

The Sport Engagement Scale: An Adaptation of the Utrecht Work Engagement Scale (UWES) for the Sports Environment*

Escala de compromiso deportivo: una adaptación de la Escala de Compromiso en el Trabajo de Utrecht (UWES) para ambientes deportivos

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ABSTRACT

The Utrecht Work Engagement Scale (UWES) is an instrument designed by Schaufeli y Bakker (2003) to measure engagement in the work context. The purpose of the present study was to adapt the UWES to the sports context. The sample consists of 240 national third division Spanish football players between the ages of 15 and 38. The UWES factor structure has been analyzed through exploratory and confirmatory factor analyses. The results reveal a three-factor structure of the scale (vigor, absorption and dedication) and also an adequate internal consistency in all cases. Finally the results show preliminary support for the validity of the construct as sport burnout is negatively related to the three engagement characteristics. These findings provide preliminary evidence for the benefits of using the UWES in the sports context.

Keywords

adaptation; Questionnaire; Engagement; Burnout; Sport; Instrumental study

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* Artículo de investigación

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RESUMEN

La Escala de Compromiso en el Trabajo de Utrecht [(Utrecht Work Engagement Scale (UWES)) (2003) mide el compromiso en el contexto laboral. El propósito de este estudio fue adaptar la UWES al contexto del deporte. La muestra estuvo compuesta por 240 jugadores de fútbol españoles de tercera división, con edades entre 15 y 38 años. La estructura factorial de la UWES ha sido analizada mediante análisis factorial exploratorio y confirmatorio. El resultado revela una estructura de tres factores (vigor, absorción y dedicación) y también una adecuada consistencia interna en todos los casos. Finalmente el resultado mostró preliminarmente soporte para la validez de constructo como el burnout en el deporte está negativamente relacionado con tres características del compromiso. Estos hallazgos dan una evidencia preliminar para el beneficio de usar la UWES en el contexto del deporte.

Palabras clave

adaptación; cuestionario; compromiso; Burnout; deporte; estudio instrumental

An athlete, just as any other person, sees him or herself exposed to situations related to their activity, which can generate enough disquiet to cause the loss of interest in a sport activity, just as a positive experience can make him/her try harder to demonstrate an optimistic attitude about his/her performance. Very few studies have related wellbeing with sport performance. However, there is a wide variety of studies that relate performance with certain negative aspects, such as high anxiety levels (Guillén & Sánchez, 2009; Modroño & Guillén, 2011) or lack of self-confidence (Ede, Hwang, & Feltz, 2011). In the literature, we find two constructs referred to as “engagement” and “burnout”. Engagement is the opposite of burnout and is characterized by a feeling of being immersed in an activity such as the practice of sport. The person establishes a link with the activity, which is reflected in a greater dedication and involvement in the task. Thus, engagement is defined as a positive mental state of realization which is characterized by vigor, dedication and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Vigor is characterized by high levels of mental resilience while carrying out an activity and athletes strive to do their best at the task they are performing even in the face of difficulties. Dedication refers to being strongly involved in one’s task and feeling a sense of significance to the opportunity, enthusiasm, inspiration, pride and challenge. Lastly, absorption occurs when athletes are totally concentrated on the task, where time appears to pass quickly and they even experience certain difficulty detaching themselves from the task. Based on the aforementioned, we can consider engagement to be an optimum state in sport and a type of wellbeing. This affirmation is in accordance with the principles of positive psychology which suggest that psychological health must be considered as something more than the absence of disease (Seligman & Csikszentmihalyi, 2000). In a work environment, there is a specific view which refers to engagement as a continuum and burnout as a negative extreme. This focus engenders the study of engagement as a strategy to prevent the symptoms of burnout.

This construct has been widely studied in the work environment (González-Romá, Schaufeli,

Bakker, & Lloret, 2006; Langelaan, Bakker, Van Doornen, & Schaufeli, 2006; Salanova, Schaufeli, Llorens, Peiró, & Grau, 2001; Schaufeli & Bakker, 2004; Schaufeli, Taris, & van Rhenen, 2008) but less research has been carried out within a sports context (Álvarez, Balaguer, Castillo, & Duda, 2009; Hodge, Lonsdale, & Jackson, 2009; Lonsdale, Hodge, & Jackson, 2007; Lonsdale, Hodge, & Raedeke, 2007).

Constructs with a conceptual similarity have been studied mainly within the sports context (e.g. subjective vitality, confidence, engagement, flow, enjoyment, optimism). Lonsdale, Hodge, and Raedeke (2007) conducted study on engagement in a sports environment with 15 elite athletes in New Zealand. Lonsdale, Hodge, and Raedeke (2007) used deductive and inductive techniques in the interview to try to identify the components of athlete engagement in sport. Their results suggested that the engagement construct is composed of three factors: confidence, dedication and vigor. Confidence is the belief in one’s ability to attain a high level of performance which allows the athlete to achieve the desired goals. Dedication was defined as an athlete’s desire to invest effort and time towards achieving goals that the athlete perceives as important. Lastly, vigor was defined as the physical, mental and emotional energy that the athlete experienced. The absorption dimension did not receive empirical support in this study.

The second part of this study by Lonsdale, Hodge, and Jackson (2007) complements the findings of the qualitative study. The Athlete Engagement Questionnaire (AEQ) was constructed based on the results of the qualitative study and it was later developed and validated (Lonsdale, Hodge, & Jackson, 2007; Lonsdale, Hodge, & Raedeke, 2007). Subsequent analysis was conducted of the psychometric properties of the AEO scale. The final solution of the AEQ supported a model of 16 items distributed in four factors: confidence, dedication, vigor and enthusiasm. Lastly, the AEQ subscales demonstrated the negative relations with the associated factors of the Athlete Burnout Questionnaire ([ABQ]; Raedeke & Smith, 2001), an instrument commonly used to measure burnout in athletes.

Self-determination theory (SDT) (Deci & Ryan, 1985; Ryan & Deci, 2000) is a widely used motivational theory which is pertinent to the study of engagement and enjoyment in a sports context (Álvarez et al., 2009; Hodge, Lonsdale, & Jackson, 2009). Using a self-determination theory perspective, Hodge et al. (2009) conducted an exploratory study of 201 Canadian athletes to identify the antecedents and consequences of engagement. This indicates the basic psychological needs as antecedents of engagement, the flow state as a consequence of engagement and the satisfaction of these basic needs. The Basic Psychological Needs Theory (BPNT) is one of the five mini-theories which integrate the SDT and includes the need for autonomy, competence and relation. The results indicated that satisfaction of the basic needs predicted positively and significantly that engagement is mainly due to the need for autonomy and competence. Engagement did not totally measure the effects of the basic needs on the flow state because the needs of autonomy and competence predict the flow.

Schaufeli, Salanova et al. (2002) developed the "Utrecht Work Engagement Scale" (UWES) to measure the engagement construct in a work environment. Their aim was to know employees' level of involvement in their work environment and its relation with their welfare. This questionnaire has been validated in different countries: Holland, Belgium, Spain and Portugal (Salanova et al., 2001; Schaufeli, Salanova et al. 2002; Schaufeli, Martínez, Marques-Pinto, Salanova, & Bakker, 2002; Schaufeli & Bakker, 2003), with different groups (workers and students) and different versions (UWES-17, UWES-15, UWES-9). International UWES data bases which bring together research from different occupational groups in countries such as Australia, Canada, Finland, France, Germany and Norway (Schaufeli & Bakker, 2003), are also used as antecedents. Overall, the reliability of the UWES, as well as the validity of the construct, has been demonstrated in the work environment and to a lesser degree in the academic environment (Schaufeli et al., 2002). Despite this previous work, very little empirical effort has been put into the sports environment to produce an instrument

that allows us to measure athlete engagement or engagement in general. Therefore, the purpose of this current research is to adapt the UWES to a team sports environment by studying the psychometric properties, which we will call the Sport Engagement Scale (SES). With this scale, our aim is to have an instrument not only for Spanish speakers but also to be used by sports professionals in all languages.

The general purpose of this study was to adapt the UWES to a sports environment and to validate the scale with a sample of Spanish soccer players, analyzing the factor structure, internal consistency and construct validity of this scale.

Method

Participants

The sample group is composed of 240 soccer players from the Community of Madrid, all of whom are males aged between 15 and 38 years ($M = 23.75$; $SD = 4.29$). The average number of years these men have been playing is 16.04 years ($SD = 4.19$). The average length of time they have been affiliated to their present team is 2.13 years ($SD = 2.72$). They reported an average of 8.69 hours ($SD = 1.83$) of physical training per week.

Procedure

Experts on the subject collaborated in the adaptation of items to the sport context. To execute this adaptation, we modified the Spanish version of the UWES (15 items) to the sport context which we have called the Sport Engagement Scale (SES). Once the adaptation of the items was completed, we conducted a pilot test on a small number of soccer players and made the necessary adjustments to obtain the final version of the questionnaire.

The soccer players completed the questionnaire either before or after their training session. They did this voluntarily without the presence of the coach but under the supervision of one of the investigators. Informed consent was obtained from all participants. Referees were assured of confidentiality for their responses and were asked to be sincere when

responding. An investigator was present while the participants filled in the questionnaire in order to resolve any doubts.

Instruments

The Utrecht Work Engagement Scale (UWES) was adapted to a sports environment which we called the Sport Engagement Scale (SES) using the Spanish version of the UWES (Salanova et al., 2000). The Sport Engagement Scale (SES) is composed of 15 items distributed in three factors of five items each: Vigor (1, 2, 6, 7, 8), Dedication (3, 4, 5, 9, 12) and Absorption (10, 11, 13, 14, 15). The soccer players were asked to be honest when expressing their feelings during their sport activity. A Likert scale was used ranging from 1 (hardly ever) to 7 (almost always). An example of an item corresponding to the vigor factor is *"I am strong and vigorous in my sport activity"*. When looking at the dedication factor, we can find items such as *"I am proud of the work I do"*. Lastly, an example of an item for the absorption factor is *"While I am training I am oblivious to everything that is going on around me"*.

To measure sport burnout we used the Inventory of Sport Burnout ([ISB]; Garcés de los Fayos, 1999), which was elaborated taking as reference the Maslach Burnout Inventory (Maslach & Jackson, 1981), an instrument frequently used to measure burnout in the work context, and which has the same three-factor structure as the Athlete Burnout Questionnaire (Raedeke & Smith, 2001). The latter has received the highest empirical support in the sports context. This inventory is composed of 27 items organized in three factors: emotional exhaustion (7 items), depersonalization (11 items) and reduced personal accomplishment (9 items). An example of an item corresponding to the emotional exhaustion factor: *"my work in sport is emotionally exhausting"*. An example of the items of the depersonalization factor: *"whilst practicing my sport activity I treat some of the people around me as if they were objects"*. An example of an item included in the reduced personal accomplishment factor: *"I feel more personally accomplished every time I do sport"*.

The athletes were asked to grade their answers using a 5-point Likert scale ranging from 1 (I have never felt or thought this) to 5 (I feel or think this daily). The reliability of the ISB has been demonstrated in previous studies (Garcés de los Fayos, 1999; Martínez, 2009), and its Cronbach's alfa coefficient of internal consistency in all subscales has been acceptable (emotional burnout = 0.7; depersonalization = 0.8; reduced personal fulfillment = 0.74).

Data analysis

Descriptive statistics (means, standard deviations, skewness, and kurtosis) were computed for the 15 items which are components of the questionnaire, with the intention of examining the normalcy of the distribution of our data. For the analysis of the psychometric properties of the scale, we carried out an exploratory factor analysis of the principal components accepting those items with self-values greater than 1. We used orthogonal rotation (varimax) eliminating those items with a factor weight of less than .40 and correlations below .30 with the rest of the items that formed part of the factor to which they belonged.

The factor structure of the SES was tested with a confirmation factor analysis (CFA) using the program AMOS 7.0 and using the method of maximum likelihood to evaluate two models: the first model of 13 items comprising a structure of three factors, and the second model of 15 items organized as one factor. We used the following indices to check the adjustment of these models: chi squared divided by the degrees of freedom (χ^2 / gl) the General Fit Index (GFI), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Incremental Fit Index (IFI) and the Root Mean Square Measure of Approximation (RMSEA). A χ^2 / gl quotient lower than 5 indicates a good fit of the model. The GFI is one of the most used indices, because it is not affected by the size of the sample. It takes into account values between 0 and 1 indicating a good fit with values above 0.09. The IFI indicates improvements in the fit of the model by degrees of freedom in comparison with the base line of the independent model. Values that are equal to or above 0.09 are considered acceptable.

The CFI is one of the incremental fit indices most used to contrast theoretical models with samples of over 100 subjects. It uses values between 0 and 1 recommending values equal to or above 0.09 for a good fit and above .95 for an excellent fit of the model (Hu & Bentler, 1999). The TLI considers the degree of freedom of the proposed and null models. Values that are equal or above .90 indicate a good fit of the model. The RMSEA checks the degree of poor fit of the residuals of the covariance matrixes of the theoretical and empirical model. Values of between .05 and .10 are considered acceptable (Cole & Maxwell, 1985).

A correlational analysis was carried out using the Pearson coefficient between the three engagement factors and the sport burnout factors together with their respective global or total scores. A negative significant relation between these factors would confirm the validity of the construct of the scale. Finally, the internal consistency of the Sport Engagement Questionnaire was analyzed using Cronbach's alpha.

Results

Descriptive Statistics

Table 1 provides the descriptive statistics of the 15 items of the SES. The data indicated normalcy in all

of the cases with asymmetrical values that oscillate between -1.2 and 1.6 normalcies of the data, which allows us to test the factor model.

Exploratory Factor Analysis

The final solution indicated a structure of three factors comprising 13 items (vigor, 4 items; dedication, 4 items; absorption, 5 items), which explained 57.91% of the variance. Vigor accounted for the greatest amount of explained variance (21.99%) followed by dedication (21.17%) and absorption (14.74%).

The items that presented problems were item 6 of the vigor factor and items 3 and 9 of the dedication factor which gave a low factor weight for the initial factor (0.76, 0.66 and 0.64 respectively). These items loaded significantly in other factors for which they were not designed in the original version of the UWES but could be supported in a one-factor structure of the scale. Table 2 demonstrates the final solution including only the items that are loaded in their respective factors.

Confirmatory Factor Analysis

To obtain the construct validity of the SES, we tested two models using a CFA of maximum likelihood. The three-factor Model 1 includes only

TABLE 1
Descriptive Statistics of the Items in the Sport Engagement Questionnaire

Item	M	SD	Asymmetry	Kurtosis
1. I am able to train for long periods of time	5.7	1.25	-0.97	0.75
2. I am very persistent in my sport activity	5.84	1.19	-1.06	1.08
3. My sport activity is a self challenge	5.6	1.13	-0.86	0.88
4. I am enthusiastic about my sport activity	5.74	1.17	-0.89	0.53
5. I am proud of the work I do	5.86	1.17	-1.2	1.6
6. I feel full of energy during my training and matches	5.37	1.23	-0.65	0.4
7. When I get up in the morning I look forward to going to train	4.88	1.53	-0.65	-0.06
8. I am strong and vigorous in my sport activity	5.44	1.09	-0.49	0.31
9. My sport activity is full of meaning and resolve	5.45	1.24	-0.64	0.03
10. I am carried away by my sport activity	4.92	1.47	-0.59	0.03
11. I am happy when I am engrossed in my sport activity	5.64	1.4	-1.15	1.06
12. I feel inspired whilst carrying out my sport activity	5.83	1.12	-0.97	0.92
13. I am oblivious to everything going on around me when I train	5.9	1.25	-1.11	0.8
14. I am absorbed in my sport activity	5.83	1.13	-0.85	0.38
15. Time flies when I am training or competing	5.88	1.07	-0.77	-0.2

Source: own work

TABLE 2
EFA with Varimax Rotation of the Items of the SES

Items	Components		
	Vigor	Dedication	Absorption
2. I am persistent in my sport activity	0.75		
8. I am strong and vigorous in my sport activity	0.7		
1. I am able to train for long periods of time	0.53		
7. When I get up in the morning I look forward to going to train	0.4	0.64	
5. I am proud of the work I do			
12. I feel inspired whilst carrying out my sport activity		0.61	
4. I am enthusiastic about my sport activity		0.47	0.73
13. I am oblivious to everything going on around me when I train			
11. I am happy when I am engrossed in my sport activity			0.65
10. I am carried away by my sport activity			0.62
14. I am absorbed in my sport activity			0.56
15. Time flies when I am training or competing			0.4

Source: own work

the 12 items loaded under their respective factor in the EFA with orthogonal rotation used previously. This model reflects the view that the three factors of “engagement” (vigor, dedication and absorption) in a sports context are independent but correlate significantly. The second model includes 15 items that hypothesize a one-factor model of the scale. In accordance with the data in Table 3, the two models report indices of a very good fit with a slight difference compatible with not only the three-factor structure of the scale but also the one-factor structure.

The individual validity of each item was analyzed by way of the regression weight that was obtained. Table 4 demonstrates the regression weight and its contribution to the corresponding factor. As we can see, all the items present an acceptable regression weight, higher than the recommended 0.4 (Hair, Anderson, Tatham, & Black, 1999); they range between 0.49 and 0.83, and item 14,

corresponding to the absorption subscale, has the highest regression weight (I’m immersed in my sports activity).

Correlations Analysis between the Engagement and Sport Burnout Factors

In accordance with the assumption that engagement and burnout constitute two ends of a continuum, we analyzed the correlations between the relevant variables with the expectation that we would obtain negative and significant correlations between the burnout and the sport engagement factors.

In Table 5, we can observe the results of the correlations using the Pearson coefficient. All the correlation results were as expected except the depersonalization factor of the ISB (Garcés de los Fayos, 1999). As can be observed, correlations among engagement subscales are positive and significant; the correlation between dedication and absorption

TABLA 3
Fit Indices for the Two Hypothesized Models

	χ^2	gl	χ^2 / gl	GFI	CFI	TLI	IFI	RMSEA
Model 1	85.56	47	1.82	0.94	0.96	0.95	0.96	0.06
Model 2	127.48	78	1.63	0.93	0.96	0.95	0.96	0.05

Source: own work

TABLE 4
Standardized Regression Weights of the SES Items

Item	Vigor	Dedication	Absorption
2. I am persistent in my sport activity	0.75		
8. I am strong and vigorous in my sport activity	0.64		
7. When I get up in the morning I look forward to going to train	0.64		
1. I am able to train for long periods of time	0.6		
12. I feel inspired whilst carrying out my sport activity		0.77	
4. I am enthusiastic about my sport activity		0.73	
5. I am proud of the work I do		0.62	
14. I am absorbed in my sport activity.			0.83
15. Time flies when I am training or competing			0.65
11. I am happy when I am engrossed in my sport activity			0.59
13. I am oblivious to everything going on around me when I train			0.5
10. I am immersed by my sport activity			0.49

Source: own work

is the strongest ($r = 0.67$). Something similar happens among the three burnout subscales, and as it was expected, significant and positive correlations were found, being the one between emotional burnout and depersonalization the strongest ($r = 0.32$). Regarding the relationship between burnout subscales and engagement, significant and negative relations were obtained, as it had been predicted; the most significant relation was the one found between dedication reduced personal fulfillment ($r = -0.45$). As for the overall score of both questionnaires, acceptable Pearson coefficients can be observed in all cases except in the depersonalization subscale. We consider the construct to be valid although this factor presented theoretical difficulties.

Reliability of the Sport Engagement Questionnaire

The reliability of the subscales of the SES was assessed using Cronbach's alpha coefficient. The results indicated that the four dimensions of the Sport Engagement Scale all had alpha coefficients that exceeded .70, and thus were considered to be reliable measures of the constructs of interest. The specific Cronbach's alpha values for each dimension, vigor ($\alpha = 0.75$), dedication ($\alpha = 0.75$), absorption ($\alpha = 0.74$) and global scale ($\alpha = 0.9$), are demonstrated in table 6 where acceptable alpha scores can be observed for the three engagement factors.

TABLE 5
Correlations between the Sport Engagement Scale and the Inventory of Sport Burnout Factors

	1	2	3	4	5	6	7	8
1. Emotional/physical exhaustion								
2. Devaluation	0.32**							
3. Reduced sense of accomplishment	0.22**	0.09						
4. Total Burnout	0.75**	0.68**	0.63**					
5. Vigor	-0.33**	0.08	-0.33**	-0.28**				
6. Absorption	-0.26**	0.09	-0.29**	-0.22**	0.54**			
7. Dedication	-0.4**	-0.03	-0.45**	-0.42**	0.67**	0.64**		
8. Total SES	-0.38**	0.05	-0.42**	-0.36**	0.86**	0.84**	0.89**	

** $p < 0.001$.

Source: own work

Discussion

The objective of this present study was to adapt the UWES to a team sports environment by studying its psychometric properties. The adapted scale has been labelled the Sport Engagement Scale (SES), which is a valid and reliable measure. The importance of this study is that on the one hand it allows professionals of the sports environment to have access to an instrument which helps them to understand the sport situation they are part of because the wellbeing of athletes, the relationship among team members, competitive obligations which are more and more demanding are clearly affecting sport performance. On the other hand, it enables researchers to understand how the characteristics of sport environment relate to psychological variables of athletes, such as optimism, resilience, decision making or burnout.

The results obtained via the exploratory factor analysis support 12 of the 15 items of the original questionnaire. The three items that are not supported by a three-factor structure are supported by means of a one-factor model. We accepted these results as the main reference in subsequent analyses and based on other studies that have advanced not only a three-factor structure but also a one-factor structure of engagement (Schaufeli, Salanova et al. 2002). We tested two models using a confirmatory factor analysis via the maximum likelihood method. The results supported the two models since both demonstrated adequate fit indices. The aforementioned are supported by prior studies carried out in a work environment. Based on the correlations analysis, we decided to adhere to the three-factor structure of engagement as its subscales (vigor, dedication and absorption) correlate positively and significantly, clearly differentiating themselves as three factors. As with a great variety of scales used in sport contexts, its use is adequate usually for different team sports. The internal consistency of the SES was also supported.

In order to assess the concurrent validity of the SES scale we correlated the SES dimensions with indicators of sport burnout. Theoretically, sport engagement and sport burnout represent

two ends of the same continuum. For this reason, we hypothesized that negative and significant correlations would be present between the SES and ISB subscales. The results supported the negative and significant relations between the SES and IBS subscales except with the depersonalization factor of sport burnout, a factor actor that demonstrated certain empirical instability. Factor validity was also tested, calculating the factor weight that each item contributed to its respective factor using a criterion of at least .50 to be considered as a significant contribution to the factor. In the majority of the cases, the results indicated significant factor weights with oscillating values of between .49 and .83. Based on the aforementioned, we can state that the Sport Engagement Scale fulfils the validity of the construct.

In conclusion, based on the results obtained in this study, we consider that the Sport Engagement Scale is an instrument that is reliable and valid for the construct that can be used with Spanish speaking team players that would allow us to study and know the relationship not only with the negative aspects that condition sports performance but also with welfare aspects. It would be very interesting to study the relationship between engagement and aspects such as perseverance, optimism, and resilience.

One limitation was that potential outcomes of engagement were not a focus of the current investigation. Future research that investigates the ability of measures derived from the SES to predict potential outcomes of engagement in sport, including athletes' satisfaction, athletes' performance, could make an important contribution to the scientific literature. Moreover, although we believe that the SES is adequate in general for all team sports, future studies could look at individual sports.

There is much work yet to do to investigate the full utility of the athletes engagement construct. The results of the current study may serve as a guide to subsequent advances in the relevant research.

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