

1 Spanish adaptation and validation of the automatic self-talk questionnaire for sports

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1 **Abstract**

2 This paper presents the Spanish adaptation of the Automatic Self-Talk Questionnaire for  
3 Sports. In the process of adaptation, we preferred cultural and linguistic equivalence to  
4 literal translation. Therefore, we gathered qualitative evidence based on the judgments  
5 of a multidisciplinary group of experts ( $n = 6$ ) and focus groups ( $n = 10$ ). Concerning  
6 cultural and linguistic equivalence, we found differences between the original and the  
7 adapted version in the editing of 16 items. Generally, these differences were deemed  
8 necessary to guarantee the cultural and metric equivalence between the original and the  
9 adapted version. As to the subsequent quantitative phase, data were obtained from 263  
10 athletes from different sports and different levels ( $M_{\text{age}} = 20.30$ ,  $S.D. = 3.08$ ). The  
11 results showed acceptable levels of internal consistency (alpha values ranged from .70  
12 to .83) and supported the original model of eight factors. In addition, a structural model  
13 including precompetitive anxiety offered further evidence in regard to the link between  
14 self-talk and competitive anxiety. Lastly, some implications concerning the  
15 methodology are discussed.

16 **Keywords:** self-talk, anxiety, measurement, athletes, psychometrics

1 Spanish adaptation and validation of the automatic self-talk questionnaire for sports  
2 Theodorakis, Weinberg, Natsis, Douma and Kazakas (2000) defined self-talk as  
3 “what people say to themselves either out loud or as a small voice inside their head” (p.  
4 254). Self-talk is an emerging topic in general psychology, especially in sport  
5 psychology (Hatzigeorgiadis, Zourbanos, Galanis, & Theodorakis, 2011). In sport  
6 psychology, the study of self-talk has advanced through two main lines of research: one  
7 that focuses on the personal and social antecedents of automatic self-talk along with the  
8 cognitive, motivational, behavioural and affective mechanisms through which automatic  
9 self-talk affects performance; and another that studies the effectiveness of self-talk  
10 interventions used to improve performance through changes in attentional focus, control  
11 of effort and emotional regulation (Hardy, Oliver, & Tod, 2009; Theodorakis,  
12 Hatzigeorgiadis, & Zourbanos, 2012).

13 In the matter of the study of automatic self-talk, our understanding regarding its  
14 content and structure has advanced through the development of research instruments,  
15 such as the Thought Occurrence Questionnaire for Sports (TOQS; Hatzigeorgiadis &  
16 Biddle, 2000) or the Automatic Self-Talk Questionnaire for Sports (ASTQS;  
17 Zourbanos, Hatzigeorgiadis, Chroni, Theodorakis, & Papaianou, 2009).  
18 Hatzigeorgiadis and Biddle (2000) developed the TOQS, which described three types of  
19 negative self-talk: worries related to performance, thoughts of escape and task-irrelevant  
20 thoughts. Later, in order to offer researchers a more far-reaching measure of athlete’s  
21 self-talk, Zourbanos et al. (2009) created the ASTQS based on the TOQS, measuring  
22 four types of positive self-talk and four types of negative self-talk: on the one hand,  
23 motivational/psych-up statements (e.g., Let’s go), confidence building statements (e.g.,  
24 I feel strong), instructional statements (e.g., Focus on your technique) and anxiety-  
25 controlling statements (e.g., Calm down); and on the other, worries (e.g., I am going to

1 lose), statements about disengagement (e.g., I can't keep going), statements regarding  
2 somatic fatigue (e.g., I am tired), and irrelevant thoughts (e.g., I am hungry).

3         Zourbanos et al. (2009) tested several measurement models, including a less  
4 restrictive model defined by the eight correlated scales and a second-order factor model  
5 comprising eight first- and two second-order factors. Their results supported both  
6 models and the authors discussed that the results indicated that the eight factors assessed  
7 distinct self-talk categories which represent two broader dimensions. Hence, subsequent  
8 studies used the latter ten-factor model which was further confirmed in the fields of  
9 sport (Zourbanos, Hatzigeorgiadis, Tsiakaras, Chroni, & Theodorakis, 2010; Zourbanos  
10 et al., 2011) and physical education (Zourbanos, Papaioannou, Argyropoulou, &  
11 Hatzigeorgiadis, 2014).

12         Respecting the second line of research, a large body of evidence supports the use  
13 of self-talk interventions to increase performance (Hatzigeorgiadis et al., 2011),  
14 motivation (Thelwell & Greenlees, 2003) and attention (Latinjak, Torregrosa, &  
15 Renom, 2010, 2011), and to reduce anxiety (Hatzigeorgiadis, Zourbanos, &  
16 Theodorakis, 2007). Moreover, Hatzigeorgiadis et al. (2011) pointed out that the effects  
17 of self-talk on motivation, attention and anxiety might serve as an underlying  
18 mechanism of the relationship between self-talk and performance. With reference to the  
19 effects of self-talk interventions upon anxiety, Hatzigeorgiadis et al. (2007) showed in  
20 their study how instructional and anxiety-controlling statements could reduce cognitive  
21 anxiety: specifically, performance worries. Moreover, these results obtained by  
22 Hatzigeorgiadis et al. justify the use of the self-talk-anxiety relationship as a means for  
23 evaluating the validity of the ASTQS in regard to a self-talk nomological network  
24 (Cronbach & Meehl, 1955) of related concepts.



1 male (76.43%) and a minor part female. All participants were sports sciences students  
2 practicing different individual (26.24%; e.g., tennis, swimming, track and field) and  
3 team sports (73.76%; e.g., soccer, basketball, handball and water polo) at regional  
4 (69.58%), national (24.33%) or international levels (6.08%). The distribution in genders  
5 and sports represent the distribution of sports sciences students at the national  
6 universities (cf. García-Fernández, Pires-Vega, & Fernández-Gavira, 2013; Latinjak,  
7 López-Ros, & Font-Lladó, 2014).

### 8 **Instruments**

9         The Automatic Self-Talk Questionnaire for Sports (ASTQS, Zourbanos et al.,  
10 2009) contains eight subscales and 40 items (see items for each subscale in Table 1). All  
11 the items are introduced by the stem '*In your sport, how often have you thought or told*  
12 *yourself something similar to the following ideas in the last months*'. The items are rated  
13 on 5-point Likert scale from 1 (Never) to 5 (Very often) <sup>1</sup>. The overall score in each  
14 subscale was obtained by calculating the mean of the items scores.

15         The Spanish version of the *Sport Anxiety Scale* (SAS-2; Smith, Smoll,  
16 Cumming, & Grossbard, 2006) developed by Ramis, Torregrosa, Viladrich and Cruz  
17 (2010) contains 15 items divided into three subscales: worries, concentration disruption  
18 and somatic anxiety. Participants rated the items that were introduced by the stem  
19 '*Before or while I compete in sports...*' on a 4-point Likert scale from 1 (Not at all) to 4  
20 (Very much). The overall score in each subscale was obtained by adding each items  
21 score.

### 22 **Procedure**

23         We have followed the recommendations of the *International Test Commission*  
24 (Hambleton, 2005) and the rationale developed in the work of Viladrich, Torregrosa,  
25 and Cruz (2011) in the process of translation and cultural adaptation. Those authors

1 suggested that the process of cultural and linguistic adaptation goes beyond the strategy  
2 of back-translation used in several studies (e.g., Gillet, Vallerand, Paty, Gobánce, &  
3 Berjot, 2010). In such a way, these procedures focus on providing information on the  
4 linguistic, conceptual and measurement equivalences. Once we obtained permission  
5 from the first author of the original version, a professional translator with Spanish as a  
6 mother tongue did the first translation from English into Spanish (Version 1). The  
7 translation was reviewed and culturally adapted by the group of experts (Version 2).  
8 This version was administered to two focus groups composed of 10 athletes from the  
9 target population. Afterwards, the group of experts used the insights obtained from the  
10 focus groups to improve the questionnaire. Specifically, they changed the wording of  
11 some items into common expressions used in a wide variety of sports (Version 3).  
12 Later, another professional translator with English as a mother tongue did the back-  
13 translation (Muñiz, Elosua, & Hambleton, 2013) from the Spanish adapted version into  
14 English. The group of experts compared the differences between the original version  
15 and the adapted version and produced the Version 4 of the questionnaire. In the  
16 quantitative phase, sports-science students of different universities were approached.  
17 Once they agreed to participate, they answered the instruments before their regular  
18 lecturing sessions. They were informed that participation was voluntary and signed an  
19 informed consent form.

## 20 **Results**

### 21 **Conceptual, cultural and linguistic equivalence**

22 The evidence of cultural and linguistic validity gathered during the adaptation  
23 process can be summarized as follows. The group of experts accepted the initial  
24 translation for 24 out of 40 items. Based on the opinion of both experts and focus  
25 groups, changes were suggested in 16 items. In this phase, priority was given to

1 retaining the concepts and not the wording; consequently, as depicted in Table 1,  
2 suggested items deviate significantly from the original wording. These divergences  
3 were deemed necessary by the group of experts to guarantee the linguistic and cultural  
4 equivalence. This included the complete rewording of item 40, (i.e., I am thirsty) which  
5 was considered a relevant thought for some sports and, therefore, was reworded into “I  
6 have a lot of things to do”, with the agreement of the first author of the original ASTQS  
7 publication (Zourbanos et al, 2009). The final version (i.e., Version 4, see Table 2) was  
8 approved unanimously by the group of experts.

### 9 **Preparatory data analysis and internal structure**

10 Item means, standard deviations, skewness and kurtosis can be seen in Table 2.  
11 Generally, our participants tended to score high in those items pertaining to positive  
12 self-talk scales and low in those belonging to the negative ones. Accordingly, some  
13 values for skewness and kurtosis do not allow the assumption of multivariate normality  
14 (i.e., items 20, 36 and 40). Missing values were scarce, one out of 1000, and were  
15 related to the responses from only 1.05% of the participants. Taking into account the  
16 ordinal nature of item responses and the doubts about multivariate normality,  
17 confirmatory factor analyses were conducted using weighted least squares mean and  
18 variance adjusted (WLSMV) estimator in Mplus 6.0. Missing values were pairwise  
19 eliminated with this estimator, a treatment we deemed adequate due to its scarcity  
20 (Graham, 2009).

21 Goodness of fit of the two models described in the introduction was tested. To  
22 begin with, the 8-factor model (M1) consisted of eight correlated first order factors. In  
23 the original second-order factor model (M2), two second-order factors (Positive and  
24 Negative Self-Talk) accounted for the relations among the first order factors. Model fit  
25 was tested using chi-square statistic, comparative fit index (CFI), Tucker-Lewis index



1 (TLI) and root mean square error of approximation (RMSEA). Values of CFI and TLI >  
2 .95 and RMSEA < .05 were taken as indicators of excellent fit (Hu & Bentler, 1999)  
3 and values CFI and TLI > .90 and RMSEA < .08 were taken as indicators of acceptable  
4 fit (Marsh, Hau, & Wen, 2004). Nested models were compared via chi-square difference  
5 and a change in CFI higher than .01 was considered significant (Cheung & Rensvold,  
6 2001).

7 Table 3 shows that the best fitting model is the less restrictive one (M1) with  
8 CFI = .93, TLI=.93 and RMSEA=.04. Chi-square statistics for the difference with the  
9 more restrictive model (M2) was statistically significant. Model M2 showed worse fit  
10 indices (CFI=.90, TLI=.89, RMSEA=.05), with a change in CFI with respect to Model  
11 M1 higher than .01, hence, we decided to use M1 in all subsequent analyses.

12 Descriptive statistics and Cronbach's alpha coefficients were obtained with  
13 SPSS 17.0 and factor loadings and correlations between factors were obtained with  
14 Mplus 6.0. Firstly, items can be considered good indicators of their first-order factors as  
15 they showed standardized factor loadings between .41 and .86 (see Table 2), the upper  
16 limit for standard errors being 0.07. Positive self-talk subscales showed higher means  
17 (Motivation:  $M = 3.53$ ,  $SD = 0.83$ ; Confidence:  $M = 3.34$ ,  $SD = 0.85$ ; Instruction:  $M =$   
18  $3.09$ ,  $SD = 0.75$ ; and Anxiety Control:  $M = 2.91$ ,  $SD = 0.85$ ) than negative self-talk  
19 subscales (Irrelevant Thoughts:  $M = 2.26$ ,  $SD = 0.97$ ; Somatic Fatigue:  $M = 2.91$ ,  $SD =$   
20  $0.85$ ; Worries:  $M = 2.03$ ,  $SD = 0.59$ ; and Disengagement:  $M = 1.65$ ,  $SD = 0.60$ ).

21 Standardized factor loadings for second order factors ranged from .45 (Motivation)  
22 to .86 (Confidence) for Positive Self-Talk and from .51 (Worries) to .85 (Irrelevant  
23 thoughts) for Negative Self-Talk (Figure 1).

24 In terms of reliability, Figure 1 shows Cronbach's alpha values between .70  
25 (Instruction) and .83 (Somatic Fatigue and Worry), all of them being equal or above .70

1 as recommended by Nunnally (1978). All the items contributed to Cronbach's alpha in  
2 their subscales with the exception of Item 9 (i.e., no stress) with a Cronbach's alpha  
3 coefficient of .78 if this item was deleted from the anxiety control subscale.

4       Regarding factor correlations, the results showed statistically significant and  
5 positive correlations among all positive self-talk factors, and statistically significant and  
6 positive correlations among all negative self-talk factors. Further, anxiety control  
7 correlated significantly and positively with somatic fatigue, worries and disengagement;  
8 and instruction correlated significantly and positively with worries and irrelevant  
9 thoughts (Figure 1).

#### 10 **Relation with the variable Competitive Anxiety**

11       In order to add a new piece of validity evidence, correlation among positive and  
12 negative self-talk factors from ASTQS and the Sport Anxiety Scales factors were  
13 obtained. Sport Anxiety Scales reliability values were acceptable, between .84 and .88,  
14 and the measurement model showed good fit indices (M3 in Table 3, CFI = .98, TLI =  
15 .98, RMSEA = .06). Afterwards, we tested the structural model relating self-talk factors  
16 with competitive anxiety factors using WLSMV estimator as defined in Mplus 6.0. The  
17 model showed an adequate fit to the data (M4 in Table 3, CFI = .94, TLI = .94, RMSEA  
18 = .04). Concerning relations (Figure 2), three of the negative ASTQS scales – worries,  
19 somatic fatigue and disengagement – correlated significantly and positively with all  
20 three SAS-2 scales. Irrelevant thoughts, on the other hand, correlated significantly and  
21 positively only with concentration disruption. Further, instruction and anxiety control  
22 also correlated significantly and positively with concentration disruption and somatic  
23 anxiety. Lastly, relations among the SAS-2 scales were all significant and positive.  
24 Relations observed in the ASTQS measurement model (Figure 1) remained unchanged  
25 in the structural model.



1 regard, Latinjak, Zourbanos, López-Ros and Hatzigeorgiadis (2014) have suggested that  
2 different types of self-talk are connected to each other in a network of causal relations.  
3 Specifically, they indicated that some sorts of self-talk (e.g., worries such as “I am not  
4 going to make it”), which come to mind unbidden and effortlessly, might trigger other  
5 types of self-talk (e.g., confidence building statements such as “I am very well  
6 prepared”), which would be used intentionally to change one’s thoughts in order to  
7 improve performance and control emotions. However, evidence regarding these  
8 relations is still lacking. Future studies should ask about the origins of these  
9 discrepancies and assess to what degree they are haphazard or cultural.

10 As for the relationship between self-talk and anxiety, our results are consistent  
11 with previous studies that have linked both concepts in sport psychology. For example,  
12 Conroy and Metzler (2004) have illustrated how different types of anxiety, such as fear  
13 of failure and sport anxiety, are related to different types of negative self-talk. Similarly,  
14 in our study we only found a relationship between negative self-talk and competitive  
15 anxiety. Furthermore, several studies have evidenced how specific self-talk  
16 interventions have proven to be beneficial reducing, specifically, cognitive anxiety  
17 (Hatzigeorgiadis et al., 2009). In this research, no such effects have been studied, but  
18 the adequate fit of the modified Second-order factor model indicates that several types  
19 of positive self-talk might be related to performance worries, which are an essential part  
20 of cognitive anxiety (Morris, Davis, & Hutchings, 1981). Generally, there is  
21 considerable evidence of the cognitive anxiety-performance relationship (e.g.,  
22 Woodman & Hardy, 2003). A better understanding of the connections between self-talk  
23 made up of worries and anxiety-controlling self-talk could help designing specific self-  
24 talk interventions. Based on previous findings, it would be expected that these

1 interventions could help athletes enhance their self-efficacy and to improve their  
2 performance (e.g., Hatzigeorgiadis et al., 2007).

3         We would like to make a final remark on the methodology we employed. In this  
4 study we preferred conceptual to linguistic equivalence. Accordingly, we chose a  
5 methodology that favoured cultural adaptation and, therefore, emphasized the use of the  
6 expert and focus groups. Our results together with those of previous studies adapting  
7 similar methodologies (Alonso-Arbiol, van de Vijver , Fernandez, Paez, & Campos,  
8 2011; Matsumoto & Van de Vijver, 2011; Ramis et al., 2010; Viladrich et al., 2011)  
9 support and promote the use of cultural adaptation procedures. Nevertheless, there is  
10 also a limitation to this study: the test-retest reliability coefficients were not examined.  
11 Such procedure would have allowed for evidence in regard to the stability and reliability  
12 of the adapted version over time.

13         Altogether, in this study we successfully adapted an instrument which allows  
14 Spanish-speaking researchers to inquire into athlete automatic self-talk and to contribute  
15 to the growing literature in this area. Moreover, we contributed to the discussion about  
16 the underlying structure of automatic self-talk and we forwarded further evidence  
17 respecting the link between patterns of what we say to ourselves and competitive  
18 anxiety. From an applied perspective, the adapted version of the ASTQS could help  
19 sport psychologists to monitor changes in athlete self-talk throughout seasons. This  
20 procedure could help to test the degree to which specific cognitive interventions, such as  
21 self-talk, imagery or cognitive restructuring are changing the general thought patterns of  
22 athletes while practising sport.

23

1 Footnote <sup>1</sup>

2 Please note that Zourbanos et al. (2009) originally used a Likert scale ranging  
3 between zero and four, based on recommendations published by Amsel and Fichten  
4 (1998). In this study we decided to use a Likert scale ranging from one to five. On the  
5 one hand, we believed that Amsel and Fichten (1998) concluded in Study 1 of their  
6 publication that it was the anchor words of the response scale, rather than the values  
7 attached to the anchor words, that influenced the way participants responded. Therefore,  
8 we took special care of adapting the anchor words into Spanish so that the original idea  
9 remained unchanged. On the other hand, we opted to use similar endpoints for the  
10 ASTQS compared to the SAS-2 and to other important psychological measures used in  
11 sport psychology and translated into Spanish, such as the *Behavioral Regulation in*  
12 *Sport Questionnaire* (BRSQ: Lonsdale, Hodge & Rose, 2008; Vilardich et al., 2011) or  
13 the *Subjective Vitality Scale* (SVS: Ryan & Frederick, 1997; Balaguer, Castillo, García-  
14 Merita, & Mars, 2005). This was supposed to facilitate the future integration of the  
15 ASTQS into booklets assessing different constructs in sport psychology.



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3

Table 1  
*Arguments for the modifications we undertook in 16 items so as to guarantee cultural equivalence*

Item	Original item	Literal translation	Adapted version	Back translation	Argument
2	Power	Fuerza	Ánimo	Come on	Both the experts and the focus groups suggested that the literal translation had to be modified in order to adapt the item to athletes' slang.
5	Strong	Fuerte	Duro	Tough	
7	Don't get upset	No te alteres	Tranquilo	Calm down	
16	Focus on what you need to do now	Concéntrate en lo que tienes que hacer ahora	Concéntrate en lo que toca	Focus on the job at hand	
21	I'm wrong again	Me he equivocado otra vez	No paro de cometer errores	I keep making mistakes	
34	Today I 'suck'	Hoy doy asco	Estoy hecho una 'mierda'	I feel like 'shit'	
12	I feel strong	Me siento fuerte	Me siento bien	I feel good	
17	Concentrate on your game	Concéntrate en tu juego	Concéntrate en lo que estás haciendo	Focus on what you're doing	
22	I am not as good as the others	No soy tan bueno como los otros	Soy peor que los demás	I'm worse than the rest	We considered that the literal translation had to be modified in order to adapt the emotional loading of the item to the Spanish culture. For example, <i>no soy tan bueno</i> or <i>quiero salir</i> were substituted for stronger expressions (i.e., <i>soy peor</i> and <i>necesito salir</i> , respectively).
23	I am not going to reach my goal	No voy a alcanzar mi meta	Fracasaré	I'm going to lose	
26	What will others think of my poor performance	Qué pensarán los demás de lo mal que lo he hecho	Estoy haciendo el ridículo	I'm making a fool of myself	
28	I want to get out of here	Quiero salir de aquí	Necesito salir de aquí	I need to get out of here	
29	I think I'll stop trying	Creo que voy a dejar de intentarlo	Voy a tirar la toalla	I'm throwing in the towel	
30	I can't keep going	No puedo seguir	No quiero seguir	I don't want to carry on	We followed suggestions made in the focus group. The meaning of the literal translation was not clear to them.
36	My body doesn't help me today	Mi cuerpo no me está ayudando hoy	Hoy mi cuerpo no me responde	Today my body isn't responding	
40	I am thirsty	Tengo sed	Tengo muchas otras cosas que hacer	I have different other things to do	We considered that the content "being thirsty" was not an irrelevant thought in many of the target sports in our study.

Table 2  
*Content, Descriptive Statistics and Standardized Factor Loadings*

Subscale	Item	Content	<i>M</i>	<i>SD</i>	Skew.	Kurt.	Loading
Motivation	1	¡Vamos!	4.17	0.91	-1.05	0.80	.41
	2	Ánimo.	3.30	1.15	-0.02	-0.91	.53
	3	Da el 100%.	3.24	1.33	-0.19	-1.14	.70
	4	A tope.	3.84	1.17	-0.78	-0.34	.62
	5	Duro.	2.95	1.42	-0.01	-1.31	.70
Anxiety	6	Relájate.	2.91	1.05	0.02	-0.78	.69
Control	7	Tranquilo.	3.46	1.04	-0.32	-0.50	.76
	8	Calma.	2.75	1.26	0.17	-1.05	.77
Confidence	9	No te estreses.	3.33	1.16	-0.25	-0.75	.65
	10	Creo en mí.	2.86	1.17	0.07	-0.82	.76
	11	Estoy bien preparado.	3.39	1.11	-0.31	-0.62	.72
	12	Me siento bien.	2.88	1.16	0.08	-0.83	.63
	13	Yo puedo.	2.29	1.18	0.71	-0.30	.65
Instruction	14	Creo en mis capacidades.	2.97	1.19	-0.12	-0.88	.86
	15	Céntrate en tus objetivos.	2.88	1.14	0.01	-0.77	.78
	16	Céntrate en lo que toca.	3.35	1.07	-0.38	-0.29	.62
	17	Concéntrate en lo que estás haciendo.	3.79	1.02	-0.63	-0.06	.70
	18	Concéntrate en tu técnica.	3.13	1.16	-0.22	-0.85	.58
Worry	19	Céntrate.	2.59	1.13	0.31	-0.72	.48
	20	Voy a perder.	1.54	0.82	1.58	2.11	.64
	21	No paro de cometer errores.	1.75	0.92	1.09	0.43	.44
	22	Soy peor que los demás.	2.13	1.01	0.67	-0.22	.61
	23	Fracasaré.	2.64	0.94	0.22	-0.26	.80
	24	No me puedo concentrar.	2.98	0.88	0.11	0.01	.68
	25	No lo conseguiré.	2.41	0.96	0.17	-0.47	.78
Disengagement	26	Estoy haciendo el ridículo.	2.46	0.97	0.41	-0.05	.60
	27	Quiero parar.	2.14	0.92	0.45	-0.49	.82
	28	Necesito salir de aquí.	2.48	1.24	0.50	-0.68	.81
	29	Voy a tirar la toalla.	2.51	1.24	0.35	-0.86	.77
	30	No quiero seguir.	2.11	1.22	0.76	-0.57	.85
Somatic Fatigue	31	Estoy hartó.	2.19	1.20	0.72	-0.51	.58
	32	No estoy en buena forma.	2.21	0.96	0.43	-0.30	.56
	33	Estoy cansado.	1.96	0.88	0.66	-0.06	.72
	34	Hoy estoy hecho una mierda.	1.89	0.94	0.95	0.47	.77
	35	Me pesan las piernas/los brazos.	1.95	0.94	0.77	0.09	.73
Irrelevant Thoughts	36	Hoy mi cuerpo no me responde.	1.59	0.83	1.43	1.63	.78
	37	¿Qué haré esta noche?	2.27	0.95	0.57	0.06	.74
	38	Tengo hambre.	2.64	0.91	0.19	-0.12	.75
	39	Me apetecería una ducha.	1.89	0.94	0.89	0.03	.79
	40	Tengo muchas otras cosas que hacer.	1.48	0.75	1.56	1.89	.85

*Note.* For all the items, the minimum observed value was 1 and the maximum was 5; *SD*: Standard Deviation; *Skew.*: Skewness, *Kurt.*: Kurtosis; *Loading*: Standardized factor loading in model M3. All factor loadings had standard errors ranging from 0.03 to 0.07 and were statistically different from zero with  $p < .001$ . Find the English version of the items in Zourbanos et al. (2009; Table 1).

Table 3  
*Fit Statistics for the Models in the Study*

Model	$\chi^2$	<i>df</i>	CFI	TLI	RMSEA (90% CI)	$\chi^2_{\text{diff}}$
M1 8-Factor model	1046.89	712	.93	.93	.04 (.04-.05)	
M2. Zourbanos et al.'s Second-Order-Factor Model	1231.64	731	.90	.89	.05 (.05-.06)	101.68
M3. 3 factors SAS-2	160.42	87	.98	.98	.06 (.04-.07)	
M4. M1 with M3	1845.34	1375	.94	.94	.04 (.03-.04)	

*Nota.* *df* = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation;  $\chi^2_{\text{diff}}$  =  $\chi^2$  difference with the less restrictive model (M1); M1= ASTQS: model with eight first-order factors; M2 = ASTQS: model with eight first-order factors and two second-order factors; M3 = SAS-2: 3-factor model; M4= structural model that includes M1 and M3. All the  $\chi^2$  values presented in this table were statistically significant at  $p < .001$ .

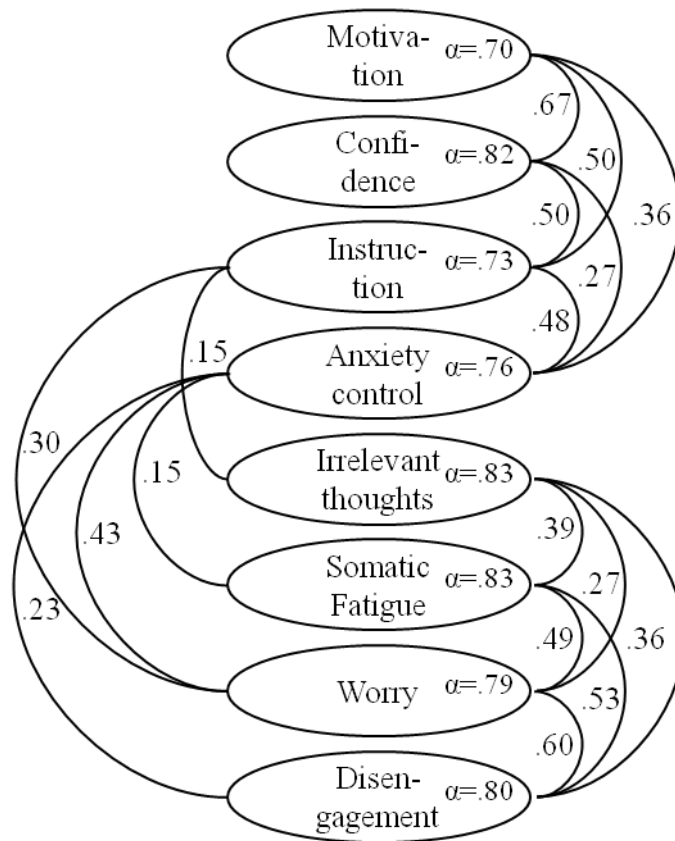


Figure 1. First-Order-Factor model (M1). *Note.* All correlations presented in the Figure are standardized. All  $r < .16$  are significant at  $p < .05$ ; all  $r > .16$  are significant at  $p < .001$ .



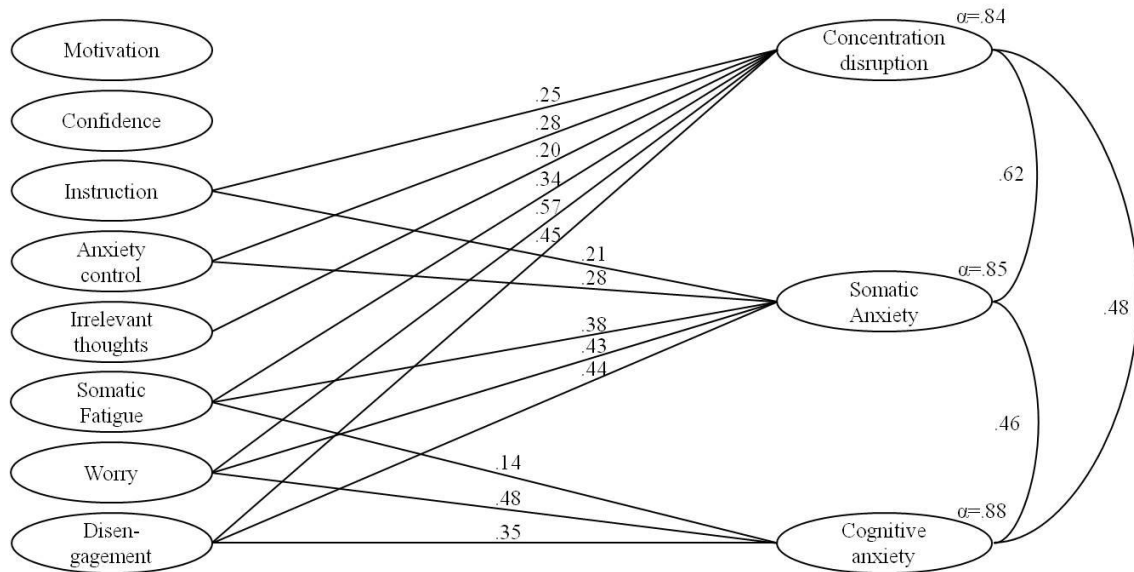


Figure 2. Structural model (M4). *Note.* All correlations presented in the Figure are standardized. All  $r < .20$  are significant at  $p < .05$ ; all  $r \geq .20$  and  $\leq .25$  are significant at  $p < .01$ ; all  $r \geq .25$  are significant at  $p < .001$ .