

Adaptation of the Athlete Burnout Questionnaire in a Spanish Sample of Athletes

Constantino Arce¹, Cristina De Francisco¹, Elena Andrade¹, Gloria Seoane¹, and Thomas Raedeke²

¹Universidad de Santiago de Compostela (Spain)

²East Carolina University (USA)

In this paper, we offer a general version of the Spanish adaptation of Athlete Burnout Questionnaire (ABQ) designed to measure the syndrome of burnout in athletes of different sports. In previous works, the Spanish version of ABQ was administered to different samples of soccer players. Its psychometric properties were appropriate and similar to the findings in original ABQ. The purpose of this study was to examine the generalization to others sports of the Spanish adaptation. We started from this adaptation, but we included three alternative statements (one for each dimension of the questionnaire), and we replaced the word “soccer” with the word “sport”. An 18-item version was administered to a sample of 487 athletes aged 13 and 29 years old. Confirmatory factor analyses replicated the factor structure, but two items modification were necessary in order to obtain a good overall fit of the model. The internal consistency and test-retest reliability of the questionnaire were satisfactory.

Keywords: ABQ, adaptation, burnout, athletes, generalization.

En el presente estudio se ofrece una versión genérica de la adaptación española del Athlete Burnout Questionnaire (ABQ) para medir el síndrome de burnout en diversas modalidades deportivas. En investigaciones anteriores, la versión española del ABQ fue aplicada a diferentes muestras de futbolistas españoles, logrando unas propiedades psicométricas adecuadas, similares a las encontradas en el ABQ original. El objetivo de este trabajo consistió en comprobar el grado de generalización a otros deportes de la adaptación española. Se partió de esta adaptación a la que se le añadieron tres ítems con enunciados alternativos (uno para cada dimensión del cuestionario) y se sustituyó la palabra fútbol por deporte. Este cuestionario de 18 ítems fue aplicado a 487 deportistas con un rango de edad entre los 13 y los 29 años. Análisis factoriales confirmatorios replicaron la estructura factorial, pero fueron necesarias dos re-especificaciones para conseguir un buen ajuste. En cuanto a la fiabilidad, se refirieron valores aceptables tanto de consistencia interna como de estabilidad.

Palabras clave: ABQ, adaptación, burnout, deportistas, generalización.

This research has been carried out with financial support from the Spanish Ministerio de Ciencia e Innovación and the European Regional Development Fund-FEDER (PSI2010-18807).

Correspondence concerning this article should be addressed to Constantino Arce. Facultad de Psicología, Universidad de Santiago de Compostela. 15782 Santiago de Compostela (Spain). Phone +34-881813795. E-mail: constantino.arce@usc.es

Burnout is a syndrome which, in the setting of sport, has given rise to considerable concerns among trainers and psychologists (Raedeke, Lunney, & Venables, 2002). Its interest lies in the negative consequences it may have for athletes' performance and well-being.

The communications media have taken it upon themselves to make the general public aware of the syndrome by publishing items of news related with the retirement of elite athletes at the peak of their careers or with the failure of promising young talents to develop their full potential (Goodger, Gorely, Lavallee, & Harwood, 2007). Nonetheless, in spite of this publicity, research carried out in this regard is still scarce. Regarding the possible causes and effect of the syndrome, the initial studies carried out in the 1980s were not conclusive but they did make it possible to establish a series of characteristics which athletes suffering from burnout seemed to suffer: (a) they were highly experienced in competition, (b) they were training hard (c) and they had been subjected to pressure from trainers and parents to perform at high levels of competition (Dale & Weinberg, 1990). Years later, a number of different researchers coinciding in pointing out that the principal obstacle to a greater development of empirical research was the lack of a shared definition of the burnout syndrome (Cresswell & Eklund 2006a; Gould, Udry, Tuffey, & Loehr, 1996) and of a suitable measuring instrument (Raedeke & Smith, 2001, 2009).

After conducting a review of the theoretical status in which the concept of burnout in sport found itself, Goodger et al. (2007) affirmed that the conceptualisation proposed by Raedeke (1997) helped to establish a certain consensus as regards what burnout in athletes is. Raedeke proposed a three-dimensional structure for the syndrome, according to which burnout is characterised by three aspects: (a) physical/emotional exhaustion, (b) reduced sense of accomplishment and (c) sport devaluation. A number of prior studies (Cohn, 1990; Eades, 1990; Gould, Tuffey, Udry, & Loehr, 1996; Silva, 1990) effectively made it possible to conclude that, among athletes suffering from burnout, there was a strong association between the presence of the syndrome and the onset of feelings of exhaustion and loss of energy (physical/emotional exhaustion), frustration owing to unfulfilled expectations (reduced sense of achievement) and a degree of unconcern and reduced attractiveness of the sport (sport devaluation).

Based on the definition proposed, Raedeke and Smith (2001, 2009) prepared a measuring instrument, the Athlete Burnout Questionnaire (ABQ), with the aim of measuring the three theoretical aspects suggested by Raedeke (1997). The ABQ is a questionnaire comprising 15 items, 5 per factor, and which employs a response format in ordered categories, with five alternatives: *Almost never* (1), *Not very often* (2), *Sometimes* (3), *Often* (4) and *Almost always* (5). The ABQ possesses good psychometric indicators of reliability (test-retest, internal consistency) and validity.

With regard to validity, the sound indicators provided by Raedeke and Smith (2001) have been replicated by other studies conducted independently by Cresswell and Eklund (2006b) and Lonsdale, Hodge, and Jackson (2007), who have validated the factor structure of the questionnaire, and by Cresswell and Eklund (2006b) who have provided evidence of validity in relation to other variables (convergent and discriminant validity).

As proof of its recognition and cross-cultural acceptance, the ABQ has been translated into and/or adapted to other languages: German (Ziemainz, Abu-Omar, Raedeke, & Krause, 2004), Arabic (Altahayneh, 2005), Chinese (Chen & Kee, 2008; Lu, Chen, & Cho, 2006), French (Perreault, Gaudreau, Lapointe, & Lacroix, 2007; Isoard-Gautheur, Oger, Guillet & Martin-Krumm, 2010), Norwegian (Lemyre, Hall & Roberts, 2008; Lemyre, Roberts, & Stray-Gundersen, 2007), Portuguese (Alvarez, Ferreira, & Borim, 2006) and Swedish (Gustafsson, Kenttä, Hassmén, Lundqvist, & Durand-Bush, 2007).

In Spain, De Francisco, Arce, Andrade, Arce, and Raedeke (2009) and Arce, De Francisco, Andrade, Arce, and Raedeke (2010) have developed a version of the ABQ for football players; this comprises 15 items which approximately reproduces the original structure of the questionnaire. A similar version has also been developed independently in Spain by Pedrosa, Suárez, Pérez, and García-Cueto (2011). Even though these versions are satisfactory, they have a common drawback in that they can only be used with football players. The present study has been conducted with the aim of overcoming this limitation and developing a more generic Spanish version of the ABQ, allowing the measurement of burnout in any athlete, in any sport, not just football, as was the case with the previous version. To do so, a new framework for all the items in the questionnaire needs to be designed for them to acquire meaning irrespective of subject to whom it is applied's sport. On a psychometric level, the core objective is to develop a version which satisfies the requirements of construct validity and reliability.

The measurement of burnout may have an important role in sport, as it helps to detect athletes who suffer (which may seem somewhat at odds with the objective of sport in itself) and, above all, as it may help to detect athletes at risk of suffering the syndrome, and to design and apply psychotherapeutic interventions to prevent its appearance; i.e., it has enormous preventive value.

Method

Participants

A total of 487 Spanish athletes participated in the study, with ages ranging from 13 to 29 ($M = 16.44$; $DT = 3.37$). Of these, 70.4% were male and 29.6% were females,

Table 1
Spanish version of the ABQ with 15 items (plus three alternative statements)

Item	Factor	Item text
1	RSA	En el [deporte] estoy logrando muchas cosas que valen la pena.
2	PEE	El entrenamiento me deja tan cansado/a que me cuesta reunir la energía suficiente para hacer otras cosas.
3	SD	Tengo dudas de si el [deporte] merece todo el tiempo que le dedico.
4	PEE	La práctica del [deporte] me deja demasiado cansado/a.
5	RSA	Creo que no estoy logrando mucho en el [deporte].
6	SD	Mi rendimiento en el [deporte] me importa menos que antes.
7	RSA	Pienso que no estoy rindiendo a mi nivel real en el [deporte].
8	PEE	La práctica del [deporte] me deja mentalmente agotado/a.
9	DPD	Creo que no me interesa tanto el [deporte] como antes.
10	PEE	Me siento físicamente agotado/a por el [deporte].
11	SD	Me preocupo menos que antes por triunfar en el [deporte].
12	PEE	Me agotan las exigencias físicas y mentales del [deporte].
13	RSA	Parece que, haga lo que haga, no rindo como debería.
14	RSA	Creo que tengo éxito en el [deporte].
15	SD	Estoy dejando de disfrutar del [deporte].
16	PEE	Después de practicar [deporte] me encuentro excesivamente cansado/a.
17	SD	El [deporte] no me gusta tanto como antes.
18	RSA	Creo que se me da bien el [deporte].

PEE = physical/emotional exhaustion

RSA = reduced sense of accomplishment

SD = sport devaluation

belonging to 25 sports teams competing in the following sports: indoor football (22.4%), basketball (18.3%), volleyball (9.2%), football (8.8%), swimming (7%), karate (5.7%), roller hockey (4.1%), athletics (3.9%), tennis (3.5%), sport dancing (3.5%), cycling (2.7%), judo, (2.7%), fencing (2.3%), olympic wrestling (1.6%), handball (1.6%), squash (1.2%), chess (0.8%) and boxing (0.6%). Participants undertook between one and eight weekly training sessions ($M = 3.18$; $DT = 1.21$) devoting a mean of 4.20 hours per week to the same ($DT = 3.08$).

Instrument

The questionnaire used was a Spanish version of the ABQ with 18 items. The 15-item questionnaire resulting from the study by Arce et al. (2010) was taken as a basis: this had a test-retest reliability in its sub-scales of between .86 and .92 and an internal consistency, measured by Cronbach's Alpha coefficient, between .84 and .90. To this base were added three items with alternative statements (test items), one for each dimension (items 16, 17 and 18). Table 1 shows the items belonging to each factor, as well as the order in which they were presented. The items had a response format with five alternatives, ranging from *Almost never* (1) to *Almost always* (5). All were formulated in the same direction, except for items 1, 14 and 18.

Other variables which could supply interesting information on the participants were also recorded, such

as age, sex, the club, sport, time competing, frequency and duration of weekly training sessions.

Procedure

The questionnaire was applied during the 2009-2010 season, by means of a standardised procedure for which all athletes were given the same instructions. Given that the participants were involved in different sports, when reading the items, they were instructed to mentally replace the word "sport", appearing in brackets, with the specific sport they were involved in. In order to provide an estimation of the test-retest reliability, a sub-sample of 211 athletes from the different specialities (29.9% basketball; 28.4% indoor football; 5.7% karate; 5.2% tennis; 4.3% swimming; 4.3% roller hockey; 3.8% cycling; 3.8% volleyball; 3.8% handball; 3.8% sport dancing; 2.4% fencing; 1.9% squash; 1.4% boxing; 1.4% chess) completed the questionnaire for a second time between 14 and 16 days after the initial application.

Data analysis

The analyses started with an initial exploration of the data, followed by description of the responses to the items. A confirmatory factor analysis (CFA) was then conducted with the program LISREL 8.80 to assess the fit of the proposed model. To this end, a number of global fit

indicators were used: the ratio of the χ^2 statistic between their degrees of freedom, the good fit index (GFI), the comparative fit index (CFI), the non-normed fit index (NNFI), the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR). Finally, the analysis of items and reliability were conducted using SPSS 15.0.

Results

Initial exploration of the data

Initially, an exploration of the data was conducted to ascertain whether there were any “missing” values, and if so, to attempt to discover some type of regularity which would make it possible to define the cause thereof. Only 8 loss values were found, distributed among seven different items. Given that there was very little absent information, it was decided to ignore the same in the ensuing analyses and to not employ any substitution procedure.

Description of the responses to items

Table 2 shows the descriptive statistics (mean, standard deviation, skewness and kurtosis) for the 18 items in the questionnaire used in the research, ordered by factors.

The reduced sense of accomplishment factor has higher means, with values between 1.97 (item 5) and 2.97 (item

14). In contrast, the sport devaluation factor has the lowest means, ranging from 1.42 (item 15) to 1.97 (item 11). The Standard deviations range between .85 (item 17) and 1.18 (item 11), with no noticeable differences between the items for the three factors in response variability. In general, the distributions of the items show moderate positive skewness and a slight predominance of leptokurtic distributions.

Confirmatory Factor Analysis

The 15-item base model (without the three alternatives) was subjected to an AFC, where correlations between factors were allowed. In this over-identified model, 33 parameters were estimated using the maximum likelihood method. The estimated factor loadings were significant, with values between .39 (item 3) and .79 (item 9) and error terms of .84 and .38.

As regards correlations between factors, the correlation between the physical/emotional exhaustion factor and the reduced sense of accomplishment factor was .29, and the value of the correlation between the physical/emotional exhaustion factor and the sport devaluation factor was .28. The highest value corresponded to the relation between the reduced sense of accomplishment dimension and sport devaluation ($r_{xy} = .57$).

The global fit of the model was not entirely satisfactory. It is considered a good fit if values of between 0 and 3 are obtained for the ratio between χ^2 and its degrees of freedom (Bollen & Long, 1993), values greater than .90 for GFI, values greater than or equal to .95 for CFI and NNFI (Bentler, 1990; Jöreskog & Sörbom, 1993; Tucker & Lewis, 1973) and values lower than .08 for RMSEA and SRMR (Browne & Cudeck, 1993). The ratio between χ^2 and the degrees of freedom was 3.79. GFI was .91. CFI was .93 and NNFI de .92. The RMSEA and SRMR values were .08 y .07, respectively.

The standardised residuals values were high, between -5.22 for the relations between items 1 and 13, and 7.09 between items 2 and 4. Moreover, the latter two items were found to be involved in other relations with high residuals. The modification indices showed a fall of 50.3 in χ^2 if the relation between items 2 and 4 were permitted, and of 27.3 in the case of items 1 and 13 being permitted.

Given that there was room for improvement in the model's fit, two modifications with a theoretical and statistical basis were introduced sequentially. Firstly, item 4 (“La práctica del [deporte] me deja demasiado cansado/a”) was replaced by the alternative statement corresponding to its physical/emocional exhaustion dimension, item 16 (“Después de practicar [deporte] me encuentro excesivamente cansado”). Another candidate for substitution would have been item 2 (“El entrenamiento me deja tan cansado/a que me cuesta reunir la energía suficiente para hacer otras cosas”), but it was decided to keep it in the

Table 2
Descriptive Statistics

Factor	Item	<i>M</i>	<i>SD</i>	Skewness <i>ET</i> = .11	Kurtosis <i>ET</i> = .22
PEE	2	2.21	1.00	0.50	-0.25
	4	2.23	0.96	0.40	-0.41
	8	1.76	0.96	1.29	1.29
	10	1.87	0.98	1.02	1.20
	12	1.81	0.86	0.87	0.37
	16	1.90	0.91	0.87	0.44
RSA	1	2.11	0.97	0.79	0.51
	5	1.97	1.08	0.96	0.14
	7	2.69	1.13	0.24	-0.67
	13	2.15	1.05	0.71	-0.07
	14	2.97	1.07	0.05	-0.48
	18	2.16	1.00	0.67	0.13
SD	3	1.77	1.05	1.47	1.61
	6	1.74	1.04	1.43	1.32
	9	1.54	0.92	1.89	3.16
	11	1.97	1.18	1.04	0.06
	15	1.42	0.78	1.95	3.53
	17	1.47	0.85	2.11	4.53

Table 3
Estimations of the confirmatory factor analysis

Factor	Item	Factor loadings	t values	Error terms	R ²
PEE	2	.62	13.71	.62	.38
	8	.62	13.74	.62	.38
	10	.74	17.20	.45	.55
	12	.68	15.38	.54	.46
	16	.73	16.76	.47	.53
RSA	1	.44	8.73	.81	.19
	5	.59	12.19	.66	.34
	7	.61	12.63	.63	.37
	13	.66	14.02	.56	.44
	14	.59	12.28	.65	.35
SD	3	.43	9.13	.81	.19
	9	.79	19.17	.37	.63
	11	.64	14.60	.59	.41
	15	.62	13.85	.62	.38
	17	.80	19.44	.36	.64

questionnaire as it provides a nuance that item 4 did not possess. Taking into account the results obtained after this modification (global and individual fit indices), item 6 (“Mi rendimiento en el [deporte] me importa menos que antes”) was replaced by item 17 (“El [deporte] no me gusta tanto como antes”), its corresponding alternative statement within the sport devaluation dimension.

Table 4
Analysis of items and reliability of the questionnaire

Factor	Sample	Item	Corrected item-factor correlations	Alpha if item deleted	Test-retest reliability
PEE	484 209	2	.55		
		8	.55	.78	.60
		10	.65	.78	.57
		12	.59	.75	.63
		16	.64	.77	.57
			.76	.67	
RSA	484 209	1	.34	.71	.62
		5	.47	.66	.44
		7	.47	.66	.69
		13	.52	.64	.72
		14	.52	.64	.62
SD	486 211	3	.38	.78	.59
		9	.66	.68	.69
		11	.52	.74	.71
		15	.53	.73	.51
		17	.68	.68	.73

Table 3 shows the estimated parameters after these two modifications were made to the model. The factor loadings values were between .43 (item 3) and .80 (item 17), with all of them being significant. The inter-factor correlation coefficients were .33 between physical/emotional exhaustion and reduced sense of accomplishment, .38 between physical/emotional exhaustion and sport devaluation and .60 for the relation between reduced sense of accomplishment and sport devaluation. All of these correlations were statistically significant.

With regard to the goodness-of-fit, the value of the ratio between χ^2 and the degrees of freedom was 2.66, which indicated an acceptable fit for the data. GFI (.94), CFI (.96) and NNFI (.95) showed a good fit. For the remaining indices, the fit was acceptable: .06 for RMSEA and SRMR.

Analysis of items and reliability

Table 4 shows the corrected item-factor correlations, the internal consistency values for each factor, the Alpha values if the item had been eliminated and the reliability coefficients.

The lowest item-factor correlations were found in the reduced sense of accomplishment factor (between .34 and .52). The physical/emotional exhaustion items and values ranging from .59 (item 12) and .65 (item 10). The sport devaluation factor showed greater variability, with values ranging between .38 (item 15) and .68 (item 17).

The Alpha coefficients were .81 for physical/emotional exhaustion, .71 for reduced sense of accomplishment, and .77 for sport devaluation. In no case did these values

increase with the elimination of any of the items comprising each dimension.

The test-retest reliability coefficient values for the factors were .70 for physical/emotional exhaustion, .81 for reduced sense of accomplishment, and .79 for sport devaluation. With regard to the reliability of the items grouped according to factors, the values range between .57 (items 8 and 12) and .67 (item 16) for the physical/emotional exhaustion factor, between .44 (item 13) and .72 (item 13) for reduced sense of accomplishment, and between .51 (item 3) and .73 (item 17) for sport devaluation.

Discussion and Conclusions

The present research was conducted with the aim of validating in other sports the Spanish version of the ABQ, developed in a prior study by Arce et al. (2010) for use with football players. A slightly modified version has been obtained, but which, in spite of everything, maintains a similar factor structure with good psychometric properties in terms of construct validity and reliability. The results are also similar to those obtained in the original study, conducted in the USA by Raedeke and Smith (2001) on samples of athletes from various disciplines.

Two of the items which had worked well in the version for footballers, did not do so in the present study: item 4 (“La práctica del [deporte] me deja demasiado cansado”, belonging to the physical/emotional exhaustion factor) and item 6 (“Mi rendimiento en el [deporte] me importa menos que antes”, belonging to the sport devaluation factor). Consequently, both items were sequentially replaced by their corresponding alternative statements, items 16 and 17 (“Después de practicar [deporte] me encuentro excesivamente cansado/a” and “El [deporte] no me gusta tanto como antes”). The results of re-specifying the model would seem to suggest that the substitution was appropriate, as the global fit indices improved after the modification: $\chi^2/df = 2.66$, GFI = .94, CFI = .96, NNFI = .95, RMSEA = .06 y SRMR = .06. These indices are similar to those reported originally by Raedeke and Smith (2001) for their study 3, with a sample of athletes from different sports, and those obtained with other transcultural versions of the ABQ, such as the Chinese version (Lu et al., 2006) or the French version (Perreault et al., 2007; Isoard-Gauthier et al., 2010).

Correlations between factors were, generally, lower than those referred to by Arce et al. (2010); nonetheless, it was worthy of note in both studies that the strongest relation appears about between the reduced sense of accomplishment and sport devaluation factors. This is not surprising, given that reduced sense of accomplishment and sport devaluation have a more attitudinal component, while physical/emotional exhaustion has a more physiological component (De Francisco et al., 2009).

As regards reliability, in general, acceptable values were observed, from the point of view of both the internal consistency of the factors and the temporal stability of the responses to the questionnaire (test-retest), with all the coefficients calculated exceeding the .70 barrier. Moreover, the conclusion was reached that the internal consistency of the questionnaire could not be improved, even if any of its items were eliminated. Hence, the results of the reliability analysis coincide with those obtained in the original version by Raedeke and Smith (2001) and with those obtained in many other transcultural adaptations of the ABQ such as, for example, the Chinese one (Lu et al., 2006), the French one (Perreault et al., 2007; Isoard-Gauthier et al., 2010), the Norwegian one (Lemyre et al., 2007), the Portuguese one (Alvarez et al., 2006) and the Arabic one (Altahayneh, 2005).

In summary, a Spanish version of the ABQ has been developed which approximately replicates the same structure as that of the original version, with 15 items grouped into the three factors proposed by Raedeke and Smith (2001, 2009): physical/emotional exhaustion, reduced sense of accomplishment and sport devaluation. The fit indices for the measuring model and the reliability of the questionnaire are satisfactory, so that it may be used in the scientific and professional settings with sufficient psychometric guarantees. The present version also has the additional advantage that it can be used with athletes from any sport, as the sample used covered a broad spectrum with regard to the age of athletes (13-29 years of age), sex (both sexes were included in the sample), sport (athletes from 18 different individual and team sports participated, and volume and intensity of training).

In spite of the satisfactory results obtained, the present Spanish version of the ABQ requires further evidence of validity based on the relation with other variables, by conducting studies similar to those of Cresswell and Eklund (2006b), who showed that the ABQ makes it possible to discriminate suitably between burnout and depression, or those of Raedeke and Smith (2001, 2004) dealing with the relation between burnout and many other associated constructs, such as competitive anxiety-feature, motivation, enjoyment, social support, stress, coping strategies, commitment, perceived control and identity.

References

- Altahayneh, Z. (2005). The effects of coaches' behaviors and burnout on the satisfaction and burnout of athletes. (Jordan). *Dissertation Abstracts International Section A. Humanities and Social Science*, 66(5-A), 1689.
- Alvarez, D., Ferreira, M. R., & Borim, C. (2006). Validação do Questionário de Burnout para Atletas [Validation of Burnout Questionnaire for Athletes]. *Revista da Educação Física/UEM (Maringá)*, 17, 27-36.

- Arce, C., De Francisco, C., Andrade, E., Arce, I., & Raedeke, T. (2010). Adaptación española del Athlete Burnout Questionnaire (ABQ) para la medida del burnout en futbolistas [Spanish Adaptation of the Athlete Burnout Questionnaire (ABQ) for measuring burnout in footballers]. *Psicothema*, *22*, 250–255.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*, 238–246. <http://dx.doi.org/10.1037//0033-2909.107.2.238>
- Bollen, K. A., & Long, J. S. (Eds.). (1993). *Testing structural equation models*. Newbury Park, CA: Sage.
- Browne, M. W., & 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.
- Chen, L. H., & Kee, Y. H. (2008). Gratitude and adolescent athletes' well-being. *Social Indicators Research*, *89*, 361–373. <http://dx.doi.org/10.1007/s11205-008-9237-4>
- Cohn, P. J. (1990). An exploratory study on sources of stress and athlete burnout in youth golf. *The Sport Psychologist*, *4*, 95–106.
- Cresswell, S. L., & Eklund, R. C. (2006a). The nature of player burnout in rugby: Key characteristics and attributions. *Journal of Applied Sport Psychology*, *18*, 219–239. <http://dx.doi.org/10.1080/10413200600830299>
- Cresswell, S. L., & Eklund, R. C. (2006b). The convergent and discriminant validity of burnout measures in sport: A multi-trait/multi-method analysis. *Journal of Sports Sciences*, *24*, 209–220. <http://dx.doi.org/10.1080/02640410500131431>
- Dale, J., & Weinberg, R. S. (1990). Burnout in sport: A review and critique. *Journal of Applied Sport Psychology*, *2*, 67–83. <http://dx.doi.org/10.1080/10413209008406421>
- De Francisco, C., Arce, C., Andrade, E., Arce, I., & Raedeke, T. (2009). Propiedades psicométricas preliminares de la versión española del Athlete Burnout Questionnaire en una muestra de jóvenes futbolistas [Preliminary psychometric properties of the Spanish version of the Athlete Burnout Questionnaire in a sample of young footballers]. *Cuadernos de Psicología del Deporte*, *9*, 45–56.
- Eades, A. M. (1990). *An investigation of burnout of intercollegiate athletes: The development of the Eades Athlete Burnout Inventory*. (Unpublished master's thesis) Universidad de California, Berkeley.
- Goodger, K., Gorely, T., Lavalley, D., & Harwood, C. (2007). Burnout in sport: A systematic review. *The Sport Psychologist*, *21*, 127–151.
- Gould, D., Tuffey, S., Udry, E., & Loehr, J. (1996). Burnout in competitive junior tennis players II: Qualitative analysis. *The Sport Psychologist*, *10*, 341–366.
- Gould, D., Udry, E., Tuffey, S., & Loehr, J. (1996). Burnout in competitive junior tennis players I: A quantitative psychological assessment. *The Sport Psychologist*, *10*, 322–340.
- Gustafsson, H., Kenttä, G., Hassmén, P., Lundqvist, C., & Durand-Bush, N. (2007). The process of burnout: A multiple case study of three elite endurance athletes. *International Journal of Sport Psychology*, *38*, 388–416.
- Isoard-Gauthier, S., Oger, M., Guillet, M., & Martin-Krumm, C. (2010). Validation of a French version of the Athlete Burnout Questionnaire (ABQ): In competitive sport and physical education context. *European Journal of Psychological Assessment*, *26*, 203–211. <http://dx.doi.org/10.1027/1015-5759/a000027>
- Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8. Structural Equation Modeling with the SIMPLIS Command Language*. Hillsdale, NJ: LEA.
- Lemyre, P.-N., Hall, H. K., & Roberts, G. C. (2008). A social cognitive approach to burnout in elite athletes. *Scandinavian Journal of Medicine and Science in Sports*, *18*, 221–234. <http://dx.doi.org/10.1111/j.1600-0838.2007.00671.x>
- Lemyre, P.-N., Roberts, G. C., & Stray-Gundersen, J. (2007). Motivation, overtraining, and burnout: Can self-determined motivation predict overtraining and burnout in elite athletes? *European Journal of Sport Science*, *7*, 388–416. <http://dx.doi.org/10.1080/17461390701302607>
- Lonsdale, C., Hodge, K. J., & Jackson, S. A. (2007). Athlete engagement II: Development and initial validation of the Athlete Engagement Questionnaire. *International Journal of Sport Psychology*, *38*, 471–492.
- Lu, J. H., Chen, L. H., & Cho, K. H. (2006). Revision of Raedeke and Smith's Athlete Burnout Questionnaire (ABQ): Analyses of validity and reliability of Chinese version. *Physical Education Journal*, *39*, 83–94.
- Pedrosa, I., Suárez, J., Pérez, B., & García-Cueto, E. (2011). Adaptación preliminar al castellano del Athlete Burnout Questionnaire en futbolistas [Preliminary adaptation into Spanish of the Athlete Burnout Questionnaire in footballers]. *Revista Electrónica de Metodología Aplicada*, *16*, 35–49.
- Perreault, S., Gaudreau, P., Lapointe, M.-C., & Lacroix, C. (2007). Does it take three to tango? Psychological need satisfaction and athlete burnout. *International Journal of Sport Psychology*, *38*, 437–450.
- Raedeke, T. D. (1997). Is athlete burnout more than just stress? A sport commitment perspective. *Journal of Sport and Exercise Psychology*, *19*, 396–417.
- Raedeke, T. D., Lunney, K., & Venables, K. (2002). Understanding athlete burnout: Coach perspectives. *Journal of Sport Behavior*, *25*, 181–206.
- Raedeke, T. D., & Smith, A. L. (2001). Development and preliminary validation of an athlete burnout measure. *Journal of Sport and Exercise Psychology*, *23*, 281–306.
- Raedeke, T. D., & Smith, A. L. (2004). Coping resources and athlete burnout: An examination of stress mediated and moderation hypotheses. *Journal of Sport and Exercise Psychology*, *26*, 525–541.
- Raedeke, T. D., & Smith, A. L. (2009) *The Athlete Burnout Questionnaire Manual*. Morgantown, WV: Fitness Information Technology.
- Silva, J. M. (1990). An analysis of the training stress syndrome in competitive athletics. *Journal of Applied Sport Psychology*, *2*, 5–20. <http://dx.doi.org/10.1080/10413209008406417>

Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factors analysis. *Psychometrika*, *38*, 1–10. <http://dx.doi.org/10.1007/BF02291170>

Ziemanz, H., Abu-Omar, K., Raedeke, T., & Krause, K. (2004). Burnout im Sport. Zur Praevalenz von burnout aus bedingungsbezogener Perspektive [Burnout in sports: About

the prevalence of burnout from a condition-related perspective]. *Leistungssport (Muenster)* *34*, 12–17.

Received March 7, 2011

Revision received July 19, 2011

Accepted September 15, 2011