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Original article

## Elements that characterize the preparation of women Softball players in the defensive area

Elementos que caracterizan la preparación de jugadoras de softball en el área defensiva

Elementos que caracterizam a preparação dos jogadores de softball na área defensiva

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### ABSTRACT

The planning of training loads is considered among the most important elements when conceiving the training plan. Having a notion of the types of load in competitive activity is a reference point for the selection and distribution of training exercises. In addition, recognizing the relevance that reaches in modern softball the defensive aspect, it was proposed as an objective: to determine the elements that characterize the preparation



of softball players in the defensive area for each position. For this, it was necessary to use as main empirical methods the revision of documents, scientific observation and measurement, with the purpose of obtaining the total values of the displacements and defensive actions for each of the athletes, according to their position in the playing field. It is concluded that the softball athletes in the defensive area express a variable effort stipulated by the actions they execute, with a predominance of fast actions. It is possible to define the elements that should characterize the athletes' preparation from the defensive point of view, being organized by groups.

**Keywords:** Preparation; Women's softball; Defensive.

## RESUMEN

La planificación de las cargas de entrenamiento se considera entre los elementos más importantes a la hora de concebir el plan de entrenamiento. Tener una noción de los tipos de carga en la actividad competitiva es un punto de referencia para realizar la selección y distribución de los ejercicios de entrenamiento. Además, al reconocer la relevancia que alcanza en el softball moderno el aspecto defensivo, se propuso como objetivo: determinar los elementos que caracterizan la preparación de jugadoras de softball en el área defensiva por cada posición. Para ello, fue necesario emplear como principales métodos empíricos la revisión de documentos, observación científica y la medición, con el propósito de obtener los valores totales de los desplazamientos y las acciones a la defensiva por cada una de las atletas, según su posición en el terreno de juego. Se concluye que las atletas de softball en el área defensiva expresan un esfuerzo variable estipulado por las acciones que ejecutan, con un predominio de las acciones rápidas. Se logran definir los elementos que deben caracterizar la preparación de las atletas desde el punto de vista defensivo, organizándose por grupos.

**Palabras clave:** Preparación; Softball femenino; Defensiva.

## RESUMO

O planejamento de cargas de treinamento é considerado um dos elementos mais importantes na elaboração de um plano de treinamento. Ter uma noção dos tipos de carga na atividade competitiva é um ponto de referência para a seleção e distribuição dos exercícios de treinamento. Além disso, reconhecendo a importância do aspecto defensivo no softball moderno, foi proposto como um objetivo: determinar os elementos que caracterizam a preparação dos jogadores de softball na área defensiva para cada posição. Para isso, foi necessário utilizar como principais métodos empíricos a revisão de documentos, observação científica e medição, com o objetivo de obter os valores totais dos deslocamentos e ações defensivas para cada um dos atletas, de acordo com sua posição no campo. Conclui-se que os atletas de softball na área defensiva expressam um esforço variável estipulado pelas ações que executam, com predominância de ações rápidas. É possível definir os elementos que devem caracterizar a preparação dos atletas do ponto de vista defensivo, organizados por grupos.

**Palavras-chave:** Preparação; Softball feminino; Defensivo.



## INTRODUCTION

Currently, the sports preparation process is going through a period that requires constant improvement and great adaptability to the changes that occur at accelerated rates, mainly, of the current trends in the planning systems of the training process (Collazo, 2006).

One of the main ways for a correct planning of the loads in training is in the procedures to be used. This process has generated several methodologies or planning models, such as cyclic periodization (Matveev), the pendular structuring of sports training (Ariosev and Kalinin), the integrative model (Bondarchuck), high loads (Vorobiev). In addition, the structural scheme (Peter Tschiene), block structuring (Verjoshanski), contemporary model (Issurin & Kaverin), structural bells (Forteza, A.), the directions of sports training (Harre and Forteza) and the integrated model (Navarro), (Pérez, 2014a).

According to this author, the differentiating elements of these forms of training structuring are given by the increase of specific training loads, the development of the model of competitive activity in training conditions and the individualization of the process. The treatment of such principles has been limited in terms of the existing ways of how to enforce them, especially, if one considers the need for knowledge of concrete elements that allow having a grounded starting point for the selection and distribution of training loads (Perez, 2014b, Perez 2017 and Perez 2018a and Perez 2018b).

It is not less certain that, independently of the type of sport preparation that is carried out, it is basic to know the particularities, not only of the athlete, but also of the competitive activity to put in function of this the potentialities of each practitioner (Peña et al., 2020). Now, in order for the direction of the sports training process to be effective, it is necessary to relate the different states of preparation to the specific characteristics of this sport, specifically to the role they will play in the game. Training must ensure speed and ease in the formation of intellectual and emotional processes, resistance to disorienting factors, activism in practice, its plasticity, its rapid recovery of work potential and the ability to withstand large loads during training (Portal, 2016). That is why the objective planning of these loads is an element of constant improvement in the training process.

It is also recognized the supreme importance of personalized work, but also the specific training by positions (Velásquez, et al., 2019). Hence, it is necessary to know on a scientific basis the manifestation of the loads of competitive exercise as a reference element for the subsequent planning of the process.

According to Pérez (2014b, p. 3), "one of the essential ways to achieve the foundation of the loads that are applied in training lies in making the interrelation of the moment of preparation and competition a reality". Considering, in addition, the characteristics of the practitioners and the specific activity they carry out.

According to the *Comprehensive Athlete Preparation Program* of the sport in question, it recognizes the need to plan and control the preparation process of high-performance athletes, based on performance criteria or indicators. Similarly, it highlights defense as a determinant direction of performance for softball (Collective of authors, 2020).

In line with the above and based on the criteria emanating from the *Reports on competitive activity in 2020*, the *World Baseball Softball Confederation* (WBSC) which recognizes that the defense in modern softball, especially in women's softball,



constitutes, along with the pitching, 85% of the victory of a team (WBSC, 2021); The study is carried out with softball players in the defensive area, with the objective of determining the elements that characterize the sport preparation taking into account each position, thus improving the planning of the loads.

## MATERIALS AND METHODS

Thirty-two (32) players of the school and youth category, belonging to the School of School Sports Initiation (EIDE) of Sancti Spíritus "Lino Salabarría Pupo" were part of the study.

The teams consisted of two (2) catchers, six (6) infielders, four (4) outfielders and four (4) pitchers for each category.

The defensive area was divided into several groups, according to their characteristics in the actions and movements they perform on the field, as follows:

- Group A: Second Base (2B) and Torpedo Boat (SS).
- Group B: First Base (1B) and Third Base (3B).
- Group C: Gardeners (J).
- Group D: Receptors (R).
- Group E: Pitchers (L).

Different methods such as *document review* are used in the research. It facilitated the collection of elements related to training by positions in softball, particularly in defensive actions; in this way, the current state of the subject under study is established. Among the documents reviewed are:

- Comprehensive Softball Athlete Preparation Programs.
- Training plans: training plans of the 13-15 years old and youth teams of the Provincial School of School Sports Initiation for girls, in the 2017-2018 academic year.
- The technical reports of the offices of the pre and post-competitive preparation for the different categories in high performance in the course under study.

The scientific observation was used with the purpose of verifying in practice the forms of control of defensive actions in the box players. It was applied taking into account the characteristics of generality, systematicity and objectivity. It was basically framed in the displacements as a dimension and as indicators: fast displacements with ball, medium displacements with ball and fast displacements without ball.

By means of the *measurement*, the approximation of the number of meters covered by each player, from their position in the different actions of the game, was calculated; then the distances covered by the players were controlled.



In order to control the defensive actions, differentiating the movements with and without the ball, it was elaborated forms that collected the volume of meters covered by the defensive players. The forms were used for each player in each game (during training and competitions) and a total of seventeen actions were recorded:

1. Cover its base.
2. Cover another base.
3. Fildear rolling from the front.
4. Fildear rolling to the left.
5. Fildear rolling to the right.
6. Fildear rolling forward.
7. Fildear front line.
8. Fildear line to the left.
9. Fildear line to the right.
10. Fildear line forward.
11. Fildear fly from the front.
12. Fildear fly on the left.
13. Fildear fly on the right.
14. Fildear fly forward.
15. Position yourself as a marker.
16. Perform assists.
17. Intern as a cutter.

In order to gain accuracy in the application of the methods, a pilot test was conducted in eight (8) matches during the team's preparation period. Based on the results of the pilot test, the instrument was perfected and definitively applied.

Different statistical techniques were applied to the data obtained; using the SPSS computerized system for Windows, in order to gain greater precision in the processing of the information collected, which increases the reliability of the same. From the descriptive statistics, the mean, standard deviation, coefficient of variation and maximum and minimum values were used. In addition, an analysis of the frequency distribution tables of maximum intensity running in different distance intervals was performed.



## RESULTS AND DISCUSSION

As it is known, the integral program of preparation of the athlete highlights the defense as a determinant direction of performance for softball. However, it is not specified which are those criteria or definitions that determine or condition their maximum performance, specifically in the defensive for each area of work, according to the characteristics of each position. This is corroborated in the training plans and technical reports of the preparation offices, after their analysis.

After applying the methods of observation (according to the types of displacements) and measurement (to determine the distance travelled while moving), the following results are obtained.

In Table 1, the fast ball speed actions are reflected, they involve looking for the connected hit or the defender's throw; the objective is to get the *out* or prevent the runner from reaching a new base (Table 1).

**Table 1.** - Total values of the displacements (meters) and defensive actions

Scrolling Groups	Fast with the ball		Medium with ball		Fast without a ball		Totals	
	Acción	Metros	Acción	Metros	Acción	Metros	Acción	
<b>A</b>	22	8	7	5	14	10	43	23
<b>B</b>	12	8	6	4	3	3	21	15
<b>C</b>	14	3	3	2	21	4	38	9
<b>D</b>	3	2	2	1	28	6	33	9
<b>E</b>	1	1	1	1	22	3	24	5
<b>Media</b>	<b>10.4</b>	<b>4.4</b>	<b>3.8</b>	<b>2.6</b>	<b>17.6</b>	<b>5.2</b>	<b>31.8</b>	<b>12.2</b>

Groups *A* and *B* are the ones that perform more actions, eight (8) each. Here it should be clarified that group *A* covers more meters than group *B*, because the latter is formed by static and reaction positions and the former is going to intervene in more than 60% of the connections that are made by the infield (ball touches, base stealing, rudders).

Group *C* performs three (3) actions in the game and in each one of them they will travel between three (3) and five (5) meters, this is due to the connections to different sides, both rollings and through the air.

The group *D* executes two (2) actions in which it moves between two (2) and (3) meters, mainly due to the field of the ball touches and the foully.

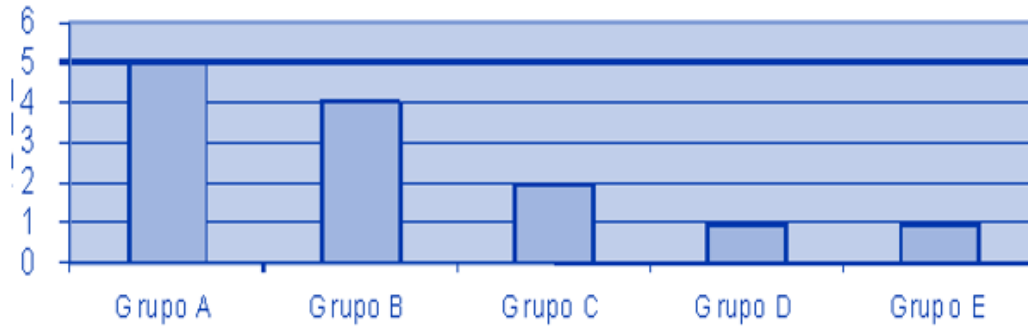
Group *E* performs one (1) action in the game, as it should not generally intervene in the defensive actions of the box, it should only edge the connection that is produced by its position.

It is corroborated in this way that the defensive movements in softball are going to be characterized by their speed of execution; these play a preponderant role since the races are of short duration. It can be defined, then, as the ability to react with maximum speed to a signal or perform movements with maximum speed. It is evident the need to prepare in the speed of reaction, speed of movement and speed of frequency of movements



(frequent). The three are strongly related and reaffirms the idea that a player will not be able to move at high speed if he does not develop the first one.

In Figure 1, it was observe the medium speed actions with the ball, groups A, B, and C perform fewer actions and cover less than 50% of the meters with fast displacements, this includes the so called front hits (the defenders only move two or three steps in any direction) (Figure 1).



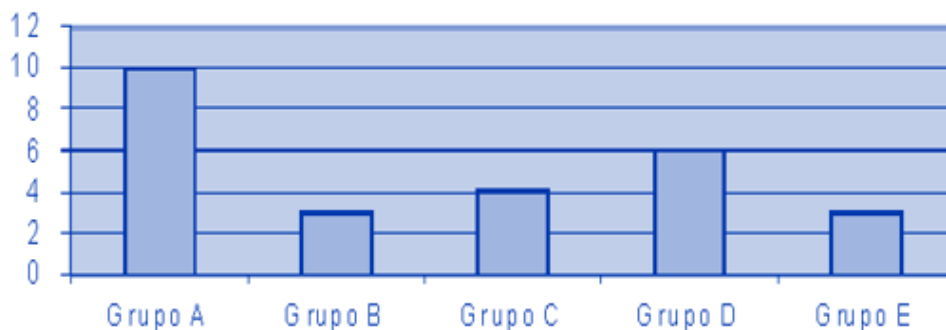
**Fig. 1.** - Medium actions with the ball on defense

The only difference here is that group B has more displacement in the medium actions with the ball than group C; this is due to the fact that in group B there are the 1B's that have a lot of return to the base at medium speed.

In general, it is noted that the average ball actions are not very noticeable, the average between the groups is two (2) to four (4) actions per game and this shows that softball is a sport of fast actions and reaction.

This reflects the value of the average actions with the ball and shows the importance that coaches should give to them in training. This corroborates, in this way, what Pérez Pardo (2018a) stated about the integrated work of the preparation of the infield players to individualize the work of the actions with the ball, so important in modern softball.

Supported in Figure 1, it was observe an aspect not valued in the game, considered very important in modern softball; it will show us actions that are seen in the game of softball and are not worked in training, are the actions of tactical thinking or the so-called anticipation plays. They include the assists behind the possible error and possible actions of the opponent (Figure 2).



**Fig. 2.** - Quick actions without the ball in defense





It is observed that the groups that move the most with respect to their actions are *D*, *E* and *C*; this is because every time there is a connection through the infield the catcher must move backwards from 1B, the pitchers with hits to the gardens, move behind each base according to the size of it and group *C* because every time there are connections through the box, or possible plays by the opponent, they have to move backwards from each corresponding base.

Group *A* is the group that performs the most actions with respect to the meters it moves, because, when the batter feints the bunt or helm, whether there is a runner at 1B or 2B, they must break the inertia and move towards each base on each pitch made by the *pitcher*. Once again it is noted that group *B*, being static and reaction positions, has less time to move.

The data explains that group *A*, having more mobility in the game, is going to perform more actions and travel more meters in short stretches. However, it is noted how groups *C* and *D* are equal in the actions performed and are quite even in the meters traveled, because they must make the assists behind the bases each one and the fielders have more ground to cover.

This demonstrates the relevance of the preparation actions prior to the plays (anticipation plays). Its importance to include them as training criteria in the training process and to value them as part of the integrated work in the actions of the box players' area. Above all, including the pitchers who play a fundamental role and perform a great amount of actions without the ball that, in many occasions, define the final result of the game.

All these actions start from the static and as it can be observed they cover medium distances to reach the maximum displacement in short times, always with a determined objective.

The middle infielders handle the ball more often than the outfielders, so we have that the center fielder and the second basewoman are involved in the greatest number of hits. Excluding the throws they receive from the other players, the first basewoman and the pitcher are the least involved in the hits produced; all the fielders have to assist behind the bases every time a play is made in the box.

The analysis of these graphs of defensive actions indicates how softball should develop an individualized work in training by positions, where each of them, indistinctly, have short and fast movements, static actions of reaction and anticipation actions to possible plays. According to Pérez (2018b), the studies that have been conducted on the subject by Acosta and Rodríguez (2010), Jiménez (2013), Acevedo (2013), Valdez (2013), Évora (2014), Pérez (2014), Méndez (2015) and Martínez (2015), also recognize the need to plan and control the preparation process of high performance athletes, attending to criteria or performance indicators. In the context of the study itself, it was possible to verify the above and the need to consider these criteria in the development of working groups as a reference point for the control and planning of the defensive training process of box players, as well as the importance of working by areas and, above all, in the groups created, according to their movement characteristics.



## CONCLUSIONS

It is evident that the planning and organization of sports training has different theoretical conceptions of different authors who have contributed significant components; but they do not offer sufficient elements to the process of interrelation of the specific moments of preparation and competition of the box players in the defensive area.

Softball athletes in the defensive area express a variable effort stipulated by the actions they execute, with a predominance of fast actions. The elements that should characterize the preparation of softball players, from the defensive point of view, are summarized by groups, as follows: Group A: (fast and short displacements), Group B: (static and reaction actions), Group C: (long displacements and assistance), as well as groups D and E: (error anticipation actions).

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**Conflict of interests:**

The authors declare not to have any interest conflicts.

**Authors' contribution:**

The authors have participated in the writing of the work and analysis of the documents.



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