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REDUCED SPANISH ADAPTATION OF THE BEHAVIORAL REGULATION IN SPORT QUESTIONNAIRE

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Abstract

The theory of self-determination is one of the models explaining human motivation. The style of behavioral regulation is one of the key concepts of this theory, and the Behavioral Regulation in Sport Questionnaire (BRSQ) is the most widely used tool for measuring this in the context of sport. The goal of this research was to draw up a reduced adaptation of the Spanish version of the BRSQ, to allow faster application, an important factor considering the characteristics of the sporting context. The study involved a sample of 426 young Spanish sportspeople, of both sexes, who took part in various individual and collective sports. We applied the Spanish version of the BRSQ to the participants. This uses 24 items to measure six styles of behavioral regulation ordered according to the degree of self-determination: amotivation, external/extrinsic regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic motivation/regulation. A reduced version containing 12 items was obtained after a factorial analysis that enabled the selection of the items with higher factorial loads. Next, the model was submitted to another, confirmatory factorial analysis to contrast this adjustment. The indices obtained permitted us to conclude that the reduced version reproduces the structure of the original version, producing satisfactory reliability indices. In summary, the 12-item version of the BRSQ developed is a valid and reliable measurement of the styles of behavioral regulation in the context of sport, and it may save considerable time when applied in the future.

Keywords: Behavioral regulation, BRSQ, extrinsic motivation, intrinsic motivation, psychometrics.

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1. Introduction

The increased interest in the field of motivation has led to a proliferation of studies on establishing motivational profiles in different fields, including sport (Balaguer, Castillo, & Duda, 2008; Moreno, Cano, González-Cutre, & Ruiz, 2008; Almagro, Sáenz-López, & Moreno-Murcia, 2012), all based on self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000).

Self-determination theory is an explanatory model of human motivation that examines to what extent behavior is volitional or self-determined. In cases where the behavior is voluntary, involvement and well-being are favored, whereas if the behavior is controlled by the environment, some unrest develops (Ryan & Deci, 2000). In addition, self-determination theory distinguishes between autonomous and controlled motivation, considering the environment itself to be one of the most important aspects in a person's autonomous functioning. In other words, they act in a volitional way and there is the perception of a possible associated choice. Despite both being intentional in character, the processes that regulate them are different (Ryan & Deci, 2000). The main concept in this theory is intrinsic (autonomous/self-determined) motivation. Therefore, when sportspeople present this type of motivation, they participate in their sport due to feelings relating to fun, satisfaction and/or interest in their activity (Deci & Ryan, 1985). In contrast, those sportspeople who display extrinsic motivation, do their sport because of the possible consequences associated with it. Finally, it has been found that certain sportspeople present no type of motivation whatsoever, neither intrinsic nor extrinsic, and demonstrate their nonintention of participating (Ryan & Deci, 2000). Thus, three types of regulation are already established: intrinsic, external/extrinsic, and amotivation, respectively. It is important to emphasize that this theory also involves diverse types of extrinsic motivation; these vary based on the autonomy experienced in each. Based on the area of sport, there are three different types: external, introjected, and identified regulation. External regulation refers to that behavior controlled by external sources. On the other hand, introjected regulation is conduct that begins to become interiorized. Finally, identified regulation refers to that behavior considered important, where the conduct is internalized, regulated, and self-determined. Later, a fourth element appears in this continuum of self-determination: integrated regulation. This refers to evaluated and considered behavior undertaken freely, with the behavior occurring according to the person's values and/or needs. Although, at first, this last factor was not included in the questionnaires, it received great empirical support in the five-factor model compared with other alternatives. However, in addition, it has recently been shown its effectiveness in the sport context in the six-factor model (González-Cutre, Sicilia, & Fernández, 2010).

To measure the motivation of the sportspeople from the SDT perspective, two different questionnaires have been developed. On the one hand, is the "Échelle de Motivation dans les Sportif" (EMS) created by Brière, Vallerand, Blais, & Pelletier (1995). This is composed of a total of 28 items and 7 subscales related to the different types of motivation and amotivation: internal motivation (knowledge, stimulation, and execution); external motivation (identified, introjected, and external regulation); and amotivation. Subsequently this questionnaire was translated into English by Pelletier et al., (1995), under the name: Sports Motivation Scale, and was one of the most widely used at the time of evaluating motivation in the field of sport. This questionnaire has also been adapted into Spanish (Balaguer, Castillo, & Duda, 2007; Núñez, Martín-Albo, & Navarro, 2007), as well as other languages.

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Despite the satisfactory validation and reliability results for this scale (Martín-Albo, Núñez, Navarro-Izquierdo, & González, 2006), the tool has been questioned due, in part, to the fact it contains only five of the six types of behavioral regulation proposed by the theory (Mallett, Kawabata, Newcombe, Otero-Forero, & Jackson, 2007).

To solve this problem, Lonsdale, Hodge, & Rose (2008), developed the Behavioral Regulation in Sport Questionnaire (BRSQ). There are many diverse studies evaluating its use for measuring the style of behavioral regulation based on SDT. Its simplest version consists of six different subscales with a total of four items in each. These measure the various types of motivation (intrinsic motivation, external, introjected, identified and integrated regulation), as well as amotivation. This questionnaire was subsequently adapted and translated into several languages, including Spanish (Moreno, Marzo, Martínez, & Conte, 2011; Viladrich, Torregrosa, & Cruz, 2011). Here it is important to note the importance of developing reduced versions of measurement tools. Indeed, the great majority of tools are too long and tedious when it comes to filling them out, making them difficult to apply. This is due to the fact that they are very tiring for the participants and demand a large amount of time, not only for the people taking them, but also for the person administering them. Therefore, having reduced versions of measurement tools that show similar psychometric properties to the originals is extremely beneficial for both researchers and practitioners. These reduced tools, which are quick to complete and that have simple response formats, are particularly useful in the context of sport, which is not designed for applying this kind of tool. In addition, the less time invested in doing the questionnaire, the greater the probabilities of the sportspeople maintaining the necessary motivation and concentration.

The aim of this study was to develop a shorter, reduced version of the Behavioral Regulation in Sport Questionnaire (BRSQ), originally drawn up by Lonsdale, Hodge, & Rose (2008) and adapted to Spanish by Viladrich et al. (2011), to make it easier to apply for professionals and researchers in the field of sport.

2. Research Methods

2.1. Participants

The sample comprised a total of 426 sportspeople with an average age of 17.89 years (SD = 3.58), of which 50.7% were men and 49.3% women. All the participants took part in individual or team sports with a federal license, competing at the local (10.3%), provincial (26.5%), autonomous community (36.9%), and international or national (26.3%) levels. They all participated voluntarily in the study.

2.2. Tools

We used the Spanish version of the Behavioral Regulation in Sport Questionnaire (BRSQ; Lonsdale, Hodge, & Rose, 2008) developed by Viladrich et al. (2011). This contains 24 items, four of which measure amotivation, four external regulation, four introjected regulation, four identified regulation, four integrated regulation, and finally, four intrinsic motivation. The models global adjustment indices, individual parameter estimates, and consistency measurements were generally satisfactory. The answers to the items were given using a Likert-type scale from 1 (completely false) to 7 (completely true).

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2.3. Procedure

Once authorized by the Ethics Committee, the researchers contacted the coaches of the sportspeople who were to make up the sample. These athletes were then informed of the characteristics of the study and their informed consent was requested. Next, a date and time when the questionnaire could be given was agreed with each participant. This took place in the changing rooms of the regular training facilities, just before the start of a training session. The instructions given were the same for all the sportspeople (standardized instructions) and confidentiality and anonymity were guaranteed with regard to the answers.

2.4. Data analysis

Firstly, an exploratory analysis of the data was carried out to detect any possible lost or out-of-range values. Next, a confirmatory factorial analysis (CFA) was run on the Spanish version of the BRSQ measurement model and the two items with the highest factorial loads in each factor were selected, reducing the questionnaire to 12 items (2 items per factor). A further AFC was run on the reduced version and the Pearson correlation was calculated for the respective factors in the 24-item and 12-item versions. Finally, the internal consistency of the two versions of the BRSQ was analyzed (24 items and 12 items).

3. Results

3.1. Confirmatory factorial analysis

Firstly, a confirmatory factorial analysis was run on the Spanish version of the BRSQ measurement model (Viladrich et al., 2011), which comprises a total of 24 items grouped into six factors, with four items per factor. Next, a new, simpler measurement model (Graphic 01) was defined with two items per factor, selected due to having the highest factor loads. For the amotivation factor items 13 and 21 were chosen, with respective factor loads of 0.84 and 0.80; for external regulation 14 and 23, with 0.79 and 0.82, respectively; for introjected regulation 4 and 18, with 0.76 and 0.76, respectively; for identified regulation 9 and 20, with 0.70 and 0.74, respectively; for integrated regulation 2 and 3, with 0.85 and 0.83, respectively; and for intrinsic motivation 1 and 16, with 0.80 and 0.81, respectively.

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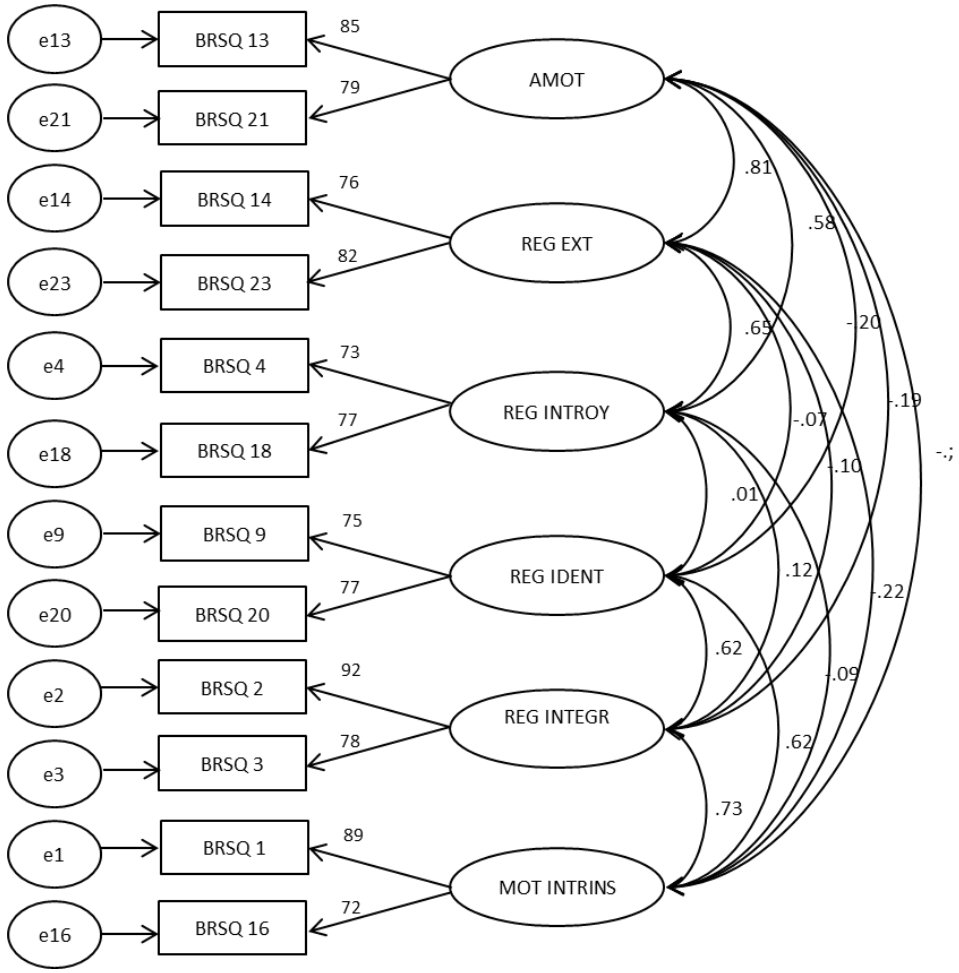

Figure 01. Measurement model, reduced version of the BRSQ

The global adjustment indices of the reduced model, with only 12 items (2 per factor), were very satisfactory: χ^2 (39) = 102.08 (p <0.001), GFI = 0.96, TLI = 0.95, CFI = 0.97, RMSEA = 0.062 (IC 90%, 0.04: 0.07), SRMR = 0.03.

3.2. Pearson Correlations

Table 01 shows the Pearson correlations between the factors in the full version (24 items) and reduced version (12 items) for each of the BRSQ factors and the total. They are all very high and statistically significant (p <0.001), with values oscillating between 0.85 for integrated regulation and 0.95 for the total.

Table 01. Pearson correlations between the full and reduced versions of the BRSQ

BRSQ	Pearson correlations
Amotivation	0.93
External regulation	0.94
Introjected regulation	0.94
Identified regulation	0.87
Integrated regulation	0.85
Intrinsic regulation	0.94
Total	0.95

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3.3. Internal consistency

Finally, Table 02 shows the Cronbach's alpha coefficients for each of the factors and the totals of the 24-item and 12-item versions, respectively. It can be seen that in both versions all the coefficients are located over the threshold of 0.70, and in all cases the values are slightly higher in the 24-item version, with the exception of the integrated regulation factor where the values are reversed, being lower in the 24-item version (0.72) compared with the 12-item version (0.83). This is due to the poor performance of item 24, which has a correlation with the total of the factors of 0.32 and the alpha value, if the item is eliminated, reaches 0.84.

Table 02. Cronbach's alpha coefficients for the full and reduced versions of the BRSQ

BRSQ	Full version (24 items)	Reduced version (24 items)
Amotivation	0.85	0.81
External regulation	0.85	0.77
Introjected regulation	0.81	0.72
Identified regulation	0.77	0.72
Integrated regulation	0.72	0.83
Intrinsic regulation	0.84	0.78
Total	0.84	0.71

4. Discusion and conclusion

The main goal of this research was to develop a reduced adaptation of the Spanish version of the BRSQ drawn up by Viladrich et al. (2011) that enables faster application in the field of sport.

After carrying out a confirmatory factorial analysis of the model proposed by Viladrich et al. (2011), comprising a total of 24 items grouped into six factors, with four items per factor, the results obtained indicate that the factorial structure of the original Spanish version is reproduced in the reduced 12-item version (two for each of the factors), with good indices for the global adjustment of the model. If these indices are compared with those obtained for the original Spanish version, or those from Lonsdale et al. (2008), we can see that the values are, in fact, better. Cronbach's alpha values have also been obtained, all of which are above the threshold of 0.70, showing the reduced version has satisfactory internal consistency. As we have seen, in one of the factors (integrated regulation) the Cronbach's alpha is even higher in the reduced version than in the full version. This could be due to inadequate performance of one of its items, since if we eliminate this we increase the Cronbach's alpha value. The high Pearson correlation coefficient values between the respective factors in the full and reduced versions of the BRSQ also offer evidence of the validity of this latter version, enabling similar conclusions to be reached as with the more extensive version.

After the process of analysis that we have carried out, we can conclude that the reduced version of the BRSQ presents adequate psychometric properties in relation to its validity and reliability, allowing it to be applied in the context of sport, making it possible to measure the motivational regulatory profiles of sportspeople, without wasting their time when answering the questionnaires. Additionally, this version will make it possible to undertake more detailed studies on motivational profiles, relating them to other variables, and allowing several questionnaires to be given in a single session of only a few minutes long.

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The increasing interest in the field of motivation has led, in recent years, to new studies where this questionnaire is related to various psychological variables. These include: the reasons adolescents participate in sport (Tsitskari, Vernadakis, Foridou, & Bebetsos, 2015); anxiety (García-Mas et al., 2015; Román, Batista, López, Muñoz, & Castuera, 2015); empowerment (Castillo, López-Walle, Tomás, & Balaguer, 2017) and even emotional intelligence (de Benito & Luján, 2013). In any case, and in accordance with the results described, it is necessary to emphasize that all work undertaken up to this point leads us to follow this line of study.

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