Psychological Actions for Tactical Thinking Development on Solving Tasks in School Volleyball

Yanelis Quesada Hidalgo a
José Ignacio Ruiz Sánchez b
Taimí Wambrug Callejas c
Hilda Rosa Rabilero Sabates d

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Abstract
The research aimed to design a proposal for psychological intervention actions that enable the development of tactical thinking in the solution of training and competition tasks, in school volleyball players of the EIDE “Cerro Pelado” of Camaguey For this purpose, it was based on the diagnosis of the individual features of consecutive thinking, flexibility, and speed, as well as the analysis of the decision-making process, in which the analysis and perception of the current defensive tactical game situation are related, with similar previous experiences to adopt the most appropriate solution, in athletes.

Keywords:
homework solution;
psychological intervention;
school volleyball;
tactical thinking;
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Author correspondence:
Yanelis Quesada Hidalgo,
Center of Sports Medicine of Camagüey, Camaguey, Cuba.
Email address: jnely@nauta.cu

1 Introduction
Volleyball is a game that has a tactical purpose, hence, it is necessary to develop a large arsenal of technical-tactical skills with the use of tactical thinking to solve the variable tasks imposed by the game (Navelo, 2004). This is a very complex process that aims to realize the situation in which the player is, but also the execution and selection of the response that he deems most appropriate for the resolution.

Therefore, use a set of psychological intervention actions so that the volleyball player knows what needs to be done; what to decide; How to do it and know how to do it well, can lead to training creative, intelligent, decisive players, who accurately reflect what happens during the competition. This process must be worked on considering the psychological preparation in conjunction with the tactical preparation, the backbone of the coach's aspirations, from then on, to direct attention to the psychological needs that athletes require.

a Center of Sports Medicine of Camagüey, Camaguey, Cuba
b Universidad Ignacio Agramante Loynaz, Camaguey, Cuba
c Universidad Ignacio Agramante Loynaz, Camaguey, Cuba
d Universidad de Oriente, Santiago de Cuba, Cuba
It becomes evident in school volleyballists a general problem related to the confrontation and resolution of situations and defensive tactical problems that occur during the game, which are presented as inadequacies in the development of tactical thinking in the solution of tasks during training and competition in Volleyball players in the 13-15 year school category of the “EIDE” Cerro Pelado “in Camagüey. For the foregoing the scientific problem is formulated as follows: How to contribute to the development of tactical thinking in the solution of tasks during training and competition in volleyball players school category 13-15 years of the “EIDE” Cerro Pelado “From Camagüey?

The objective of the research is to design a proposal of psychological intervention actions that enable the development of tactical thinking in the solution of tasks during training and competition in volleyball players category 13-15 years of the EIDE “Cerro Pelado” of Camagüey.

2 Materials and Methods

The sample consists of 12 Camagueian male volleyball players of the school category, belonging to the EIDE “Cerro Pelado”. The sample (n = 12) has been selected through a non-probabilistic, intentional sampling. It is composed of the 12 volleyball players that make up the regular team. The age of volleyball players ranges between 13 and 15 years.

Description of the methods and techniques

The methods used to carry out the research were determined by the objectives and tasks envisaged. From the theoretical level, the following were used:

- Analytical-synthetic: It is of vital utility both in the realization of the theoretical framework of reference and in the analysis of data products of the research itself, in order to refer to the most significant elements both in the diagnostic period, of elaboration of the methodology, as in the evaluation of the proposal.

- Inductive-deductive: it is based on the study of tactical thinking to emphasize resources and defensive tactical actions in volleyball, and at the same time ensure that the conclusions that are reached enrich the theoretical elements that are known about this process.

In the present investigation, measurement (using the Test to determine the consecutiveness, flexibility, and speed of thinking in the solution of tasks, proposed by Sánchez & González (2005), was used as empirical methods, and the interview technique, (semi-structured interview).

The semi-structured coach interview was aimed at obtaining information on the elements that indicate the development of tactical thinking in solving tasks in defensive actions, according to their criteria. It consists of ten reference points or questions that collect information on the elements of the perceptual environment in which the volleyball player must fix his attention and his expression in logical order, for the execution of the reception of the serve/block/ field defense; on the selection, programming and evaluation of the effectiveness in the execution of these actions, as well as the game and defense system used by the team (Singh & Parmar, 2016).

The semi-structured interview with the athlete aimed to know the processes used according to the following categories, perceptual elements of the environment: those aspects of the game situation in which the player fixes his attention before making a decision; decision making, technical-tactical action options, changes in decision making and evaluation of the decision taken and executed. It consists of conducting a stimulated memory interview, evoking a memory of the previous game. It was performed during the diagnostic stage, individually, before starting the training session.

It consists of five reference points or questions, which collect the following information; what is paid attention to at the time of receiving the service / blocking / defending the field; specific aspects that you want to specify about these defensive tactical actions; tactical technical action options that you value; main reasons why you decide to receive the serve/block/ defend; if there are changes between what is decided and executed, as well as the assessment of the tactical effectiveness of the action and the possible changes it must make.

In the test to determine the consecutiveness, flexibility, and speed of thinking in the solution of tasks. The subject must perform two tasks. In the first task, the subjects under study are shown several sheets of figures related to the execution of different exercises, so that they determine the missing figure. In the second task, they must lengthen each of the rows that appear on the sheet, finding the missing figure. Both solutions must be found through the search for a certain regularity.

In each task, the researcher, after giving the subject to the subjects, must control the time invested by them to find the solution. This allows determining the speed of thought. Once each task is completed, the following questions should be asked for each subject: What is the regularity that allowed you to reach the given solution? Did you maintain or change the solution path? These questions will provide information about consecutive and flexible thinking.

Statistical methods: Statistical methods allowed to assess the results in each phase of the investigation. For the analysis of the results, the descriptive statistics were applied, using the median and the mode as central tendency measures. Additionally, empirical distributions of absolute and relative frequencies were used for the qualitative analysis of the variables. Statistical processing was performed using the statistical package SPSS 22.0 for Windows.

For the realization of this research, the following variables were taken into consideration as relevant variables:

The dependent variable tactical thinking in the solution of tasks during training and competition in Volleyball players category 13-15 years, is operationalized establishing two dimensions; an individual dimension that has as indicators the individual traits of thinking in the solution of tasks, consecutiveness, flexibility and speed and a cognitive one, with the following indicators; analysis and perception of the game situation; decision making and evaluation of the decision taken and executed.

The independent variable of psychological intervention actions is defined as training aimed at the development of skills, comprehension and perceptual; decisional; for the programming of actions; for the valuation and control, based on the individual features of the consecutive thought, flexibility, and speed of the volleyball players.

3 Results and Discussions

The semi-structured interview with coach of the category allowed to know the elements that should be perceived when receiving the service expressed in logical order, these are: the type of service, the power of the service and the direction; the criteria on the effectiveness of receiving the service, when all planned combinations can be established; elements that are taken into account to perform an individual, double lock and for its effectiveness, such as the height and direction of the serve; the height of the ball, taking into account the other partner who blocks and the position of the auctioneer, which becomes effective when the ball is won, or the offensive of the opponent is prevented and the team scores or scores the point.

They are considered by the coach as elements that must be perceived, to perform a good field defense, the concentration of attention, the position of the ball, the direction of the ball, the characteristics of the auctioneer. This action is effective when the ball is won and the team scores or scores the point, when the offensive of the opponent on their own court is prevented. They are identified as, game system and team defense; 6-2 with 6 late and 4-2; 5-1; 6-2, respectively. The coach refers to the difficulties of school volleyball players to identify the elements mentioned above in the analysis and perception of the different game situations, as well as, for the execution, assessment, and control of these defensive tactical actions and their successful performance in training and competences.

The semi-structured interview with the athlete (school volleyball player) shows, as regards the perceptual elements of the environment, those aspects of the game situation in which the player fixes his attention on defensive actions. In relation to the perception of the service, 81% refer to focus only on the type of service, not to mention the information related to the server and the position he has on the court; the power of the serve and its direction.

With respect to the block, none of the elements on which the player must pay attention, such as the type of block, the ball, the position of the auctioneer's hand, the height and the direction, are mentioned or identified by the volleyball players of the serve. A similar situation occurs with the field defense, where they are not noticed as aspects on which attention should be fixed, the position occupied on the court, the good concentration; the position of the ball; the direction of the ball and the characteristics of the auctioneer.

With regard to decision-making, as regards the options of defensive technical-tactical actions understudy, volleyball players generally value the performance of the action of receiving, blocking or defending, but are not able to refer or include, varied possibilities of action that would be executed according to the elements of the environment perceived in-game situations, to finally choose one of the alternatives proposed for its realization. Among the main reasons why they decide to receive the serve/block/defend; that is, execute the defensive elements, meet, score or score points (8), 72%; receive well (3), 27%; and not lose (1), 9%, so it can be seen that there is no reference to specific indicators of efficient performance in each of these actions.

Regarding the assessment of whether changes appear between what is decided and executed, by school volleyball players, in (8) of them, (72%), there are no changes while, in (4) 36%, if changes occur, this implies specifying and identifying in each of the athletes, which are those situations of play in defensive tactical actions, where the coincidence or not of the decision taken initially and the execution carried out afterward is reflected.

When analyzing the evaluation of the decision made and executed by the volleyball players, with the completion of a personal balance on the effectiveness of the action that the player finally executed, criteria related to the quality of the execution are not issued, indicators of good performance, such as, the establishment of all planned combinations,
(efectividad de recibir la serve); ganar el balón, prevenir la ofensiva del oponente y los equipos oponentes el punto (efectividad de la defensa); y evitar el ataque del oponente en el campo propio (efectividad del campo defensivo), y no es necesario cambiar según las ejecuciones en las diferentes situaciones de juego, en defensivo estrategias tácticas.

En la prueba para determinar la secuencialidad, flexibilidad, y velocidad de pensamiento en la solución de tareas. Se puede ver en el caso 1, con relación a la información sobre la secuencialidad y el pensamiento flexible, que solo uno de los jugadores de voleibol, (9%) (caso 1), identifica todos los elementos de regularidad; la posición de las manos, el número, la figura geométrica de Saya, y que el tipo de zapato lleva, y él mantiene la solución para elegir correctamente el número de fallos, número 6. En el otro caso, tres de los jugadores de voleibol (27%) (casos 3, 6, 10), identifican dos elementos de regularidad; la posición de las manos y la figura geométrica de Saya, y ellos mantienen esta solución para elegir correctamente el número de fallos.

Cuando controlando el tiempo invesitado por los jugadores de voleibol para encontrar la solución, cuatro de los jugadores que identifican la regularidad y el número correcto, el que manifiesta la velocidad de pensamiento más alta es el caso 6, al invertir solo 00:40 s para realizar la tarea, en un segundo orden, caso 3, con 1:32 s, luego de caso 1 con 1:57 s, y, finalmente, caso 10 con 2:14 s. El resto de los jugadores del equipo de voleibol no identifican regularidad, por lo tanto, no encuentran la solución correcta, que limita el tiempo a encontrar la solución a la tarea.

Con respecto al caso 2, en relación a la información sobre la secuencialidad y el pensamiento flexible, dos jugadores de voleibol (27%) (casos 1 y 10), encuentran la solución correcta, completando la figura correcta y identificando la regularidad en cada uno de los casos propuestos, cambiando el camino de solución y encontrando la solución correcta para resolver el problema. También, tres de ellos (27%) (casos 6, 7 y 11) logran completar la figura correcta y identifican la regularidad en la mayoría (tres) de los casos propuestos, con la ayuda de los métodos de solución y los que tienen la identidad más apropiada para resolver el problema.

El tiempo invertido por los jugadores de voleibol que encontraron la solución correcta, fue mayor en la cuarta fila, en cada uno de ellos, considerado este, el más complejo para encontrar regularidad, según los criterios de los jugadores. Es importante recordar que ninguno de los respondentes fue capaz de realizar la tarea independientemente sin ayuda del instructor, requerido como un segundo punto, después de dar las instrucciones, que requerían la atención o que podrían ser percibidos, que eran las operaciones matemáticas que se habían de realizar, para regularidad, y llegar a la final y figura correcta de la fila.

Los resultados anteriores reflejan las características del desarrollo de los individuos, secuencial, flexible y rápido en los jugadores de voleibol, expresadas en las dificultades para conseguir un orden lógico de la actitud de pensamiento, en el análisis de una situación en sistema de forma, sin deviatiar, sin saltar de un pensamiento a otro (secuencial); en la imposibilidad de cambio, a veces, apreciar si es necesario mantener o cambiar los caminos o soluciones cuando son inadecuados y encontrar nuevas soluciones que demandan un nuevo enfoque al problema (flexibilidad), así como, el deseo de mejorar la capacidad para dar la solución correcta en el mínimo tiempo, que es, mayor velocidad de pensamiento (rapidez).

**Psicología acción para el desarrollo de la estrategia de pensamiento en la solución de tareas en jugador de voleibol de 15-16 años de Camagüey**


**Objetivo:** Incrementar el nivel de desarrollo de la estrategia de pensamiento en la solución de tareas, en jugadores del equipo de voleibol de Camagüey, categoría 15-16

**Organización**

La aplicación de las acciones se ha distribuido en diez semanas cubriendo tres fases fundamentales, (Weinberg & Gould, 2013; citado en Sarmiento, 2011). Fase educativa: los medios, los métodos, para encontrarse en la situación de estrategia de pensamiento, sus beneficios, y las procedimientos, así como el funcionamiento de las sesiones se presentan. Subsecuentemente, un nivel aceptable de compromiso y permanencia de todos los participantes se establece. (Primera y segunda semana)

La fase de adquisición está en la dinámica se enfoca en las estrategias y técnicas necesarias para el desarrollo de la estrategia de pensamiento en la solución de tareas. Este momento se divide en individuo y grupo de entrenamiento. Las pertinentes...
adaptations to the proposed techniques are made, adapting them to the circumstances and particularities of the sport and of each subject. (From the third to seventh week)

Practical phase: its fundamental objectives are to automate the skills worked in relation to the process, systematically integrate them into their executions and apply them to the competencies in which they participate. (from eighth to tenth week). Several techniques are performed in a group framework and others are individual; in both cases they are carried out in training sessions with their characteristic environment.

Assuming the statement by Rodionov (1990), (cited in Sainz, 2010), in relation to the effectiveness of the tactical resolution determined by the level of perceptual, intellectual and psychomotor qualities; and the foundations of Temprado (1991), which establish a parallel between “tactical thinking” and “knowing how to decide” or operational thinking that involves several skills, as well as, the established categories, in the decision-making model proposed by Iglesias et al., (2002); The actions were organized for the development of 4 fundamental skills that should be promoted in athletes for the development of tactical thinking in the solution of tasks, they are:

a) Understanding and perceptual skills: (Know what is to be done); know the aspects of the game situation in which the player fixes his attention, which leads to setting the action objectives to solve it.

b) Decision skills: (Know what to decide); selection and assessment of the possibilities of technical-tactical action options that the player must execute, and his final choice.

c) Skills for programming actions: (Knowing how to do it) identification and organization in a suitable procedure the sub-objectives that allow solving the problem.

d) Skills for the evaluation and control of the execution: (Knowing how to do it) Personal balance on the coincidence of the decision taken initially and the execution carried out later; control and effectiveness of the required action.

In this sense, the techniques were distributed in the following groups.

Group 1: Exercises for the development of the perception of information and the concentration of attention

Technical:
- Ideomotor training (Sainz de la Torre, 2010)
- The combined technique of cognitive processes (Del Monte, 1998)
- Verbalization and description of the essential points and gestures that precede the actions of the opposite, for the efficient execution of defensive actions.

Group 2: Exercises for decision making and evaluation.

The verbal or written description of the content of the models of the different defensive moves, to see if they are clear on the mental plane.
- Gradual education of the mental solution: request the answer to a given tactical defensive situation presented and the athlete is given the possibility of giving him the solution, at different times up to the minimum time, according to his models.
- Observation of images of defensive tactical situations for the subsequent analysis of the possibilities of action that the player valued to execute, the one he chose, for its realization and of the coincidence or not of the decision taken initially and the execution made afterward.

Group 3: Exercises for the clarification of objectives

Chats-debates: they constitute support techniques through which the athlete is offered all the necessary information for the knowledge of the process in question.
- Establishments of performance objectives and goals in partial tasks.
- Use of personal diary.

Group 4: Exercises for the assessment, control, and effectiveness of the required action

- Techniques of group dynamics of analysis and discussion for the critical analysis of one's own participation and that of the opposite; of tactical combinations of stronger teams and situations of defensive tactical tasks and their solution.
4 Conclusion

The solution to situations is considered as an activity and thought process, with a dynamic nature, given both, by the peculiarities of the situations and those of the athlete, which gives a motor solution. The organic relationship between problem-solving and thinking constitutes the basis and starting point of the tactical training of the athlete in the teaching-learning process.

Difficulties are manifested in school volleyball players to achieve a logical order in the analysis of defensive tactics and knowledge that allow them to quickly identify the objectives, relevant means; those that refer to the possibilities of selection, and those that concern the implementation of the response programs in minimum time. The proposed intervention action group consists of ten activities aimed at training four fundamental skills, based on the results of the diagnosis, both individual and group of tactical thinking in the solution of tasks.

Conflict of interest statement
The authors declared that they have no competing interests.

Statement of authorship
The authors have a responsibility for the conception and design of the study. The authors have approved the final article.

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