

Factors affecting concentration of attention in boxing athletes in combat situations

Los factores que afectan la concentración de la atención en atletas de boxeo en situaciones de combate

Fatores que afetam a concentração da atenção em atletas de boxe em situações de combate

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ABSTRACT

Concentration of attention is a fundamental aspect to achieve high results in boxing; therefore, it is necessary to keep control of the factors that influence it to achieve an adequate performance in combat situations. The aim of this paper is to analyze the factors that influence the proper performance of concentration of attention in boxers in combat situations. To carry out the diagnosis, methods such as interviewing the boxer, observations to trainings, competitive stops, the variant of the Load Symptom Test for athletes and the external assessment scale for coaches are used. For the analysis of the results, the descriptive statistics were applied, using as trend measures the median and the mode. In addition, empirical distributions of absolute and relative frequencies were made, the analysis of non-parametric variance of Kruskal Wallis with a significance level of $p < 0.05$. It is appreciated in the results that the factors that influence negatively in the adequate performance of the concentration of attention, self perceived by the boxers and trainers were the manifest superiority of the opponent and the reproaches of the trainers during the competition. As conclusions, it is appreciated that the obtained results demonstrate that the factors that influence in the suitable performance of the concentration of the athletes are the manifest superiority of the opposite, the reproaches during the



competition and it is recommended the application of actions of psychological intervention to improve the concentration of the attention of the studied boxers, based on the correct definition of the attentional focuses and to offer positive feedback on the part of the trainers.

Keywords: Self-perception; concentration of attention; boxing; loading symptom test.

RESUMEN

La concentración de la atención constituye un aspecto fundamental para lograr altos resultados en el boxeo; por eso, se necesita mantener el control de los factores que influyen en esta para lograr un desempeño adecuado en situaciones de combate. El presente trabajo tiene como objetivo analizar los factores que influyen en el desempeño adecuado de la concentración de la atención en los boxeadores en situaciones de combate. Para realizar el diagnóstico se utilizan métodos como la entrevista al boxeador, observaciones a entrenamientos, topes competitivos, la variante del *Test de Síntomas de Carga* para los atletas y la escala de valoración externa a entrenadores. Para el análisis de los resultados se aplicó la estadística descriptiva, utilizando como medidas de tendencia la mediana y la moda. Además, se realizan distribuciones empíricas de frecuencias absolutas y relativas, el análisis de varianza no paramétrico de Kruskal Wallis con nivel de significación de $p < 0,05$. Se aprecia en los resultados que los factores que influyen negativamente en el desempeño adecuado de la concentración de la atención, autopercebidos por los boxeadores y entrenadores fueron la manifiesta superioridad del contrario y los reproches de los entrenadores durante la competencia. Como conclusiones se aprecia que los resultados obtenidos demuestran que los factores que influyen en el desempeño adecuado de la concentración de los atletas son la manifiesta superioridad del contrario, los reproches durante la competencia y se recomienda la aplicación de acciones de intervención psicológica para mejorar la concentración de la atención de los boxeadores estudiados, basadas en la definición acertada de los focos atencionales y ofrecer feedback positivos por parte de los entrenadores.

Palabras clave: autopercepción; concentración de la atención; boxeo; test de síntoma de carga.

RESUMO

A concentração das atenções é um aspecto fundamental para alcançar resultados elevados no boxe; portanto, é necessário manter o controle dos fatores que a influenciam para alcançar um desempenho adequado em situações de combate. O presente trabalho visa analisar os fatores que influenciam o desempenho adequado da concentração da atenção nos boxeadores em situações de combate. Para fazer o diagnóstico, são utilizados métodos como a entrevista do boxeador, observações a treinos, paragens competitivas, a variante do Teste de Sintoma de Carga para atletas e a escala de avaliação externa para treinadores. Para a análise dos resultados foram aplicadas as estatísticas descritivas, usando como medidas de tendência a mediana e a moda. Além disso, foram feitas distribuições empíricas de frequências absolutas e relativas, a análise da variância não paramétrica de Kruskal Wallis com um nível de significância de $p < 0,05$. É apreciado nos resultados que os fatores que influenciam negativamente no desempenho adequado da concentração de atenção, autopercebida pelos boxeadores e treinadores, foram a manifiesta superioridade do



adversário e as reprovações dos treinadores durante a competição. Os resultados obtidos mostram que os fatores que influenciam o desempenho adequado da concentração dos atletas são a manifesta superioridade do adversário e as reprovações durante a competição. Recomenda-se a aplicação de ações de intervenção psicológica para melhorar a concentração da atenção dos boxeadores estudados, com base na definição correta dos focos de atenção e para oferecer feedback positivo pelos treinadores.

Palavras-chave: autopercepção; concentração da atenção; boxe; teste de sintoma de carga.

INTRODUCTION

Concentration of attention

Coaches' support for the athlete's autonomy must be permanent and is positively associated with the psychological well-being of the athletes and the development of their potential so that they can achieve their maximum performance. *Sagarra, (2003), González et al., (2013); González, (2016); Pérez y Cañizares, (2018); Soler, Y. and Suárez, M. (2015); Soler and Suárez (2015); Suárez, Soler and Cañizares, (2018); Cañizares, (2015).*

In the study of the personal qualities of competitors, Olympic and world champions there are some like the following *Orlik, (1986), Suárez, Soler and Cañizares, (2018).*

1. Psychological self-direction: self-discipline, self-confidence, self-motivation.
2. Determination: Doing everything possible to achieve a goal.
3. Organization: Always establish priorities, follow the corresponding instructions.
4. Concentration on the task: Focus on the most relevant indicators at the right moments.

Thus, concentration of attention is part of the essential mental skills for any athlete, *Cañizares, (2009); Sarmiento, (2011), Ribetti, (2011).*

Concentration of attention implies the stability of its orientation towards a given object or stimulus. It is also distinguished by the intensity of attention, which indicates the strength with which an individual concentrates his or her attention on a given activity, object or task, making abstraction of everything else, *Cañizares, (2009).*

In combat sports such as boxing, the subject becomes more relevant because it is a sport with high demands on the psychophysiology of the athlete, in which there is a close-up confrontation and in which the quality of its technical-tactical execution is decisive for the result; an aspect that requires high levels of concentration of attention as addressed by Sagarra in his master lecture, *Soler and Suárez, (2015).*

The acquisition of tools and skills for the concentration of attention from an early age, become a fundamental weapon for the athlete, which allows him to self-regulate his behavior and determines largely the attitude assumed by him later on in teaching, training and competition activities *Ribetti, (2011).*



Therefore, the boxing trainer must analyze the use of full attention, of the attention process, to improve the concentration in this process and to accentuate the orientation of the boxers towards the most relevant focuses in their actions **Soler and Suárez, (2015)**.

In this way, the athlete must learn to focus on the combat situation at the right time and in the right place, which will facilitate the correct execution. At the same time, it is necessary that the athlete perceives what is the state of his concentration of attention and be able to evaluate himself in that sense, **Soler and Suárez, (2015)**.

This ensures a better assimilation of the technique as the focus is on which point of the technique and - or tactics they have to devote more attention to when executing their actions and those of their opponent. This procedure is systematically trained until it becomes an attentional skill once it is perfected, **Soler and Suárez, (2015)**.

Thus, the boxer will be able to attend to the external stimuli of this sport that will be captured depending on the flexibility and translation of his attention, the direction and amplitude of the attentional focus in the fight, both in training and in competition, **Soler and Suárez, (2015)**.

Professor Raúl Fernández Liranza, quoted in **Suárez, Soler and Cañizares, M. (2018)**. Coach of the Cuban National Boxing School, who has coached several Olympic and world champions, states,

"The coach must help develop skills for the concentration of the boxer's attention through pedagogical observation and video analysis of fights, as a didactic component".

It is understood that learning to focus attention on key elements is an essential component in competitive success for the boxer and the following should be taken into account:

- The boxing coach must know the characteristics and psychological particularities of the athlete's age, specifically the developmental behavior of the attention process in the evolutionary stage in which he is working, whether with schoolchildren, adolescents or youth.
- He should be concerned about problems affecting the athlete's preparation that are of concern to the sport either itself, family members or others.

Self-perception of concentration of attention

It is considered necessary that the athlete knows how the states of concentration are manifested and what prevents him from achieving an adequate focus of his objectives; therefore, it is important that the coach takes into account, among other aspects, the following **Soler and Suárez, (2015)**:

- To attend to the styles of combat and confrontation of its athletes before the different situations, for the search of possible solutions and variants and thus to help them to focus its actions in the most effective solutions in the period of learning, in the technical improvement and in the competitive period, in its strategies of attack and defense in the boxing combat.
- To attend to the individual characteristics of their athletes and the particularities of their attentional processes that are closely related to the



characteristics of their personality, temperament, motivations, states of psychological predisposition and states of pre-start.

- To work in close relationship with the psychologist, as this is his advisor in the different situations of psychological control.
- To know the potentialities of his athlete, the zone of next development, to orientate the accents of the preparation according to his rhythms of learning.

Likewise, Raul Fernandez Liranza, quoted in **Suarez Soler and Canizares, (2018)** emphasizes that boxing coaches must develop attention skills based on:

- To know what signs should be attended to (voice of the coach, different signs, as previously agreed with the coach, to execute with discipline the personal strategies, which are not the same in the different athletes, that is to say, they can vary according to the styles of each boxer.
- Keep the focus on the relevant signs of the task, i.e., establish the dominant focus on the actions.
- Ability to change the focus of attention when necessary.
- Ability to re-focus when some type of distraction occurs, whether by the audience, referee, negative thoughts.
- Control of irrelevant and unrelated thoughts
- Inhibit distracting stimuli of all kinds.
- Control of the states of fatigue, as well as the rest periods of the boxer.
- Taking into account the level of complexity and demands of the competition and the focus on the actions and styles that the athlete will use in his fight, according to the goals and objectives set.
- The self-perception of the concentration of attention is a practice that must be systematized regularly to know what to attend to and what not to attend to, and to maintain a high level of orientation towards the task.

For this reason, this research aims to analyze the factors that influence the proper performance of concentration of attention in boxers in combat situations.

Thus, the diagnosis and study of the boxer's self-perception and the control of the factors by the coaches that influence the state of concentration of the boxers' attention, acquires particular importance since it contributes to the coaches and psychologists' ability to plan and project their work. In this way, it will be possible to establish indicators of concentration of attention self-perceived by the athletes and perceived by the trainer that affect and/or favor their actions. In addition, it will facilitate the planning of psychological intervention actions to optimize this process and favor the development of attention skills.

MATERIALS AND METHODS

The study that is carried out is essentially of a descriptive type.

Methods

Interview with the boxer: it was done during the diagnostic stage, individually, before starting the training session. It is used to collect the state of mind of the athletes who are members of the sample in relation to significant elements related to concentration of attention.



It consists of four questions that collect information corresponding to the following indicators:

- Self-perception of the knowledge of the attention process.
- Self-perception of the level of significance of the attention process for the activity.
- Self-evaluation of the concentration of attention in training and competencies.
- Behaviors assumed in the face of the appearance of difficulties in the concentration of attention.

Observation of training sessions and competitive matches

Objective: to assess the existence of indicators of low concentration of attention in boxing athletes referenced in [Soler, Y. and Suárez, M. \(2015\)](#).

The indicators were:

Fulfillment of the oriented tasks:

- Time used to solve the task.
- Quality of performance.
- Repetition of errors already made.
- Discrimination of relevant sounds.
- Anticipation of the actions of the opponent.

Variation of the load symptom test

Objective: to explore conditions that influence the adequate performance of the athlete's attentional processes in combat situations through the self-perception of the athlete.

It is a test created by [Frester, \(1976\)](#), quoted in [Soler and Suárez, \(2015\)](#). in order to know the situation of load of incident factors in the sport performance. It is composed of twenty-one (21) items with a score scale from one (1) to nine (9) points. For the analysis of results, the items are grouped into three (3) factors related to the psychic stability of the athletes in relation to the objective conditions of the environment, social-personal stability and vegetative and success-default stability.

On the other hand, [García, \(2001\)](#) cited in [Soler, Y. and Suárez, M. \(2015\)](#). proposes to use it for the evaluation of the incidence of the present stimuli in competition on the concentration of attention, modifying the original one and its ranges for the evaluation; emphasizing the incidence of the referred situations on the concentration of attention.

In a general sense, these techniques were used to collect data on the current state of the process under study, as well as to collect the state of opinion of the subjects directly and indirectly involved in the research.



A qualitative evaluation was carried out taking into consideration the self-perception of the influence that athletes have in relation to certain factors that are present in competition situations. In order to present and understand the results, they were distributed in three groups: those with a positive influence, those with a negative influence and those with no influence at all.

In addition, the results of the observations made and the criteria provided by the coach about the factors that influence the concentration of the boxers were taken into account.

Scale of external assessment to coaches

Objective: to explore the coach's assessment criteria regarding the concentration of attention of the boxers in the sample.

It was elaborated by the researcher [Soler, Y. \(2016\)](#) taking as a reference the Loehr Psychological Performance Test, as well as elements that denote difficulties in the process in boxing athletes and that were detected by the coaches in the study. It was applied to each athlete's coach individually and was validated in previous research, [Soler, Y. \(2016\)](#).

Mathematical statistical analysis

From the statistical-mathematical level, the methods and procedures used were the following: for the collection of the information in the field, a form was prepared and taken to an EXCEL database for its ordering and better understanding. For the analysis of the results, descriptive statistics were applied, using the median and mode as trend measures. Additionally, empirical distributions of absolute and relative frequencies with their corresponding percentage distribution were used for the qualitative analysis of the variables. In addition, the analysis of non-parametric variance of Kruskal Wallis was performed in order to compare the diagnostic observations. The significance level used was $p < 0.05$.

Population and sample

The general population was composed of the 40 boxers belonging to the EIDE "Martyrs of Barbado" of Havana, who were part of the school team of the province. Of these, 20 were selected from the 15-16 age group that made up the research sample, representing 50 % of the population. In addition, the 10 coaches (100 %) of the population working with these athletes were interviewed. An informed consent for the application of the different tests was obtained signed by the athletes and coaches who participated in the research.

RESULTS

Interview results to boxers

The Table 1 shows the empirical distributions of absolute and relative frequencies with their corresponding percentage distribution in relation to the self-perception of low concentration indicators of the attention of the boxers in the sample (Table 1).



Table 1. - Indicators of low concentration of attention self-perceived by athletes

| Indicators | Number of athletes | % |
|---|--------------------|----|
| I let myself be provoked by my opposite | 17 | 85 |
| I repeat the same mistakes | 16 | 80 |
| I listen to the audience more than I listen to my coach | 11 | 55 |
| I let myself be surprised by the opposite | 10 | 50 |
| I think about past mistakes | 9 | 45 |
| I feel distracted | 9 | 45 |
| I'm easily exhausted | 3 | 15 |

Source: Interview made to the sportsmen Soler, Y. and Suárez, M. (2015).

The indicators of low concentration of attention most self-perceived by the athletes expressed in the interview were: "I let myself be provoked, on the contrary, I repeat the same mistakes already corrected by the coaches and I listen more to the public than to my coach".

Results of observations to athletes in competition and training situations

This technique was used during the diagnostic stage in order to corroborate the existence of indicators affecting concentration of care. Five overall observations were made between the researchers and the head coach, and these observers gave scores.

The observations were made during the first week of evaluation, coinciding with preparatory competitions on the third and fourth days, so that the performance of the athletes could be observed both in competition situations and in training.

The Table 2 shows the median value of the group's evaluations for each of the indicators evaluated in the observations. It can be seen that, in general, five of the six indicators observed are evaluated on a regular basis, and only the time taken to solve the tasks is evaluated well. (Table 2)



Table 2. - Results of the observation by indicators in the situation of competences and trainings

| | |
|---|--------|
| Total observations | 5 |
| Indicators | Median |
| Fulfilment of tasks oriented | 2,5 |
| Time taken to solve the task | 3 |
| Quality of performance | 2,5 |
| Repetition of mistakes already made | 2,5 |
| Anticipating to the actions of the opponent | 2 |

Source: Observations made to athletes Soler, Y. y Suárez, M. (2015).

The Table 3 shows the descriptive statistics of the diagnostic observations, evaluated by indicators. For the fulfillment of the tasks, a marked tendency to maintain the same values of the median in the observations was obtained; obtaining an overall median for the indicator of 2.5 that indicates a regular evaluation.

The most frequent category of evaluation was that of regular (*Fashion* = 2), even though there were two well-evaluated observations. In this case, in none of the observations did this indicator receive an evaluation of very good or excellent. The differences were not significant when comparing the observations of Kruskal Wallis ($p > 0.05$).

The indicator time used for the solution of the task showed slightly higher qualitative results than that of compliance with the oriented tasks, with the median and mode values of each observation coinciding in three, which corresponds to an evaluation of good. When comparing each observation, for the variable indicated, no significant differences were found ($p > 0.05$).

The indicator *performance quality* showed median values ranging from two to three for the observations made, with an overall value of 2.5 for a regular assessment.

Observations three and four (carried out in a competitive situation), had the most discreet fashion (*Fashion*=2), corresponding with the evaluation of regular. The same happened with the evaluation six made during the last training of the week and after the competition situation.

The rest of the observations showed a similar fashion (*Fashion*=3). When the differences found were contrasted through the Kruskal Wallis test, significant differences ($p < 0.05$) ($p = 0.00$) were obtained between the observations.



When evaluating the *indicator of repetition of errors* already corrected, the median values ranged from two to three for all the observations, their overall evaluation being 2.5 in correspondence with the evaluation of regular. Despite this, the value of three for fashion as a trend in most of the observations indicates a predominance of athletes evaluated as good even though none is evaluated as very good or excellent.

The lowest values are found in the third observation corresponding to a competitive situation, with the fashion value being one, which indicates the predominance of athletes evaluated poorly. The contrast among observations showed significant differences for $p < 0.05$ ($p = 0.01$).

In relation to the relevant sound discrimination indicator, medians were found tending to the same value ($Median = 2$) for the observations made, with observation two (made in a training situation) being the only one to reach the category of good with a median of three. Except for observation two ($Fashion = 3$), the rest of the observations had their fashion in two, which indicates that the evaluation that is most repeated in this sense is that of regularity.

The contrast among observations showed significant differences for $p < 0.05$ ($p = 0.00$).

Another of the indicators evaluated was anticipation of the actions of the opposite party. In this case, the median score obtained in each observation ranged from one to three. Observation 3, coinciding with a mode centered on the lowest rating showed the lowest value (one), while the rest had its mode between ratings two and three.

The most unfavorable values in both the median and the mode are found in the third and fourth observations, which were made during the competitions. The contrast between observations showed significant differences for $p < 0.05$ ($p = 0.00$).

Table 3. - Results of observations in competition and training situations. Kruskal Wallis test

| Observations | Median /mode | CT | TST | CE | REC | DSR | AAC |
|---------------------|--------------|-------|-------|------|------|------|------|
| Observation1 | Median | 2,5 | 3 | 3 | 2,5 | 2 | 3 |
| | Mode | 2 | 3 | 3 | 3 | 2 | 3 |
| Observation2 | Median | 3 | 3 | 3 | 3 | 3 | 3 |
| | Mode | 2 | 3 | 3 | 3 | 3 | 3 |
| Observation3 | Median | 2,5 | 3 | 2,5 | 2 | 2 | 1 |
| | Mode | 2 | 3 | 2 | 1 | 2 | 1 |
| Observation4 | Median | 2,5 | 3 | 2 | 2,5 | 2 | 2 |
| | Mode | 2 | 3 | 2 | 3 | 2 | 2 |
| Observation5 | Median | 3 | 3 | 2,5 | 2,5 | 2 | 2 |
| | Mode | 3 | 3 | 2 | 3 | 2 | 2 |
| * Meaning | Median | 0,569 | 0,767 | 0,00 | 0,01 | 0,00 | 0,00 |



*Meaning of Kruskal Wallis test

Legend:

- CT:** Fulfilment of tasks.
- TST:** Time spent on task solution.
- CE:** Quality of implementation.
- REC:** Repetition of errors already corrected.
- DSR:** Discrimination of Relevant Sounds.
- AAC:** Anticipation of the actions of the opposite party.

Source: Observations made to sportsmen Soler, Y. and Suárez, M. (2015).

Load Symptom Test results

In relation to the factors affecting the concentration of attention in the boxers, it was obtained that the most self-perceived by the athletes in the load symptom test were: being harmed by the judges, in nine athletes (45 %); excessive nervousness, sensations of physical weakness, spectators and disturbance stimuli of optical, acoustic or tactile nature in seven athletes (35 %); as well as the previous defeats and the manifest superiority of the opponent in six athletes (30 %).

These factors also include reproaches during competition and poor performance in training and competitions by five athletes (25 %); as well as disagreements with coaches, teammates and family members, and postponements of competitions by four athletes (20 %). (Figure 1).

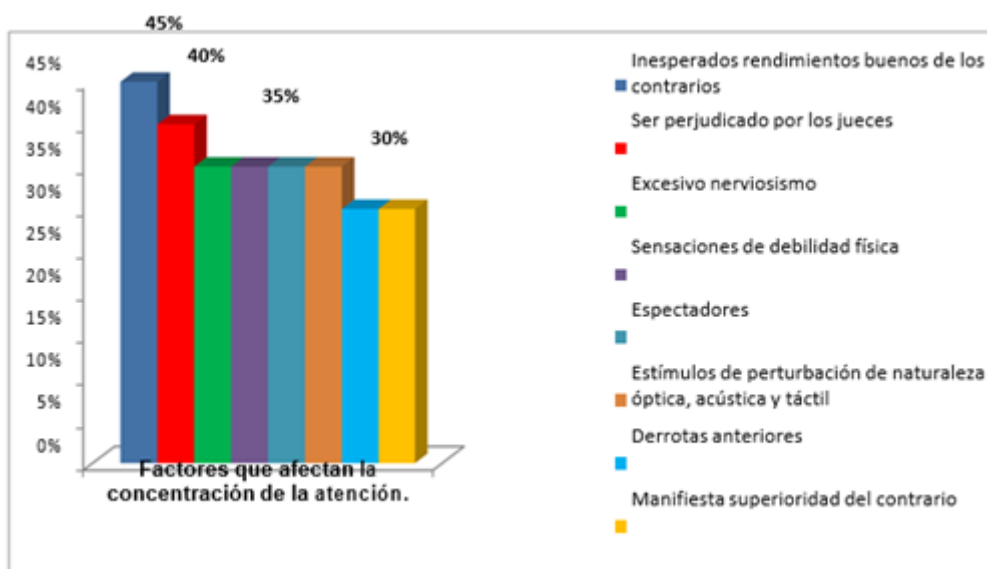


Fig. 1. - Main factors affecting concentration of attention self-perceived by athletes from the load symptom test

There is another group of factors self-perceived by athletes as elements that favour their concentration of attention. They are: thinking continuously about the fulfilment of the goals set in 10 athletes (50 %); actions failed at the beginning in nine athletes



(45 %); having already lost once to the opponent in seven athletes (35 %); favourite role and excessively high performance goals in six athletes (30 %). This group of factors could be used to support the athletes' concentration of attention by monitoring the effect each of them has at any given time and adapting their management to each athlete and each particular situation (Figure 2).

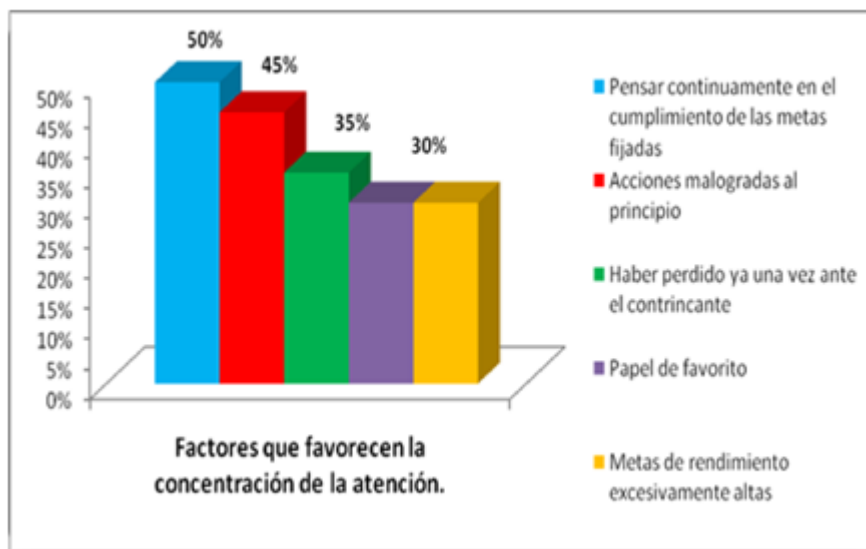


Fig. 2. - Factors favoring concentration of attention self-perceived by athletes from the load symptom test

Finally, the factors which athletes consider not to be influential in concentrating attention, but which should not be ignored in the process of psychological intervention, are: uncomfortable competition facilities in nine athletes (45 %); too long journeys in eight athletes (40 %); unfamiliar opponents and difficulties in reconciling and maintaining sleep in seven athletes (35 %) (Figure 3).

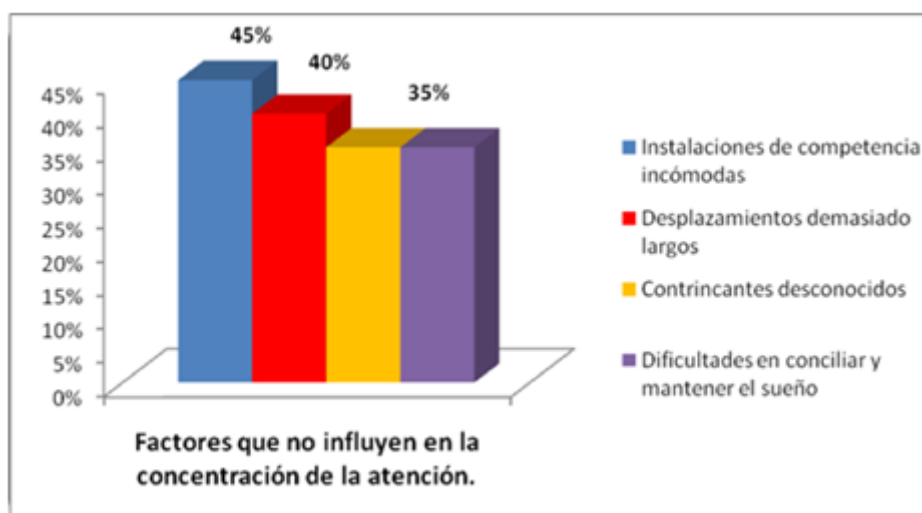


Fig. 3. - Factors that do not influence the concentration of attention self-perceived by athletes from the load symptom test



Table 4. - Results of the external assessment scale during the diagnostic stage

| External assessment | Median | Frequency |
|--|--------|---------------|
| He makes the same mistakes after being corrected by the coaches. | 4,5 | Almost always |
| He gives in to the provocations of his opponents and does not develop his tactical plans. | 3 | Sometimes |
| He affect his concentration. | 3 | Sometimes |
| At the moment of the fight, the noises of the public and the directions of the coaches from the corner affect his concentration. | 3 | Sometimes |
| During the fights, it seems as if he is thinking about something alien to it. | 3, 5 | Sometimes |
| During the fight, he neglects the movements of both hands and feet of his opponents so he is easily surprised. | 4, 5 | Almost always |

As expressed in the table above, the evaluations of the coaches were placed in the category almost always to express the frequency with which the following indicators occur: repetition by the athletes of the same errors after being corrected by the coaches (reiteration), as well as the carelessness during the fight of the movements of both hands and feet of their opponents, which makes them easily surprised.

This evaluation indicates that according to the perceived and expressed criteria of the coaches these are the indicators of difficulties in concentration of attention, most frequently present in the sampled boxers.

In the case of the remaining indicators (he gives in to the opponents' provocations and does not develop his tactical plans; at the moment of the fight the noises of the audience and the coaches' orientations from the corner affect his concentration; during the fights it seems as if he is thinking about something alien to it) they appear with a category of frequency of sometimes.

It is important to note that during the diagnostic stage, the coaches rarely, if ever, referred to the categories in the evaluation exercise of their athletes, which indicates a correspondence of the coaches' criteria with the results obtained in the previously evaluated tests.

DISCUSSION

In the sample studied, during the initial diagnosis, a predominance of boxers with evaluations of bad and regular attention concentration in the observations made was found.



The indicators of low concentration of attention most self-perceived by the athletes were: I let myself be provoked on the contrary I repeat the same mistakes already corrected by the coaches (reiteration), I listen more to the public than to my coach.

The factors self-perceived by the athletes as those that affect in a positive way the adequate performance of the concentration of attention, were the manifest superiority of the opponent and the reproaches during the competition; while those self-perceived as facilitators of the achievement of a better concentration were: the continuous thinking in the fulfillment of the goals set and the improvement of the actions that were failed at the beginning. The self-regulation of the athlete's behavior in this situation can be appreciated here, which helps him to know himself in order to achieve effective ways of self-help.

In this case, the selection of the factors that hinder the concentration of attention made by the athletes in the sample, is in correspondence with studies carried out by [Weinberg, and Gould \(1996\)](#) and [Pérez, M, Cañizares, M, Fleitas, D, Amico \(2018\)](#), who refer to these factors as trends that frequently become obstacles to achieve the control of the focus of attention and that are widely present in the sports context.

In the observations made to athletes in competition and training situations, the results of Kruskal Wallis' test show that there was no athlete evaluated as very good or excellent in the concentration of attention, since in these the evaluations of regular and in some cases with a tendency to good predominated. The need to promote this important process in the boxers of the sample is therefore appreciated.

In relation to the factors that affect the concentration of attention in the boxers, it was obtained that the most self-perceived by the athletes in the load symptom test were: being damaged by the judges, in nine athletes excessive nervousness, sensations of physical weakness, spectators and disturbance stimuli of optical, acoustic or tactile nature; as well as the previous defeats and the manifest superiority of the opponent. This indicates the need to control these internal factors (subjective) that obey the control of thoughts (cognitive aspect) and emotional self-control, as well as the external factors coming from the competitive scenario [Soler, Y. and Suárez, M. \(2015\)](#).

When analyzing the factors that favor the concentration of attention self-perceived by the athletes from the Load Symptoms Test, it can be seen that: thinking continuously about the fulfillment of the goals set as well as the actions failed at the beginning and having already lost once to the opponent, are the most pointed out by the boxers which constitute elements to consider in order to stimulate the elaboration of cognitive strategies for the development in the training of attention skills.

Thus, it can be seen that there are factors that athletes mention that do not influence the concentration of attention, from the results of the Load Symptoms Test and are beyond the control of coaches, medical staff and athletes themselves, for example: the condition of competition facilities, too long trips, unknown opponents and difficulties in reconciling and maintaining sleep. However, it is considered that the trainer should not neglect these aspects, as they should be taken into account so that they do not affect the preparation of the athlete.

On the other hand, in the results of the external assessment scale during the diagnosis stage, the evaluations of the coaches in the category were almost always destined to the indicators: reiteration by the athletes of the same errors after being corrected by the coaches (reiteration), in which it is observed coincidence with what



was perceived by the boxers; in addition the coaches state that the negligence during the fight of the movements of both hands and feet of their opponents, is almost always manifested what makes their athletes to be easily surprised.

The coaches also point out that in the case of the remaining indicators: he gives in to the opponents' provocations and does not develop his tactical plans; at the moment of the fight the noises of the audience and the coaches' orientations from the corner affect his concentration; during the fights "it seems as if he is thinking about something alien to it". In the case of the "sometimes" category, this indicates that, although to a lesser extent, there is also recognition by coaches of their existence as disruptive to the proper performance of the Athlete, both in training situations and in competition.

Taking into consideration the self-perception of athletes in relation to these factors is based on the theory of [Nideffer, F. \(1976\)](#), in which he states that there are three major groups of factors that can act as internal (thoughts outside the situation, negative thoughts, lack of security and the difficulty of changing the way of attending (change from one attentional style to another). According to the results of research carried out by this author, the appearance of these elements in the presence of an athlete who has not been prepared in their handling can cause a total disorganization that leads to low sports performance.

Therefore, it is necessary to strengthen their confidence in their resources as boxers to cope with these elements and avoid causing a negative effect on their concentration. Therefore, in the preparation of the athlete, coaches must perform an adequate management of competition situations that may affect the concentration of attention.

The factors that influence the concentration of attention in the boxers described in this study coincide with those evaluated in research by [Soler, Y. and Suárez, M. \(2015\)](#) and [Suárez, M, Soler, Y. and Cañizares, M. \(2018\)](#) in which the need to control internal and external factors that affect the concentration of attention in athletes for the improvement of their competitive results is appreciated.

The results obtained show that athletes are able to perceive which are the internal and external factors that affect their concentration of attention and on the other hand coaches also distinguish those factors that most affect this process in their preparation in training and in competitions.

Based on the results obtained, it is necessary to carry out psychological intervention actions aimed at knowing and assessing the external and internal obstacles (factors) that can affect the concentration of the attention of the boxers in the sample. To this end, the active role of the trainer in determining the focus of attention and the advice of the specialist psychologist for the psychological control of this process is required. Moreover, the implementation of such studies and their application in larger samples and in other sports will allow defining trends and regularities around the factors that most affect the concentration of attention in athletes.

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