is crucial to determining which training will have the greatest impact on enhancing the volleyball players' chosen physical fitness metrics and jumping abilities.

1.2 Statement of the Problem

This investigation is mainly concerned with the study of the effect of speed jump and strength jump training on selected physical fitness variables and jumping performance of female volleyball players.

1.3 Objectives of the Proposed Study

The following is the study's suggested objective:

1. To compare the effects of speed-jump and strength-jump training on selected physical fitness Variables.

2. To compare the effects of speed-jump and strength-jump training on jumping performance.

3. To determine which experimental training were the most impact on enhancing selected physical fitness and jumping performance of volleyball players.

1.4 Delimitations

The following delimitations were used to define the current study.

1. In order to fulfil the study's objectives, ninety (N=90) female volleyball players from different colleges associated with Veer Narmad South Gujarat University, Surat, were selected as subjects. These players had competed in inter college, state level, inter university and national level volleyball tournaments.

2. The subjects were between the ages of 17 and 22.

3. The subjects were divided at random into three (two experimental and one control) groups of thirty each (n=30).

4. The training period was delimited to three days in a week for a period of eight weeks.

5. The following variables were selected in this study.

Physical Fitness Variables:

1. Speed
2. Cardio Respiratory Endurance
3. Explosive power
4. Agility

Jumping Performance:

1. Standing Vertical jump (SVJ)
2. Three step approach vertical jump (AVJ)
3. Side step jump (SSJ)
   a) Right direction jump
   b) Left direction jump

1.5 Limitations

1. The researcher had no control over the subjects' daily schedules, personality traits, routines, food, weather, socioeconomic position, etc.

2. In this study, the players' prior performance in training was not taken into account.

3. Another limitation of the study may be the surface and ground conditions of the courts utilised to gauge subject performance.

4. Based on what was available at the department or institution, the investigator tried to employ the usual equipment for data collection.

5. During the test delivery, no unique strategy was applied to encourage the subjects.

1.6 Hypothesis

It will be hypothesized that:

1. There will be significant improvement on selected physical fitness variables due to the effect of speed-jump training and strength-jump training.

2. There will be significant improvement on selected jumping performance due to the effect of speed-jump training and strength-jump training.
3. There will be significant differences on the selected physical fitness variables and jumping performance of volleyball players among the experimental groups.

1.7 Definition and Explanation of Terms

Physical Fitness

"Fitness is the capacity to carry out daily tasks quickly and aggressively without experiencing undue exhaustion, and with sufficient energy to take part in leisure activities and handle unexpected situations." — **Clarke, 1976.**

Sports Training

"Sports training is a pedagogical process built on scientific principles that aims to get athletes ready for better performance in sporting events." **- Singh (1991)**

Speed-Jump Training

"Training for explosive speed, jumps, and reactions is referred to as speed-jump training. Explosive strength exercises are intended to either increase the movement's speed or height."

Strength-jump Training

"The capacity to swiftly absorb and transmit pressures is known as strength-jump. Plyometric exercises, medicine ball tosses, and heavier barbell cycles will all be a part of this program's strength jump training."

Speed

Speed is defined as "the capacity to perform rapid movements of the same kind in the least amount of time." - **Uppal (1992)**

Cardio Respiratory Endurance

"Cardio respiratory endurance, also known as cardio respiratory endurance and circulatory endurance, is a type of physical fitness test that involves the heart and lungs becoming accustomed to extended effort." - **Fox (1993)**

Explosive power

"When performing a vertical jump or standing broad jump, explosive power is the capacity to release the greatest amount of muscular force in the shortest amount of time." - **Baumgartner (1987)**

Agility

"The ability to change direction quickly and effectively while moving, ideally at top speed," is the conventional definition of agility. - **Eckert (1974)**

Jumping Performance

"The capacity to execute ballistic muscular contractions during leaps relates to the capacity to achieve the highest velocity with one's own body mass in the shortest amount of time." - **Reyes et al. (2019)**

1.8 Significance of the Study

The results of the current study could be important in the following ways:

- The finding of the study may help to find and develop the good volleyball players.
- The finding of the study will very much helpful to college level volleyball players to improve their physical fitness which is directly influence speed jump and strength jump training.
- The outcome of the study will immensely important to coaches, physical teachers, trainers and elite players to master and co-ordinate the skills of volleyball.
- Result of the study may help to differentiate between different training methodology and their trainability through systematic training program.
- The findings of the study may provide criteria for selecting best talent that exist for volleyball.
- The finding of the study may help to the upcoming researchers as well for future further studies.