Optimism and resilience: the Golden Path to sportive performance?

Optimismo y resiliencia: ¿el camino dorado hacia el rendimiento deportivo?

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Abstract

Introduction: the importance of the study lies in understanding the relevance of burnout as a detriment to the quality of life and performance of high performance athletes.
Objective: Identify and describe the dimensions of resilience and optimism that could act as protective variables against the possibility of suffering burnout.
Methodology: The study was conducted with a sample of 194 Uruguayan athletes who participated in the ODESUR 2022 games. Four instruments were used: The Resilience Scale (ER; Ruiz et al., 2012), the Life Orientation Scale-Revised (LOT-R; Scheier, et al., 1994), the Sports Optimism Questionnaire (COD; Batista, 2022) and the Burnout Inventory for Athletes (IBD-R; Garcés de los Fayos et al., 2012).
Results: Athletes present a moderate level of resilience, a high optimism profile and a moderate level of pessimism. Regarding Burnout, 65.5% presented symptoms of Emotional Exhaustion, 67% had symptoms of Depersonalization and 62.9% had symptoms of Reduced Personal Accomplishment. The SEM model explained a very high percentage of the variance in emotional exhaustion scores (79.1%) with resilience being the predictor variable, mediated by the protective role of optimism.
Discussion: The percentages found are shocking and are very similar to those found in Uruguayan athletes previously evaluated, as well as in other research with elite athletes.
Conclusions: The findings allow us to visualize the fundamental role of Resilience and Optimism as protective factors that could reduce the risk of burnout in high performance athletes.

Keywords

Burnout; optimism; resilience; sport psychology.

Resumen

Introducción: La importancia del estudio radica en comprender la relevancia del *burnout* como detrimento de la calidad de vida y el rendimiento de los deportistas de alto rendimiento.
Objetivo: Identificar y describir las dimensiones de la resiliencia y el optimismo que podrían actuar como variables de protección frente a la posibilidad de padecer *burnout*.
Metodología: El estudio se realizó con una *muestra* de 194 deportistas uruguayos que participaron en los juegos ODESUR 2022. Se utilizaron 4 *instrumentos*: La escala de Resiliencia (ER; Ruíz et al., 2012), la Escala de Orientación hacia la Vida Revisada (LOT-R; Scheier, et al., 1994), el Cuestionario de Optimismo Deportivo (COD; Batista, 2022) y el Inventario de *Burnout* para Deportistas (IBD-R; Garcés de los Fayos et al., 2012).
Resultados: Los deportistas presentan un nivel moderado de resiliencia, un perfil de optimismo elevado y un nivel moderado de pesimismo. Respecto al *Burnout*, un 65.5% presenta sintomatología en Agotamiento Emocional, 67% sintomatología de Despersonalización y un 62,9% en Reducida Realización Personal. El modelo SEM explicó un porcentaje muy elevado de la variancia en las puntuaciones de agotamiento emocional (79.1%) siendo la resiliencia la variable predictora, mediado por el rol protector del optimismo.
Discusión: Los porcentajes hallados estremecen y son muy similares a los encontrados en deportistas uruguayos evaluados anteriormente, así como en otras investigaciones con deportistas de elite.
Conclusiones: Los hallazgos encontrados, permiten visualizar el rol fundamental de la Resiliencia y el Optimismo, como factores protectores, que podrían disminuir el riesgo de padecer *burnout* en deportistas de alto rendimiento.

Palabras clave

Burnout; optimismo; resiliencia; psicología deportiva.

Introduction

High-performance athletes require training with high levels of demand to achieve a superlative performance. Within this is the training of mental skills, which allow learning to adequately handle pressure and moments of adversity. Hence the importance of generating training processes towards high performance that represent a path to be followed, mediated by numerous factors that could act as facilitators or, on the contrary, as barriers related to the resources that can be accessed along the way (Purcell et al., 2019). These resources determine how the individual athlete will face adversity and failure (Gupta and McCarthy, 2022; León Zarceño et al., 2022).

Williams et al., (2020) point out that one of the most representative variables on the prediction of expectations-outcomes is dispositional optimism. The conceptualization of optimism as a stable variable in the individual who has a positive expectation throughout his or her life course (Scheier and Carver, 1985) is defined as dispositional optimism (Scheier and Carver, 2018). The framing of optimism in sport has evolved from its consideration as a personality trait (Gould et al., 2002), to a factor related to mood (Angosto et al., 2021), stress and rehabilitation period (Ford et al., 2000), increased coping and resilience (Aranzana et al., 2016), lower stress levels (Albinson and Petrie, 2003) and burnout (Gustafsson and Skog, 2012) in high performance athletes. The relationship between optimism and significant variables with performance and well-being such as self-efficacy, coping or resilience (Carver and Scheier, 2014; 2024) has had a long research history, however, the absence of authors who have collected data on dispositional optimism, resilience and *burnout* in the same sample of high-level professional athletes is surprisingly scarce (Tutte-Vallarino et al., 2022), taking into account the significant body of research that relates optimism and resilience, and their influence on psychosocial well-being (Lee, 2023), as well as the protective effect of these two variables against *burnout*.

The importance of the study lies in understanding the relevance of *burnout* as a detriment to quality of life (Taylor et al., 2022), well-being (Chyi et al., 2018), perception of performance (Moen et al., 2019) and optimism of both the worker and the athlete has been increasing since the work of Flippin (1981) and Feigley (1984), conceptualized as a syndrome related to stress and loss of satisfaction. The dimensions of *burnout* proposed by Maslach and Jackson (1981a) transferred to the field of sports, depersonalization, emotional exhaustion and loss of personal satisfaction, have found prevalence figures in athletes of between 1 and 9% (Gustafsson, 2007).

For the same researchers, it is surprising how little attention has been paid to the relationship between these variables and sport *burnout* (Garcés de los Fayos et al., 2013), since *burnout* can produce serious consequences in athletes (Sánchez-Romero et al., 2021).

In Uruguay, although the percentage of athletes who present the syndrome is low (5%), it is impressive that more than 70% of athletes present *Burnout* symptoms (Tutte and Suero, 2009; Tutte, et al., 2010; Tutte and Reche, 2016, Tutte-Vallarino et al., 2022). These percentages are shocking because, although few are diagnosed with the syndrome, there are many who present symptoms and are on the way to a future diagnosis, hence the importance of working on variables that act as protection against this prognosis.

It is in view of this reflection that we set ourselves the objective of the present study, to know if Resilience and Optimism could act as protective factors against the possibility of suffering *Burnout* in Uruguayan high-performance athletes.

Method

Participants

The sample was composed of 194 athletes who participated in the ODESUR 2022 Games, corresponding to 67.7% of the total number of participants. The age range was between 15 and 55 years (M = 25.75; SD = 7.77), of which 56.2% (n = 109) were male and 43.8% (n = 85) were female. Regarding the sport modality, 58.8% (n = 114) practiced collective sports and 16.1% (n = 80) practiced individual sports (Table 1).

Table 1. Descriptive statistics of sociodemographic variables.

Sociodemographic variables	Level	*N*	%
Gender	Male	109	56.2
	Female	85	43.8
Sports Modality	Individual	80	41.2
	Collective	114	58.8

The type of sampling used was non-probabilistic, by convenience, since certain inclusion criteria had to be taken into consideration for the participants, such as: -being Federated (i.e. participating in a type of sport with legal representation through a Federation recognized by the Uruguayan Olympic Committee and by the National Sports Secretariat). - be pre-selected to participate in the three most important events in the Olympic cycle (South American, Pan American Games and/or Olympic Games). -Train at least 5 times a week. Fulfilling all these criteria, the athletes who express their willingness could participate in this research.

Procedure

Instruments

To measure resilience, the adapted version of the Resilience Scale (Wagnild and Young, 1993) by Ruiz et al., (2012) was used. This instrument was adapted to Spanish in soccer, presenting a good psychometric and reliable performance in a sample of Spanish fencers and Uruguayan judokas, (Reche and Ortín, 2013; Reche et al., 2014). An overall internal consistency of .89 was observed, providing evidence of the reliability of the test. It is a self-report measure, composed of 25 items written in a positive form and with a 7-point Likert-type response format. It assesses the degree of individual resilience and the perspective of resilience as a positive personality characteristic that favors adaptation. The scale allows obtaining an overall resilience score (as this score increases the higher the resilience is considered) and a score for each of the factors: Personal Competence, which is subdivided into: Feeling Good Alone, Self-Confidence, and Perseverance; and Acceptance of Self and Life, which is subdivided into: Personal Satisfaction and Equanimity.

The Spanish version of the Life Orientation Scale-Revised (LOT-R; Scheier et al., 1994) by Otero et al., (1998) was used to measure Optimism, the original scale having an internal consistency of .78. The structure of the instrument consists of 10 items with a 4-point Likert response format (three positive, three negative and four fillers). On the one hand, it is possible to keep each disposition separately (trait optimism vs. trait pessimism) by adding the items of each subscale; and on the other hand, the items written in a negative sense are inverted and a total score oriented towards the optimism pole (total optimism) is obtained, describing levels of low (scores from -12 to 2), medium (scores from 3 to 5) or high optimism (scores from 6 to 12).

To measure *Burnout*, the Inventory of *Burnout* in Athletes Revised (IBD-R; Garcés de los Fayos, et al., 2012) was used, which consists of 19 items for the measurement of the three dimensions of *burnout* proposed by Maslach and Jackson (1981b): Emotional Exhaustion, Reduced Personal Accomplishment and Depersonalization, and with an overall internal consistency of .75. The response format is Likert-type, with five alternatives. The items corresponding to Emotional Exhaustion and Depersonalization are formulated in such a way that the higher the numerical response of the subject, the greater the *burnout* experienced; while the items of Reduced Personal Accomplishment are formulated in the opposite direction: the lower the numerical response of the subject, the greater the degree of *burnout* experienced. In addition, there is an ambiguous zone, intermediate between P33 and P66, which, although it does not determine an exact level of *burnout*, marks a tendency or predisposition to suffer it in the future and represents moderate *burnout*.

The Sports Optimism Questionnaire in its reduced version (Batista, 2022) was also applied to the sample of professional athletes. The structure of the instrument consists of 26 items, with a 5-point Likert response format. The instrument is composed of three factors: Factor 1, which has been called Personal optimism about the future, refers to the positive expectations I have about how the person faces his or her future. Factor 2, which has been called Personal Optimism in specific situations of sporting life, refers to the positive expectations that the person has in certain specific situations in his or her sporting life. Finally, Factor 3, called Social Optimism, has to do with the positive expectations either of the person

towards others or the perception of others towards the person. Each of the factors presents adequate reliability, since it exceeds .80 (Factor 1: α = .95; Factor 2: α = .92; Factor 3: α = .80) (Batista, 2022).

Data Collection and Analysis Procedure

Authorization was requested from the National Sports Secretariat to carry out the study with high-performance athletes, after obtaining the approval of the Ethics Committee of the Catholic University of Uruguay (file number: 211020).

Subsequently, the athletes who met the criteria established above were summoned and there they expressed their authorization and willingness to collaborate in the study by signing an informed consent form. The sample was made up of high-performance athletes from Uruguay who participated in the Odesur Games held in October 2022, with a total of 200 federated athletes. The questionnaires were administered during the month of September 2022 and the athletes completed the test individually and voluntarily.

Data were processed with SPSS statistical software (version 22), with JASP Team (2022) and R (R Core Team, 2023) using the lavaan package (Rosseel, 2012).

Based on the recommendations of Kline (2011), data analysis was carried out, inquiring about collinearity between the study variables, normality study and outlier cases.

In turn, frequency, percentage and descriptive analyses such as measures of central tendency and dispersion were performed for the description of the study variables.Finally, and as a previous step to carry out the Structural Equation Model (SEM), the relationship that could exist between all the quantitative variables and their dimensions was analyzed through Pearson's bivariate r correlations and simple and multiple linear regression. Once these results were obtained, a structural equation model was tested to provide more information on the complexity of the relationships between these variables. The following statistics were used to interpret the results: $\chi 2/gl < 3$; CFI and TLI ≥ .90/95; RMSEA ≤ .06; SRMR < 1 (Hooper et al., 2008; Hu and Bentler, 1999; Kline, 2011, 2023).

Results

Table 2 allows us to observe the results of the descriptive analyses, indicating a mean value of 135.81 on the Resilience scale, which would indicate that these athletes have a moderate level of resilience (range of 121 to 146, according to cut-off points taken in other studies). Likewise, it can be observed that in relation to the optimism variable, a high optimism profile is presented in the total sample (M = 9.14; SD = 5.2) taking as indicators a range of 6 to 12 points (Lacárcel, et al., 2022). While they present a moderate level of pessimism (M = 3.71; SD = 2.08) in a range of 3 to 6 (Lacárcel, et al., 2022).

Table 2. Descriptive statistics for each of the dimensions of optimism and resilience.

Scale	Variable	Mean	SD	Asymmetry	Kurtosis	Kolmorogov-Smirnov	P
Resilience Scale	Personal Competence	92.68	8.93	-0.17	-0.65	.058	.200
	Acceptance of oneself and life	43.13	5.61	-0.02	-0.28	.061	.074
LOT-R	Optimism	9.14	1.78	-0.49	-0.04	.173	.000
	Pessimism	3.71	2.08	0.11	-0.64	.109	.000
COD	COD 1	58.64	5.78	-1.02	0.64	.137	.000
	COD 2	30.67	4.26	-0.35	0.13	.072	.017
	COD 3	22.30	2.36	-0.64	-0.18	.155	.000

Table 3 below shows the descriptive values through the analysis of frequencies, percentages and Chi-square for the *Burnout* variable with its respective dimensions.

Table 3. Frequencies and percentages of the variable Burnout.

	Emotional Exhaustion		Depersonalization		RRP	
	Mean	Percentage	Mean	Percentage	Mean	Percentage
No Burnout	67	(34.5%)	64	(33%)	72	(37.1%)
Moderate Burnout	61	(31.4%)	48	(24.7%)	52	(26.8%)
With Burnout	66	(34%)	82	(42.3%)	70	(36.1%)

From the results found, we observed that 65.5% of the total sample presented *Burnout* symptoms for the Emotional Exhaustion dimension, 67% for the Depersonalization dimension and, finally, 62.9% for the Reduced Personal Accomplishment dimension.

Then, the relationship between all the dimensions of Resilience, Optimism and *Burnout* was analyzed, observing significant relationships between several factors. First, it was observed that the Optimism dimension of the LOT was negatively related to all *Burnout* dimensions ($p < .05$); and, on the contrary, the Pessimism factor was positively related to *Burnout* dimensions ($p < .01$). Likewise, when analyzing the dimensions of Optimism (evaluated with the reduced version of the Sports Optimism Questionnaire), a negative relationship was observed with Emotional Exhaustion and with Reduced Personal Accomplishment (RRP) ($p \leq .001$).

On the other hand, all dimensions of Resilience were negatively related to Emotional Exhaustion and to RRP ($p \leq .001$), and only Acceptance was negatively related to Depersonalization ($p < .05$).

Finally, the Optimism dimensions (of both scales) were positively related to the dimensions of resilience ($p \leq .001$), and in the case of the Pessimism dimension (of the LOT) a negative relationship was observed with Personal Competence ($p < .01$).

The effect size of these relationships ranged from small to moderate. To determine the effect size, Cohen's (1992) criterion will be considered, according to which values between .10 and .30 indicate a small effect, values between .30 and .50 a medium effect, and values above .50 a large effect. In the case of Optimism (COD) and AE, a high effect was observed, as well as the correlations between the dimensions of resilience and Personal and Future Optimism (Factor 1) and Personal Optimism in specific situations of sporting life (Factor 2) presented a high effect (Cohen, 1992). The magnitude of all correlations can be seen in Table 4.

Table 4. Pearson correlations between the variables under study.

	OPT	PES	AE	DESP	RRP	COMPER	ACEPT	CODF1	CODF2	CODF3
OPT	1	-.295***	-.309***	-.150*	-.339***	.355***	.335***	.517***	.504***	.259***
PES		1	.256***	.205**	.269***	-.221**	-.123	-.238***	-.217**	-.109
AE			1	.321***	.301***	-.323***	-.422***	-.520***	-.439***	-.211***
DESP				1	.134	-.122	-.164*	-.098	-.107	-.077
RRP					1	-.413***	-.265***	-.436***	-.436***	-.275***
COMPER						1	.570***	.507***	.607***	.343***
ACEPT							1	.538***	.551***	.294***
CODF1								1	.677***	.451***
CODF2									1	.448***
CODF3										1

Note: To make it easier to visualize the results, the correlation values between dimensions of the same variables were omitted.
OPT = Optimism; PES = Pessimism; AE = Emotional Exhaustion; DESP = Depersonalization; RRP = Reduced Personal Accomplishment; COMPER = Personal Competence; ACEPT = Acceptance of Self and Life; COD 1 = Future Personal Optimism; COD 2 = Personal Optimism towards specific situations in sporting life and COD 3 = Social Optimism. * $p < .05$; ** $p < .01$; *** $p \leq .001$

Next, multiple linear regressions were carried out to analyze to what extent the variance of the dependent variables is explained by the independent variables. In the first instance, the Optimism dimensions were considered as VI and the Burnout dimensions as VD (entered one at a time), considering the correlations that were significant between the variables.

First, the LOT dimensions predicted 13% of the variations in Emotional Exhaustion (EE) ($F(2, 191) = 13.660$; $p = .000$). Looking at which dimensions significantly predicted this aspect of Burnout, the following was found Optimism ($\beta = -.255$; $p = .000$), Pessimism ($\beta = .181$; $p = .011$).

On the other hand, it was observed that Pessimism ($\beta = -.176$; $p = .018$) positively predicted variations in Depersonalization ($r2 = .051$; $F(2, 191) = 5.112$; $p = .007$), but with an insubstantial coefficient of determination.

In addition, the LOT dimensions predicted 15% of the variations in Reduced Personal Accomplishment ($F(2, 191) = 16.368$; $p = .000$). Significant prediction came from Optimism ($\beta = -.284$; $p = .000$) and Pessimism ($\beta = .185$; $p = .009$) (See Table 5).

Table 5. Dimensions of the LOT-R as predictors of Burnout

	Dimensions of Optimism				
	OPT-LOT		PES-LOT		R^2
	B	β	B	β	
AE	-.712	-.255***	.433	.181*	.125
DESP	-.158	-.098	.243	.176*	.051
RRP	-.710	-.284***	.397	.185*	.146

Note. Only regressions for significant correlations from the above analysis are shown (see Table 5). OPT = Optimism; PES = Pessimism; AE = Emotional Exhaustion; DESP = Depersonalization; RRP = Reduced Personal Accomplishment.
*p < .05; **p < .01; ***p ≤ .001.

Taking the Optimism data from the Reduced Sport Optimism Questionnaire scale, it could be observed that all dimensions explained 29% of the variations in AE (F (3, 190) = 25.470; p = .000); but specifically Personal and Future Optimism (β = -.427; p = .000) and Personal Optimism towards sport life situations (β = -.178; p = .039) were the ones that significantly and negatively predicted AE.

Likewise, all dimensions of Optimism together predicted Reduced Personal Accomplishment (F (3, 190) = 18.793; p = .000), explaining 23% of the variations in it. When considering each optimism dimension of this scale separately, the following predictive values were observed for RRP: Personal and Future Optimism (β = -.245; p = .006) and Personal Optimism towards sport life situations (β = -.245; p = .006) (See Table 6).

Table 6. Dimensions of COD as predictors of Burnout

	Dimensions of Optimism						
	COD1		COD2		COD3		R^2
	B	B	B	B	B	β	
AE	-.367	-.427***	-.207	-.178*	.128	.061	.287
RRP	-.189	-.245**	-.256	-.245**	-.103	-.055	.229

Note. Only regressions for significant correlations from the previous analysis are shown (see Table 5). AE = Emotional Exhaustion; RRP = Reduced Personal Accomplishment; COD 1 = Future Personal Optimism; COD 2 = Personal Optimism in the face of specific situations in sporting life and COD 3 = Social Optimism.
*p < .05; **p < .01; ***p ≤ .001.

Then, Resilience dimensions were considered as VI and Burnout dimensions as DV (entered one at a time, see Table 7).

When analyzing the results, it was observed that the Resilience dimensions explained 19% of the variations in EA (F (2, 191) = 22.111; p = .000); being specifically the Acceptance of Life and Self dimension (β = -.352; p = .000) the one that significantly and negatively predicted this dimension of *Burnout*

On the other hand, it was observed that Resilience significantly predicted PRR (F (2, 191) = 19.810; p = .000), explaining 17% of the variations in it. Negative and significant prediction came from the Personal Competence dimension (β = -.388; p = .000).

Finally, Acceptance (β = -.164; p = .022) was found to negatively predict variations in Depersonalization, but with a trivial coefficient of determination (r 2 = .027; F (1, 192) = 5.301; p = .022).

Table 7. Dimensions of Resilience as predictors of Burnout.

	Dimensions of Resilience				
	ACEPT		COMPER		R^2
	B	B	B	B	
AE	-.312	-.352***	-.068	-.123	.188
RRP	-.035	-.044	-.193	-.388***	.172
DESP	-.084	-.164*	--	--	.027

Note. Only regressions for significant correlations from the above analysis are shown (see Table 5). AE = Emotional Exhaustion; DESP = Depersonalization; RRP = Reduced Personal Accomplishment; COMPER = Personal Competence; ACEPT = Acceptance of Self and Life.
*p < .05; **p < .01; ***p ≤ .001.

To answer the objective of this research, to analyze the specific dimensions of resilience and optimism that could act as protective variables against the possibility of burnout and to provide more information on the pattern of relationships between the variables, a structural equation model (SEM) was tested

using the lavaan package (Rosseel, 2012) of the R statistical program (R Core Team, 2023). We also sought to evaluate general optimism and sport optimism as mediators of burnout.

The diagonally weighted least squares estimator (DWLS) was used to calculate model parameter estimates, with conventional standard errors based on ordinal measures.

In this model, *Burnout* was measured through three dimensions (Emotional Exhaustion, Depersonalization and Reduced Personal Accomplishment), the variable Sport Optimism (OPT) was assessed through 3 dimensions (Future Personal Optimism, Personal Optimism in the face of specific situations of sporting life, Social Optimism), and General Optimism (LOT-R) was measured through 2 dimensions (optimism and pessimism). Since COD and LOT-R are two different forms of optimism, they were specified in the model as covariates.

The SEM model explained 79.1% of the variance in Burnout scores and presented an adequate fit to the data ($\chi2(2684) = 3714.59$; $p < .001$; CFI = .98; TLI = .98; SRMR = .086; RMSEA = .04; 95% CI [.040, .049]). The proportion of variance explained is quite high, given that burnout can be influenced by a variety of biological, cognitive, environmental, social, and spiritual factors.

Regarding the direct effect in the mediation model, the data suggest that when athletes are resilient, they are more likely to experience significantly lower levels of burnout ($\beta = -.40$; standard error = 0.11; $p < .001$). Likewise, the direct effect of optimism (composed of three factors) was also significant in reducing *burnout* levels ($\beta = -.38$; standard error = 0.13; $p < .001$), as well as in the case of LOT, but with a smaller direct effect size ($\beta = -.18$; standard error = 0.12; $p = .032$).

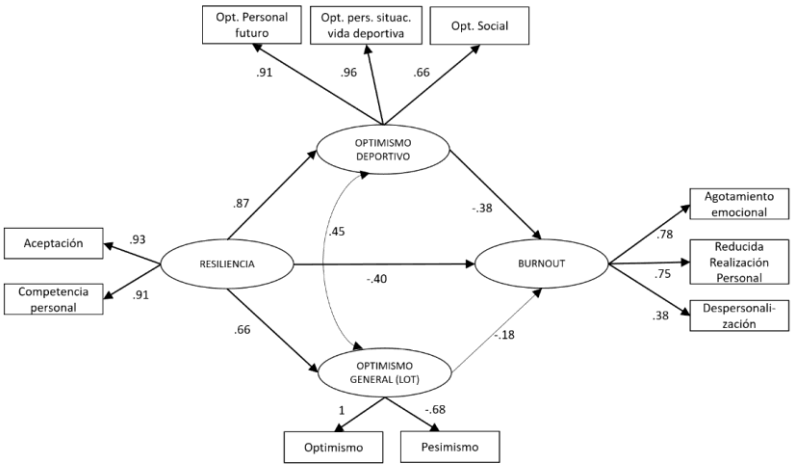
On the other hand, the indirect effect of sport optimism was also significant in reducing burnout levels ($\beta = -.33$; standard error = 0.11; $p < .001$), as also with LOT, but with a smaller indirect effect ($\beta = -.12$; standard error = 0.06; $p = .029$).

The total effect in the mediation model is larger than the direct effect of resilience on *burnout* and meets the requirements for joint significance testing of mediation (Fairchild and McDaniel, 2017).

The total combined effect of Resilience and Sport Optimism (OPT) on *burnout* was large and statistically significant ($\beta = -.73$; standard error = 0.08; $p < .001$), as was the total combined effect of Resilience and General Optimism (LOT) on Burnout ($\beta = -.52$; standard error = 0.13; $p < .001$). The proportional measured effect size of OPT was moderate (PM = .45) and more than twice the magnitude of the LOT effect (PM = .23), although this difference was not statistically significant ($\triangle = -0.257$; standard error = 0.161; $p = .11$).

The model parameter estimates, including their confidence intervals, are presented in Table 8, as well as in Figure 1 below.

Figure 1. *Diagram of the SEM model tested*



Note: Standardized coefficients are presented. All relationships were significant.
(Thinner line arrow represents ⟶ * $p < .05$; thicker arrows ⟹ *** $p < .001$).

Table 8. Estimated SEM model parameters and confidence intervals

Parameters	Coefficients	95% CI	Z	P	β Coef.
(a) BNT ⇐ RES	-0.49	-0.70, -0.27	-4.42	.000	.40
(b) OPT ⇐ RES	0.89	0.80, 0.98	18.88	.000	.87
(c) LOT ⇐ RES	0.54	0.47, 0.62	14.83	.000	.66
(d) BNT ⇐ OPT	-0.45	-0.70, -0.19	-3.45	.001	-.38
(e) BNT ⇐ LOT	-0.26	-0.50, -0.02	-2.15	.032	-.18

Note. β Coef = standardized Beta; BNT = Burnout (composed of AE, RRP, and D dimensions); OPT = Sport Optimism (composed of OF, OP, OS); LOT = General Optimism (composed of OPT, PES); RES = resilience (composed of ACEP, COMP); ⇐ = "is predicted by".

Discussion

The results of this study show a moderate level of resilience in the evaluated athletes, a result that finds similarities in another research (Brozovich-Neyra et al., 2024; Córdova-Castillo et al., 2023; Lacárcel et al., 2022; Serrano-Nortes et al., 2021; Reche et al., 2020; Reche and Ortín, 2013; Tutte and Reche, 2016; Tutte-Vallarino et al., 2022).

In the sports context, it is essential to have the ability to resist beyond the obstacles that may be faced and to readapt to quickly redirect energy towards new objectives (Reyes-Bossio, 2010). Resilience is a variable that makes this viable, allowing the athlete to overcome adversity in the sporting environment (Reche et al., 2014; Reche et al., 2018). The level of resilience of this sample of athletes is moderate, although it is a capacity that can be improved when facing moments of difficulty. This result would indicate that Uruguayan high-performance athletes, in some situations, may feel that they have the resources to face and learn from complex sporting situations, but on other occasions they would not have these tools or the capacity to handle negative sporting circumstances.

In relation to the Optimism variable, a high optimism profile is presented in the total sample, while a moderate level of pessimism is found, matching results like those found in other research with high-performance athletes who practice different disciplines (Angosto et al., 2021; Lacárcel et al., 2022; Reche et al., 2014; Reche et al., 2018; Tutte and Reche, 2016; Tutte-Vallarino et al., 2022). These high scores in optimism are undoubtedly encouraging and of utmost importance since optimism is a personality construct that acts as a conclusive factor when an athlete must face an adverse situation (Seligman, 2004).

Regarding the analysis of the Burnout dimensions: Emotional Exhaustion, Depersonalization and Reduced Personal Accomplishment, showed that 65.5% present *Burnout* symptoms for the Emotional Exhaustion dimension, 67% obtained Depersonalization symptoms and 62.9% in Reduced Personal Accomplishment, percentages that are shocking due to their manifestation in athletes and very similar to those found in a sample of Uruguayan high-performance athletes previously evaluated (Tutte-Vallarino et al., 2022). These data are worrying because they are higher compared to those found in other research (Santana et al., 2023) and, as is known, high scores in at least one of the three dimensions increase the likelihood and vulnerability to the possibility of suffering from *burnout* (Isorna et al., 2019; Reche et al., 2014; Santana et al., 2023; Tutte et al., 2010; Tutte and Reche, 2016; Tutte-Vallarino et al., 2022; Vives and Garcés de los Fayos, 2004).

These results continue to support the importance of continuing to work and research on protective variables that allow the athlete to develop effective emotional tools, minimizing in this way the possibility of suffering *burnout* (Trujillo-Torrealva and Reyes-Bossio, 2019), protective variables such as resilience and optimism (Santana et al., 2023; Tutte-Vallarino et al., 2022).

Regarding the results of the correlations, the Optimism dimension measured by the LOT-R, presented a significant negative correlation with respect to the three dimensions of *Burnout*: Emotional Exhaustion, Depersonalization and Reduced Personal Accomplishment. And with respect to the pessimism dimension, it presented a significant positive correlation with respect to the three dimensions of *Burnout:* Emotional Exhaustion, Depersonalization and Reduced Personal Accomplishment. Similar results to those obtained measured by the COD, where the three dimensions of the COD presented a significant negative correlation with respect to two of the three dimensions of *Burnout*: Emotional Exhaustion and Reduced Personal Accomplishment.

The importance of studying Optimism is that it is related to psychological health and performance, which allows predicting variables of utmost importance for Clinical Psychology and Sport Psychology (Scheier et al., 2021). We must consider that Optimism would be a predictor variable of sporting success, positioning itself as a psychological resource of major importance due to its high predictive capacity for the psychological well-being and performance of athletes (Batista, 2022; Seligman, 2019) and protective against *Burnout* syndrome (Ortín, 2023; Reche et al., 2014).

There are several studies that have studied burnout and optimism in the sports context, although few studies have shown specific correlations between optimism and the different dimensions of *burnout* as we intend to develop through this work. A bibliometric analysis conducted in 2013 concludes that there is a growing increase in research relating these variables in the sports context (Garcés de los Fayos et al., 2013). Another study with athletes showed results where optimism had a significant negative relationship with both stress and *burnout* (Gustafsson and Skoog, 2012). In the same line Ortín (2023) states that in the different investigations that have related optimism and *burnout*, athletes who have they tend to respond with optimism more often suffer less emotional exhaustion, remember that this first dimension, considered as "the gateway" to the risk of suffering *burnout* in all its breadth. This coincides with an investigation in judokas, where a significant and negative relationship was obtained with burnout symptoms, related to low optimism (Reche et al., 2014).

Likewise, similar results were found in field field hockey, finding significant differences between athletes who present *burnout* symptoms in relation to resilience and optimism, resulting that those who present *burnout* symptoms have lower resilience and optimism (Tutte and Reche, 2016). Recently, (Angosto et al., 2021) concluded that optimistic athletes show a greater perception of personal achievement in their performance and less emotional exhaustion.

It could be said that these results suggest that the levels of optimism could explain to some extent the changes in *burnout* symptomatology, and that the greater the optimism, the lesser the appearance of symptoms.

Regarding the dimensions of Resilience, the Personal Competence dimension presented a significant negative correlation with two dimensions of *Burnout*: Emotional Exhaustion and Reduced Personal Accomplishment. And with respect to the Acceptance of oneself and life dimension, it presented a significant negative correlation with the three dimensions of *Burnout*: Emotional Exhaustion, Depersonalization and Reduced Personal Accomplishment.

Within the research on resilience in the sports context, one of the aspects that has been studied the most is its influence on sports performance. Where the existence of a positive relationship with the athlete's performance is affirmed, which could be due to a correspondence between high values of resilience, optimism and psychological well-being, as well as negative with various psychological disorders and *burnout* syndrome (Bretón et al., 2016). In addition, it has also been suggested that resilience may appear when the athlete learns to cope with the demanding and potentially negative situations surrounding his or her performance (Trigueros et al., 2022).

Research conducted with Uruguayan judokas evaluated positive psychological aspects such as resilience and optimism and negative aspects such as burnout, finding that a quarter of the athletes showed high resilience with a significant and negative relationship with *burnout* symptomatology, related to low optimism. Therefore, they conclude that resilience associated with optimism protects from *burnout* symptomatology (Reche et al., 2014). On the contrary, Uruguayan female field hockey players presented high burnout symptomatology, and had lower resilience and optimism (Tutte and Reche, 2016).

While another study conducted with participants of both sports modalities concluded that, under pressure situations, athletes with high resilience are less likely to suffer *burnout* (Lee et al., 2017). Along the same lines as the research mentioned so far, resilience was observed as a protective variable against the possibility of suffering *burnout* (García-Hernández et al., 2020) that helps to manage the impact of adversity and is a determinant in generating a positive adaptation (Balcombe et al., 2022), obtaining a statistically significant negative relationship with *burnout*, being valued as a strategy for the prevention and protection of the syndrome (Tutte-Vallarino et al., 2022).

It is important to highlight that optimism measured by both scales is positively related to resilience. As Ortín (2023) mentions, the literature shows a close relationship between optimism and resilience.

Athletes and individuals in general who see the future as a challenge and expect positive results due to their high efforts to meet their expectations, are likely to be closer to growth.

The purpose of testing the study variables through an integrative model is to provide more specific knowledge regarding the relationship between resilience and optimism as protective factors against *burnout*.

The model explained 79.1% of the variance in *Burnout* scores and presented an adequate fit to the data. The proportion of variance explained is quite high, given that *burnout* can be influenced by various biological, cognitive, environmental, social and spiritual factors.

In terms of the direct effect on the mediation model, the data suggest that when athletes are resilient, they are more likely to experience significantly lower levels of *burnout.*

Likewise, the direct effect of optimism (composed of three factors measured by the COD) was also significant in reducing *burnout* levels, as was also the case with the LOT, but with a smaller direct effect. On the other hand, the indirect effect of sport optimism was also significant in reducing *burnout* levels as with the LOT, but with a smaller indirect effect.

The optimism variable, evaluated by the LOT-R, predicted 13% of variations in Emotional Exhaustion (EA) variations. The optimism data from the COD scale explained 29% of EA variations, suggesting that the new optimism instrument could predict the possibility of developing Emotional Exhaustion. High levels of optimism may reduce the likelihood of emotional fatigue in athletes. Resilience dimensions explained 19% of EA variations, indicating that emotional exhaustion is the first dimension of the syndrome to appear. This highlights the importance of prevention through protective variables like resilience and optimism (Santana et al., 2023). The study found that the combined effect of resilience and optimism on burnout was large and statistically significant. These findings highlight the importance of resilience and optimism in preventing emotional exhaustion.

These results allow us to conclude that both Resilience and Optimism are variables that, when present in our athletes, significantly reduce the risk of suffering *burnout.*

In summary, from the results obtained through the SEM Model, it can be concluded that both study variables, Resilience and Optimism act as protective and predictive variables against *Burnout.* And the combined effect of both, that is, of resilience measured by the role of optimism, is much larger and statistically significant in the *burnout* variable. Therefore, it is essential to know everything that surrounds the athlete, their environment and their psychological profile, so we can identify whether we are dealing with protected people or, on the contrary, with a greater likelihood of getting sick (Ortín, 2023).

Thus, optimism is presented as a predictive, protective and mediating variable of resilience against the possibility of suffering *burnout*. Meanwhile, resilience is presented as a predictive and protective variable, i.e., the greater the resilience capacity, the lower the possibility of suffering *burnout*. Competitive sport, even sometimes from an early age, subjects the athlete to great pressure that takes him away from the center of something that should be the essence of the practice of any sport: his health (Hoare, et al., 2022; Rice et al., 2016; Santana et al., 2023; Williams et al., 2020).

If we take the example of different athletes who were exposed to the need to face adversity and adapt to it to continue (e.g.: Simon Biles, Mohamed Allí, Michael Phelps, Novak Djokovic, among others), we could think that both optimism and resilience are part of the path to success and overcoming. And so, we wonder if there is another way to reach that golden path, other than through learning under pressure, to perform and value the effort of the journey. And to learn not only to enjoy the final product, but to value the process of achieving it.

One of the greatest challenges, therefore, is to work with *elite* athletes, starting with psychological and emotional training that will allow them to improve their performance, and to traverse this path with the objective of achieving the greatest possible success, through health, learning to cross mountains (Astuti et al., 2024; Batista, 2022; Córdova-Castillo et al., 2023; León Zarceño et al., 2022).

Athletes themselves perceive that psychological attributes and skills are vital for sporting success (Burns et al., 2022) and value having emotional resources and protective tools to manage adversity and illness, such as *burnout* and its symptoms. The athlete will be able to apply them within the sport

practice, and in his or her own life, generating a sporting well-being and a psychological well-being in general that contributes to the purpose of life or *ikigai*. Hence the importance of creating the conditions for the emergence, maintenance, or improvement of the factors that contribute to the presence of optimism and resilience in high-performance athletes.

This research, besides being able to contribute to deepen the relationship between the variables and the way they are linked, has allowed us to evaluate a very high percentage of Uruguayan athletes who participated in the ODESUR 2022 Games, each of them receiving an individualized report, protecting the confidentiality of the data and at the same time, it allowed us to identify cases that required a clinical referral. In this way, science allows us to make a concrete contribution to the community, providing a health service to those athletes who presented certain warning signs regarding their mental health.

Recommendations and suggestions

The present research provides information that could lead to future lines of research and intervention to be taken into account:

The importance of introducing variables such as resilience and optimism in the training of athletes as protective and preventive factors against the possibility of suffering *burnout*, especially considering the concerning results due to the significant presence of *burnout* symptomatology in its three dimensions in the sample of Uruguayan high performance athletes.

Promote research that allows us to propose intervention programs in sports psychology to strengthen resilience, optimism as prevention of burnout (Trujillo-Torrealva and Reyes-Bossio, 2019; Reyes-Bossio et al., 2022).

Likewise, we understand that it is not enough to work only with the athlete, but also with his or her immediate context, which undoubtedly plays a fundamental role for him or her and often works as antagonist, as a stressor or, on the contrary, as a protective factor (Brandão et al., 2024).

Regarding *coaches*, technical staff and people who work and/or train with athletes directly, it seems appropriate to provide them with tools for primary care of the psychoemotional health of the athlete, being able to be agents of prevention and/or intervention when the situation requires it. They are the ones who are with the athletes all the time and share situations related to both victories and painful defeats. We consider, then, that sensitizing them will allow addressing these "emotional injuries" and not only physical, preventing or minimizing the possibility of putting mental health at risk, such as *burnout* syndrome or simply issues such as stress, competitive anxiety, group disparity, etc., which, although they also interfere in the athlete's performance, do not necessarily affect health in general.

As *sports psychologists*, it is essential to think about teaching emotional regulation, to have an "emotional *kit*" as a guide to manage cognitive and emotional resources, not only encouraging the use of these protective strategies but also self-knowledge and self-care, key concepts so that the athlete himself knows when it is necessary to implement these "first aid" against frustration tolerance, pressure, stressors, anxiety, etc., or if it is necessary to "ask for help", as it is another effective way to solve the problem.

Regarding the *family or peer group* that surrounds the athlete, let us keep in mind that the scientific literature tells us that this social support can act as a protective factor or, on the contrary (Tutte and Suero, 2009). For this reason it is essential for the athlete to learn basic social skills, conflict resolution, assertive communication, emotional regulation and expression, etc., so that the athlete develops stable, lasting, but above all adaptive bonds, in their closest context, but also within the practice of their sport.

And last but not least, to train the athlete as an *athlete* but also as a *person*, to be able to broaden the view of the athlete so that he/she is not simply an object of play but a subject of law. With the possibility of projecting themselves beyond the sport, thinking about a vital project, a personal objective for their life that gives it the importance of living, finding meaning in what we do. And that prepares him/her for his/her life "beyond sport", or if the sporting possibility in high performance is not given, that gives him/her the cognitive flexibility to think of another alternative, another life plan, where he/she has an active role in his/her decisions and does not simply depend on "if I am lucky to get there".

Limitations

Although we consider that this research could provide knowledge both in the study and analysis of the proposed variables, we are aware of the presence of a series of limitations that could have interfered throughout the time this research took.

One of the limitations is with respect to the sample, although gender is equal, with respect to the sport modality, the athletes who practice in collective modality outnumber those who practice in individual modality.

A possible consequence of this may be reflected in the attempt to generalize the results achieved. Likewise, these limitations are frequent when dealing with athletes in general and become even more complex when the subject requires access to high-performance athletes. Research is carried out with those who meet the requirements and simultaneously express their willingness to participate.

Let us recall that we achieved the participation of a percentage greater than 65% of the total number of athletes qualified for the Odesur Games. Being the number achieved relevant, which far exceeds the minimum requirement for the sample to be representative.

Regarding the evaluation instruments used, it is important to point out that in the present investigation self-report questionnaires were used, which could imply that there are biases inherent to the scales used (e.g., social desirability, lack of understanding of the scales, lack of commitment in their implementation). In turn, the use of the IBD-R inventory, which has been questioned or little used by the scientific community, despite having adequate psychometric properties, is not taken into account in meta-analyses that address the burnout variable (Glandorf et al., 2023) but is evaluated with another instrument in most of the research found (e.g. ABQ). This would also allow us to evaluate the convergent validity between both instruments, a relationship that has already been studied (De Francisco et al., 2014), but not in Uruguayan athletes.

The LOT-R also presents some resistance and there is no single agreement regarding its unidimensionality or bidimensionality when it comes to its correction and subsequent interpretation. Finally, the COD, which lacks previous data with which we can compare and support the research due to its recent elaboration, being limiting factors to take into account.

Finally, and no less important, we are very aware that there are study variables, qualitative and sociodemographic variables, that were not introduced into the integrative model, which is a weakness that we are aware of, since we do not have this data contribution. The possibility of introducing these sociodemographic variables to the explanatory model of the structural equations will undoubtedly continue to provide greater knowledge and response to more specific needs of our athletes. And it will allow us to continue analyzing the model and the way in which the variables seem to be linked in relation to *burnout.*

Conclusions

1-The results showed that the athletes present a moderate level of resilience, although it is a capacity that continues to be perfected by putting it to the test in the face of adversity and training it, it could be said that they present a good level of resilience when trying to adapt and overcome the challenges they face.

2-The athletes presented a high optimism profile while presenting a moderate level of pessimism.

3-The *Burnout* dimensions: Emotional Exhaustion, Depersonalization and Reduced Personal Accomplishment, showed that 65.5% present *Burnout* symptomatology for the Emotional Exhaustion dimension, 67% present Depersonalization symptomatology and 62.9% in Reduced Personal Accomplishment, percentages that are shocking due to their manifestation in high performance athletes in Uruguay.

4-The SEM model explained 79.1% of the variance in *Burnout* scores and presented an adequate fit to the data. As for the direct effect on the mediation model, the data suggest that when athletes are resilient, they are more likely to experience significantly lower levels of *burnout*. Thus, optimism is presented as

a predictor, protective and mediating variable of resilience against the possibility of *burnout*. Resilience, on the other hand, is presented as a predictive and protective variable, i.e. the greater the resilience capacity, the lower the possibility of suffering *burnout*.

5-We find it essential to continue to deepen the study of these variables to understand more and more accurately the influence they have on each other. At the same time, we reiterate the importance of providing athletes with psychological tools that allow them to face difficulties and continue the long road that leads to high performance.

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