



UNIVERSITETI I SPORTEVE TË TIRANËS

INFLUENCE OF PHYSICAL - FUNCTIONAL PARAMETERS TO
TECHNICAL -TACTICAL PARAMETERS IN THE IMPROVEMENT OF THE
DEFENSIVE GAME OF THE ELITE FEMALE VOLLEYBALL PLAYER

(Review)



Prepared

Msc. Nora Deda

Supervisor

Prof.dr. Bashkim Milo

INTRODUCTION

Volleyball game more and more marks a satisfactory and qualitative achievement. Changes are in qualitative and quantitative aspect, the product of an emphatic and passionate work of specialist staff and the volleyball female players, who courageously embraced the new contemporary on the basis of conditions and our opportunities, and have also scored high results in international activities. The sustainable process of the development and perfection of knowledge, the use of new scientific and technical in all sports fields, creates real conditions for solving the high quality level of sports activity in general and volleyball in particular.

It is noted that on the staff and specialists is being consolidated the thought, that the game of volleyball as a complex physical and mental activity should be based on a healthy physical preparation, which constitutes the main factor for the growth of physical- technical, functional, coordinating and psychological indicators. Volleyball game presents very high requirements to physical qualities of the player. So between the technical or tactical outcome and physical indicators there is a very high correlation. However, there is still a problem that in the physical aspect are required objective solutions. So for example the place of physical preparation in the training process, the basic directions and reports between the general and special aspect, the coordination of physical and functional qualities with those coordinative together with the relevant tools and methods within the session, and the training micro-cycle and macro-cycle, are problems that should be discussed now to avoid interpretations of the specialist staff, which not rarely are subjective and unreal.

The theme which I have prepared has as an object the impact of physical- technical and functional parameters on those technical- tactical of the defense in modern volleyball. In this study, I tried to have as objection, theoretical usages and practical analyses in the process of preparing volleyball players. On this basis the premises and opportunities are created for the effective construction of a training methodology through which it becomes possible to improve the physical-technical and functional parameters and uninterrupted mobility in defense.

This was this the reason I undertook this work which will shed light on the problems of organizing the training process for the growth of these indicators of preparation by means of tests in specific conditions of volleyball game.

The object of study

The study has as object the improvement of physical - technical and functional indicators through testing, recommended exercises specific during the training process with women's teams of the first category, which undoubtedly will heavily affect in tactical activity of the play in attack and in defense. On this basis it is established the possibility for a training contemporary methodology. To undertake this study we have selected a contingent of 32 volleyball players age 19-23 years old, where 16 volleyball players were treated as experimental group and 16 others as control group relatively at a time of 12 months. Albanian national team, of England, Montenegro, Partizani, Teuta and Vllaznia team have been subject to surveillance.

The purpose

The study aims to make a complete and deep analysis of all aspects of the volleyball game that are related to tactical protective actions, the impact of physical and functional parameters in efficiency of sports results, as well as their improvement on a higher scale, as a result of the application of a moderate training program. The program has been operating and is based mainly on physiological and specific requirements of the game in defense in volleyball. For the realization of this fundamental goal are raised several tasks:

- Updating with the basic directions of contemporary training process in the context of development of physical -technical and functional qualities and our positive experience in this field.
- The study of theoretical and practical bases for the development of physical and functional preparation in accordance with the requirements of the game in defense.
- The practical development of training models for the physical-technical preparation during the periods and phases of the training process.
- Generalization of data on physical – technical and functional indicators for the creation of new concepts, for the effective development and organization of training in accordance with our conditions and opportunities.

The methodology of study

With the realization of scientific, methodical and organizational parameters the attendance of a methodical special procedure came out as a duty.

- They studied and analyzed the recent achievements in the and field of organization and development of physical - functional technical, functional, coordination, tactical preparation in defense. Then was used an up-to-date literature by authors from today's volleyball, taking an important place that of the years 2005-2015.

- We analyzed and exploited our positive experience, the qualitative and fruitful work of the specialist staff who has contributed to the sport of volleyball. The analysis of plans and training curricula of the teams of Volleyball Federation of Albania, scientific articles of foreign authors and those of our country as well as the Institute of Sport and Science at the University of Sports have played an important role in this framework.
- I practiced volleyball with the national teams, club teams, Vllaznia of Shkoder, Partizani, Minatori, Dinamo, Tirana for 28 years, having consecutive successes. Based on my perennial experience, I modeled, experimented the process of physical – technical, functional preparation priority defense. I can say that I've defined objections and checked the progress of work on the training procedures conform to the defined program. I have supported my views and practical applications on the knowledge received in the University of Sports in Tirana, in international seminars and during the project "Tempus" since I am currently the coordinator of the group.
- I have done statistical processing and analysis to all data collected during this work, highlighting even the accuracy of this data.
- The tests and modeling of indicators is made in accordance with modern requirements, for each of the physical and functional quality etc.

- Methodology of the use of tests
- Assessment
- Base material

The tests used:

1. Weight
2. Length
3. Touch of the height with a hand from the place.
4. Touch of the height with a hand bouncing from place
5. Touch of the height with two hands bouncing from place
6. Touch of the height with a hand with a momentum jump.
7. The maximum relative power with Leonardo platform.
8. The time of the description of the test 92 meters run in the volleyball court
9. The time of the description of the test Illinois
10. The time of the description of the test hegzagon
11. The time of the description of the test **L-Test**.
12. The time of the description of the test **T-Test**.
13. Number of bouncing for 20 seconds in the test touch of the lower edges of a basketball table for 20 seconds.

Modern sport is a comprehensive and multi-dimensional activity that combines in a unique complexity all the essential elements of the human being as a functional, physical and social unity.

In its historic evolution sport has gone through developmental stages that clearly reflect people's and practitioners' need to guarantee a continuous and essential progress of the conception of the role and place of sport in society and together with this aspect and that of recognition, analysis and study of reports and relations between the constituent elements of the sport and the interaction of various physical, functional, moral, social and volatile components that characterize and support the development of a modern sport in compliance with all the development and progress of society.

Unimaginative developments in the field of sport are at the same time, reflection of the intensive and fundamental changes of human society and, on the other hand the motivator and determinant of these changes. So sport as an important part of society, reflects the changes occurring in it and at the same time, actively contributes to these changes. Changes are not simply and only on a personal level of individual connections of a person with his sport activity. Today, the level and development of the sport is grown in such dimensions that necessarily bring a visible and inalienable combination with a lot of components of economic, health, environmental and political development of the society at local, national and international level.

Modern sport is no longer an isolated place or environment where one is transported (the term derives from the French word " DESPORT "- transportation, alienation) from ordinary reality to live temporarily out of it but it is already an area where dynamic and close relationships with all other areas and with all other aspects of human life are developed and combined.

On the other hand sport is today not only a localized phenomenon in a certain group of society or certain social stratum. Modern sport is the property of the whole society; it is present in all levels and stratum, in all age groups and geographical expansion.

In this general context the sport of volleyball cannot be excluded. If we analyze the historic period since its creation as a sport until today we will see that its evolution is a complex process clearly dominated by the same dimensions and features that characterize the development of the sport in general. As one of the world's popular sports, volleyball has the multidimensional necessity of pursuing the general trend of human society and reflecting on all the changes, developments and social economic and scientific evolution of society.

Due to this general trend today we are witnessing an intensive evolution of everything that is related to this game and, perhaps, we should admit that this sport remains the most "revolutionary" among many others. This determination is made based on a very simple

comparison of technical elements, regulation and overall system of national and global development.

Along with the popularity and prosperity of the game of volleyball, the technical level of the game has progressed so rapidly. From one world championship to another held every 4 years, from an Olympic tournament to another is done the improvement of the technical value of the participating teams and now this ascertainment is very difficult to distinguish the best teams in the world.

The progress of the techniques of the game of volleyball is closely related to the progress and improvement of technical elements of the game as well as the processing and upgrading of new techniques and the execution of the technical elements of the game or new proceedings.

This progress should be viewed through the prism of the war taking place between two opposites, attack and defence, war that constitutes the engine of the development of the technique and volleyball game in general. In this context, the evolution of attack passes the defence and in this moment, to balance the ratio of forces between attack and defence, as well as to ensure the very existence of progress of volleyball have intervened the changes of the regulation of the game of volleyball which have enriched particularly the technique of defence and have set up the power of defence before the attack.

Modern volleyball training process has undergone fundamental changes compared to that of several years ago. And in this context it must be admitted that even the paces of these fundamental modifications have changed. If the introduction of a new methodology was much slower several years ago, today everything, even in terms of the training process, moves very quickly and spreads much more intensively.

Today the study of tactic and technical parameters of modern volleyball is the key and the basis of analyses of the training process, moving from a general and unique training in a training based on parameters that require not only the sport of volleyball nowadays but also based on specifications that each athlete has, in each of the evolutionary stages of his age, ranging from childhood and ending at the stage of sports of full maturity.

The main element of today's training process in its long-term perspective, is the reliance on a few basic principles that constitute the pillars of the concept of actuality and perspective of the sport.

They are:

1. Setbacks at the height of the game in the net.
2. Maximum dynamism in tactical actions.

3. High and adaptable technique in terms of previously indefinable alternatives of the game situation.
4. Complying in the possible limits of body size with maximum coordination.

More specifically

1. Setbacks at the height of the game in the net.

It is clear that the increase of the height of the volleyball game in the net is the product of a combination of increased body height of volleyball players, on one hand, and the increase of functional indicators of the strength and power that produce a larger jumping performance. Numerous studies show that there is a clear link between indicators of stature and elite level of sportswomen. A qualitative team has taller sportswomen. On the other hand the vertical jump is associated with the quality of the outcome. Today the challenge of modern volleyball is to seek and train sportswomen who have these two elements, body length and height of the jump in an optimum ratio. This has meant that today we have touching height in limits 3.70 m for men and 3.30 for women meanwhile the height of 3,30m was a very ambitious target of elite men only 20 years ago.

2. Maximum dynamism in tactical actions.

Volleyball challenge today is to combine physical height of athletes with the request of a dynamism increasingly maximal in the game. It is already proven that the length of the body is an indication that doesn't have correlation with the agility. While the demand for tall players is an imperative this is accompanied with the requirement that at the same time these players must be the owners of a greater dynamism. This contradiction is resolved or intended to be resolved firstly, through the selection of sportswomen with these features

3. High and adaptable technique in terms of previously indefinable alternatives of the game situation.

Volleyball is a sport that presents very high demand for technical execution of specific sports gestures.

But like any sport the conditions in which this technique is executed are variable and unpredictable. This means that the possession of the technique of the

key elements of volleyball game should not only be in classic conditions of the development of the game but also in changing and unexpected conditions. This requirement conditions the whole process of preparation of the sportsman for the sports activity and significantly modifies the structure and learning methodology of the technique of volleyball in its essential elements.

Believing that the first three elements are easily understandable in their definition, I'll stop in the fourth point. Today it is clear that volleyball requires a considerable body length which is a condition for success, if we consider what determines the first point of the list above (the displacement in the height of the game in the net).

But this request has two main problems. First length as a rule is in inverse with coordination skills, which means that a long body is a premise for less developed coordination skills. . And coordinative skills gaps, or not achieving their optimum level affects all elements of the game of volleyball, in attack, block, especially in defensive actions in the second line.

This discrepancy between the length that is required today to shift the game in the net and that the deficiency that this length brings in a skill that is vital for modern volleyball is intended to be compensated with the introduction of the libero player but it can not satisfy all deficiency that would be created if the players do not have their skills for defence and coordination of their individual movements.

If any player does not have a level of all-round, satisfactory and sufficient preparation for the level of volleyball that his team should produce then it would create significant technical and fruitful deficits.

On the other hand the length can help to achieve the altitude but if not accompanied by a satisfactory jumping indicator then it is not enough. A volleyball player that is 10-15 cm shorter but has a jumping skill 10-15 cm greater than the one that is taller, has the opportunity to compensate not only for the lack of altitude but has more chances to have good results considering the fact that the increase in length is almost always accompanied by a declining relative jumping level.

As seen in the selection and training of today's volleyball players a vital importance is received to objective factors of choice and selection of future volleyball players, their training based on the requirements of modern volleyball and functional , individual, physical and psychological features of each athlete.

Modern volleyball, or the objective to be part of it, is a very difficult objective and can not be achieved unless all aspects that condition its development are taken into consideration or solved.

Hence the training process that aims to prepare worthy volleyball players for today's volleyball is a and studied and qualitative activity. Reflecting not only the demands of actuality but also the demands of the sport when today's young volleyball players will go to first teams.

And seeing the vitality and the changing and adaptive strength of volleyball this is a very decisive and attainable objective too.

1. The scientific literature on the problems of assessment, analysis and study of the most important parameters of the sport of volleyball is multifaceted about these topics. However, from its analysis there is a clear need for the sport of volleyball to continue a more comprehensive and deeper study of its most important aspects that have a direct impact on the quality of sports activity.
2. The scientific literature for volleyball and other aspects that are closely linked with it, handles a wide range of factors where technical and training aspects occupy the main place. Among the technical aspects, the defence and the elements that compose it are present in many studies and this also supports our intention to conduct a study on PhD level on this topic
3. Protective actions have a clear impact on the quality of the result and productivity of volleyball teams.
4. Defence as an important part of the game of volleyball is based on:
 - a. Technical aspects
 - b. Tactical aspects
 - c. Physical aspects
 - d. Anthropometric aspects.

Each of the above aspects is important and should be treated with caution.

5. Volleyball can guarantee success when all the elements that make up the game, are handled effectively in the training process while maintaining faithful the scheme of actions that is characteristic of it in the game.

Defence in the game of volleyball

Volleyball game starts with the service, then we have the possession-pass-attack – block-defence and again service –possession etc. In this chain of consecutive actions, the main connective action is the defence. The development of the game of volleyball means sports fight between attack and defence.

Volleyball as collective game is more vivid, more beautiful, and more spectacular when the game continues with the changes that occur during attack and defence actions. There are always made changes in the rules of the game in order to preserve a balance between the game in attack and in defence. So the potential of great attack has no value if there is no defence and the opposite the potential of great defence has no value unless it has the potential to be transformed into an effective attack.

The spectacular aspect of volleyball is not possible without a good defence. The better the defence, the more interesting and vivid is the game. The temptation that players and spectators feel for the game depends on the quality of the defence.

The increase of the attacking and defensive power is done by increasing the height of the body of our players. The introduction of players over 2m for men and over 1.90 m for women in our volleyball expresses a global trend in this sport, to be supported, but must be seen as limited direction because of their small number in population and because of the efforts that other sports do for such players. (Basketball, etc.).

At the same time it is worth to note that the comprehensive physical preparation and that of the game on defence which merged with a great combative spirit and full of dynamism in defence has been characteristic of the game of our volleyball players and their successes in the past, a tradition and experience that will never be forgotten.

Currently in our volleyball the defence in general and that of the back line in particular gives a significant impact often determinant in the results of the teams, both in national and international meetings.

In the content of the technique we can mention the following:

-the technical element

- the execution variants of technical elements

-the personal style of each player.

During the observation of volleyball matches in this study we can conclude that in sports games correct technical execution is inextricably and directly linked to the right and rational solution of tactical situations that appear to the player in the game, situations that are changing and never identical. This conclusion coincides with conclusions of other studies.

The tactic can be defined as a set of individual techniques and collective game to reach the maximum result.

The tactic in the sport of volleyball consists of:

- Individual tactics;

- Group Tactics;

- Team tactics.

As a result we have individual tactic in attack and defence.

The attack tactic is related and affects the defence tactic and vice versa.

Regarding the individual tactic in defence it has to do with the bump pass, with the block and low defence. When analyzing tactical actions during the game in the defence we can conclude that we have the group tactic in defence with first line, second line, first line and partly second line, second line and partly first line players. In collective tactic we have the setting of the team for the bump pass, also we have the tactic of putting players after the block in all defence systems known (6 introduced before, pulling it back and linear). Player's activity in the game is closely related with team-mates, opponents, the ball, the net and the game situation presented to him. The technical execution of the player will be depending on the task and function of the constituent elements of its activity in the game.

So it is said that in general it is impossible to split the technique from tactic, since it is difficult to say where the technique ends and where the tactic begins. The individual tactic of the technical element is the use of all physical, technical and psychological abilities of the player for the benefit of the team, it is the best and most rational way of the use of technical baggage of the player in function with teammates, ball, net, opponents to resolve properly the different situations of the game in accordance with the tactic of the team.

Defence is the technical answer that can stop an attack that can be winner. Many characteristic elements of volleyball are synthesized to the defence. In general in modern volleyball, defence is considered as essential phase of the game and the current trends are reinforcing the increased level and influence of the defence in the outcome of the game. The attack immediately captures the attention of fans; the defence wins the matches and in the end wins the championship.

The protective activity is selected and arranged based on the abilities and possibilities of each player and depends a lot on the opponent's attacking activity. The desire of the team to be firm and solid in defence and often makes the difference between victory and defeat.

A good defence can be achieved if you combine two factors:

- Technical factor (block and individual defence) and

- Collective game (to master as many balls to the opponent).

1. Assessing the mathematical statistics collected in our championship matches and cup of republic of Tirana team (team leader) and compared with matches of our national team (70% of the team consists of players of Tirana) and Montenegro (friendly) and England teams (for the European Championship qualifiers) we see that mathematical parameters vary.

Positive services in national meetings range from 82-93%, while in international meetings they range from 50-70%. If we make comparisons with other teams the percentage of positive block fluctuates 12% with Montenegro and 15% with the England team while with our teams this

indicator fluctuates 31-33% respectively (Teuta, Partizani). Positive defence varies from 70-80% in the national meetings to 30-45% in international matches.

2. It is important that the didactic elections be adjusted to the game. If mathematical parameters increase does not mean that the level of the game has increased. From this concrete result in percentage we understand that the level and mastery of the game is in decline.

3. The fact of high figures tells us if we have an increase of parameters but in fact it is the best indicator that expresses the concrete reality of the decrease of the concrete level of the game specifically in attack and in block.

If we need to confront high-level teams we must respond by strengthening the defence for the reasons that we have outlined above.

If we make a real concrete perception of this result we conclude that:

1. The fact that we attack from the defence, so we fight back shows the great importance of defending the back, which also plays a compensating role for the low level of defence in the net -block.
2. The best way to reduce the gap that exists between attack and defence is improving the practical defence, during the training and game, regardless of the results of experiments.
3. Coaches must increase their efforts to perfect strategy, game and formation systems, training methods and most important attitude towards defence and in particular the defence on the move.
4. Another conclusion from this study was that even for the game of volleyball, the technique is of great importance because the level of the game depends to a considerable extent by the acquisition of its technology, and the fact that as it is known technical and artistry perfection knows no border. The technique is the basis of the game. It is the foundation that allows the realization of some tactics. Without a good technique cannot be achieved a high tactic level. Technical preparation is closely related to physical, tactical and moral volitive preparation. The technique of the game of volleyball summarizes an ensemble of specific actions and executions in form and content, conducted in a rational way with productivity, in close connection with the requirements of the situation of the game.
5. Our survey concluded that the possession of these technical elements was below average technique compared with the same age in international level.

Training experimentation for defence

PhD study that I am introducing aimed to analyze the assessment of how much a training process affects in order to improve the technical and physical elements in the defence indicators in a female volleyball team. To undertake this study, we have selected a contingent of 36 volleyball players age 19-23 years old as part of two teams in the First Category of the Championship that

trained together. A team of 18 volleyball players was considered as experimental group while the other team comprised of 18 volleyball players was considered as a control group. It was necessary to include a complete team in the experiment as the study protocol and its duration can only be accomplished with a contingent that constituted a stable team. On the other hand the extent of the study in more than one team as experimental group was impossible to guarantee the constant pursuit of experimental procedures that lasted 12 months. The number of volleyball players was conditioned by the composition of the two teams that were selected for experimentation.

In the first phase of 12 months, the study is focused on the assessing of the impact that the improvement of technical elements has in the performance of protective actions during the game. The experimental group developed a training process with emphasis protective exercises. A particular training time of 90 minutes was dedicated to these exercises during the training week. So if the control group performed about 120-150 minutes in a total of 500 minutes training time week, the experimental group had a training time of 210 to 240 minutes in the training week. Obviously in the period of 12 months the training time was more flexible but in all cases experimentation aimed to preserve this quantitative change of time available for the training of protective actions through a program dedicated specifically to protective actions.

Experimental and control group are evaluated in terms of efficiency of protective actions every 30 days through their matches. Matches are held every 3 weeks between experimental team and that of the control, where the composition of the first team and replacements are respected. So teams played with three stable formations which lasted two sets for each formation. So in every match the formation of experimental team faced with the first formation of the control team then the second formation with the second formation and third formation of experimental team with the third formation of the control team.

For each match between formations the statistics of protective actions were held as following:

1. Resulting and not resulting block
2. Bump pass
3. Bum pass from the setback

In the training program of the experimental team were practiced a battery of exercises focused on defence and the main technical elements. These exercises were distributed in three sessions of 30 minutes in 48-hour interval from one another to reach the weekly total time of 90 minutes extra on the duration of the normal training process. So the experimental team developed in this extra time devoted to defence a training program based on exercises for the defence .

Didactic principle of the program was shifting from simple exercises to more complicated ones.

The training program with experimental exercises was developed as below:

Team/Days	Day 1	Day 2	Day 3
Experimental	Individual exercises	Group exercises(2-3 players)	Game with emphasis on defence exercises

Conclusions

Based on our achievements in volleyball matches, in the new forms of training as well as the direction that makes specialty literature to the problems analyzed in it, we have reached the following conclusions:

- By alternating different types of exercises and variety of training forms, it helps in the progressive performance of match results. It should be considered with the loads in the preparation of general, specific, and that of the game.
- It should be paid attention to the loads that pass from one level of adaptation to another; the increasing loads constitute a higher form. Study data that we have presented, have proved that with the gradual increase of loads are progressed results in sustainability, speed, strength, jumping and technical elements of the game in defense.
- Statistical processing of material, concretization, conclusion issued through analysis, comparison and study of physical and functional indicators and their connection with the rating of training clarify much more problems to be focused scientifically on the priorities of the training process.
- The model of indicators through the method of regressive analysis clarifies the evaluation of the results in the match as well as the training advantage of particularities and individual trends of volleyball players.
- Volleyball is a sport in constant evolution towards modernization of the game, which is developing more and more quickly and in higher position form the ground, indicator that should occupy an important place in the planning of training sessions.
- The training process in women's volleyball must reflect the most important needs and requirements of the game and must take place in nearly the same conditions with it.
- The defence is the determining element for the quality of the game and its outcome, therefore, should be given priority.

- The training of protective actions should be a continuous process and built upon scientific basis.
- In our experimental work we are convinced that the use of physical tests makes possible the elimination of subjectivity in the evaluation of the physical condition, the accurate diagnosis of this condition, revealing the strengths or weaknesses in the preparation of any player in different periods of the sports season. The use of tests enables operational control of the effectiveness of the training process.
- The constant speed of the game and the adoption of new techniques and schemes of offensive and defensive game, mainly based on rapid changes of direction and speed shooting, already made the connection of the role of the structure of the player indisputable, so an accurate athletic preparation. So it is necessary that a volleyball player should have a good physical and athletic base.
- A sound program of the conditionality brings great benefits to women. First the loss of adipose tissue, systematic exercises, along with an appropriate diet and conditioning of exercise will improve the appearance of the woman through the aerodynamic of the muscles and improvement of the tone.
- The volleyball game has no stereotyped frames, it cannot restrain instant creativity of volleyball players, on the contrary it must stimulate. It should be based on the dynamics of the actions, in the uninterrupted mobility of the players based in the high physical-technical, intellectual and tactical preparation.

Prepared by

Msc. Nora Deda