Psychometric properties of the Spanish version of the Referee
Self-Efficacy Scale (REFS)

Félix Guillén¹, Deborah Feltz², Todd Gilson³, & Lori Dithurbide⁴

Abstract
The purpose of the present study was to translate into Spanish and analyze the reliability and validity of the Referee Self-Efficacy Scale (REFS). The English version of the 13-item REFS, which was created by Myers, Feltz, Guillén and Dithurbide (2012), was analyzed with data obtained from a sample of 490 Spanish referees representing three different team sports. The reliability was evaluated using Cronbach’s alpha and test-retest. The validity was assessed through Confirmatory Factor Analyses and the correlations between the REFS subscales. The reliability estimated with Cronbach’s alpha was (alpha = .85) which was acceptable for the 13-item REFS as well as its subscales ranged .72 to .80. The Confirmatory Factor Analyses were performed which supported a 13-item REFS, assessing the four hypothesized dimensions of self-efficacy: game knowledge, decision-making, pressure, and communication. The overall fit of the model was good showing value of .95 for AGFI, .97 for GFI and NNFI, .98 for CFI, and .04 for RMSEA. In conclusion, this version shows good properties in terms of its dimensionality and internal consistency. Guidelines are also provided for future research on its validity as a measure of self-efficacy in a sample of Spanish officials.

Keywords: sports officials, sources of sport confidence, sport referees, exploratory structural equation modeling

Sports’ officiating has scarcely been studied by researchers (Guillén, 2003a) in spite of being so important and decisive in the world of sports. Referees need to pay attention to every aspect of the game, evaluate and judge each and every action and make the correct decisions when the time comes (Schweizer, Plessner, Kahlert, and Brand, 2011). Sports officiating is extremely challenging, referees must deal with multiple aspects of a complex set of tasks, which they must attend to simultaneously (Bar-Eli, Plessner and Raab, 2011; Guillén, 2010; Hancock, Rix-Lièvrec and Côté, 2015; Lirgg, Feltz and Merrie, 2016). The magnitude of variables referees need to be aware of could lead to mistakes, which in turn may lead to problems such as an increase in anxiety, loss of self-confidence or loss of self-efficacy, amongst others (Nicholls, Polman and Levy, 2010). Consequently, referees often abandon the profession (Hancock, Dawson and Auger, 2015; Louvet, 2011; MacMahon et al., 2015).

In the last decade, many researchers have studied self-efficacy in sport and other domains (Bandura, 2012; Feltz, Short and Sullivan, 2008), which has considerably extended the conceptual map of this construct. According to Bandura (1997), self-efficacy is defined as the strength of an individual’s conviction that he or she can successfully execute a behaviour required to achieve a certain outcome. Self-efficacy beliefs affect the quality of human functioning through cognitive, motivational, affective, and decisional processes (Bandura, 1997, p. 3). Bandura (2012) contends that if people are persuaded to believe in themselves they are more perseverant in the face of difficulties and consequently, it is this resolution that increases the chance of success. People also rely partly on their physical and emotional states in judging their self-efficacy. Efficacy beliefs are strengthened by reducing anxiety and depression, building physical strength and stamina, and correcting the misreading of physical and emotional states (Bandura and Locke, 2003). Efficacy beliefs affect whether individuals think optimistically or pessimistically, in self-enhancing or self-debilitating ways (Bandura, 2017). Therefore, self-efficacy beliefs influence how well people motivate themselves and persevere in the face of difficulties through the goals they set for themselves, their outcome expectations, and causal attributions for their successes and failures. Those who are confident in their abilities focus on the challenge and what they need to do to accomplish their task and worry less about making mistakes or the pressure of the situation.

In sport and exercise contexts, self-efficacy research is well established (Feltz et al., 2008) and it has also been widely studied as a cognitive variable related to, among others, elevated effort (Hutchinson, Sherman, Martinovic and Tenenbaum, 2008). Further self-efficacy, has shown to be a strong positive and consistent predictor of physical activity (Pan et al., 2009) and sport performance (Feltz,
Chow and Hepler, 2008; Feltz and Magyar, 2006; Gilson, Chow and Feltz, 2012; Moritz, Feltz, Fahrbach and Mack, 2000), and a negative predictor of anxiety (Cartoni et al, 2005; Haney and Long, 1995). Lent and Lopez (2002) also proposed that a high degree of confidence in one's own ability aligns with a desirable profile of outcomes within close interactions, in the form of engagement, effort, enjoyment, and personal performance.

While studies examining self-efficacy in athletes and coaches are widespread, those involving referees are scarce, despite the fact that self-confidence and self-efficacy are some of the aspects that referees worry about most (Guillén, 2003b; Guillén and Jiménez, 2001; Ede, Hwang and Feltz, 2011). Self-efficacy of referees is defined by Guillén and Feltz (2011, p. 1) "as the extent to which referees believe they have the capacity to perform successfully in their job". The self-efficacy of referees was conceptualized within the self-efficacy theory (Bandura, 1997), more precisely, self-efficacy in sport (Feltz et al., 2008). As with athletes and referees, one could expect a positive relationship between self-efficacy and performance and a negative relationship between self-efficacy and anxiety and stress.

For this reason, Guillén and Feltz (2011) presented a preliminary conceptual model of the self-efficacy of referees, which was inspired by the self-efficacy theory and the existent research on self-efficacy in sport. In this model, they proposed that highly efficacious referees should be more accurate in their decisions, more effective in their performance, more committed to their profession, receive more respect from coaches, administrators, and other officials and suffer less stress from officiating than less efficacious referees.

In their conceptual paper, Guillén and Feltz (2011) proposed six dimensions of referee self-efficacy including game knowledge (adequate knowledge of their sport and rules), strategic skills (precise interpretations of the game and rules), decision-making skills (the ability to make decisions which require speed and accuracy), psychological skills (these skills entail focus attention and concentration, remaining calm under pressure, coping with mistakes and adverse situations, and setting realistic goals), communication/control of game (the ability to communicate with those involved in the game and game situations), and physical fitness (Optimal physical condition is fundamental in most sports).

The authors also proposed four categories of sources of referee self-efficacy information based on Bandura’s (1977, 1997) proposed sources of efficacy information, the Sources of Sport Confidence Questionnaire (SSCQ; Vealey, Hayashi, Garner-Holman and Giacobbi, 1998), and input from the focus group of referees. These sources include (a) mastery experience (e.g., years of referee experience, past performance, mentored experience, and knowledge of the rules), (b) support from significant others (e.g., players’/coaches’/parents’ feedback, peer/partner feedback, evaluator’s feedback, and social comparison with other referees), (c) physical and mental preparation, and (d) partner/environment qualifications (e.g., assigned a game/match for which I feel qualified; assigned a qualified partner(s); familiar with partner(s); confidence in partner(s)’ ability; familiarity of field; weather conditions are favourable).

Starting from the initial conceptual model conducted by Guillén and Feltz (2011), Myers, Feltz, Guillén and Dithuribe (2012) subsequently developed a measurement tool, the Referee Self-Efficacy Scale (REFS), which has four factors: Game Knowledge (Three items), Decision-Making (Three items), Pressure (Three items) and Communication (Four items). The Confirmatory Factor Analysis (CFA) showed evidence of validity with satisfactory adjustment indexes and factorial structure with the model presented with the REFS. Moreover, the correlations among factors varied between .86 for Decision-Making and .91 for Pressure (Myers et al., 2012). The authors also provided favourable information about convergent and discriminant validity, as well as empirically supporting the different dimensions.

Myers et al. (2012) also found that sources of referee self-efficacy beliefs in three of the four categories proposed by Guillén and Feltz (2011) were significant predictors of at least one dimension of referee self-efficacy: years of experience and highest level refereed in the mastery experiences category, physical/mental preparation, and environmental comfort in the environment qualifications category. Years of experience and physical/mental preparation were predictive of all four dimensions of referee self-efficacy. Thus, the development of the REFS has shown to be congruent with the self-efficacy theory and the model proposed by Guillén and Feltz and provides a useful instrument to collect data from an important population in sport that has largely been ignored.

Referee self-efficacy could be studied more widely if this tool was available in more languages given that currently, the REFS is available only in English. Moreover, further research on self-efficacy of referees is necessary as this field remains unexplored.

The purpose of the present study was to translate into Spanish and analyse the psychometric properties of the Referee Self-Efficacy Scale (REFS) with a sample of referees of different sports, analysing the internal consistency and the construct validity of this scale.

**Method**

**Participants**

A sample of 490 referees, representing three different team sports, was considered in the present study. Internal consistency was determined by all 490 participants (n = 490), the value of CFA was n = 424 and test reliability was n = 66. The age of the referees varied from 18-60 (M = 30.19, SD = 9.26). Most participants were male (n = 408). The three team sports represented by the participants were basketball (n = 238), soccer (n = 158) and handball (n = 28). The levels of competitions consisted of different groups: youth (n =
130), amateur \((n = 230)\), semi-professional \((n = 51)\), and professional and/or international \((n = 13)\).

**Instruments**

The measure used was the Spanish version of the *Referee Self-Efficacy Scale* (REFS; Myers, Feltz, Guillén and Dithurbide, 2012). The purpose of this scale was to assess the perception of referee self-efficacy. A referee’s self-efficacy was defined as the extent to which a referee believes that he or she has the ability to successfully officiate a competition. The original version of this test consists of 13 items (see Appendix 1) each of which containing four dimensions: Game Knowledge, Decision-Making, Pressure and Communication. Each item was assessed using the Likert response format that contained five possible responses ranging from 1 (very low) to 5 (very high). In the present study, Cronbach’s alpha for the entire scale was .86.

**Procedure**

*Translate.* The guidelines used for the translation and adaptation of the Referee Self-Efficacy Scale (REFS) were those suggested by Muñiz, Elosúa and Hambleton (2013). The items were translated into Spanish using the process of back-translation (Brislin, 1970, 1986). In order to do so, the original REFS was first translated into Spanish by one bilingual native English speaker and then by another into English. Both of them were previously informed about the scale and the type of responses used. During this process, the aim was to remain as faithful to the original instrument’s content as possible; for this reason, three psychologists and three referees were asked to contribute feedback which was used to elaborate the final questionnaire.

*Administration.* The questionnaires were administered with the help of local referee associations. Informed consent was obtained from the referees. They then completed the Spanish REFS during a weekly meeting. It was clearly stated to participants that confidentiality of their answers would be maintained at all times. They were also offered the option to withdraw from the study at any time.

*Data Analysis*

In this research, in order to determine the internal validity of REFS measurement model(s), first, validity evidence was provided through the CFA; then, evidence was provided for partial factorial invariance by country, level of competition refereed, team gender, and sport refereed. To determine the external validity of the REFS, the correlation matrix between the dimensions of referee self-efficacy and the SSCQ dimensions was estimated. The years of referee experience and the highest level of competition refereed were also taken into consideration.

To examine the relative fit of the REFS, a confirmatory factor analysis (CFA) was run using AMOS v.20. All CFAs implemented in this study were conducted with maximum likelihood procedures using a covariance matrix. To adequately test the fit of each model, the following specific indices were analysed compared to accepted cutoff scores, as determined by previous works (Bollen, 1989; Fan, Thompson and Wang, 1999; Hoyle and Panter, 1995; Hu and Bentler, 1999; Klein, 2005; Tabachnick and Fidell, 2007): a chi-square test, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative-fit index (CFI), root mean square residuals (RMSR), root mean square error of approximation (RMSEA), and non-normed fit index (NNFI).

**Results**

The purpose of this study was to examine the psychometric properties of the Spanish version of the REFS. Specifically, four analyses were conducted: a) examination of internal consistencies, b) confirmation of the factorial structure with CFA, c) validation through test-retest reliability, and d) convergent validity with correlational patterns of subscales.

**Internal consistencies**

Before conducting a CFA, internal consistencies were assessed to determine if appropriate Cronbach’s alphas were achieved \((n = 490)\). Internal consistency coefficients in the current sample were acceptable for the 13-items \((\alpha = .85)\). Upon analysis, all subscales loaded with \(\alpha > .72\) (Table 3) further supporting the fact that statements within each subscale measured the same construct. Table 1 presents the means, standard deviations, and intercorrelations of the 13-item REFS questionnaire.
Psychometric properties of the Spanish version of the Referee Self-Efficacy Scale (REFS)

Table 1
Means, Standard Deviations, and Correlations of REFS Questionnaire Items

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>GK1</th>
<th>GK2</th>
<th>GK3</th>
<th>DM1</th>
<th>DM2</th>
<th>DM3</th>
<th>PR1</th>
<th>PR2</th>
<th>PR3</th>
<th>CM1</th>
<th>CM2</th>
<th>CM3</th>
<th>CM4</th>
</tr>
</thead>
<tbody>
<tr>
<td>GK1</td>
<td>4.19</td>
<td>.73</td>
<td>___</td>
<td>___</td>
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<td>___</td>
<td>___</td>
<td>___</td>
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</tr>
<tr>
<td>GK2</td>
<td>4.35</td>
<td>.65</td>
<td>.37**</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
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<td>___</td>
<td>___</td>
<td>___</td>
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<tr>
<td>GK3</td>
<td>4.24</td>
<td>.68</td>
<td>.37**</td>
<td>.45**</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
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<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>DM1</td>
<td>4.09</td>
<td>.73</td>
<td>.28**</td>
<td>.36**</td>
<td>.39**</td>
<td>___</td>
<td>___</td>
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<td>___</td>
<td>___</td>
<td>___</td>
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<td>___</td>
</tr>
<tr>
<td>DM2</td>
<td>4.49</td>
<td>.64</td>
<td>.31**</td>
<td>.33**</td>
<td>.38**</td>
<td>.38**</td>
<td>___</td>
<td>___</td>
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<td>___</td>
</tr>
<tr>
<td>DM3</td>
<td>4.16</td>
<td>.73</td>
<td>.40**</td>
<td>.42**</td>
<td>.46**</td>
<td>.45**</td>
<td>.43**</td>
<td>___</td>
<td>___</td>
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<td>___</td>
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<td>___</td>
</tr>
<tr>
<td>PR1</td>
<td>4.31</td>
<td>.75</td>
<td>.26**</td>
<td>.24**</td>
<td>.32**</td>
<td>.37**</td>
<td>.43**</td>
<td>.35**</td>
<td>___</td>
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<tr>
<td>PR2</td>
<td>4.35</td>
<td>.76</td>
<td>.25**</td>
<td>.23**</td>
<td>.24**</td>
<td>.34**</td>
<td>.35**</td>
<td>.33**</td>
<td>.60**</td>
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<td>___</td>
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</tr>
<tr>
<td>PR3</td>
<td>4.39</td>
<td>.74</td>
<td>.27**</td>
<td>.30**</td>
<td>.33**</td>
<td>.41**</td>
<td>.48**</td>
<td>.40**</td>
<td>.64**</td>
<td>.57**</td>
<td>___</td>
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<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>CM1</td>
<td>3.91</td>
<td>.81</td>
<td>.28**</td>
<td>.27**</td>
<td>.19**</td>
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<td>.26**</td>
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</tr>
<tr>
<td>CM2</td>
<td>4.24</td>
<td>.72</td>
<td>.32**</td>
<td>.21**</td>
<td>.29**</td>
<td>.17**</td>
<td>.22**</td>
<td>.31**</td>
<td>.20**</td>
<td>.22**</td>
<td>.27**</td>
<td>.34**</td>
<td>___</td>
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<td>___</td>
</tr>
<tr>
<td>CM3</td>
<td>4.13</td>
<td>.77</td>
<td>.37**</td>
<td>.17**</td>
<td>.27**</td>
<td>.26**</td>
<td>.26**</td>
<td>.32**</td>
<td>.25**</td>
<td>.17**</td>
<td>.28**</td>
<td>.51**</td>
<td>.44**</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>CM4</td>
<td>4.33</td>
<td>.70</td>
<td>.27**</td>
<td>.25**</td>
<td>.25**</td>
<td>.19**</td>
<td>.33**</td>
<td>.35**</td>
<td>.19**</td>
<td>.15**</td>
<td>.21**</td>
<td>.32**</td>
<td>.31**</td>
<td>.37**</td>
<td>___</td>
</tr>
</tbody>
</table>

Confirmatory Factorial Analysis

A CFA was first conducted using a simple structure with four factors as a foundation. In this model, individual questionnaire items were hypothesized to only load to their appropriate factor (i.e., GK1, GK2, and GK3 only load to the factor of Game Knowledge). Results showed (Table 2) that goodness of fit indices reached or exceeded appropriate levels, with the exception that a chi-square test was significant. However, it was also noted that a non-significant chi-square test was significant. Noting that a non-significant chi-square test is rarely achieved with large samples (Bollen and Long, 1993), in accordance with cutoff criteria and in agreement with Hu and Bentler (1999), there seems to be a good compromise between the target model and the observed data. As shown in table 2, the values obtained are favorable. The results prove to be favorable especially when the absolute values for x²/df statistics are below 2; RMSEA values are close to or below 06; SRMR values are close to or below 08; and GFI values are greater than 95. In regards to Incremental Fit Indices, CFI and NNFI values are close to or greater than 95. Finally, Parsimony Fit Indices, specifically AGFI values, are close to or greater than 95.

An additional CFA was then run using the pathways of the previous accepted version of the REFS, validated by Myers et al. (2012).

Table 2
Summary of Fit Statistics for REFS models

<table>
<thead>
<tr>
<th>Model</th>
<th>χ² (df)</th>
<th>GFI</th>
<th>AGFI</th>
<th>CFI</th>
<th>RMR</th>
<th>RMSEA</th>
<th>NNFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple Structure REFS</td>
<td>100.74** (59)</td>
<td>.97</td>
<td>.95</td>
<td>.98</td>
<td>.02</td>
<td>.04</td>
<td>.97</td>
</tr>
<tr>
<td>REFS (Myers et al., 2012)</td>
<td>62.47 (50)</td>
<td>.98</td>
<td>.96</td>
<td>.99</td>
<td>.01</td>
<td>.02</td>
<td>.99</td>
</tr>
</tbody>
</table>

Note. GFI = Goodness of Fit Index, AGFI = Adjusted Goodness of Fit Index, CFI = Comparative Fit Index, RMR = Root Mean Square, RMSEA = Root Mean Square Error of Approximation, NNFI = Non Normed Fit Index.

**p < .01

Figure 1 highlights the pathways in this four-factor model. When examining goodness of fit indices of this model compared to the simple structure model (see Table 3), results clearly highlight how the latter model achieved robust values. In addition, an improvement was noted for each specific index, including the achievement of a non-significant chi-square value. Finally, Figure 1 displays the present factor loadings for the previously validated version of the REFS.

Test-retest reliability

The next step in the examination of the psychometric properties of the REFS was to analyse the test-retest reliability. A total of 66 participants completed the REFS questionnaire two weeks after initial participation in this study.
Descriptive measures revealed that this subsample had a mean age of 21.9 years ($SD = 6.4$), the distribution of years of experience was well represented from a low of one year to a high of 26 years, and the majority of referees were employed at the youth level (56.1%). Specific results from the test-retest analysis indicated that the REFS showed an adequate level of stability ($r = .87, p < .001$) and can be utilized to assess referee self-efficacy over time.

Convergent validity
As a final validation procedure, convergent validity of the REFS was also assessed by studying the specific correlational patterns of REFS subscales (i.e., game knowledge, decision making, pressure, and communication). Table 3 highlights this information and shows that all subscales were significantly alike, further supporting the fact that the parameters conceptualized to be related to each other actually were. In particular, all subscales achieved correlations significant at the $p < .01$ level, which is not surprising based on the previous conceptual work of referee self-efficacy by Guillén and Feltz (2011) and the previous psychometric analysis conducted by Myers et al. (2012). Overall, results of this study support the usage of the Spanish version of the REFS as a psychometrically sound instrument to assess perception of confidence amongst this unique group of sport participants.

Table 3
Means, Standard Deviations, reliability, and Correlations of REFS Subscales

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>$\alpha$</th>
<th>GK</th>
<th>DM</th>
<th>PR</th>
<th>CM</th>
</tr>
</thead>
<tbody>
<tr>
<td>GK</td>
<td>4.26</td>
<td>.53</td>
<td>.72</td>
<td>___</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>DM</td>
<td>4.25</td>
<td>.54</td>
<td>.73</td>
<td>.61**</td>
<td>___</td>
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<td>___</td>
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<tr>
<td>PR</td>
<td>4.35</td>
<td>.64</td>
<td>.80</td>
<td>.41**</td>
<td>.56**</td>
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<tr>
<td>CM</td>
<td>4.15</td>
<td>.55</td>
<td>.75</td>
<td>.46**</td>
<td>.46**</td>
<td>.34**</td>
<td>___</td>
</tr>
</tbody>
</table>

Note. GK = Game Knowledge, DM = Decision Making, PR = Pressure, CM = Communication.

**$p < .01$**

Discussion
The aim of this study was to (a) test the factor structure of the Spanish REFS by verifying the structure obtained from a previous study (Myers et al., 2012) on a different sample from the original; and (b) test the factor structure on a sample of referees from different sports, thereby analysing the internal consistency and construct validity of this scale. In translating this scale all of the items contained in the original version were also included in the final version.

According to the first source, the results of the CFA showed that the data gathered using the Spanish REFS fits a similar pattern to the original questionnaire. After applying the CFA procedure, no further modifications were made to the previous model as it was well adjusted (Byrne, 2010; Hair, Black, Rabin and Anderson, 2014) and it was producing adjustment coefficients consistent to those found in the original sample by Myers et al. (2012). The results indicate a good model-to-data fit, corroborating the scale’s four-factor model; it also coincides with data obtai-
The highest value was found between the factors "Game knowledge" and "Decision making," with slightly lower values than those referenced by Myers et al. (2012) in the original version. The correlations between the four factors of the scale were analyzed. The results indicated positive and relevant relationships between these and also the items of each dimension. Specifically, the analysis of the correlations between the four dimensions of the scale indicate positive and relevant relationships between them with slightly lower values than those obtained by Myer et al. (2012).

The correlations between factors were slightly lower than those referenced by Myers et al. (2012) in the original questionnaire. The highest value was found between the dimensions "Game knowledge" and "Decision making." These results make it possible for researchers to use a Spanish version of the REFS with psychometric properties similar to those observed in the sample from the original study.

In conclusion, these results showed that the Spanish version can be considered a preliminary adaptation of the original version of the scale, and these results also justify its use for assessing the self-efficacy of referees.

Theoretical, technical and practical implications
This study serves to advance the knowledge and understanding of self-efficacy during the refereeing process in sports. This is the first study of the factorial structure of REFS in Spain and it confirms the factor structure of this measure of self-efficacy. Additionally, from a practical point of view, the results suggest that the REFS questionnaire can also be used for referees possessing different levels of experience and/or from different categories, or equally for different types of team sports.

Limitations and future research
The primary limitation in this study concerns the sample selection. The study sample was limited only to referees officiating a handful of team sports. In order to best represent the officiating population of Spain, a wider selection of officiated sports, both team and individual could have been included. Consequently, future research should consider applying this version to other team sports and to behaviour in individual sports.

In addition, the great majority of the sample included male referees who officiated mostly male sports. Although this may be representative of the population, and there are few women referees, future studies should also attempt to study the effects of gender on referee self-efficacy along with its correlates.

Future research could study the relationship with other positive traits of personality such as optimism, perseverance, resilience, etc. Another consideration would be to carry out experimental studies to achieve a better understanding of how self-efficacy affects the quality of refereeing.

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Propiedades psicométricas de la versión española de la Referee Self-Efficacy Scale (REFS)
Resumen
El propósito del presente estudio era traducir al español y analizar la fiabilidad y validez de la Referee Self-Efficacy Scale (REFS). La versión inglesa de la REFS con 13 ítems, creada por Myers, Feltz, Guillén y Dithurbide (2012), fue analizada con datos procedentes de una muestra de 490 árbitros españoles representantes de tres diferentes deportes de equipo. La fiabilidad fue evaluada usando el alfa de Cronbach y el test-retest. La validez fue evaluada a través un Análisis Factorial Confirmatorio y las correlaciones entre las subescalas REFS. La fiabilidad estimada con el alfa de Cronbach era (α = .85) siendo aceptable para los 13 ítems de la REFS, así como para sus subescalas, variando desde .72 a .80. El Análisis Factorial Confirmatorio ejecutado respaldó una REFS de 13 ítems, evaluando las cuatro dimensiones de autoeficacia hipotetizadas: conocimiento del juego, toma de decisión, presión y comunicación. El ajuste general del modelo fue bueno mostrando un valor de .95 para AGFI, .97 para GFI y NNFI, .98 para CFI, y .04 para RMSEA. En conclusión, esta versión muestra bue-
nas propriedades em termos de sua dimensionalidade e consistência interna. Também se proporcionam pautas para futuras investigações por sua validade como medida de autoeficácia em uma muestra de árbitros espanhóis.

Palavras-chave: árbitros, fuentes de confianza deportiva, modelos exploratorios de ecuaciones estructurais

Propriedades psicométricas da versão espanhola da Referee Self-Efficacy Scale (REFS)

Resumo
O propósito do presente estudo foi traduzir para espanhol e analisar a fiabilidade e validade da Referee Self-Efficacy Scale (REFS). A versão inglesa da REFS com 13 itens, elaborada por Myers, Feltz, Guillén y Dithurbide (2012), foi analisada com dados procedentes de uma amostra de 490 árbitros espanhóis representantes de três modalidades coletivas distintas. A fiabilidade foi avaliada através do alfa de Cronbach e do test-retest. A validade foi avaliada através da Análise Fatorial Confirmatória e das correlações entre as subescalas da REFS. A fiabilidade foi estimada com o alfa de Cronbach (α = .85) sendo aceitável para os 13 itens da REFS, assim como para as suas subescalas, variando entre .72 e .80. A Análise Fatorial Confirmatória elaborada demonstrou uma REFS de 13 itens, avaliando as quatro dimensões de autoeficácia: conhecimento do jogo, tomada de decisão, pressão e comunicação. O ajustamento global do modelo foi bom mostrando um valor de .95 para AGFI, .97 para GFI e NNFI, .98 para CFI, e .04 para RMSEA. Em conclusão, esta versão demonstra boas propriedades em termos da sua dimensionalidade e consistência interna. Também foram delineadas linhas orientadoras para futuras investigações pela validade como medida de autoeficácia numa amostra de árbitros espanhóis.

Palavras-chave: árbitros, fontes de confiança desportiva, modelos exploratórios de equações estruturais

References


Psychometric properties of the Spanish version of the Referee Self-Efficacy Scale (REFS)


Escala de autoeficacia para árbitros (REFS)

La confianza de los árbitros hace referencia a la medida en que los árbitros creen que son capaces de llevar a cabo su trabajo de forma eficaz.

Reflexiona sobre tu nivel de autoconfianza cuando estás arbitlando. Responde, de manera sincera, a las preguntas que aparecen a continuación a partir de la confianza que sientes al arbitrar. No hay respuestas correctas. Haz un círculo alrededor del número que mejor se corresponda con tu sensación de autoeficacia.

Cuando desempeñas tu labor de árbitro, qué confianza tienes en tu capacidad para

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<tr>
<th>Baja</th>
<th>Media</th>
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<tr>
<td>1</td>
<td>2</td>
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<td>4</td>
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<thead>
<tr>
<th>GK 1. Understand the basic strategy of the game</th>
<th>1 2 3 4 5</th>
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<tr>
<td>GK 2. Understand all the rules of your sport</td>
<td>1 2 3 4 5</td>
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<tr>
<td>GK 3. Understand proper officiating mechanics</td>
<td>1 2 3 4 5</td>
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<td>DM1. Make critical decisions during competition</td>
<td>1 2 3 4 5</td>
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<tr>
<td>DM2. Be firm in your decisions</td>
<td>1 2 3 4 5</td>
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<tr>
<td>DM3. Make quick decisions</td>
<td>1 2 3 4 5</td>
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<tr>
<td>PR 1. Uninfluenced by pressure from players</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>PR 2. Uninfluenced by pressure from spectators</td>
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<tr>
<td>PR 3. Uninfluenced by pressure from coaches</td>
<td>1 2 3 4 5</td>
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<td>CM1. Communicate effectively with coaches</td>
<td>1 2 3 4 5</td>
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<tr>
<td>CM2. Communicate effectively with other referees</td>
<td>1 2 3 4 5</td>
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<tr>
<td>CM3. Communicate effectively with players</td>
<td>1 2 3 4 5</td>
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<td>CM4. Communicate effectively with auxiliary game personnel</td>
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<td>CM5. Communicate effectively with the personal auxiliary</td>
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