

The Effect of Experience, Coaching and Technical Post, on the Coping Strategies Solicited by the U15 Elites Affiliated to the Regional Centers of the Tunisian Football Federation (TFF)

Jamel Hajji^{1,2}, Ali Elloumi^{3,4}

¹Department of Sciences Education, Faculty of Humanities at Tunis, University of Tunis, Tunis, Tunisia

²Higher Institute of Sport and Physical Education Gafsa, Gafsa University, Gafsa, Tunisia

³Department of Arts and Sciences Social, Sfax University, Sfax, Tunisia

⁴Laboratoire Techniques et Enjeux du Corps, Université Paris Descartes, Paris 5, France

Email: Hajji5jamel@yahoo.fr

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Abstract

Today, the training center represents an unavoidable passage in the career of the high-level footballer. Training centers are among the mechanisms of National Technical Direction, to develop Tunisian football, and to improve performance in youth categories. The objective of our study is to examine the coping strategies of the competition, solicited by the elites affiliated to the regional training centers of the Tunisian Football Federation (TFF) and evaluate the interaction effects of coaching, experience, and the technical position. 76 U15 football players regularly evaluated through high-stakes competitions are invited in one hour after the competition, to settle against the Arabic version of the inventory of coping strategies of the sporting competition. Data were collected and analyzed by SPSS IBM and AMOS version 21.0.0. The results suggest that mental distraction is the coping strategy most solicited by our participants, the MANOVA analysis, only disclosed the effect of the coaching factor on mental imagery, thought control, Effort expenditure and Relaxation, but regression analysis revealed no strong explanatory relationship. Overall, this study allowed us to deepen our knowledge about the coping strategies of the competition used in the preformation process in the different training centers of the TFF. In addition, the impact of experience, coaching and the specificity of the technical position, on the choice of these strategies in com-

petitive contexts.

Keywords

Coping Strategies, Training Center, Tunisian Football Federation (TFF)

1. Introduction

In order to demonstrate their personal competence, elite footballers will be evaluated several times, (Martinent and Decret, 2015). An adequate transition period between the ages of 13 and 15 allows the athlete to achieve high-level performance and to specialize before the advanced years (16 and over), (Faure and Suaud, 1999; Slimani, 2000; Demazière and Csakavary, 2002, Bertrand, 2008; Roderick, 2006). Young people in this way face a double uncertainty, their chance to lead to the end, in which the achievement of a career rests on a virtuosity acquired early; And the initiation in which the environment plays a fundamental role (Bertrand, 2015). Moreover, coping with the stresses of sporting competition is an essential factor of self-regulation to promote optimal levels of sporting success (Gaudreau, Nicholls, & Levy, 2010).

The treatment of the threatening action is always done only in relation to the answers that the individual judges himself capable or not to bring. It is in this treatment that the strategies of coping or coping, defined by Lazarus and Folkman, come into play as “the constantly changing cognitive and behavioral efforts deployed by the individual to respond to specific internal and/or external demands, which are assessed as very strong and exceeding its adaptive resources”. Coping is a dynamic process, which changes according to situations and how the individual treats them. The athlete adopts this mechanism to manage the stressful stresses of competition and maximize performance (Calmeiro et al., 2010, 2014, Doron & Gaudreau, 2014, Doron & Martinent, 2016).

Carton-Caron (2004) states that the modes of “coping” are based on internal and/or external factors, indicating great inter and intra-individual variability. Some studies show that coping changes through the different phases of the competition (Gaudreau, Lapierre, Blondin, 2001, Gaudreau and Blondin, 2004).

For some authors, the determinants of coping are provisional. For others, coping is determined by situational or transactional characteristics. The transactional approach of Lazarus and Folkman (1984) is based on the principle that the individual permanently assesses his relationship with the environment and his report on personal well-being. In the spirit of the Lazarus model, coping has two essential functions, direct action on the causes of the problem, or moderation of the emotional consequences of the stressful interaction. Mellalieu, Hanton and Fletcher (2006), indicate that the level of the athlete’s experience influences the choice of coping strategies used. Some authors point out that young people use emotion-based strategies, while others point to the use of problem-oriented strategies. The same applies to the elderly (Callahan and Chabrol, 2013).

Cosh and Tully (2015), Anshel and Si (2008), identified that the behavior of the trainer (coaching) was described as a key stressor. The study by Gearity & Murray (2011), on coaching, showed that the athletes indicated that the style of coaching was associated with their adaptation and their sports motivation. Support coaching can play a positive role in providing direction in the process of achieving goals and in promoting the development of athletic and mental skills (Côté et al., 1999). In this sense, it can also be considered as a potential resource (Hobfoll, 2002), to make athletes more capable of solving problems and to cope with the stresses inherent in sports competitions (Ntoumanis, Biddle and Haddock, 1999). Effective coaching requires not only the establishment of a satisfactory relationship, but also the physical, technical, mental and tactical preparation of athletes (Hollebeak and Amorose, 2005).

2. Materials and Methods

2.1. Population

76 footballers U15 (average age 14.00, SD: 0.33) (see **Table 1**) affiliated to the regional training centers.

The regional technical advisor appointed by the Tunisian Football Federation (TFF) selects the best talents at the age of 13 to 14 in their region, after having evaluated these athletes during their participation in the official competitions in their clubs. Template, speed, technical capacity, tactical intelligence and integration; Are the most adopted criteria.

The selected footballers are then invited to the regional training centers supervised by the National Technical Direction (NTD) of the TFF; To be submitted to a final prospecting program, consisting of a physical, technical, and tactical testing package.

Finally, the 20 best talents are maintained and submitted to a training and evaluation program for 2 years to join the national selection.

Table 1. Frequency tables.

		Age (SD)	Body weight (SD)	Height (SD)	Effective	%
Training Center	Gafsa	13.85 (0.37)	48.65 (7.64)	161.70 (8.42)	20	26.3
	Sidi Bouzid	13.95 (0.37)	51.16 (7.07)	160.00 (7.15)	19	25.0
	Gabès	14.10 (0.37)	52.25 (10.22)	164.25 (8.86)	20	26.3
	Le Kef	14.12 (0.37)	50.71 (6.41)	164.82 (7.43)	17	22.4
Level Experience	Less than 2 years	14.00 (0.00)	51.42 (7.86)	164.88 (8.08)	26	34.2
	More than 2 years	14.00 (0.40)	50.30 (8.11)	163.38 (7.97)	50	65.8
Technical position	Goalkeeper	13.90 (0.57)	52.00 (13.40)	164.40 (11.55)	10	13.2
	Defender	14.00 (0.00)	50.64 (8.23)	164.45 (7.94)	22	28.9
	Midfielders	14.00 (0.32)	50.57 (5.95)	162.90 (7.58)	21	27.6
	Attacker	14.04 (0.38)	50.26 (6.82)	164.04 (6.99)	23	30.3

2.2. Measure

We examined coping strategies through the Arabic version of the Inventory of Coping Strategies in Sports Competition (Hajji et al., 2016). The ISCCS (Gaudreau and Blondin, 2002) is a questionnaire of 39 items. When handling the questionnaire, participants had to position themselves against a Likert scale ranging from 1 (not at all used) to 5 (used very frequently). The questionnaire consists of 10 subscales: Mental imagery, Thought Control, Effort Expenditure, Seeking Support, Relaxation, Logical Analysis, Venting of Unpleasant Emotions, Disengagement, Social Withdrawal, Mental Distraction.

3. Procedure

After authorization to conduct our study, we contacted the heads of each training center and the parents of all athletes (under 15 years old); through letters of recommendation certified by the national technical direction (DTN) of the Tunisian Football Federation. The coaches are then invited to engage in the evaluation process.

All parents of participants have given their informed written consent. Prior to the data collection, the athletes who agreed to participate and their parents were given ample information about the study's purpose and procedure, and were informed that the results would be made available after completion of the survey, Study is completed.

During their sectoral groupings, in December 2015 and March 2016, athletes were invited to position themselves against the Arab version of the ISCCS, one to two hours after the competition.

The questionnaire was then preceded by clear and concise instructions, indicating information concerning age, gender, sports discipline, technical post held, and level of experience. The data was then analyzed by SPSS IBM and AMOS version 21.0.0.

4. Data Analysis

We evaluated the psychometric properties of the Arabic version of the ISCCS (Hajji et al., 2016), through the correlation for the ratio of the subscales, through the analysis of Alpha Cronbach for the internal consistency of the ISCCS, and Through an exploratory and confirmatory factor analysis processed with SPSS and AMOS 21.0.0, in order to validate the structure and arrangement of the ISCCS factors.

We use several indices of adequacy (Hoyle & Panter, 1995; Kline, 2005) to evaluate the fit models to data collected such as the χ^2 statistic that overcomes the abnormality data (Satorra and Bentler, 1994), the compared fit index CFI (Bentler, 1990) and TLI (Tucker-Lewis Index), and the Root Mean Square error of approximation RMSEA (Browne & Cudeck, 1993).

To reveal the level of coping in general and in relation to the factors: coaching, level of experience and technical post of each athlete, we focused the mean scores and the standard deviations of each coping strategy.

To support the interaction effect of factors, coaching, level of experience and technical post on coping strategies implord by our elites, we performed an MNOVA analysis. Finally, and to explain the effects of existing interactions, we performed a multiple regression analysis (input method).

5. Results

Psychometric properties of ISCCS

1) The report of the subscales

Significant positive correlations at $p < 0.05$ were observed (see **Table 2**).

2) The internal consistency of the ISCCS

The Cronbach α coefficient of the different subscales ranges from 0.71 to 0.87, while the overall Cronbach α coefficient of the scale is 0.77 (See **Table 3**).

3) Exploratory Factor Analysis

a) the 6-factor model: task-oriented coping: TOC

-Determining = $3.478E-005$.

-KMO index and Bartlett test: 0.696 (Meaning of Bartlett < 0.001).

-The saturations of each item on the 6-factor model (See **Table 4**).

b) the 4-factor model: emotion-oriented coping: EOC

Table 2. Inter-subscale correlations of ISCCS.

		1	2	3	4	5	6	7	8	9
Mental imagery	r	1								
	p									
Thought control	r	0.022	1							
	p	0.850								
Effort expenditure	r	0.087	0.047	1						
	p	0.457	0.690							
Seeking support	r	-0.095	0.147	-0.122	1					
	p	0.414	0.207	0.294						
Relaxation	r	-0.126	-0.007	-0.315**	0.344**	1				
	p	0.277	0.950	0.006	0.002					
Logical analysis	r	0.168	0.164	0.381**	-0.003	-0.096	1			
	p	0.147	0.157	0.001	0.980	0.408				
Venting of unpleasant emotions	r	0.232*	0.081	0.071	-0.020	0.062	0.223	1		
	p	0.044	0.486	0.542	0.864	0.596	0.053			
Disengagement	r	-0.152	-0.087	0.102	0.280*	0.134	0.038	-0.007	1	
	p	0.190	0.455	0.380	0.014	0.248	0.742	0.950		
Social withdrawal	r	-0.272*	0.071	-0.003	0.287*	0.306**	0.129	0.113	0.339**	1
	p	0.017	0.544	0.982	0.012	0.007	0.267	0.332	0.003	
Mental distraction	r	-0.030	0.189	-0.034	0.185	0.348**	0.096	0.237*	0.011	0.254*
	p	0.795	0.102	0.772	0.109	0.002	0.411	0.040	0.926	0.027

*The correlation is significant at 0.05 (bilateral). **The correlation is significant at 0.01 (bilateral).

Table 3. Alpha Cronbach coefficient of the ISCCS.

ISCCS Subscales	Alpha Cronbach	N
Mental imagery	0.871	4
Thought control	0.842	4
Effort expenditure	0.729	3
Seeking support	0.709	4
Relaxation	0.711	4
Logical analysis	0.719	4
Venting of unpleasant emotions	0.845	4
Disengagement	0.830	4
Social withdrawal	0.726	4
Mental distraction	0.825	4
The ISCCS scale	0.772	39

Table 4. Standardized solutions for factor loadings for the task oriented coping (TOC).

	1	2	3	4	5	6
Item 31	0.895					
Item 11	0.842					
Item 1	0.839					
Item 21	0.795					
Item 34		0.855				
Item 26		0.809				
Item 16		0.806				
Item 6		0.772				
Item 18			0.787			
Item 36			0.692			
Item 28			0.658			
Item 8			0.594			
Item 29				0.781		
Item 9				0.744		
Item 19				0.721		
Item 37				0.570		
Item 35					0.799	
Item 17					0.770	
Item 27					0.608	-0.378
Item 7			0.453		0.577	
Item 24						0.796
Item 14						0.761
Item 4				0.400		0.644

-Determining = 0.001.

-KMO index and Bartlett test: 0.714 (Meaning of Bartlett < 0.001).

-The saturations of each item on the 4-factor model (See **Table 5**).

4) Confirmatory Factor Analysis

The 6-factor and 4-factor model adjustment indices are presented in **Table 6**.

5.1. Level of Coping

The average scores and standard deviations of each subscale are presented in **Table 7** and **Table 8**.

Generally mental distraction, Social withdrawal and disengagement, are the coping strategies most requested by our participants.

Compared to the training center, we have distinguished that the coping strategies most used are, the control of thoughts among the elites of Gafsa, the Social withdrawal among the elites of Sidi Bouzid, the relaxation among the elites of Gabès and the mental distraction among the elites of El Kef.

Compared to the experience, we found that both groups, implore more the mental distraction.

Compared to the technical position, we have shown that the mental distraction is more demanded in the defenders, the midfielders and the attackers. While the goalkeepers demand more Social withdrawal.

Table 5. Standardized solutions for factor loadings for the emotion oriented coping (EOC).

	1	2	3	4
Item 2	0.848			
Item 32	0.819			
Item 22	0.809			
Item 12	0.788			
Item 30		0.878		
Item 20		0.816		
Item 10		0.804		
Item 38		0.700		
Item 39			0.833	
Item 15			0.816	
Item 25			0.776	
Item 5			0.739	
Item 3				0.782
Item 23				0.776
Item 13				0.763
Item 33				0.533

Table 6. Confirmatory factor analysis of the ISCCS measurement model.

	X^2	X^2/df	p	CFI	TLI	RMSEA
6-factor model	251.84	1.17	0.048	0.93	0.92	0.048
4-factor model	130.44	1.33	0.016	0.93	0.91	0.066

Table 7. The level of coping strategies among the FFT-U15 elites.

	Mental imagery	Thought control	Effort expenditure	Seeking support	Relaxation	Logical analysis	Venting of unpleasant emotions	Disengagement	Social withdrawal	Mental distraction
Mean (SD)	10.25 (3.69)	14.89 (3.44)	9.12 (3.66)	14.51 (3.34)	14.38 (3.70)	10.95 (3.98)	10.95 (3.98)	15.03 (3.41)	15.17 (3.54)	15.93 (3.26)
N	76									

Table 8. The level of coping strategies in relation to factors: training center, experience and technical position.

Training Center		Mental imagery	Thought control	Effort expenditure	Seeking support	Relaxation	Logical analysis	Venting of unpleasant emotions	Disengagement	Social withdrawal	Mental distraction
Gafsa	Mean	12.75	16.40	10.65	13.40	11.25	12.60	14.75	14.45	14.35	15.15
	(SD)	(3.61)	(1.96)	(3.16)	(3.33)	(2.99)	(3.69)	(3.26)	(3.60)	(3.26)	(3.43)
S. Bouzid	Mean	08.32	14.31	09.84	14.74	15.26	12.00	14.79	15.52	16.84	15.84
	(SD)	(2.52)	(4.62)	(3.71)	(3.62)	(2.96)	(4.72)	(4.32)	(3.39)	(3.08)	(2.52)
Gabès	Mean	10.60	13.85	06.10	15.85	17.15	08.85	15.50	15.45	16.05	16.85
	(SD)	(3.67)	(3.06)	(2.81)	(2.87)	(2.47)	(3.33)	(2.98)	(3.75)	(3.62)	(1.90)
Le Kef	Mean	09.06	15.00	10.06	14.00	13.82	10.29	15.17	15.29	16.64	17.35
	(SD)	(3.30)	(3.33)	(3.17)	(3.22)	(3.64)	(3.03)	(3.14)	(3.60)	(2.52)	(1.83)
Level of experience											
Less 2 years	Mean	11.65	14.65	10.00	14.11	13.92	11.23	15.73	14.88	16.11	16.27
	(SD)	(3.86)	(4.20)	(3.12)	(2.82)	(3.56)	(3.37)	(2.96)	(3.95)	(2.97)	(2.44)
More 2 years	Mean	09.52	15.02	08.66	14.72	14.62	10.80	14.70	15.32	15.84	16.26
	(SD)	(3.41)	(3.00)	(3.82)	(3.58)	(3.77)	(4.29)	(3.60)	(3.34)	(3.43)	(2.73)
Technical post											
Goalkeeper	Mean	09.80	15.30	08.30	14.10	15.40	08.50	13.40	15.00	16.50	15.90
	(SD)	(3.42)	(4.44)	(3.88)	(3.90)	(4.29)	(4.88)	(3.89)	(5.45)	(3.03)	(2.84)
Defender	Mean	09.45	14.68	09.86	15.00	15.50	11.45	14.59	15.54	16.36	16.54
	(SD)	(3.70)	(3.45)	(3.63)	(2.99)	(2.92)	(3.91)	(3.71)	(2.42)	(2.57)	(1.97)
Midfielders	Mean	10.62	14.24	08.24	14.38	14.09	09.47	16.29	15.66	16.00	16.47
	(SD)	(4.22)	(3.83)	(4.09)	(4.27)	(4.01)	(3.58)	(2.22)	(2.43)	(3.75)	(2.46)
Attacker	Mean	10.87	15.52	09.56	14.35	13.13	12.87	15.08	14.43	15.22	15.95
	(SD)	(3.33)	(2.55)	(3.13)	(2.49)	(3.58)	(3.02)	(3.60)	(4.32)	(3.54)	(3.27)

The interaction effect of coaching, experience and technical position.

The analysis of variance validated only the effect of the coaching center on the coping strategies of competition among our elites, [Wilks' Lambda = 0.233 < 1, D = 2.21, $p = 0.002 < 0.05$.] (See **Table 9**).

The strategies involved are mental imaging ($F = 2.882$, $p = 0.046 < 0.05$), thought control ($F = 3.17$; $p = 0.036 < 0.05$), Effort expenditure ($F = 3.969$; $p = 0.014 < 0.05$) and relaxation ($F = 6.508$; $p = 0.001 < 0.05$) (See **Table 10**).

Table 9. The effect of interaction between factors (IV) and strategies of coping (DV).

	Effect	Value	D	Ddl of the hypothesis	ddl error	Sig.
Training Center (coaching)	Trace of Pillai	1.070	2.052	30.000	111.000	0.004
	Wilks' Lambda	0.233	2.216	30.000	103.408	0.002
	Hotelling Trace	2.132	2.392	30.000	101.000	0.001
	Roy's Biggest Root	1.517	5.613 ^c	10.000	37.000	0.000
Level of experience	Trace of Pillai	0.211	0.935 ^b	10.000	35.000	0.514
	Wilks' Lambda	0.789	0.935 ^b	10.000	35.000	0.514
	Hotelling Trace	0.267	0.935 ^b	10.000	35.000	0.514
	Roy's Biggest Root	0.267	0.935 ^b	10.000	35.000	0.514
Technical post	Trace of Pillai	0.810	1.369	30.000	111.000	0.122
	Wilks' Lambda	0.366	1.409	30.000	103.408	0.105
	Hotelling Trace	1.274	1.430	30.000	101.000	0.096
	Roy's Biggest Root	0.654	2.421 ^c	10.000	37.000	0.025

Table 10. Inter-subject interaction effects between training center factor and coping strategies).

Source	Dependent variable	Sum of type III squares	ddl	Mean of squares	F	p-value.
Training Center (coaching)	Mental imagery	87.564	3	29.188	2.882	0.046
	Thought control	77.250	3	25.750	3.117	0.036
	Effort expenditure	121.532	3	40.511	3.969	0.014
	Seeking support	82.723	3	27.574	2.143	0.108
	Relaxation	207.474	3	69.158	6.508	0.001
	Logical analysis	72.319	3	24.106	2.250	0.096
	Venting of unpleasant emotions	21.018	3	7.006	0.580	0.631
	Disengagement	27.433	3	9.144	0.930	0.434
	Social withdrawal	29.877	3	9.959	0.832	0.483
	Mental distraction	62.374	3	20.791	2.737	0.055

5.2. Multiple Linear Regression

To explain the effect of interaction, a multiple regression analysis (entry method) was performed, we revealed four explanatory relationships that predict the following coping strategies (see **Table 11**):

The mental imagery [$R^2 = 0.157$; $F = 4.483$ at $p = 0.006$], determined by training center (coaching) factors ($\beta = -0.264$, $t = -2.440$ at $p = 0.017$).

The Relaxation [$R^2 = 0.161$; $F = 4.622$ at $p = 0.005$], determined by the training center (coaching) factors ($\beta = 0.298$, $t = 2.748$ at $p = 0.008$) and technical positions ($\beta = -0.230$, $t = -2.124$ at $p = 0.037$).

The logical analysis [$R^2 = 0.145$; $F = 4.070$ at $p = 0.010$], determined by the technical positions ($\beta = 0.241$, $t = 2.207$ at $p = 0.031$). And the mental distraction [$R^2 = 0.106$; $F = 2.831$ at $p = 0.044$], determined by the training center (coaching) factors ($\beta = 0.325$, $t = 2.902$ at $p = 0.005$) (See **Table 12**).

Table 11. Table summary of models.

Dependent variable	R	R ²	R ² Adjusted	Standard Error of Estimate	Change in statistics					Durbin Watson
					Variation of R ²	Variation of F	ddl1	ddl2	Sig. Variation of F	
Mental Imagery	0.397 ^a	0.157	0.122	3.45881	0.157	4.483	3	72	0.006	1.657
Relaxation	0.402 ^a	0.161	0.127	3.45661	0.161	4.622	3	72	0.005	1.389
Logical Analysis	0.381 ^a	0.145	0.109	3.75882	0.145	4.070	3	72	0.010	1.429
Mental Distraction	0.325 ^a	0.106	0.068	2.53370	0.106	2.831	3	72	0.044	1.696

Table 12. Coefficients table.

Dependent variable		Non-standardized coefficients		Standardized coefficients	t	Sig.	Correlations			Statistics of collinearity	
		A	Standard Error	Beta			Simple Correlation	Partial	Part	Tolerance	VIF
Mental Imagery	(Constant)	14.520	2.023		7.177	0.000					
	coaching	-0.830	0.361	-0.250	-2.302	0.024	-0.271	-0.262	-0.249	0.991	1.009
	Expérience	-2.042	0.837	-0.264	-2.440	0.017	-0.276	-0.276	-0.264	0.998	1.002
Relaxation	(Constant)	13.261	2.022		6.559	0.000					
	coaching	0.991	0.360	0.298	2.748	0.008	0.321	0.308	0.297	0.991	1.009
	Technical positions	-0.823	0.387	-0.230	-2.124	0.037	-0.257	-0.243	-0.229	0.992	1.008
Logical Analysis	(Constant)	11.274	2.199		5.128	0.000					
	Technical positions	0.929	0.421	0.241	2.207	0.031	0.265	0.252	0.240	0.992	1.008
Mental Distraction	(Constant)	14.533	1.482		9.806	0.000					
	coaching	0.767	0.264	0.325	2.902	0.005	0.324	0.324	0.323	0.991	1.009

6. Discussion

6.1. Psychometric Properties

For Relationships between the ISCCS subscales, Correlation values range from 0.23 to 0.38, so they are within an acceptable range (Briggs and Cheeks, 1986), (see Table 2).

For the internal consistency of the scale, the coefficients of a Cronbach are acceptable and similar to that of the original version of (Gaudreau & Blondin, 2002) and the Arab version of ISCCS (Hajji et al., 2016). In general, according to De Vellis (1991), alpha values greater than 0.60 are considered acceptable. (See Table 3).

For confirmatory factor analysis revealed a good fit for both models. The 6-factor model [Chi-2 = 251.84 at $p = 0.048$; CFI and TLI are > 0.9 and RMSEA < 0.08], and the 4-factor model [Chi-2 = 130.44 at $p = 0.016$; CFI and TLI are > 0.9 and RMSEA < 0.08]. Tabachnick and Fidell (2007), (See Table 6 and Figure 1 and Figure 2).

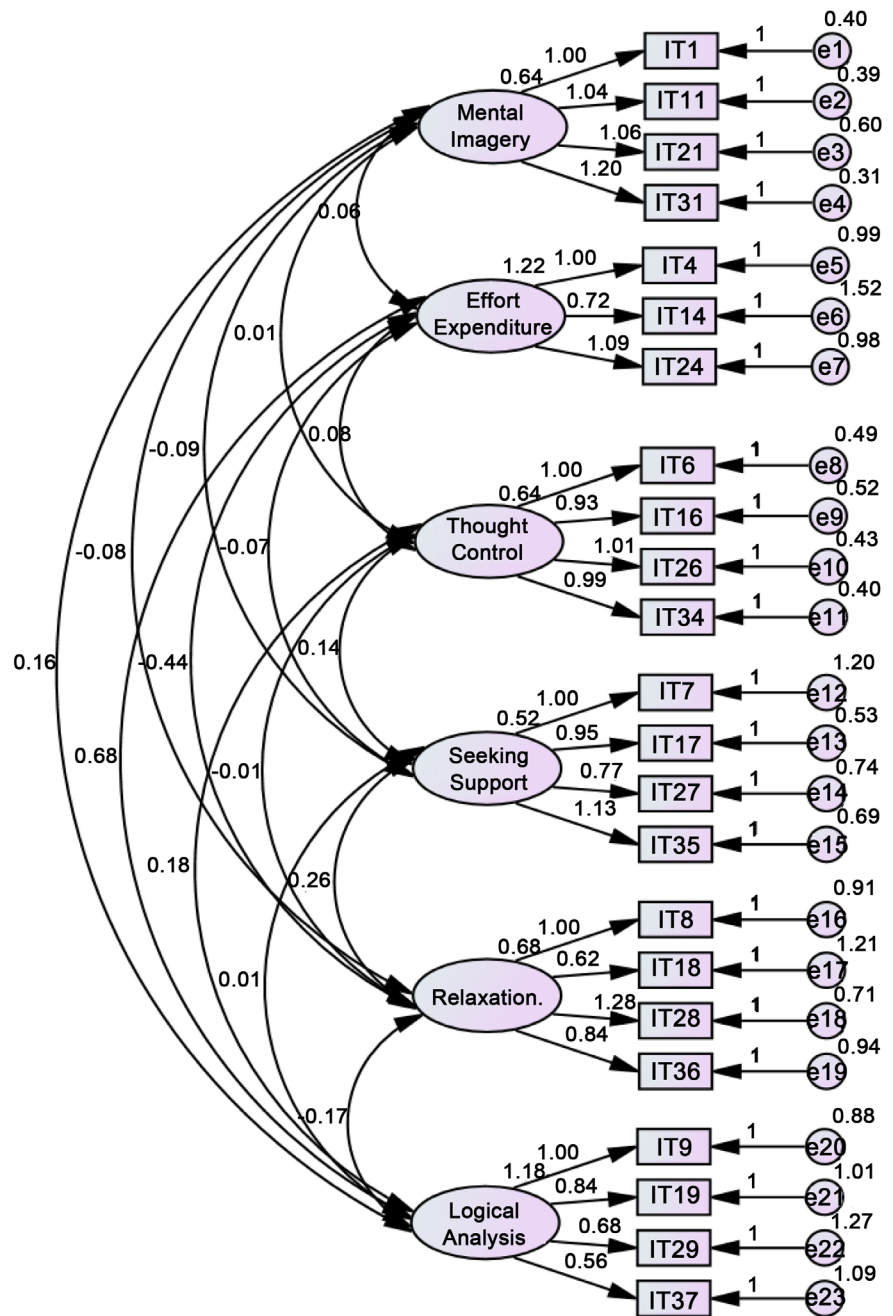


Figure 1. 6-factor model.

6.2. Level of Coping and Anxiety

The results of our study suggest that coping strategies oriented towards emotion, in a general way or in relation to factors, coaching, experience and technical positions, are most implored by our elites through the competitive environment. While some authors confirm (Gaudreau et al., 2002; Nicholls et al., Doron & Gaudreau, 2014, Doron and Martinent, 2016) that task-oriented coping strategies are positively associated with performance, At the level of achievement the objectives of the competition (Amiot, Gaudreau and Blanchard, 2004; Dinca & Rosnet, 2007).

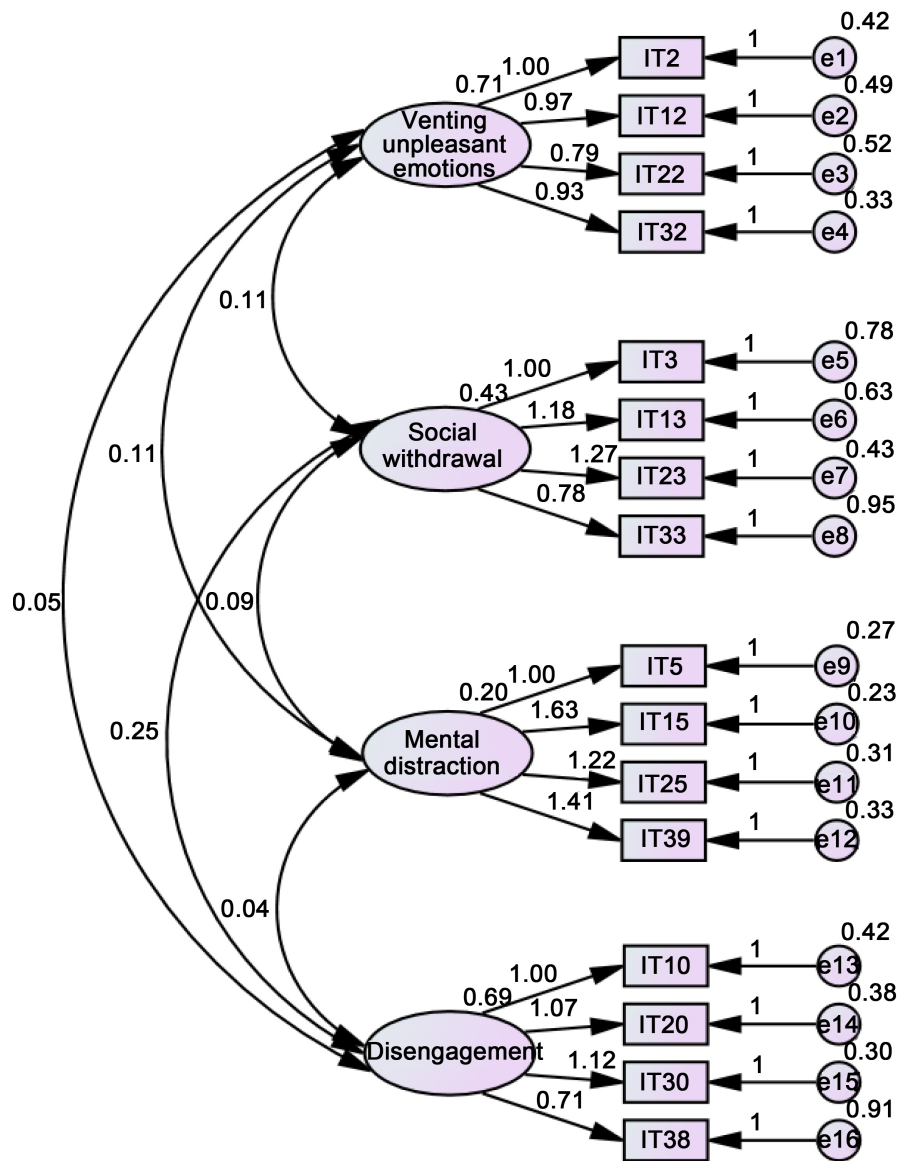


Figure 2. 4-factor model.

6.3. The Interaction Effect of Determinants

To estimate the interaction effect of the factors, the MANOVA variance analysis proves that only the training center or coaching factor has an interaction effect on task-oriented coping strategies such as imaging Mental control, thought control, effort deployment and relaxation. While the experience and the game post, have no interaction effect. Our results are similar to those published in the study by Nicolas, Gaudreau, and Franche (2011), who asserts that task-oriented coping strategies is an important process by which the Perceived support coaching has an influence on athletes during a specific competition. Similarly for Kristiansen et al. (2008), in elite athletes in four different European countries.

6.4. Regression

In order to know what factors (coaching, experience, technical position) influ-

ence the coping strategies of the competition. We performed a multiple regression analysis, the input method.

The results suggest that:

The VIF and tolerance values confirm the absence of multicollinearity problem (see **Table 12**).

The Durbi-Watson test values for assessing the correlation between residuals and errors are in the range of 1.5 to 2.5. The regression model is validated.

The coefficients of F obtained are significant at $p < 0.05$, indicating that the model contribute to better predict coping strategies (Hair et al., 2010).

The results also suggest that there are only four significant explanatory relationships at $p < 0.05$; Whereas the values of R^2 indicate that the strength of all these relationships is very low (see **Table 11**).

-15.7% of mental imagery is explained by factors, training center (coaching) and experience.

-16.1% of relaxation is explained by the factors, training center (coaching) and Technical positions

-14.5% logical analysis is explained only by the factor, gaming station

-10.6% of the mental distraction is explained only by the factor, training center

The values of R^2 indicate that the strength of all explanatory relationships is very low.

7. Conclusion

Research on coping in sports was strongly influenced by the transactional coping approach of Lazarus and Folkman (Nicholls & Polman, 2007). In this context, our work was designed to provide a descriptive basis for understanding how our elites in regional state training centers manipulate coping strategies in key competitive events.

In the sports field, the use of task-oriented coping strategies and disengagement during a sporting competition are associated, positively and negatively, with the gap between the objectives set beforehand and the result achieved (Gaudreau & Blondin, 2004; Gaudreau, Blondin, & Lapierre, 2002), (Ntoumanis & Biddle, 1998, Kim and Duda, 2003). Athletes who have a high use of task-oriented coping strategies, adapt better to the competition situation (Gaudreau & Blondin, 2004). Contrary to what was expected, our elites are more impatient of emotion-based coping strategies.

Task-oriented coping strategies are associated with a more efficient organization of learning and working methods (Devonport & Lane, 2006). Coaching is the effective determinants of training in the field of sport. In our work, analysis of variance revealed only the effect of training center where the trainer plays the crucial role, on the coping strategies used by our elites. Coaching has been established as a stressor in elite athletes. The flexibility and support of coaches was a crucial source for overcoming stressors (Cosh and Tully, 2015).

Today, applied research is needed to examine whether preventive psycho-

educational interventions that teach coaching support behaviors (Smith, Smoll and Cumming, 2007) have effects on the use of athletes coping strategies.

8. Limits

Among the limitations of our work, only situational coping strategies have been examined, while coping strategies are also provisional, changing over time, situations and contexts (Gaudreau & Miranda, 2010).

The second limit in our work is that there was no possibility to evaluate the coping during the competition (Gaudreau and Blondin, 2002).

References

- Amiot, C. E., Gaudreau, P., & Blanchard, C. M. (2004). Self-Determination, Coping, and Goal Attainment in Sport. *Journal of Sport and Exercise Psychology*, *26*, 396-411. <https://doi.org/10.1123/jsep.26.3.396>
- Anshel, M. H., & Si, G. (2008). Coping Styles Following Acute Stress in Sport among Elite Chinese Athletes: A Test of Trait and Transactional Coping Theories. *Journal of Sport Behavior*, *31*, 3-21.
- Bentler, P. M. (1990). Comparative Fit Indexes in Structural Models. *Psychological Bulletin*, *107*, 238-246. <https://doi.org/10.1037/0033-2909.107.2.238>
- Bertrand, J. (2008). Preparing for the Profession of Footballer: Analysis of Professional Socialization. *Staps*, *82*, 29-42. <https://doi.org/10.3917/sta.082.0029>
- Bertrand, J. (2015). *How Does One Become a Professional Footballer?* Human Sciences, Monthly No. 272.
- Briggs, S. R., & Cheeks, J. M. (1986). The Role of Factor Analysis in the Development and Evaluation of Personality Scales. *Journal of Personality*, *54*, 106-148. <https://doi.org/10.1111/j.1467-6494.1986.tb00391.x>
- Browne, V., & Cudeck, R. (1993). Alternative Ways of Assessing Model Fit. In K. A. Bollen, & J. S. Long (Eds.), *Testing Structural Equation Models* (pp. 136-162). Newbury Park, CA: Sage.
- Callahan, S., & Chabrol, H. (2013). *Mechanisms of Defense and Coping* (2nd ed.). Paris: Dunod.
- Calmeiro, L., Tenenbaum, G., & Eccles, D. (2010). Sequence Analysis of Appraisals and Coping during Trapshooting Performance. *Journal of Applied Sport Psychology*, *22*, 392-407. <https://doi.org/10.1080/10413200.2010.495325>
- Calmeiro, L., Tenenbaum, G., & Eccles, D. (2014). Managing Pressure: Patterns of Appraisals and Coping Strategies of Non-Elite and Elite Athletes during Competition. *Journal of Sports Sciences*, *32*, 1813-1820.
- Carton-Caron, A. (2004). *Coping Strategies in Athletes*. Doctoral Thesis in Psychology, Bois: University of Charles de Gaulle Lille 3.
- Cosh, S., & Tully, J.P. (2015). *Stresseurs d'adaptation et de mécanismes desoutien pour les étudiants-athlètes Combinant Elite Sport et enseignement supérieur: Implications pour lapratique*. Texte intégral de l'article, Sport Psychologue.
- Côté, J., Yardley, J., Hay, J., Sedgwick, W., & Baker, J. (1999). An Exploratory Examination of the Coaching Behavior Scale for Sport. *Avante*, *5*, 82-92.
- Demazière, D., & Csakavary, B. (2002). Becoming Professional. *Panoramiques*, *61*, 85-91.
- De Vellis, R. F. (1991) *Scale Development: Theory and Application*. London: Sage.
- Devonport, T. J., & Lane, A. M. (2006). Cognitive Appraisal of Dissertation Stress among

- Undergraduate Students. *The Psychological Record*, 56, 259-266.
- Dinca, A., & Rosnet, E. (2007). *Relationship between Personal Effectiveness, Coping Strategies and Performance in Sports Competitions*.
- Doron, J., & Gaudreau, P. A. (2014). Point by Point Analysis of Performance in a Fencing Match: Psychological Processes Associated with Winning and Losing Streaks. *Journal of Sport and Exercise Psychology*, 36, 3-13. <https://doi.org/10.1123/jsep.2013-0043>
- Doron, J., & Martinent, G. (2016). Trajectories of Psychological States of Women Elite Fencers during the Final Stages of International Matches. *Journal of Sports Sciences*, 34, 836-842. <https://doi.org/10.1080/02640414.2015.1075056>
- Faure, J., & Suaud, C. (1999). *French Professional Football*. Paris: University Press of France.
- Gaudreau, P., & Blondin, J. P. (2004). Different Athletes Cope Differently during a Sport Competition: A Cluster Analysis of Coping. *Personality and Individual Differences*, 36, 1865-1877. <https://doi.org/10.1016/j.paid.2003.08.017>
- Gaudreau, P., & et Blondin, J. (2002). Development of a Questionnaire for the Assessment of Coping Strategies Employed by Athletes in Competitive Sport Settings. *Psychology of Sport and Exercise*, 3, 1-34. [https://doi.org/10.1016/S1469-0292\(01\)00017-6](https://doi.org/10.1016/S1469-0292(01)00017-6)
- Gaudreau, P., & Miranda, D. (2010). Coping across Time, Situations, and Contexts: A Conceptual and Methodological Overview of Stability, Consistency, and Change. In A. R. Nicholls (Ed.), *Coping in Sport: Concepts, Theories, and Related Constructs* (pp. 15-32). New York: Nova.
- Gaudreau, P., Lapierre, A. M., & Blondin, J. P. (2001) Coping at Three Phases of a Competition: Comparison between Pre-Competitive, Competitive, and Post-Competitive Utilization of the Same Strategy. *International Journal of Sport Psychology*, 32, 369-385.
- Gaudreau, P., Nicholls, A., & Levy, A. R. (2010). The Ups and Downs of Coping and Sport Achievement: An Episodic Process of Analysis within Person Associations. *Journal of Sport & Exercise Psychology*, 32, 298-311. <https://doi.org/10.1123/jsep.32.3.298>
- Gearity, B., & Murray, M. (2011). Athletes' Experiences of the Psychological Effects of Poor Coaching. *Psychology of Sport and Exercise*, 12, 213-221. <https://doi.org/10.1016/j.psychsport.2010.11.004>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.
- Hajji, J. (2016). Validation of the Arabic Version of the Inventory of Coping Strategies of Competitive Sport (ISCCS). *Advances in Physical Education*, 6, 312-327. <https://doi.org/10.4236/ape.2016.64032>
- Hobfoll, S. E. (2002). Social and Psychological Resources and Adaptation. *Review of General Psychology*, 6, 307-324. <https://doi.org/10.1037/1089-2680.6.4.307>
- Hollembek, J., & Amorose, A. J. (2005). Perceived Coaching Behaviors and College Athletes' Intrinsic Motivation: A Test of Self-Determination Theory. *Journal of Applied Sport Psychology*, 17, 20-36. <https://doi.org/10.1080/10413200590907540>
- Hoyle, R. H., & Panther, A. T. (1995). Writing about Structural Equation Models. In R. H. Hoyle (Ed.), *Structural Equation Modeling: Concepts, Issues, and Applications* (pp. 158-175). London: Sage.
- Kim, M. S., & Duda, J. (2003). The Coping Process: Cognitive Appraisals of Stress, Coping Strategies, and Coping Effectiveness. *The Sport Psychologist*, 17, 406-425. <https://doi.org/10.1123/tsp.17.4.406>
- Kline, R. (2005). *Principles and Practice of Structural Equation Modeling* (2nd ed.). New York: Guilford.

- Kristiansen, E., Roberts, G. C., & Abrahamsen, F. E. (2008). Achievement Involvement and Stress Coping in Elite Wrestling. *Scandinavian Journal of Medicine & Science in Sports*, 18, 526-538. <https://doi.org/10.1111/j.1600-0838.2007.00646.x>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. New York: Springer.
- Martinet, G., & Decret, J.-C. (2015). Motivational Profiles among Young Table-Tennis Players in Intensive Training Settings: A Latent Profile Transition Analysis. *Journal of Applied Sport Psychology*, 27, 268-287. <https://doi.org/10.1080/10413200.2014.993485>
- Mellalieu, S. D., Hanton, S., & Fletcher, D. (2006). A Competitive Anxiety Review: Recent Directions in Sport Psychology Research. In S. Hanton, & S. D. Mellalieu (Eds.), *Literature Reviews in Sport Psychology* (pp. 1-45). New York: Nova Science.
- Nicholls, A. R., & Polman, R. C. J. (2007). Coping in Sport: A Systematic Review. *Journal of Sports Sciences*, 25, 11-31. <https://doi.org/10.1080/02640410600630654>
- Nicolas, M., Gaudreau, P., & Franche, V. (2011). Perception of Coaching Behaviors, Coping, and Achievement in a Sport Competition. *Journal of Sport and Exercise Psychology*, 33, 460-468. <https://doi.org/10.1123/jsep.33.3.460>
- Ntoumanis, N., Biddle, S. J. H., & Haddock, G. G. (1999). The Mediator Role of Coping Strategies on the Relationship between Achievement Motivation and Affect in Sport. *Anxiety, Stress, and Coping*, 12, 299-327. <https://doi.org/10.1080/10615809908250480>
- Roderick, M. (2006). *The Work of Professional Football: A Labour of Love?* Abingdon: Routledge.
- Satorra, A., & Bentler, E. M. (1994). Corrections to Test Statistics and Standard Errors in Covariance Structure Analysis. In A. von Eye, & C. C. Clogg (Eds.), *Latent Variables Analysis: Applications for Developmental Research* (pp. 399-419). Thousand Oaks, CA: Sage.
- Slimani, H. (2000). *The Professionalization of French Football: A Model of Denial*. Doctoral Thesis, Nantes: University of Nantes.
- Smith, R. E., Smoll, F. L., & Cumming, S. P. (2007). Effects of a Motivational Climate Intervention for Coaches on Young Athletes' Sport Performance Anxiety. *Journal of Sport & Exercise Psychology*, 29, 39-59. <https://doi.org/10.1123/jsep.29.1.39>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics*. Boston, MA: Pearson.



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