

## ***Characteristics of the psychological skills of sports performance in youth Basketball athletes***

### ***Abstract***

*The interest in the study of psychological variables associated with sports performance as a starting point for more efficient and systematic training programs to achieve success in sport is an evident need in our current sports context. This paper focuses on the characterization of psychological skills in a women's basketball team in the youth category prior to the National Youth Games. A cross-sectional descriptive study was carried out where descriptive statistics were used to investigate the state of said skills, as well as the Pearson correlation coefficient to search for significant relationships with demographic variables. The adapted Sports Execution Psychological Inventory was applied. The most developed psychological skills are the motivational level, attitude control, self-confidence and visual-imaginative control. No significant relationships were established between the demographic variables, nor between these and psychological abilities. There is a greater relationship between self-confidence and attention control with other psychological skills, but there is no significant relationship between them.*

***Keywords:*** Basketball, psychological skills, sports performance.

## **Introduction**

The study of psychological variables associated with success and sports performance constitutes an important task within the work of psychologists in this field, not only allows the achievement of favorable results for the athlete, but also sets guidelines to improve and direct psychological preparation within training. sports. Thus, the psychological characterization of athletes who compete in high performance is necessary to identify sensitive psychological areas, where targeted and systematic psychological intervention can contribute significantly to the optimization of the athlete's performance. (Gimeno, Buceta and Pérez Llantada, 2007; De la Vega et al., 2014)

Motivation, attention, anxiety, self-confidence, moods, goal orientations or emotional adjustment are some examples of variables that are being evaluated mainly in competitive situations (Moreno, Cervelló & González Cutre, 2010; Ramis et al., 2013; Morillo, Reigal and Hernández-Mendo, 2016) Nuñez, M., Isla, SD., Páez, YR., and Alata, YI. (2019) carried out a psychological intervention to enhance the psychological predisposition in artistic gymnastics girls in Venezuela.

In Cuban sports practice, the theoretical-methodological contributions made by Loehr (1986) on the existence of seven mental abilities are relevant: self-confidence, attention control, motivational level, negative energy control, visual-imaginative control, control of positive energy and attitude control, as mediators of success in sport.

Hernández Mendo in 2006 made an adaptation of the instrument provided from the theoretical model of Loehr (1982, 1986, 1990), the Psychological Performance Inventory (PPI) to the Spanish language, called the Psychological Inventory of Sports Performance, validated and replicated in various countries and regions due to its psychometric properties for the detection of strengths and weaknesses of psychological abilities in athletes.

Similarly, in numerous recent investigations in Cuba (Ríos and Pérez, 2020; Ríos and Pérez, 2021; Ríos, Pérez, de Armas and Rodríguez, 2021; Ríos, Pérez, Fuentes, Rodríguez and Sorís, 2021; Ríos, Pérez, Olmedilla and Gómez-Espejo, 2021) seeks to correlate these psychological skills with other risk factors inherent to the practice of any sport, as a starting point for efficient interventions, not only by the sports psychologist, but also by coaches and other professionals linked to the practice of sport for high performance.

Basketball is within the cooperation-opposition sports where the offensive and defensive tactical component is important within the game. The dynamics of this sport favors intrinsic and self-determined motivation in players that helps adherence to their own sports practice (Lim & Wang, 2009; Vieira, Beutetemmuller, da Costa, Piovani & Both, 2020).

Even though studies of the indisputable relationship between psychological skills and sporting success are currently on the rise in scientific practice, their daily exercise is insufficient in our context in order to stimulate a psychological development corresponding to each sociocultural reality, in specific sports. and mostly in athletes in the modernization phase.

The present investigation intends to characterize the psychological abilities in basketball athletes, female, from the youth category of the province of Villa Clara, prior to the National Youth Games.

## **Methodology**

### **Type of study**

A cross-sectional descriptive study was carried out in the pre-competitive period of the training macrocycle (2021-2022), prior to the start of the National Youth Games in 2022.

### **Population and Sample**

The female athletes that made up the youth category basketball team of the province of Villa Clara (n= 12) were studied. In the team, an average chronological age of 16.67 years and a sports experience of 6.67 years were verified.

### **Techniques and instruments**

The evaluation of psychological skills related to sports performance was carried out using the Sports Performance Psychological Inventory (IPED), an instrument adapted and replicated in Spanish by Hernández Mendo (2006) from Loehr's Psychological Performance Inventory (PPI) (1986), which consists of 42 items grouped into seven Likert scales with 5 options ranging from almost never (1) to almost always (5). A Cronbach's Alpha coefficient of 0.79 was obtained for the self-confidence factor, 0.70 for negative coping control, 0.71 for attention control, 0.73 for visual-imaginative control, 0.78 for motivational level, 0.75 positive coping control, and 0.75 for attitudinal control.

### **Analysis of data**

For the description of the different variables studied, descriptive statistics were used such as: minimum, maximum, mean and standard deviation. Pearson's correlation coefficient is used to establish relationships between psychological abilities and demographic variables (chronological age and sports experience). For data analysis, the SPSS version 25.0 software package for Windows was used.

## Procedures

The application of the instrument was carried out in the morning at the Psychology Laboratory of the Villa Clara Provincial Center for Sports Medicine according to the schedule established by it for the pre-competitive check-up of each sport. The offline version of the IPED in HTML format (González-Ruiz et al., 2018) was used for the application and safeguarding of the information offered by each athlete, using a laptop for this.

The instrument was applied in adequate working conditions, where the objective of the study and its characteristics were clearly explained, as well as the importance of expressing sincerity in the answers for each item.

## Ethical Considerations

The study was duly endorsed by the Center's Scientific Council and the Medical Research Ethics Committee. Its development remained strictly attached to the ethical precepts of scientific research contained in the Declaration of Helsinki. Participation in the study was voluntary and under the strict approval of the head coaches of each sports team.

## Results and discussion

Table 1 shows the description of the demographic variables analyzed.

Table 1. Description of the chronological age and experience of the athletes

Variables	N	Mínimo	Máximo	Media	Desviación
Edad Cronológica	12	15	18	16.67	.985
Experiencia Deportiva	12	4	11	6.67	2.309

Variables N Minimum Maximum Mean Deviation

Chronological Age 12 15 18 16.67 .985

Sports Experience 12 4 11 6.67 2.309

The 12 athletes have chronological ages between 15 and 18 years, in addition, their sports experience can be considered high since it is established between 4 and 11 years of practice despite their young chronological age.

Table 2 shows the state of the psychological variables under study and their normal distribution.

**Table 2. State of the psychological variables in the team prior to the competition.**

psychological variables	Half	DT	Asymmetry	kurtosis	K-S	p
Self-confidence	24.92	3.655	-.926	.623	.200	.200
Motivational Level	26.08	3.777	-.855	-.481	.241	.052
Control of Attention	20.25	4.789	.244	.723	.153	.200
Negative Coping Control	18.92	3.942	.085	-1.715	.183	.200
Positive Coping Control	23.25	2.958	-.368	-1.283	.223	.102
Visual and Image Control	24.25	3.793	.152	-1.476	.212	.141
Attitude Control	25.08	5.401	-.715	-.902	.234	.068

Note.  $p > .05$  (normal distribution); DT= Standard Deviation; K-S= Kolmogorov-Smirnov.

It can be seen that the motivational level, attitude control, self-confidence and visual-imaginative control of the athletes, in that order, are the psychological skills that reach the highest scores, while positive coping control, attention control and negative coping control score lower. The results agree with those obtained by Ríos Garit and Pérez Surita (2020) in a study carried out on top-class male basketball athletes, where these same skills obtain the highest and lowest scores, although not in the same hierarchical order.

These findings are also similar to those of a study carried out by Ríos Garit et al. (2023) in female athletes, coinciding with the most developed skills, except: positive coping control, which scored lower in the athletes under study, and visual and image control, which in this study shows greater development.

**Table 3. Relationships between psychological abilities, chronological age and sports experience.**

Variables	Correlation coefficient	1	2	3	4	5
1. Chronological age	Pearson					
	Bilateral significance					
2. Sports Experience	Pearson	.466				
	Bilateral significance	.126				
3. Self-confidence	Pearson	-.387	-.144			
	Bilateral significance	.214	.656			
4. Motivational Level	Pearson	-.041	.024	.383		
	Bilateral significance	.900	.940	.220		
5. Control of Attention	Pearson	.019	.066	.542	.099	
	Bilateral significance	.953	.839	.069	.759	
6. Negative Coping Control	Pearson	.133	-.183	.631*	.342	.719**
	Bilateral significance	.681	.569	.028	.276	.008
7. Positive Coping Control	Pearson	-.218	-.306	.809**	.266	.643*
	Bilateral significance	.495	.333	.001	.402	.024
8. Visual and Image Control	Pearson	-.073	.342	.651*	.436	.712**
	Bilateral significance	.822	.276	.022	.156	.009
9. Attitude Control	Pearson	-.336	-.318	.765**	.463	.277
	Bilateral significance	.285	.313	.004	.129	.384

Note. \* $p \leq 0.05$ ; \*\*  $p \leq 0.01$  (bilateral significance)

Table 3 shows the results of the relationships between the psychological variables, chronological age and sports experience of the athletes analyzed. The correlational analysis indicates that there is no significant relationship between age and sports experience, nor between these variables and the different psychological abilities, on the other hand, psychological abilities do have certain relationships between them, always in a positive way, coinciding with the results. de Ríos Garit et al. (2021). It is evident that self-confidence and attention control are related to other skills such as attitude control, positive and negative coping and visuo-imaginative control, establishing a strong interdependence, however, they do not have a significant relationship between them.

The results obtained show that the athletes presented a psychological preparation with greater strengths than weaknesses before the main competition, so their mental predisposition to perform during the competition can be considered adequate. However, the identified weaknesses indicate the need to stimulate key variables such as emotional and attentional control due to their relationships with sports performance in competitive situations, where psychological tensions reach their maximum expression.

Although the findings make it possible to guide the planning of special psychological preparation in youth basketball athletes from Villa Clara by offering trends in group performance in immediate competitive situations, the type of study carried out does not allow obtaining a certain degree of certainty of future performance due to the temporality of the psychological evaluation, the volume of data processed and its correlational statistical analysis. For this reason, it is considered necessary to carry out a prospective longitudinal study of several years and obtain information on performance indicators during the competitions to plan both general and special psychological preparation during the training macrocycle up to the fundamental competition.

## Conclusions

The psychological skills that show better development in the athletes are the motivational level, attitude control, self-confidence and visuo-imaginative control in that order, and the least developed psychological skills are positive coping control, attention control and control. of negative coping, descending.

It was possible to verify that there is no significant relationship between age and sports experience, nor between these variables and the different psychological abilities, in the same way it is evident that self-confidence and attention control are related to other abilities, establishing a strong interdependence, however, they do not bear a significant relationship between them.

## References

- De la Vega Marcos, R., Román Tabanera, M., Ruiz Barquín, R., & Hernández López, J. M. (2014). How do soccer coaches perceive the role of the sport psychologist?: a comparative study. *Cuadernos de Psicología del Deporte*, 14(2), 27–36.
- Gimeno, F., Buceta, J and Pérez –Llantada, M. (2007) Influence of psychological variables in competitive sports: evaluation through the questionnaire Psychological characteristics related to sports performance. *Psychothema*,19(4),667-672.
- González-Ruiz, S.L., Domínguez-Alfonso, R., Chica-Merino, E., Pastrana-Brincones, J.L., and Hernández-Mendo, A. (2018). A virtual platform for online evaluation and research: MenPas. *Sports Psychology Notebooks*, 18(3), 26-48.

- Hernandez Mendo, A. (2006). A questionnaire for the psychological evaluation of sports performance: Complementary study between TCT and TRI. *Journal of Sport Psychology*, 15(1), 71-93.
- Loehr, J.E. (1986). *Mental Toughness Training for Sports: Achieving Athletic Excellence*. Lexington: Stephen Greene Press.
- Lim, B.S.C., & Wang, C.K.J. (2009). Perceived autonomy support, behavioral regulations in physical education and physical activity intention. *Psychology of Sport and Exercise*, 10(1), 52-60.
- Morillo Baro, J.P., Reigal, R.E., and Hernández A. (2016). Relationships between the sports psychological profile and competitive anxiety in beach handball players. *Journal of Sports Psychology*, 25 (1), 121-128. ISSN: 1132-239X.
- Núñez, M., Isla, S.D., Páez, Y.R., and Alata, YI. (2019). Psychological intervention to enhance the psychological predisposition in artistic gymnastics girls. *Ciaf magazine*, 6 (1), pages 61-71. <http://revistaciaf.uclv.edu.cu/index.php/revista/article/view/85/107>
- Rios Garit, J et al. / *Rev Andal Med Sport*. (2021); 14(1): 28-32 <https://doi.org/10.33155/j.ramd.2020.07.006>
- Ríos Garit, J., and Pérez Surita, Y. (2021). Psychological factors related to injuries in high-performance basketball athletes in a Cuban province. *Havana Journal of Medical Sciences*, 20(5): e3430. <http://www.revhabanera.sld.cu/index.php/rhab/article/view/3430>
- Ríos Garit, J. and Pérez Surita, Y. (2020). Relationships between Psychological Skills and Sports Injuries in Elite Cuban Softball Players. *Psychological Action*, 17(1), 91–102. <https://doi.org/10.5944/ap.17.1.26607>
- Ríos Garit, J., Pérez Surita, Y., Fuentes Domínguez, E., and De Armas, M.M. (2019). Effect of sports injuries on psychological variables in baseball pitchers. *Podium. Journal of Science and Technology in Physical Culture*, 14(3), 403-415.
- Rios Garit, J.; Perez Surita, Y.; Olmedilla Zafra, A.; & Gomez-Espejo, V. (2021). Psychology and Sports Injuries: A study in Baseball Pitchers. *Sports Psychology Notebooks*, 21(1), 102-118

Ríos Garit, J., Pérez Surita, Y., Fuentes Domínguez, E., Soris Moya, Y. and Borges Castellanos, R. (2021) Anxiety and psychological variables of sports performance related to injuries in high-performance sportsmen. *notes. Sports Medicine*, 56. <https://doi.org/10.1016/j.apunsm.2021.100358>

Ríos Garit, J., Pérez Surita, Y., Armas Paredes, M., & Rodríguez Méndez, L. (2021). Relationship between psychological variables and sports injuries in baseball pitchers. *PODIUM - Magazine of Science and Technology in Physical Culture*, 16(1), 168-186. <http://podium.upr.edu.cu/index.php/podium/article/view/908>

Ríos Garit, J.; Pérez Surita, Y.; Soris Moya, Y.; Calvino Carvajal, D. (2023). Psychological abilities in a sample of young Cuban athletes: Differences according to sex and sport. *Sportis Sci J*, 9 (2), 220-236 <https://doi.org/10.17979/sportis.2023.9.2.9268>

Vieira, S. V., Beutetemuller, L. J., da Costa, L. C. A., Piovani, V. G. S., & Both, J. (2020). Basic psychological needs and motivation in young Brazilian basketball players. *Cuadernos de Psicología del Deporte*, 20(1), 25–36. <https://doi.org/10.6018/cpd.355121>