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## Confirmatory factor analysis and psychometric properties of the Spanish version of the Multidimensional Body-Self Relations Questionnaire-Appearance Scales



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#### ABSTRACT

The Multidimensional Body-Self Relations Questionnaire (MBSRQ) is the most comprehensive instrument to assess body image. The MBSRQ-Appearance Scales (MBSRQ-AS) is a reduced version that has been validated in other languages. The main aim of the present study was to confirm the factor structure of the Spanish version of the MBSRQ-AS and analyze its psychometric properties in 1041 nonclinical individuals. Confirmatory factor analysis showed excellent goodness of fit indices for the five-factor structure (Appearance Evaluation, Appearance Orientation, Body Areas Satisfaction, Overweight Preoccupation, and Self-Classified Weight). Factors possessed adequate scale score reliability indices. Some of the factors showed significant associations with the Eating Attitudes Test. Significant differences were found between boys/men and girls/women, and among age groups. The Spanish version of the MBSRQ-AS is a valid instrument for use in nonclinical population settings in people from 15 to 46 years old.

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#### Introduction

Body image refers to the multifaceted psychological experience of embodiment, which includes perceptions, beliefs, feelings, and behaviors related to one's own body, particularly but not exclusively one's physical appearance (Cash, 2004). Numerous studies have revealed that both dissatisfaction with one's body and body image disturbance are associated with a number of problems, such as poorer social functioning, more anxiety in social situations or avoidance of anxiety-producing situations (Davison & McCabe, 2006), poorer sexual functioning (Cash, Maikkula, & Yamamiya, 2004), greater likelihood of becoming overweight (Haines, Neumark-Sztainer, Wall, & Story, 2007), chronic use of appearance and performance enhancing drugs (Hildebrandt, Alfano, & Langenbucher, 2007), and the use of cosmetic surgery (Sarwer & Crerand, 2004). Body dissatisfaction is also associated with having a lack of control over eating, adopting restrictive diets, and demonstrating bulimic symptomatology (Stice & Shaw, 2002). In fact, body image disturbance is one of the most prominent clinical characteristics of eating disorders (Garner, 2002; Nye & Cash, 2006; Schwartz & Brownell, 2004; Watson, Raykos, Street, Fursland, & Nathan, 2011), and one of the most relevant prognostic factors in bulimia nervosa (Grilo et al., 2009; Johnson & Wardle, 2005) and anorexia nervosa (Farrell, Lee, & Shafran, 2005; Hrabosky et al., 2009). Moreover, persistence of body image dissatisfaction is associated with eating disorder relapse (Cash & Deagle, 1997; Marco, Perpiñá, & Botella, 2013a, 2013b).

The most important limitation when evaluating body image is that the majority of the self-report measures have not been developed from a multidimensional view, and they do not capture the complexity of this construct, including only a single dimension of body image. One of the most comprehensive instruments is the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash, & Mikulka, 1990; Cash, 2000), which was created to evaluate the self-attitudinal aspects of the body image construct. The original version of this instrument was a 294-item self-report instrument called the Body-Self Relations Questionnaire (BSRQ). Subsequently, the number of items in the original version was reduced on the basis of rational/conceptual and psychometric criteria. A 54-item version was used in a 1985 national USA survey in

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Psychology Today magazine (findings reported by Cash, Winstead, and Janda in the magazine in 1986). The conceptual framework for the instrument defined body image attitudes as reflecting two psychological dimensions, evaluation and orientation or investment, in relation to each of three somatic domains—appearance, health, and fitness. The factor analysis of the BSRQ by Brown et al. (1990) used the same national survey database and produced a structure very similar to the conceptual framework. The BSRQ factor scales are Appearance Evaluation, Appearance Orientation, Fitness Evaluation, Fitness Orientation, Health Evaluation, Health Orientation, and Illness Orientation (Cash, 2000). Subsequently, three additional appearance-related scales were included with the factor scales: the Body Areas Satisfaction Scale, the Overweight Preoccupation Scale, and the Self-Classified Weight scale. The BSRQ plus these additional scales constituted the 69-item, 10-scale assessment, renamed as the MBSRO.

The MBSRQ-Appearance Scales (MBSRQ-AS) is the 34-item version consisting of only the five appearance-related scales (described in further detail in the Measures section). This version is recommended when the objective is to evaluate appearance-focused body image, and there is no interest in fitness or health scales. Both the MBSRQ and MBSRQ-AS have been used in a large number of studies. They have shown adequate psychometric properties in nonclinical samples, students (Haugen, Johansen, & Ommundsen, 2014), people with eating disorders (Costarelli, Antonopoulou, & Mavrovounioti, 2011; Kelly et al., 2012), plastic surgery patients (Botella, Ribas, & Ruiz, 2009), and people with body dysmorphic disorder (Hrabosky et al., 2009), people with obesity, outcome studies of body image treatment, people who engage in physical exercise (Cash, 2000) or have medical conditions (Hatipoglu et al., 2014).

The 69-item version of the MBSRQ has been translated into Spanish and validated in the Spanish population on two occasions with different results. Raich, Torras, and Figueras (1996) conducted an exploratory factor analysis of the instrument with 214 college students. They obtained six factors with adequate psychometric properties, which the authors labeled: (a) Interest in Sports and Physical Skills, (b) Concern about Body Image, (c) Evaluation of Body Image, (d) Hypochondriac Signs, (e) Health Evaluation, and (f) Health Concerns. More recently, Botella et al. (2009) conducted an exploratory factor analysis of the MBSRQ with 131 students and 130 patients undergoing cosmetic surgery. The authors found four factors, which they referred to as (a) Subjective Importance of Corporality, (b) Behaviors Aimed at Staying in Physical Shape, (c) Self-Rated Physical Attractiveness, and (d) Care of Physical Appearance. In the Botella et al. (2009) Spanish validation of the MBSRQ, the instrument was reduced to 45 items. Therefore, it consists of two parts, one referring to overall body image assessment, and the other assessing the degree of satisfaction with various body areas separately. However, to date, the short version of the MBSRQ, the MBSRQ-AS, has not been validated in the Spanish population.

The MBSRQ-AS has been validated in French (Untas, Koleck, Rascle, & Borteyrou, 2009), Greek (Argyrides & Kkeli, 2013), and more recently German (Vossbeck-Elsebusch et al., 2014), with satisfactory results. The MBSRQ-AS is widely used in body image research. Moreover, it is able to differentiate between the evaluation of appearance-related aspects and the person's orientation toward these aspects (i.e., the perceived importance of appearance and its influence on the person's behavior). No Spanish validation of this instrument is available, and we think a Spanish version analyzing the original factor structure could be useful in future research in Spanish-speaking populations. The main objective of the present study was to confirm the factor structure of the Spanish version of the MBSRQ-AS and analyze its psychometric properties in a nonclinical sample. The secondary objectives were to analyze differences between sexes and among age groups and to

examine relationships with eating pathology. Based on a previous study using confirmatory factor analysis (Vossbeck-Elsebusch et al., 2014), we expected that the five original factors of the MBSRQ-AS would be confirmed.

#### Method

#### **Participants**

Participants in the present study included 1041 individuals, 694 of whom were women (66.7%). The mean age was 23.11 (SD = 6.10) years, ranging from 15 to 46 years. The mean body mass index (BMI) was 22.23 (SD = 3.07); range 17-34.6). The majority of the sample was single (85.8%) and had university level studies (59.3%) and a medium socio-economic level (73.5%).

Age was stratified according to the World Health Organization (WHO, 1986) study group on young people and "Health for All by the Year 2000". Based on development in adolescence and youth, boys and girls from 15 to 17 years old would be in the "middle adolescence" stage; those from 18 to 20 years old would be in the "late adolescence" stage; and from 21 to 24 years old, they would be in the "youth" stage. Finally, in our sample, the 25- to 46-year-old group was considered the "adult" group. Given differences in BMI between men and women, F(1, 1021) = 137.17; p < .001, and among age groups, F(3, 1019) = 25.74; p < .001, ANCOVAs were calculated, controlling BMI in the MBSRQ-AS analyses of group comparisons.

#### Measures

Multidimensional Body-Self Relations Questionnaire-Appearance Scales (MBSRQ-AS 34; Brown et al., 1990; Cash, 2000). The MBSRQ-AS is composed of five scales with good psychometric properties: (a) Appearance Evaluation, composed of seven items, assesses beliefs and feelings of satisfaction or dissatisfaction with one's appearance; (b) Appearance Orientation, made up of 12 items, assesses the extent of one's cognitive-behavioral investment in one's appearance; (c) Overweight Preoccupation, composed of four items, assesses fat anxiety, weight vigilance, dieting and eating restraint; (d) Self-Classified Weight, composed of two items, assesses how one perceives one's weight status, from very underweight to very overweight; and (e) Body Areas Satisfaction, containing nine items, assesses satisfaction or dissatisfaction with specific body areas and attributes (i.e., face, hair, lower torso, mid torso, upper torso, muscle tone, weight, height, overall appearance) (Cash, 2000). Each item is scored on a 5-point scale and evaluates agreement (from 1: "Definitely disagree" to 5: "Definitely agree"), frequency (from 1: "Never" to 5: "Very often"), or satisfaction (from 1: "Very dissatisfied" to 5: "Very satisfied"). For items related to Self-Classified Weight, participants use ratings from 1: "Very underweight" to 5: "Very overweight".

Regarding the Spanish translation of the MBSRQ-AS, adjustments were made to some expressions from the existing Spanish version. After that, a native English speaker carried out a backtranslation. In cases of incongruence, the item was checked by a group of clinical psychologists with considerable expertise in the field of eating disorders and body image, and the native speaker was again consulted. The final version of the instrument is available in an online Supplementary Materials document linked to the present article.

**Eating Attitudes Test** (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982). This self-report instrument assesses attitudes and behaviors related to ED across three subscales: Dieting, Bulimia and Food Preoccupation, and Oral Control. The total score measures ED symptom severity. Each item is scored on a 6-point scale from "Always" to "Never". In the present sample, the Spanish version

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