

Original article (short paper)

Correlational study of psychological variables self-confidence and anxiety

Gloria González Campos
University of Seville

Javier Cachón Zagalaz
University of Jaen

Santiago Romero Granados
University of Seville

Abstract—The purpose of this study is to analyze the concurrent validity of the psychological variables self-confidence and anxiety among the psychological measurement instruments: Psychological Characteristics Questionnaire related to Sports Performance (CPRD); Competitive State Anxiety Inventory-2 (CSAI-2); and Sports Psychological Inventory LOEHR. For this purpose, a correlational study was conducted between the selected variables and pertinent aspects of the measurement instruments. The study has revealed that the psychological variables self-confidence and anxiety are relevant in all three instruments, although not in all of the selected items.

Keywords: correlation, concurrent validity, psychological instruments, psychological variables

Resumo—“Estudo da correlação das variáveis psicológicas autoconfiança e ansiedade.” O objetivo deste estudo é analisar a validade concorrente das variáveis psicológicas de autoconfiança e ansiedade entre os instrumentos de medição psicológica: Questionário de Características Psicológicas relacionadas ao Desempenho Esportivo (CPRD), Inventário de Ansiedade Estado Competitivo-2 (CSAI-2) e Inventário Psicológico Esportivo LOEHR. Para isso foi realizado um estudo de correlação entre os itens selecionados e coincidentes em tais instrumentos. A análise revelou que as variáveis psicológicas autoconfiança e ansiedade guardam relação nos três instrumentos, mas não em todos os itens selecionados.

Palavras-chave: correlação, validade concorrente, instrumentos psicológicos, variáveis psicológicas

Resumen—“Estudio correlacional de las variables psicológicas autoconfianza y ansiedad.” El objetivo del presente estudio es analizar la validez concorrente de las variables psicológicas autoconfianza y ansiedad entre los instrumentos de medición psicológica: Cuestionario de Características Psicológicas relacionadas con el Rendimiento Deportivo (CPRD), Competitive State Anxiety Inventory-2 (CSAI-2) e Inventario Psicológico Deportivo LOEHR. Para ello, se ha llevado a cabo un estudio correlacional entre los ítems seleccionados y coincidentes en dichos instrumentos. El estudio ha revelado que las variables psicológicas autoconfianza y ansiedad guardan relación en los tres instrumentos, aunque no en todos los ítems seleccionados.

Palabras claves: correlación, validez concorrente, instrumentos psicológicos, variables psicológicas

Introduction

There are multiple variables that influence a sportsmen performance, among which stands out the psychological variables, as coping with the competition, the attitude of the athlete or his degree to develop psychological skills. Among the latter, self-confidence, stress management, attention-concentration, emotional control or motivation, among others are other variables that stand out.

According to Galilea (1989), a good specialization in sports requires to determine which variables should be considered to succeed in that field. Today, it seems that psychological skills are those that prevail to be analyzed as participants in the athletic performance. Pazo, Saenz-Lopez and Fradua (2012)

indicate that it necessary to deepen and get referrals from the players through psychological tools to analyze the psychological skills, which make up one of the fundamental pillars of optimal development of any athletes career.

Different studies provide data on what psychological variables must be considered to assess and enhance the optimal development of sports productivity. Thus, Williams and Reilly (2000) talk about self-confidence, anxiety control, motivation and concentration with the purpose of clarifying that these variables constitute the basis for becoming an expert in the sports field.

Meanwhile, Gimeno, Buceta, and Pérez-Llantada (2007) offer a research into the analysis about the influence of psychological variables on achieving success. A part of their study

focuses on demonstrating the relevance of psychological skills training to implement athletic performance. They also clarify in this study that highly important psychological variables such as motivation, attention, stress, anxiety, self-confidence, states of mood, self-control and self-regulation, cohesion, interpersonal skills or emotional adjustment, participate in all areas involving competitive sport.

It is essential to know in detail the path young athletes walk through, from the beginning to achieve excellence in high-performance sports, for a good development of their careers (Arruza & Arribas, 2008). Additionally, it is necessary to know their psychological skills. Zarauz and Ruiz (2012) point out that in all of the operation areas involving competitive sport are intervened by psychological variables that have considerable importance, such as stress, anxiety and self-confidence (Jaenes, Peñaloza, Navarrete, & Bohorquez, 2012).

Once different influential psychological variables in sports production are identified and exposed, this study analyzes two main variables that, in many of the cases, can be considered predictive of performance: self-confidence and anxiety.

Self-confidence is a construct defined by Dosil (2004) in the sports field as the level of certainty, in terms of past experiences, that an athlete reaches in relation to his/her ability to succeed in a specific task. It is the belief that you can execute a wished behavior. There are also other definitions, such as that included in *Diccionario Oxford de Medicina y Ciencias del Deporte* by Kent (2003:504-505), that points out that athletic confidence relates to the belief or level of certainty that athletes have in their capacity to succeed in sports.

Similarly, Nicolás (2009) describes self-confidence as someone's belief in developing the necessary skills to successfully perform the required behavior and achieve a specific result. This author extrapolates the concept to the sports field and states that self-confidence usually refers to someone's perception of his/her capacity to face a particular task. Moreover, González (2010) confirms that if the athlete enables to be properly guided on the objective self-awareness of his/her possibilities and limitations, he/she will better control his/her athletic performance, and his/her realistic expectations will be conducive to a high development of self-confidence. León-Prados, Fuentes, and Calvo (2011), in a study carried out with a sample of elite and high-performance gymnasts, state that in general, the higher level of confidence athletes have, the higher level of performance they reach with respect to other athletes. They also point out that athletes use the symptoms of this ability as facilitators for the subsequent performance in competition.

As anxiety concerns, according to an adaptation of the *Diccionario de Psicología* by Saz (2000), it is an emotional state of nervous stress, intense fear. It is characterized by somatic symptoms such as trembling, restlessness, sweating, hyperventilation or palpitations, among others, as well as cognitive symptoms such as mental restlessness, hypervigilance, loss of concentration or cognitive distortions, for example. *Diccionario Oxford de Medicina y Ciencias del Deporte* by Kent (2003: 56) also defines anxiety by highlighting that it is a subjective sensation of apprehension and elevated physiological stress. Normally, a high level of anxiety reduces the

level of performance because it affects quality of attention and consequently, execution. This dictionary defines three types of anxieties that are worth mentioning: cognitive anxiety, sensed by people and referred to their personal awareness of their situation; behavioral anxiety, which affects someone's real behavior; and somatic anxiety, noticed by means of real physiological symptoms, such as increased heart rate and sweating.

Fernández-Abascal (2003:281) defines anxiety as "state of nervousness, restlessness and worry" in a general and summarized way. He also adds that a processing of threatening information that brings into operation preventive actions is triggered. As for non-clinical anxiety, as Mercado (2004) calls it, a first approach to anxiety defined as state anxiety is distinguished. According to the different authors, it is studied as a temporary anxiety that refers to an unusual emotional reaction caused by a threatening context or a stressful situation for a limited period of time (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983).

The other type of non-clinical anxiety is called trait anxiety and it is characterized by dispositional and relatively stable aspects of the individual, which reveals his/her tendency to anxiety. This dimension is explained this way by many authors (Costa & McCrae, 1985; Eysenck, 1967; Eysenck & Eysenck, 1985; Gray, 1982).

It is known that anxiety influences the performance of many athletes and this fact has let researchers go deeply into this concept with the aim of finding out and applying tools that prevent this emotion affecting the performance of different sports athletes. Navlet (2012) confirms that presently, the evaluation of competitive anxiety is approached from a multidimensional view that inevitably covers a three-pronged approach: cognitive, physiological and behavioral. Some studies indicate that the symptoms of anxiety that finally appear to be a facilitator source to face competition make reference to low levels of anxiety, probably combined with high levels of self-confidence (Lundqvist, Kentta, & Raglin, 2005; Mullen, Lane, & Hanton, 2009; O'Brien, Hanton, & Mellalieu, 2005). García-Más (2002) states that, most skilled players show more competitive anxiety and also use better coping techniques.

All these investigations allow assessing the importance of going deeply into the psychological variables self-confidence and anxiety that affect athletic performance. Thus, this particular study is framed in a more comprehensive study based on the analysis of the psychological variables that influence players of a semiprofessional football team in the Spanish League. Therefore, this research contributes to providing statistical data so as to test the existing correlation among selected items of the variables self-confidence and anxiety of psychological instruments matched in the field of sports psychology.

Method

Participants

For this research we selected a football team from 3rd division, the sample includes 25 players that make up a whole team that competes in the Group X of the Spanish soccer league organized

and regulated by the Real Spanish Football Federation (RFET). They come from towns located in different cities in Andalusia (Cádiz, Córdoba, Granada, Huelva, Sevilla and Málaga). There is also a player who comes from Uruguay. Their ages range from 17 to 24 years, with an average value of 20.9 years.

Instruments

Three psychological tools have been used to verify the existing similarities or differences in measuring the psychological variables self-confidence and anxiety: Psychological Characteristics Questionnaire related to Sports Performance (Cuestionario de Características Psicológicas relacionadas con el Rendimiento Deportivo, CPRD) by Buceta, Gimeno and Pérez-Llantada (1994), the version translated into Spanish (Jaenes, Caraculm & Pérez-Gil, 1999) of the Competitive State Anxiety Inventory-2 (CSAI-2) by Martens, Burton, Vealey, Bump and Smith (1990), and Cernuda's Spanish version (1988) of the Sports Psychological Inventory LOEHR (1982).

CPRD is a questionnaire used in Spain and abroad, for almost twenty years, conducting studies in individual sports such as tennis, athletics, swimming, judo, skiing, canoeing, karate or parachuting, among others, or collective sports such as football, basketball, handball, volleyball or hockey, for example. This is an instrument that, according to the authors, applying Cronbach's alpha coefficient and taking as a reference .70 as the minimum internal acceptable level of consistency suggested by Nunally (1978), offers a total reliability of .85.

The instrument is composed of 55 items divided into five scales: stress control, influence of performance evaluation, motivation, mental ability and team cohesion. The answers are given on a Likert-type scale going from "totally disagree" to "totally agree," including an additional answer option "I do not understand," for those cases in which the athlete does not understand the meaning of the item.

Two scales of the instrument have been selected for this study: on the one hand, the scale "stress control," whose items cover the variables self-confidence and anxiety and present, according to the authors, a reliability of .88 and, on the other hand, "the scale influence of performance evaluation," from which an item related to anxiety has been selected, and presents a reliability of .72.

The following selected items regarding self-confidence belong to the "stress control" scale: item number 8, "In most of the competitions, I am confident that I will have a good performance," item number 26, "My self-confidence is unstable," item number 32, "I have faith in myself," item number 54, "I usually trust myself even in the most difficult moments of a competition."

On one hand, the selected items related to anxiety belong to the "stress control" scale: item number 6, "I hardly ever feel so tense, so as to let it negatively influence my performance," item number 16, "Sometimes I feel very anxious while I am participating in a sport event." On the other hand, the selected item from the "influence of performance evaluation" scale is number 30, "I can control my stress efficiently."

CSAI-2 consists of 27 items organized into three scales: cognitive anxiety, somatic anxiety and self-confidence. Each scale comprises 9 items. In this case, the answers are given on a Likert-type scale from "nothing/none" to "very much."

According to the authors, after the application of Cronbach's alpha coefficient and taking also as a reference .70 as the minimum internal acceptable level of consistency proposed by Nunally (1978), it issues values between .79 and .90, as a whole.

The actual research has applied the Spanish version of CSAI-2. This was designed and finished by Jaenes *et al.* (1999) by applying the questionnaire to 234 marathon runners between 19 and 62 years. It was previously translated and edited and later submitted to experts' review, who pointed out that the instrument was completely understandable in the sports field.

CSAI-2 Spanish version was headed by Illinois Self-evaluation Questionnaire with the aim of avoiding biases in the answers of individuals in relation to anxiety. The Spanish authors applied Cronbach's alpha coefficient to each of the scales in order to check the reliability of the tool and they obtained data from .77 to .82. This instrument measures specific state anxiety in competitive sports. It has been applied for more than twenty years to a large number of athletes and players, both on individual and collective sports, such as athletics (Hammermeister & Burton, 1995), football (Hale & Whitehouse, 1998), gymnastics (Elko & Ostrow, 1991), wrestling, canoeing, triathlon, surfing and golf (Telletxea, 2007). This psychological tool has been translated into different languages, such as Spanish, French, Greek or Swedish, among others, and it had to undergo analytical tests of reliability and factorial validity, being applied to large and different samples (Lundqvist & Hassmén, 2005; Martinent, Ferrand, Guillet, & Gauthier, 2010).

CSAI-2 is constantly increasing in the new technology field and Arruza, González, Palacios, Arribas and Cecchini (2012) provide Competitive State Anxiety Inventory-2 Reduced (CSAI-2 RE) through Teskal Web application. To validate it, the authors gathered answers of 231 athletes from different sports, showing similar psychometrics properties to the original version. Finally, it is shown that CSAI-2 digital and reduced version keeps the factorial structure, which is appropriate to measure state anxiety in athletes participating in competitions.

It is recognized that creating a Web application contributes to generate a personalized monitoring as well as allows it to be efficiently applied to large samples of athletes, overcoming barriers such as space or time. Particularly, the CSAI-2 selected items for this research in relation to self-confidence belong to a "self-confidence" scale, such as item number 9, "I trust myself," item number 12, "I feel confident," item number 15, "I am confident that I can have a good performance under pressure" and item number 18, "I am sure that I do well." Item number 1, "I am worried about this competition," has been selected for the variable anxiety belonging to the "cognitive anxiety" scale, as well as items belonging to the "somatic anxiety" scale, such as: item number 2, "I feel nervous," item number 8, "My body is tense" and item number 26, "I am stiff."

Additionally, as Loehr concerns, this study has used Cernuda's Spanish version (1998). This instrument comprises 42 items grouped into seven scales: self-confidence, control of

negative energy, control of attention, control of display and images, motivational level, positive energy and control of attitudes. Each scale consists of 6 items and the answers are given on a Likert-type scale from “nearly always” to “rarely.”

Professionals in sports psychology has utilized this psychological inventory for many years in order to evaluate and describe the psychological skills an athlete has, although it is highly criticized for lacking data about his/her psychometric characteristics. It is included in the program for detecting sports talents carried out by the National Council for Sports within the Ministry of Education, Culture and Sports 9 Consejo Superior de Deportes del Ministerio de Educación, Cultura y Deporte) of the Spanish government in 2001.

Two scales of the instrument have been chosen for this research:

“Self-confidence” scale for self-confidence variable, whose items are: number 8, “I believe in myself as an athlete,” number 22, “I can perform beyond my talent and skills,” and item number 29, “I am a mentally strong competitor.”

“Control of negative energy” scale for anxiety variable, whose items are: number 2, “I get angry and frustrated along the competition,” number 9, “I am nervous during the competition,” number 16, “Errors throughout the competition make me feel and think negatively,” number 23, “My muscles tense very much along the competition” and item number 37, “I can remain calm in the competition, although matters of concern appear.”

Data analysis

To validate the concurrent validity of the three questionnaires in the variables self-confidence and anxiety, χ^2 (Chi square) statistical analysis and Cramér’s v correlation coefficient have been used, leading to a correlational study between the selected and coinciding items related to these psychological variables in the three aforementioned questionnaires.

The strength of the correlational values was explained as follows: from 0 to .25, there is a weak correlation; from .25 to .50, there is a moderate correlation; from .50 to .75, the correlation goes from moderate to good; and above .75, the correlation is excellent (Cotton, 1974).

Results

This section presents the results obtained from the correlational study conducted for this research after selecting the items coinciding in the three questionnaires used that make reference to the psychological variables self-confidence and anxiety.

Correlation of CSAI-2, CPRD and LOEHR items on the psychological variable self-confidence

Below, the selected items of the questionnaire for the correlational study of the variable self-confidence are shown (Table 1).

Table 1. CPRD, CSAI-2 and LOEHR selected items for the correlational study of self-confidence.

Questionnaire		Items
CPRD	8	“In most of the competitions, I am confident that I will have a good performance”
	26	“My self-confidence is unstable”
	32	“I have faith in myself”
	54	“I usually trust myself even in the hardest moments of a competition”
CSAI-2	9	“I trust myself”
	12	“I feel confident”
	15	“I am confident that I can have a good performance under pressure”
LOEHR	18	“I am sure that I can do well”.
	8	“I believe in myself as an athlete”
	22	“I can perform beyond my skills and talent”
	29	“I am a mentally strong competitor”

Table 2 below represents the resulting data from the correlation between the CSAI-2 and LOEHR selected items on the variable self-confidence.

Table 2. CSAI-2 and LOEHR selected items for the correlational study of self-confidence.

		CSAI-2			
LOEHR	8	11.81; .733 (.008)	6.56; .386 (.363)	13.60; .769 (.009)	13.03; .770 (.011)
	22	5.14; .342 (.525)	10.54; .489 (.104)	2.139; .216 (.710)	3.43; .280 (.487)
	29	2.68; .247 (.847)	6.42; .377 (.377)	5.37; .342 (.251)	1.31; .173 (.860)

*Values presented as χ^2 ; Cramér’s v (p). CSAI-2: Competitive State Anxiety Inventory; CSAI-2 Statement item 9 (“I trust myself”); CSAI-2 Statement item 12 (“I feel confident”); CSAI-2 Statement item 15 (“I am confident that I can have a good performance under pressure”); CSAI-2 Statement item 18 (“I am sure that I can do well”). LOEHR: LOEHR Sports Psychological Inventory; LOEHR Statement item 8 (“I believe in myself as an athlete”); LOEHR Statement item 22 (“I can perform beyond my skills and talent”); LOEHR Statement item 29 (“I am a mentally strong competitor”).

It is observed in bold, that LOEHR item 8, “I believe in myself as an athlete” significantly correlates with three CSAI-2 items: number 9, “I trust myself,” number 15, “I am confident that I can have a good performance under pressure,” and number 18, “I am sure that I can do well.” These relationships show an association coefficient that ranges from .733* to .770*, with a significance of .008*, .009* and .011, respectively. No statistical significance is appreciated in the other relationships established among the different selected items from CSAI-2 and LOEHR questionnaires, in terms of the variable self-confidence.

Table 3 contains the data obtained from the correlation of CPRD and LOEHR selected items, in terms of the variable self-confidence.

Table 3. Correlation of CPRD and LOEHR items on the variable self-confidence.

Items	CPRD			
	8	26	32	54
8	8.91; .431 (.349)	13.03; .521 (.111)	12.40; .508 (.011)	12.16; .503 (.114)
LOEHR 22	7.582; .397 (.475)	9.16; .437 (.328)	5.83; .349 (.212)	13.45; .529 (.097)
29	4.73; .314 (.785)	6.19; .359 (.626)	2.33; .220 (.675)	5.576; .341 (.695)

*Values presented as χ^2 ; Cramér's v (p). CPRD: Psychological Characteristics Questionnaire related to Sports Performance; CPRD Statement item 8 ("In most of the competitions, I have confidence that I will have a good performance"); CPRD Statement item 26 ("My self-confidence is very unstable"); CPRD Statement item 32 ("I have faith in myself"); CPRD Statement item 54 ("I usually trust myself, even in the hardest moments of a competition"). LOEHR: Sports Psychological Inventory; LOEHR Statement item 8 ("I believe in myself as an athlete"); LOEHR Statement item 22 ("I can perform beyond my skills and talent"); LOEHR Statement item 29 ("I am a mentally strong competitor").

Item number 8 in bold, "I trust myself as an athlete," significantly correlates with some other selected items from CPRD, such as item number 32, "I have faith in myself," with Cramér's v correlation coefficient of .508* and significance of $p = .011$.

However, there is no significant association regarding the variable self-confidence in the remaining relationships established among the chosen items here represented. The closest value to significance that is worth highlighting is that established between LOEHR item number 22, "I can perform beyond my skills and talent," and CPRD item number 54, "I usually trust myself, even in the hardest moments of a competition," with Cramér's $v = .529*$ and $p = .097*$.

Table 4 below shows the data obtained from the correlation of CSAI-2 and CPRD selected items regarding the variable self-confidence.

The correlational analysis reveals that no selected item in both questionnaires provide statistically significant data so as to define association criteria. Exclusively, closer values to significance can be pointed out, such as those found after matching CPRD item number 54, "I usually trust myself, even in the hardest moments of a competition," with CSAI-2 item number 9, "I trust myself," giving values such as Cramér's $v = .462*$ and $p = .294*$.

To summarize, this study carried out on the psychological variable self-confidence highlights that LOEHR item number 8, "I believe in myself as an athlete," significantly and positively correlates and keeps a high level of relation with three CSAI-2 items, number 9, "I am self-confident," number 15, "I am confident that I can have a good performance under pressure," and number 18, "I am sure that I can do well." There is also a high level association with CPRD item number 32, "I have faith in myself."

Table 4. Correlation of CSAI-2 and CPRD items on the variable self-confidence.

Items	CSAI-2			
	9	12	15	18
8	10.16; .393 (.601)	4.259; 0.254 (.894)	6.57; .378 (.583)	4.97; .336 (.761)
26	13.82; .458 (.312)	5.99; .301 (.740)	6.69; .381 (.570)	8.61; .442 (.376)
CPRD 32	6.14; .382 (.378)	3.66; .289 (.722)	2.85; .249 (.583)	2.29; .323 (.682)
54	14.10; .462 (.294)	12.22; .430 (.428)	3.37; .271 (.909)	8.25; .433 (.409)

*Values presented as χ^2 ; Cramér's v (p). CSAI-2: Competitive State Anxiety Inventory; CSAI-2 Statement item 9 ("I trust myself"); CSAI-2 Statement item 12 ("I feel confident"); CSAI-2 Statement item 15 ("I am confident that I can have a good performance under pressure"); CSAI-2 Statement item 18 ("I am sure that I can do well"). CPRD: Psychological Characteristics Questionnaire related to Sports Performance; CPRD Statement item 8 ("In most of the competitions, I have confidence that I will have a good performance"); CPRD Statement item 26 ("My self-confidence is very unstable"); CPRD Statement item 32 ("I have faith in myself"); CPRD Statement item 54 ("I usually trust myself, even in the hardest moments of a competition").

Correlation of CSAI-2, CPRD and LOEHR items on the psychological variable anxiety

Table 5 shows the selected items of each questionnaire for conducting the correlational study on the variable anxiety.

Table 5. CPRD, CSAI-2 and LOEHR selected items for the correlational study of anxiety.

Questionnaire	Nº	Item
CPRD	6	"I hardly ever feel so tense, so as to let it negatively influence my performance"
	16	"Sometimes I feel very anxious while I am participating in a sport event"
	30	"I can control my stress efficiently"
CSAI-2	1	"I am worried about this competition"
	2	"I feel nervous"
	8	"My body is stressed"
	26	"I am stiff"
LOEHR	2	"I get angry and frustrated along the competition"
	9	"I am nervous along the competition"
	16	"Errors throughout the competition make me feel and think negatively"
	23	"My muscles tense very much along the competition"
	37	"I can remain calm in the competition, although matters of concern appear"

Table 6 lists the data resulting from the correlation of CSAI-2 and LOEHR selected items on the psychological variable anxiety.

Table 6. Correlation of CSAI-2 and LOEHR items on the variable anxiety.

Items	CSAI-2			
	1	2	8	26
2	9.40; .639 (.401)	5.54; .347 (.476)	8.37; .348 (.497)	3.78; .405 (.286)
9	8.75; .356 (.460)	3.83; .409 (.699)	5.86; .292 (.753)	5.21; .476 (.157)
LOEHR 16	10.56; .391 (.307)	1.99; .208 (.920)	3.96; .240 (.914)	5.90; .507 (.117)
23	10.96; .399 (.532)	5.57; .348 (.695)	10.05; .382 (.611)	2.82; .350 (.588)
37	10.27; .386 (.328)	1.06; .152 (.983)	7.57; .331 (.578)	1.49; .255 (.684)

*Values presented as χ^2 ; Cramér's ν (p). CSAI-2: Competitive State Anxiety Inventory; CSAI-2 Statement item 1 ("I am worried about this competition"); CSAI-2 Statement item 2 ("I feel nervous"); CSAI-2 Statement item 8 ("My body is stressed"); CSAI-2 Statement item 26 ("I am stiff"). LOEHR: Sports Psychological Inventory; LOEHR Statement item 2 ("I get angry and frustrated along the competition"); LOEHR Statement item 9 ("I am nervous along the competition"); LOEHR Statement item 16 ("Errors throughout the competition make me feel and think negatively"); LOEHR Statement item 23 ("My muscles tense very much along the competition"); LOEHR Statement item 37 ("I can remain calm along the competition although matters of concern appear").

There are no statistically significant relationships among the selected items of CSAI-2 and LOEHR regarding the psychological variable anxiety. The closest result to significance represented in this table is $p = .117^*$ with Cramér's $\nu = .507^*$, corresponding to the intersection of LOEHR item number 16, "Errors throughout the competition make me feel and think negatively," with CSAI-2 item number 26, "I am stiff."

Table 7 lists the data resulting from the correlation of CPRD and LOEHR selected items in relation to the psychological variable anxiety.

Once the corresponding analysis has been carried out, the resultant data point out that LOEHR item number 2, "I get angry and frustrated along the competition," significantly correlates with CPRD item number 16, "Sometimes I feel very anxious while I am participating in a sport event," with Cramér's $\nu = .606^*$ and $p = .034^*$.

There is no significance association concerning the variable anxiety in the remaining relationships established with the selected items here represented. Basically, it is worth highlighting the only closest value to significance that is identified between the aforementioned LOEHR item number 2, "I get angry and frustrated along the competition," and CPRD item number 6, "I hardly ever feel so tense, so as to let it negatively influence my performance," with Cramér's $\nu = .767^*$ and $p = .293^*$.

Table 8 shows the data obtained from the correlation of CSAI-2 and CPRD selected items on the psychological variable anxiety.

Table 7. Correlation of CPRD and LOEHR items on the variable anxiety/

Items	CPRD		
	6	16	30
2	14.12; .767 (.293)	26.43; .606 (.034)	5.36; .273 (.802)
9	12.19; .412 (.430)	11.91; .407 (.685)	7.77; .329 (.557)
LOEHR 16	8.27; .339 (.764)	9.19; .357 (.867)	6.00; .289 (.740)
23	17.22; .424 (.371)	18.66; .544 (.544)	8.23; .338 (.766)
37	12.84; .422 (.381)	12.68; .420 (.627)	8.93; .352 (.443)

*Values presented as χ^2 ; Cramér's ν (p). CPRD: Psychological Characteristics Questionnaire related to Sports Performance; CPRD Statement item 6 ("I hardly ever feel so tense, so as to let it negatively influence my performance"); CPRD Statement item 16 ("Sometimes I feel very anxious while I am participating in a sport event"); CPRD Statement item 30 ("I can control my stress efficiently"). LOEHR: Sports Psychological Inventory; LOEHR Statement item 2 LOEHR ("I get angry and frustrated along the competition"); LOEHR Statement item 9 ("I am nervous along the competition"); LOEHR Statement item 16 ("Errors throughout the competition make me feel and think negatively"); LOEHR Statement item 23 ("My muscles tense very much along the competition"); LOEHR Statement item 37 ("I can remain calm in the competition, although matters of concern appear").

Table 8. Correlation of CSAI-2 and CPRD items on the variable anxiety.

Items	CSAI-2			
	1	2	8	26
6	21.14; .542 (.048)	8.96; .432 (.345)	11.23; .395 (.509)	1.11; .216 (.891)
CPRD 16	15.58; .465 (.410)	26.17; .739 (.04)	15.03; .457 (.449)	4.10; .414 (.534)
30	8.94; .352 (.443)	1.88; .198 (.930)	13.21; .428 (.153)	4.95; .454 (.175)

*Values presented as χ^2 ; Cramér's ν (p). CSAI-2: Competitive State Anxiety Inventory; CSAI-2 Statement item 1 ("I am worried about this competition"); CSAI-2 Statement item 2 ("I feel nervous"); CSAI-2 Statement item 8 ("My body is stressed"); CSAI-2 Statement item 26 ("I am stiff"). CPRD: Psychological Characteristics Questionnaire related to Sports Performance; CPRD Statement item 6 ("I hardly ever feel so tense, so as to let it negatively influence my performance"); CPRD Statement item 16 ("Sometimes I feel very anxious while I am participating in a sport event"); CPRD Statement item 30 ("I can control my stress efficiently").

Two statistically significant values are provided in the intersection between CSAI-2 item number 1, "I am worried about this competition," and CPRD item number 6, "I hardly ever feel so tense, so as to let it negatively influence my performance," with Cramér's $\nu = .542^*$ and $p = .048^*$, and in the association of CSAI-2 item number 2, "I feel nervous" and CPRD item number 16, "Sometimes I feel very anxious while I am participating in a sport event," with Cramér's $\nu = .739^*$ and $p = .04^*$.

Despite the absence of significant relations in the other cases, the intersection between the previously referred CSAI-2 item number 1, "I am worried about this competition," with the aforementioned CPRD item number 16, "Sometimes I feel very anxious while I am participating in a sport event," is also remarkable with Cramér's $v = .465^*$ and $p = .410^*$.

To conclude, it must be summarized that in this study conducted on the psychological variable anxiety, CPRD item number 16, "Sometimes I feel very anxious while I am participating in a sport event," positively and significantly correlates and keeps a high level relation with LOEHR item number 2, "I get angry and frustrated along the competition," as well as CSAI-2 item number 2, "I feel nervous."

Discussion

Some difficulties arose to elaborate the discussion of this study, mainly linked to the specific objective of contrasting the data related to this study with other studies' results, with the aim to corroborate or contradict them, since there are no similar previous studies on this matter. This is due to the fact that today, research studies carried out on CPRD, CSAI-2 and LOEHR psychometric and factorial aspects do not cover a concurrent validity analysis among specific items of the scales that measure the variables that coincide among them. Nevertheless, regarding the use of these questionnaires, some studies have been found out confirming the usefulness of these instruments for measuring psychological variables in athletes, such as self-confidence and anxiety, which are related to our study.

As far as CPRD concerns, it must be highlighted the analysis of CPRD psychometric characteristics conducted by Gimeno, Buceta, and Pérez-Llantada (2001) on 485 athletes, where 96 out of the total were football players. It allows verifying this assessment instrument as a valid tool to compile information about psychological skills by measuring the variables aimed to measure.

Besides, it is worth mentioning the study performed in tennis by Pérez-Llantada, Buceta, López de la Llave, Gimeno, and Ezquerro (1997) that specifically focused on the stress control scale of the psychological instrument CPRD, bearing in mind that this scale copes with the variables self-confidence and anxiety.

There is also another research study conducted by Olmedilla, García, and Martínez (2006) on a sample of 278 professional and semiprofessional footballers. The authors carried out a factorization of CPRD questionnaire, by reducing it to four factors (self-confidence, influence of the evaluation, anxiety and concentration) with only 29 items and then, they linked the self-confidence variable to the states of sports injury.

With regard to the application of CSAI-2, Rodrigo, Lusiardo, and Pereira (1990) analyzed the relationships between anxiety and self-confidence on 51 football players and they concluded that there was a moderate relation between the two types of anxiety the questionnaire measured (cognitive anxiety and somatic anxiety). They also put forward that anxiety was inversely associated with performance.

Hernández, Olmedilla, and Ortega (2008) applied this instrument to 97 judo players, out of the 500 that participated in the junior and cadet categories of the Spanish Judo Championship, with ages ranging from 13 to 16 years (14.7 as the average age). They aimed to assess these athletes' cognitive and somatic anxiety as well as their self-confidence, making a comparative study between both categories.

Recently, Jaenes, Peñaloza, Navarrete, and Bohórquez (2012) have done a research with 156 participants in triathlon competitions (just men), in order to study their levels of cognitive and somatic anxiety and self-confidence. For this purpose, they use the validated Spanish version of CSAI-2.

As the usage of LOEHR concerns, Llames (2003) studied the relationship between psychological skills and sports performance on 98 football players, with an average age of 18 years, who played at three different teams in Real Oviedo S.A.D. She used LOEHR inventory to evaluate the psychological profile of the athletes and she realized that the resultant data were very relevant for a later intervention.

Conclusions

Once the concurrent validity among the three questionnaires for the variables self-confidence and anxiety has been verified, it must be mentioned that self-confidence in LOEHR is linked to the same variable in CSAI-2 and CPRD, but not in all the selected items. Therefore, LOEHR item 8, "I believe in myself as an athlete," significantly and positively correlates, in a very high relation level, with three CSAI-2 items: number 9 "I trust myself," number 15, "I am confident that I can have a good performance under pressure," and 18, "I am sure that I can do well." In addition, it is strongly associated with CPRD item number 32, "I have faith in myself."

Similarly, after testing the concurrent validity of the variable anxiety among the three psychological instruments, it is realized that this variable in CPRD is related to the same variables in CSAI-2 and LOEHR, but not in all the selected items. Therefore, CPRD item number 16, "Sometimes I feel an intense anxiety while I am participating in a sport event," significantly and positively correlates, in a very high relation level, with LOEHR item 2, "I get angry and frustrated along the competition," and CSAI-2 item 2, "I feel nervous."

To conclude, it must be stated that the correlation of CPRD, CSAI-2 and LOEHR selected items regarding the psychological variables self-confidence and anxiety, confirm in a high and a very high level, that when measuring some items of these variables, some of them coincide, even though some others do not.

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Authors' note

Gloria González Campos (gloriagc@us.es) is affiliated with the Educational Sciences Faculty of the Universidad de Sevilla, Physical Education and Sport Department, Spain.

Javier Cachón Zagalaz (jcachon@ujaen.es) is affiliated with the Humanities Faculty and Educational Sciences of the Universidad de Jaén, Didactic of Musical Expression, Plastic and Corporal Department, Spain.

Santiago Romero Granados (sanrome@us.es) is affiliated with the Educational Sciences Faculty of the Universidad de Sevilla, Physical Education and Sport Department, Spain.

Corresponding author

Dra. Gloria González Campos
Educational Sciences Faculty of the Universidad de Sevilla
Physical Education and Sport Department, Spain
E-mail: gloriagc@us.es
Mobile phone: +34676331597

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Original article (short paper)

Predictive power of task orientation, general self-efficacy and self-determined motivation on fun and boredom

Lorena Ruiz-González

Antonio Videra

Universidad de Málaga, Málaga, Spain

Juan Antonio Moreno-Murcia

Universidad Miguel Hernández de Elche, Elche, Spain

Abstract—The aim of this study was to test the predictive power of dispositional orientations, general self-efficacy and self-determined motivation on fun and boredom in physical education classes, with a sample of 459 adolescents between 13 and 18 with a mean age of 15 years ($SD = 0.88$). The adolescents responded to four Likert scales: Perceptions of Success Questionnaire, General Self-Efficacy Scale, Sport Motivation Scale and Intrinsic Satisfaction Questionnaire in Sport. The results showed the structural regression model showed that task orientation and general self-efficacy positively predicted self-determined motivation and this in turn positively predicted more fun and less boredom in physical education classes. Consequently, the promotion of an educational task-oriented environment where learners perceive their progress and make them feel more competent, will allow them to overcome the intrinsically motivated tasks, and therefore they will have more fun. Pedagogical implications for less boredom and more fun in physical education classes are discussed.

Keywords: self-determination, self-efficacy, achievement goals, satisfaction

Resumo—“Poder preditivo da orientação para a tarefa, a autoeficácia geral e motivação autodeterminada sobre diversão e tédio.” O objetivo desse estudo foi comprovar a predição das orientações disposicionais, autoeficácia geral e a motivação autodeterminada sobre a diversão e o aborrecimento nas aulas de educação física, com uma amostra composta por 459 adolescentes de 13 a 18 anos com uma média de idade de 15 anos ($DP = 0.88$). Os adolescentes responderam a quatro escalas do tipo Likert: Questionário de Percepção do Êxito, Escala Geral da Auto-eficácia, Escala de Motivação no Esporte e Questionário de Satisfação Intrínseca no Esporte. Os resultados do modelo de regressão estrutural mostraram que a orientação para a tarefa e a autoeficácia geral prediziam positivamente a motivação autodeterminada, e esta última predizia positivamente a mais diversão e menos ao aborrecimento nas aulas de educação física. Promover um ambiente educativo orientado à tarefa, onde os discentes percebam seus progressos e que se sintam mais competentes permitirá que eles possam superar tarefas com uma motivação intrínseca, portanto, se divertirão mais. Indaga-se sobre as diferentes pedagogias para diminuir o aborrecimento em aula.

Palavras-chave: autodeterminação, autoeficácia, metas de realização, satisfação

Resumen—“Poder predictivo de la orientación tarea, la autoeficacia general y la motivación autodeterminada sobre la diversión y el aburrimiento.” El objetivo de este estudio fue comprobar el poder de predicción de las orientaciones disposicionales, la autoeficacia general y la motivación autodeterminada sobre la diversión y el aburrimiento en clases de educación física, con una muestra compuesta por 459 adolescentes de entre 13 y 18 años con una media de edad de 15 años ($DS = 0.88$). Los adolescentes contestaron a cuatro escalas tipo Likert: Cuestionario de Percepción de Éxito, Escala de Autoeficacia General, Escala de Motivación en el Deporte y Cuestionario de Satisfacción Intrínseca en el Deporte. Los resultados revelan que el modelo de regresión estructural mostró que la orientación hacia la tarea y la autoeficacia general predecían positivamente la motivación autodeterminada, y ésta a su vez, predecía positivamente una mayor diversión y un menor aburrimiento en las clases de educación física. El fomento de un entorno educativo orientado a la tarea, donde los discentes perciban sus progresos y les hagan sentir más competentes, les permitirán superar las tareas motivados intrínsecamente, y por tanto, se divertirán más. Se discuten las implicaciones pedagógicas para un menor aburrimiento.

Palabras claves: autodeterminación, autoeficacia, metas de logro, satisfacción