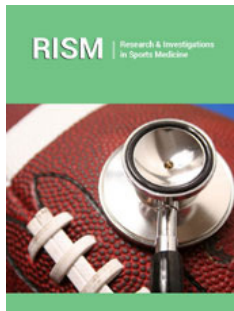


Focus Program in Attention and Concentration for Strengthening Sports Performance in Cross Fit Athletes of the Integral Performance Training (IPD) Box, In Aragua State

ISSN: 2577-1914



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Submission:  September 09, 2023

Published:  October 05, 2023

Volume 10 - Issue 1

How to cite this article: Guillermo Andrade, Katherin Betancourt, Aaron Guerra, Asdrúbal Castillo* and Alessandro D'Amico. Focus Program in Attention and Concentration for Strengthening Sports Performance in Cross Fit Athletes of the Integral Performance Training (IPD) Box, In Aragua State. Res Inves Sports Med. 10(1), RISM.000726. 2023.
DOI: [10.31031/RISM.2023.10.000726](https://doi.org/10.31031/RISM.2023.10.000726)

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Abstract

The psychological variables of attention and concentration are of vital importance when it comes to practice and athletic performance and therefore when performing mental preparation with athletes cannot miss their presence. However, there are coaches who still do not know the theory related to attention processes. That is why the objective of this scientific article is to present an overview of the construct's attention and concentration in cross fit sport, the exploration of scientific literature related to this mental process indicates that there is a benefit of external attentional focus on the internal especially in the sports area.

Keywords: Attention; Concentration; Athletic performance; Cross fit

Introduction

Among the important psychological abilities in high performance sports, the process of attention and focus invades notoriously preeminence as a variable object study, influential in sport performance [1-4]. Today it is known that attention and concentration are abilities that can be learned and trained, in expert athletes and those in the process of formation. In this research emphasis will be put on the psychological approach of these variables' attention and concentration in CrossFit specifically. Nevertheless, even though the notion of attention and concentration frequently appears in the sports ambit-and most people have an approximate idea of what these processes are and how they work-it is not easy to determine which defined aspects of our performance must be taken in account, now of valuing and training the attentional qualities. This difficulty is more evident, if we have present that the relevant stimuli of the game that athletes must pay attention cannot be established in a general way, but each sport particularly and specific commitment that each athlete has will the ones that establish what attentional requirements must be satisfied in each case. Concentration is one of the fundamental aspects to reach the maximum level, so that each athlete is suitable. The principal element of concentration is the capacity to focus attention on the task that is being carried out and not be distracted by external or internal irrelevant stimuli. External stimuli can include spectators booing, memories of recent mistakes, anti-sports fair play, among others. Most of the external events will display a cognitive and emotional change in the athlete. Given that this interaction is being shown all the time, coaches and sport psychologists must train athletes to face this event under situations of pressure, just as sports competitions are.

During the last decade, multiple professionals of sport psychology have shown their interest in the importance of concentration [5]. Thus, an article points out referring to this significant variable in sport performance [6], concentration is one of the most important

key points that can be put to service for the athlete to improve the performance, in training and in competition. According to Mack (2009), unfortunately the coach doesn't possess enough tools about teaching and how to empower adequately the athletes in such ability, or failing that, applies attentional focuses poorly effective and opposite to what research evidence [7,8]. Nevertheless, when an athlete gets more experience with a certain ability, minor attention will be required before the technique, and the attentional progress will be focused on more relevant stimuli [9,10].

Problem Situation

International contextualization

The evolution of CrossFit through the years has given an opportunity to its participants to integrate into the world of competitive sport. The birth of this sport is thanks to Greg Glassman, who in 2001 gave it name and its own form, allowing the whole world to get to know it. This North American that dedicated to train police officers with this method in sunny California, made possible that in 1995 appeared the first gym affiliated to CrossFit, in the city of Santa Cruz. Such was its success that it became popular worldwide, making people aged from 12 to 50 years old practice it [11]. The worldwide boom was such that at some point a great variety of competitions began to appear in this discipline. The best-known one and now is considered the main one, is the CrossFit Games. During these games, athletes compete in exercise routines that they learn just a few hours before performing them. Many of these include standard weightlifting and gymnastics movements, but sometimes include surprise movements that are not part of the typical CrossFit regime. Examples of these surprise elements could be swimming in agitated waters and throwing a ball. The competition afore-mentioned competition is made to determine "the most apt on Earth", and the competitors must be prepared for all.

National contextualization

In Venezuela, CrossFit begins to be known in 2010, through the athlete named German Foucault. But the ones who created the first box affiliated to the network of CrossFit NC were Antonio Carrera, Ricardo Vidal and José Alberto Carrera. This box is called CrossFit 58, where every WOD (Work of the Day) is experimented in a frequency that goes from lowest to biggest, with escalations or progressions adapted to the strength and level of a person. One of the most recognized events nationally where a great quantity of athletes from different states gather to demonstrate their physical abilities are the Fit Games or the Workout Challenge. Such events are celebrated once a year and have an exhaustive process of selection to qualify.

Regional contextualization

In Maracay, Aragua State, there are approximately 9 CrossFit boxes functioning, and the number of groups practicing this discipline is bigger. For this, there is an endless number of education programs that prepare CrossFit coaches so that they learn to train the athletes that wish to compete in these events, like the case of the

working group that is found in the box called Integral Performance Training (IPT).

Purpose of the research

The purpose of the present study is to offer a general approach referring to the process of attention and concentration in sports ambit, as well as its influence in the same. Besides, it is required to provide the coach with an approximation that supplies and facilitates the approach of attention and concentration in the daily practice of the sport discipline of CrossFit.

Importance of subject matter

According to bibliographic antecedents, research did not find specific information from the psychological point of view referent to concentration and attention and its influence in sport performance in CrossFit Athletes in Venezuela. Therefore, the need for innovation stands out for experts in this inexorable area in our country. Thus, the development of future investigations will be incentivized in this sport discipline that has so much popularity at the present time in Venezuela.

Theoretical Perspective

Attention

It's defined as the psychological process that allows an individual to establish contact with the most relevant stimuli of the present moment situation, omitting or eliminating those other stimuli that are not important (Dosil, 2006).

Concentration

It's the capacity to keep focus in the relevant signals of the environment, and as this environment changes, the focus must change as well [12].

The following factors described below are considered distractors of concentration:

External: They refer to each thing that happens around the athlete and can distract and make the concentration be lost.

Internal: They refer to thoughts and feelings of the athletes that in certain moments can distract them from what they are doing.

Difficulty to change the way of attending: Incapacity to change an attentional style. Once these concepts are understood, it is necessary to describe the attentional styles.

Attentional styles

The two basic dimensions of attention are: amplitude (wide-reduced) and direction (external-internal). Concretely, amplitude refers to the extension of the attentional field, this is, to the major or minor amount of information that the athlete must process at a certain moment. If the attentional field is wide, the athlete will be attending a great variety of stimuli at the same time. On the other hand, if the attentional field is reduced, this same athlete will be focusing his attention on a few, but crucial, stimuli. On the other hand, the direction establishes and determines the place where the attention focus is oriented. If the attention focus is directed to

the exterior, this is, toward environmental stimuli the crowd, the weather, mass media, etc.- it is referred to external attentional focus. Opposite to this, if attention is focused on oneself, in one's own sensations, feelings and/or emotions, it is referred to internal attentional focus. This means that in both cases -internal and external- are complemented and their use concerns both individual characteristics and the requirements of the situation.

But there is more. The combination of these two dimensions gives place to four different attentional styles. They represent the exact form in which the athletes attend the principal stimuli of the environment: The "wide-external" style, used for evaluating quickly the situation from the processing of great amount of information; the "wide-internal" style, used for analyzing and planning the situation from the selective analysis of the received information and the interiorized game schemes; the "reduced-external" style, used for preparing the performance through focusing the attention in a concrete object or in an determined external situation; and the "reduced-internal" style, used for preparing the sport performance through mental rehearsal of the performance. Speaking with honesty, although the sports modality tends to be the one that -due to its idiosyncrasy- makes athletes develop some styles more than others and unconsciously, and they use them in a recurrent and open way [13].

Attention focus

The wide attentional focus allows a person to perceive different events in a spontaneous way. This is especially important in sports where the athletes must be conscious and sensitive in the face of quick changes in the environment. This means they must respond to multiple signals. The narrow attentional focus works when a person responds to one or two signals. The external attentional focus directs the attention towards an object that is outside, or toward movements of the opponent. The internal attentional focus is directed to the inside, towards the thoughts and the sensations, like when a coach analyses the plays without having to perform them or a golf player visualizes what he thinks before hitting the ball.

Sport performance

It's the result of a sport activity that, especially in a competitive sport, crystallizes in a bestowed magnitude to the mentioned motor activity, according to the fully established rules [14]. On the other hand, it is important to mention that CrossFit was born as a training system designed to improve performance and physical qualities in policeman and firemen. It was created by an American man named Greg Glassman, who in 1995 would open the first CrossFit gym. The good results obtained made CrossFit open to the population and in the year 2000 a web page would be created to disseminate it. This results in massification of this system.

Cross fit

It's a functional movement of high intensity and constant variation and it consists of three important variables [10].

Functional movement

It is defined as a set of "universal patterns of motor activation to which our body is specifically designed to do, like running, jumping, pushing, pulling, sitting, getting up, among others" [15].

Variation

Variation is the key, the specialization of the non-specialization, from this point of view the answer is obtained for a more possible wider adaptation, climbing, running, jumping, lifting, swimming [15].

High intensity

When intensity is mentioned in CrossFit, this refers to the percentage of our heart rate or our VO2 max, then it is how we know the percentage of load of our maximum repetition [15].

Method and hierarchy of Cross fit

Nutrition: This aspect is the base of CrossFit. The first thing to be dominated is correct nutrition, which sets the molecular bases for health and physical aptitude.

Metabolic conditioning: It develops resistance, which is the base physical capacity in the rest of the developing capacities.

Gymnastics: CrossFit uses elements of this sport to develop in the individual the capacity to control the body and grant adequate movement range to avoid injuries.

Weightlifting: Through derived exercises from this sport, it is pretended to develop the ability to control external objects outside the individual's body and provoke potency.

Sports: It's the peak of the pyramid, it's all the motor abilities and physical capacities mentioned before applied with a competitive purpose.

Individual sports

They are those sports in which the practitioner is found alone in a space, where certain difficulties must be beaten, overcoming himself/herself with relation to a time, a distance or a technical execution, that can be compared with others, that are performed in the same conditions too.

Classification of individual sports

In the great number of existing classifications, one of the most approved is the one from [16], which includes individual sports in two categories or "psychomotor situations" en function of the presence or not of uncertainty that can influence in their performance:

- A. There is no uncertainty: athletics, swimming.
- B. There is uncertainty due to the space: lone climbing, alpine sky, etc.

In function of the presence of other participants:

- a) Solitaire performance: sky, climbing, weightlifting.

b) Simultaneous performance with other athletes: swimming, rowing, athletics races.

In function of the presence of an object that needs to be manipulated or not:

Fixed device:

- A. Without an object to manipulate artistic gymnastics in floor, swimming, athletics races (except relay races).
- B. With an object to manipulate throwing, pole vault, rhythmic gymnastics.

Fluctuating or variable device:

- a) Without an object to manipulate free climbing, open water swimming (sea, river, ocean).
- b) With an object to manipulate ski, sailing, cyclo-cross.

CrossFit: From training system to sport

With the first bricks put, the expansion of CrossFit worldwide was tremendously quick, opening itself space in the so demanding world of sport. The boom of CrossFit occurs between the years 2005-2009, arriving to have 1000 people affiliated in the whole world. For this tremendous demand, is that the idea of creating games that gathered the best specialists in this discipline was born, ascending CrossFit to the category of sport. In 2007 the first "CrossFit Games" would be created, in which participated around 70 people. The games take place each year, and its participation has been growing so progressively that in 2014, the athletes that competed were 200.000. And from then on, each year the number of participants keeps growing.

The structuring of a WOD (Work of the Day)

It has a duration of approximately 60 minutes and it is structured in the following way:

Warm-up: A previous neuromuscular conditioning is carried out to avoid possible injuries. The neuromuscular conditioning exercises tend to be rope jumping, abs, push-ups, squats, spinals, etc.

Strength workouts (with bar) in CrossFit:

- A. **Technique/ Strength "A":** In this part of the training session, different exercise techniques are practiced, in which strength, technique and potency are developed. Besides, one seeks the bigger amount of weight that one can work with, depending on the exercise and the number of given reps. The exercises tend to be Back or Front Squat, Deadlift, Snatch, hang clean, Hang clean & jerk, Planks, Bench Press, etc. Sometimes they can be combined.
- B. **Part "B":** It's about the most intense moment of training in which the amount of weight is lowered, compared with part "A" and here the workout seeks to increase the respiratory capacity. The exercises tend to be combinations of the exercises previously described in part "A" and other ones of resistances or without weight, for example: jumps, pull-ups, rings, push-

ups, abs, maximum speed races, bar swing, pistol squats, pike push-ups, etc.

There are different types of WODs. Among them, the most used are:

AMRAP: (As Many Reps as Possible): Consists of doing the biggest number of possible rounds of the given combination of exercises, in determined time. An example of this is a 20 minutes AMRAP, where you are provided with 20 minutes to do the biggest number of possible rounds you can.

EMOM: (Every Minute on the Minute): In this type of WOD, the task is to do a certain number of reps of an exercise (or several exercises) in one minute, during the biggest number of possible minutes. The time that remains from the end of the exercise till the end of the minute is a time to rest. The EMOM finishes when the athlete can't finish in the minute or in te minutes marked by the coach.

For Time: Another way of training consists of doing several determined rounds as a goal, in a limited time to achieve the purpose or do the given exercise combination, as fast as possible.

Tabata: Consists of 8 rounds in which 20 seconds of an intense exercise is carried out, followed by 10 seconds of resting time and number of total reps are counted. It can be a TABATA of two or three different exercises.

In part "A" and in part "B", the amount of weight used in each exercise is personalized and it seeks to do the exercises with the indicated weight for each one. It's recommendable to use a stopwatch or timer to keep the precise time, the number of intervals and the intensity level.

Elongation: The coach conducts an elongation in group, of the muscles used in the training session with the purpose of preventing injuries.

The exercises are carried out inside a box (this is the name given to the place where CrossFit is practiced), and depending on its location and the WOD, the exercises can be done outdoors.

Cross fit games

This is a world event, where the maximum exponents of this sport compete, seeking who is crowned as "the most complex human being in the world". To make it to this event, the athlete must go through two previous stages known as the "Open" in which the organizers establish routines. They can be done by different people that want to participate and afterwards send their results by video. These must be endorsed by CrossFit filial. The ones that pass that stage, then arrive at the "Regionals". This is a competition where the best of each zone faces each other. These zones are divided by geographical phases. There are 17 zones distributed in the world. 12 of these are in the United States of America. Once both stages are finished, the participants of the CrossFit Games are chosen. In this type of championship, athletes must carry out Cros fit routines, which are only known hours before displaying them. The winner of each one of these tests adds points just like the rest of

the participants, in which the one that achieves a better position will receive the biggest score. Once all the events are finished, it is determined who has the biggest score.

Methodology

The present research is addressed to a concrete population, which consists of the athletes of the box of Integral Performance Training (IPT), in Maracay, Aragua State, Venezuela. This group counts with the participation of 12 athletes of competition for recreation, with ages from 16-30 years old. These have a training plan, which is conducted by a specialist CrossFit coach, in the schedule from 11am to 2pm. This study is considered scientific research, because according to Tamayo (2004), research is a process that through application of the scientific method and procures to obtain relevant and trustworthy information, to understand, verify, amend or apply the knowledge. The present research is based in a qualitative and field model, following the approaches of [17], which point out that the qualitative research studies reality how it happens and in its natural context, extracting and interpreting phenomena according to the implicit persons. It uses a variety of instruments to gather information, such as interviews, images, observations, life stories, in which routines and problematic situations are described, as well as the significances in the life of the participants.

Research procedure

The first encounter consisted of the group of researchers assisting the IPT box, finding now a great number of athletes available to collaborate and work in the present research. They were presented the whole work method, the possibility of being evaluated through psychological tests and observation. This was presented to their sports manager too. All the work was approved at that very moment. In the elapsing of time of the visits to the box and getting to know the athletes, many were the factors that came out. One of them was the authoritarian leadership style with which they managed the training day. The athletes were found hostile and many times reluctant to follow the instructions of their coach, due to differences of opinions. Thanks to these inconveniences the communication process with the whole group of athletes disabled a whole day's work with them. Due to this, the first working exercise on behalf of the researchers was called "assertive communication", where only four athletes and the coach assisted.

This was based on allowing athletes to communicate to their coach in a direct and assertive way all kinds of nuisance or thoughts that harmed the teamwork. Inside the process for the obtaining of information, several tools were used. These must be possessed by each professional dedicated to sport psychology. These tools include the process of observation in all its phases. Likewise, some psychological tests were applied for the data collection that contribute to the development of this research. At this point, it can be said that the observation was the activity that was carried out recurrently by the researchers, because during the training sessions was difficult to intervene in an active way, and this would have interrupted the correct performance of a movement in an athlete or the implementation of a technique, dispersing the attention or the

concentration during the display of some technique that demands high consumption of psychic energy.

Emphasis was made in the use of this tool to detect body language, emotional state, attitude, matureness, attention, concentration, motivation, empathy, group cohesion, frustration, self-esteem, aggressiveness, communication, stress, and decision-making, among other variables, in all members of IPT box.

On the other hand, in the work carried out with the group, it was more frequently used the group dynamics. This was one of the tools also employed in the available times with the athletes, to boost and make noticeable the work of the researches in the box. To facilitate the understanding of the reader, it can be said that group dynamics are used to train the athletes in the team functioning, to facilitate interpersonal communication and the performance of different leaderships. The dynamics are used to display themes, discuss them and deepening them in their contents. They are also employed for analyzing and planning. This is why group dynamics are the way in which the coach, coordinator or team manager counts, to restructure, enhance, motivate or inducing the group in the project or work that gathers them. In this research, group dynamics of cognitive training were carried out, specifically directed to work the attentional processes of the athletes, during the performance of sports clinic that was carried out with the aim of evaluating the attention and concentration variable and its relationship with sports performance. Furthermore, these dynamics worked as psychoeducation for the athletes of IPT box. Likewise, as mentioned before, the functions of psychoeducation for the CrossFit athletes of IPT box and the application of these techniques and tools is something new inside a CrossFit box, because there haven't been found previous serious and formal research that reflect some kind of intervention in this population.

Findings

As it was mentioned in reiterated occasions, previously mental preparation in the discipline of CrossFit in Venezuela, specifically in Aragua State, hasn't been included inside the training plan. Therefore, the receptivity of the athletes and the interest for this sport science sport psychology- was perceived in a comprehensive way, thus achieving that these athletes gave the required importance to accomplish a quality work. For this it is important to mention that in the process of this work, a series of psychological tests were applied for the data collection of information for the present research. These tests offer valuable information to distinguish in a psychometric way the measurement of different psychological variables that exist inside the world of sport. In this case, the researchers were interested in applying tests to measure the variable attention and concentration, as it was a need manifested by the coach and the athletes. Among the several applied tests, the researchers focused on the psychological tests that evaluate the variable of attention and concentration in sport that were used, like the Test of Toulouse-Pieron and the Grill Test. Hereunder, through a series of tables, the quantitative and the qualitative level of the applied tests results are explained.

Analysis of Results

It can be observed through Table 1 corresponding the results of the Test of Toulouse-Pieron per sex, which the evaluated athletes, from both sexes, obtained negative results, for which it can be deduced that the CrossFit athletes don't possess the necessary abilities to concentrate during a specific performance for determined period. It can be observed through Table 2 corresponding the results of the Grill per sex, which the evaluated athletes, from both sexes, don't possess the competences to dominate their mind and attend adequately to a situation for a determined period (Table 3). For which it can be inferred that their sport performances, at training or competition time, are not optimal. Therefore, they are unable to achieve their maximum sport potential.

Table 1: Attentional focuses [12].

Wide-External Used for quickly evaluating a situation	Wide-Internal Used for analyzing and planning
Reduced-External Used for focusing in a non-destructive way on one or two external signals	Reduced-Internal Used for reviewing systematically and mentally a situation of performance and for directing and [/or] controlling the physical arousal

Table 2: Results of the test of Toulouse Pieron per sex.

Sex	Quantitative Result	Qualitative Result
Feminine	65	Deficient
Masculine	57	Hypoprosexia

Table 3: Results of the grill test per sex.

Sex	Quantitative Result	Qualitative Result
Feminine	170	Regular
Masculine	190	Bad

Conclusion

In general terms, just how it was laid out, the purpose of the present study is to offer a wide perspective about the process of attention and concentration in CrossFit, highlighting its importance, as well as to provide tools for the coach that allow to implement some practical exercises adjusted to the specific characteristics of a particular sport, understanding that variables like academic formation of the coach, the models, the criteria and duration of the training plans [18] must be suitable for each sport discipline. This research on behalf of the CrossFit athletes has resulted quite positive, for their personal benefit, highlighting in a special way, on one hand, the fact that most of these athletes consider beneficial the psychological preparation in their sport practice, and on the other hand, their great usefulness with views to their professional world. The athletes of the IPT box accepted a program of these characteristics, considered it interesting and even necessary, confirming its efficacy in function to the extension of all the components of the team.

Furthermore, it can be said that results of research show that centering in the result of the movement can be more beneficial,

that is, an external focus, than centering in comparisons of the movements of the ability, or internal focus [19,20]. There exists wide empirical evidence that the adoption of an external focus, compared with an internal focus, promotes bigger automaticity of movement control [3,4]. Finally, in this order of ideas, the researchers encourage the strengthening of research related with the process of attention and concentration, with the purpose of consolidating the theoretical body of the applied sport psychology, especially in the Venezuelan context.

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