Original Article

Body image evaluation: a systematic review of figural drawing scales

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Abstract:

Approach: Body image is a mental construct, which is complex, multifaceted, dynamic, and unique. In order to evaluate body image, researchers and specialists have been using different instruments and techniques to assess the perceptual and attitudinal aspects that compose this construct. The silhouette and figural scales are important methods that evaluate body image. **Purpose:** A systematic literature review was conducted in order to register and analyze the silhouette scales developed to evaluate body image. **Material and Methods:** Databases like Scopus, Psycinfo, Web of Science, and Pubmed were used, with no time restriction, with the following descriptors: "body image," "body size," "body dissatisfaction," "body satisfaction," "figural stimuli," "silhouette* scale*," "contour schematic," "contour line draw*," "figure rating scale*," "figural draw*," "figural scale*". **Results:** One thousand, six hundred and twenty-nine studies were found, 36 of which were considered appropriate for this study. From the analysis of these studies, three main aspects were considered: 1) the dimensions of instruments composed of figures; 2) the specific characteristics of the groups of scales; and 3) the characteristics of the target audience of figural scales. Most of the scales are focused on the evaluation of body dissatisfaction and perception. The scales differentiate themselves for their characteristics regarding shades, contour, application, clothes, hair, etc. Moreover, female young adults and teenagers represent the majority of the target audience. Even though there are many validated scales, there is a lack of instruments created and validated by researchers, which meet rigorous criteria of scale elaboration methods. **Conclusions:** Future studies should focus on methods of assessing body dissatisfaction through scales created and validated with appropriate psychometric parameters, so that these tools can effectively contribute to clinical practice and research.

Key Words: body satisfaction; body dissatisfaction, figure rating scale, tactile graphic language

Introduction

The term "body image" refers to the way people experience their own bodies. This construct is based on beliefs, thoughts, and feelings related to physical appearance, body function, and body integrity (Cash, 2012). The evaluation of body image is a complex task, considering the varied features of this construct. Two aspects are usually mentioned as being part of body image: the perceptual and the attitudinal components. The perceptual component corresponds to accuracy when judging body size, shape, and weight. Meanwhile, the attitudinal aspect has four components: (1) affective – feelings towards the body, which result in the assessment and individual interpretation of events, objects, or situations; (2) cognitive – thoughts that reveal heavy criticism over one's body; (3) behavioral – avoidance of situations that might trigger body image pain; and (4) global subjective dissatisfaction – deep dissatisfaction with one's own body (Thompson & Van Den Berg, 2002).

With an increasing interest in those components, researchers started to investigate the types of body image assessment. Each method is chosen taking into account the construct that researchers want to evaluate and/or their objectives. Therefore, many investigation instruments have started to be adopted, such as projective tests. Moreover, the use of body shape/silhouette scales and questionnaires have started to increase (Damasceno et al., 2020; Campana & Tavares, 2009; Thompson, 2004). The majority of the instruments assess only one of the body image components: the affective one - which measures the dissatisfaction with one's own body, due to its close correlation with different factors that are harmful to the health, such as: low self-esteem, depression, eating disorders, social anxiety, body shame, and a large variety of other experiences and feelings that undervalue self-worth (Morgado, Ferreira, Campana, Rigby, & Tavares, 2013). Thus, body dissatisfaction has been considered a serious social and personal problem, which affects the quality of life and is an important aspect to consider in studies about body image in different groups and contexts (Almeida et al., 2019; Ayala, 2020; Forbes et al., 2012). Studies about body dissatisfaction using the silhouette scales are presented in the literature review. One of them, from Moraes, Anjos and Marinho (2012), had the aim to identify the silhouette

scales that were developed or adapted from 1983 to today, relating the silhouette scales to the objective measurements of nutritional status. This study concluded that the silhouette scales should be used carefully in order to predict nutritional status. Another review was performed by Côrtes, Meireles, Frinche, Caiaffa and Xavier (2013) in order to compile studies that investigated the body satisfaction of teenagers through silhouette scales. The authors identified that the scale that was used the most frequently was the one proposed by Stunkard, Sorensen and Schulsinger (1983) and that it is necessary to be more rigorous when applying such scales, as well as when presenting such methods. In this systematic review research, we aim to identify and analyze studies that continue to use silhouette scales and figural drawings. We also aim to understand if such scales, which were developed to evaluate body dissatisfaction in different individuals, have been used to evaluate other constructs. This research may guide other researchers and specialists to chose the most appropriate instruments and methods in order to create and validate scales. This research may also help the application of instruments and their statistical analysis.

Material & methods

A systematic review was performed, following the standards prescribed by the PRISMA methodology (Moher et al., 2009), through articles indexed in databases such as Scopus, Psycinfo, Web of Science and Pubmed. With the aim of covering a representative number of scientific studies, the following combination of the keywords was applied: "body image" OR "body size" OR "body dissatisfaction" OR "body satisfaction") AND ("figural stimuli" OR "silhouette* scale*" OR "contour schematic" OR "contour line draw*" OR "figure rating scale*" OR "figural draw*" OR "figural scale*"). The following filters were used: "All Fields" (Scopus and Pubmed), "Any Field" (Psycinfo) and "Topic" (Web of Science). We chose not to restrict the searching period of time. All the searching was carried out between May and June 2019. The first stage of exclusion was to eliminate duplicated articles, followed by the stages described below: (a) unavailable abstracts; (b) articles that did not directly treat the objects of this study; (c) articles that did not use figural scales for body classification; (d) instruments that did not evaluate any aspects of body dissatisfaction. All these stages were performed by two researchers independently. Any dispute regarding the exclusion/inclusion of articles was resolved by a third researcher. After the selection stage, all the articles were read in full, which permitted the extraction and categorization of data, as follows: 1) Author/year/country; 2) instrument/type/nature; 3) sample 4) dimension evaluated; 5) reliability; 6) validity. These aspects were carefully analyzed according to Content Analysis (Bardin, 2011). All the three stages were closely performed: a) pre-analysis, in which the researcher skims and organizes the texts, selects documents to be analyzed, and formulates the indicators to substantiate the final interpretation; b) material exploration, in which two researchers codify and classify the articles according to their themes, and c) interpretation and inference of the results, in which the researcher tabulates data and applies the analysis techniques. After the analysis, the data were discussed and organized into three main categories: 1) Dimensions evaluated through instruments containing figures; 2) Methodological aspects of instruments that assess body image; 3) Characteristics of individuals evaluated by figural scales.

Results

Following the proposed methodology, 1,629 studies were found. Figure 1 represents the number of articles identified in each database, using the combination of keywords:

Figure 1. Our elaboration following the PRISMA methodology.

After applying the exclusion criteria, 36 articles were considered for analysis, since they met all the criteria. The articles selected for this systematic review refer to scales of body dissatisfaction assessment published from 1991 to 2019. The evaluative instruments were targeted at people from many different countries, with a focus on Brazil (n=12) and the United States (n=10), when it comes to the elaboration of developed and validated scales. The other Western and Eastern countries did not present as many validated instruments as the two countries mentioned above. In general, it was observed that researchers do not clearly show how the process of scale development occurred. It is possible to affirm, however, that there are more instruments developed for females (n=31) than for males (n=26). Regarding the age range, there is a lack of assessment instruments for elderly people, since none of the instruments were specifically created for this population, except for two of them (Griep et al., 2012; Gardner, Jappe, & Gardner, 2009), which included people over 65 years old in their sample.

Regarding the peculiarities of the instruments that were found, none of them verified only body distortion, whereas 22 of the instruments found evaluated both body dissatisfaction and body image distortion. The rest of the instruments evaluated only body dissatisfaction (n=14). There are numerous ordinal scales (n=20), followed by interval scales (n=14), and continuous scales (n=2). When it comes to the number of figures, 24 scales had a reduced number of figures (less than 10). All these details are described in Table 1.

Table 1 - Description of Studies Included in the Systematic Review

Reference/ Year/ Country/	Name of Instrument	Sample	Dimension Evaluated	Type (Number of Figures) Nature/ Body Details	Development of the Instrument
Thompson and Altabe (1991) EUA	Figure Rating Scale	University students ♂ ♀ From 17 to 25 years old	Body dissatisfaction	Type: Figural (9 figures) Nature: ordinal Clothes: yes	Information not available
Thompson and Gray (1995) EUA	Contour Drawing Rating Scale	University students ♂ ♀ From 18 to 23 years old	Body dissatisfaction and distortion	Type: Figural (9 figures) Nature: continuous Clothes: yes	Professional Artist
Sherman, Iacono and Donnelly (1995) EUA	Body Rating Scale for 11-year- olds (BRS11) and for 17-year-olds (BRS17)	Teenagers ♀ From 11 to 17 years old	Body dissatisfaction	Type: Figural (9 figures) Nature: ordinal Clothes: yes	Information not available
Gardner, Friedman and Jackson (1998) EUA	Thirteen-Figure Contour Drawing Rating Scale	Adults ♂ ♀ 19 years old	Body dissatisfaction and distortion	Type: Figural (13 figures) Nature: interval Clothes: no	Data from 19 year- old American adults
Gardner, Starck, Jackson and Friedman (1999) EUA	2-figure continuous scale	Adults ♂ ♀ 19 years old	Body dissatisfaction and distortion	Type: Figural (2 figures) Nature: continuous Clothes: no	Data from 19 year- old American adults
Williamson et al., (2000) EUA	Body Shape Assessment for obesity (BIA-O)	Caucasian and African- American adults ♂ ♀ From 18 to 65 years old	Body dissatisfaction and distortion	Type: silhouette (18 figures) Nature: ordinal Clothes: yes	information not available
Williams, Gleaves and Cepeda- Bonito (2001) EUA	Body Image Assessment	University students ♂ ♀ From 19 to 34 years old	Body dissatisfaction	Type: silhouette (9 figures) Nature: ordinal Clothes: yes	copies
Truby and Paxton (2002) Australia	Children's Body Image Scale	Children ♂ ♀ From 7 to 12 years old	Body dissatisfaction and distortion	Type: pictorial (7 figures) Nature: ordinal Clothes: yes	Statistical percentages from the National Health Center
Pulvers et al., (2004) EUA	Culturally Relevant Body Image Instrument	African Americans ♂ ♀ 44 years old on average	Body dissatisfaction	Type: figural (9 figures) Nature: ordinal Clothes: yes	Graphic artist
Scagliusi et al., (2006) Brazil	Stunkard's Figure Rating Scale	University students ♀ 23.3 years old on average	Body dissatisfaction	Type: figural (9 figures) Nature: ordinal Clothes: yes	Information not available
Swami (2008) England	Photographic Figure Rating Scale	Adults ♀ From 18 to 44 years old	Body dissatisfaction	Type: pictorial (10 figures) Nature: interval Clothes: yes	Photos of women BMI ranging from 12.5 to 41.2kg/m ²
Gardner, Jappe and Gardner	Body Image Assessment	Adults ♂ ♀ From 20 to 74	Body dissatisfaction	Type: figural (17 figures)	Anthropometric and stereo

(2009) EUA	Scale-Body Dimension (BIAS-BD)	years old	and distortion	Nature: interval Clothes: no	photometric data from the US Air Force Material Command
Kakeshita, Silva, Zanatta, Perocco and Almeida (2009) Brazil	Brazilian Silhouette Scale for Adults	Adults ♂ ♀ From 18 to 60 years old	Body dissatisfaction and distortion	Type: silhouette (15 figures) Nature: interval Clothes: yes	Software run by a qualified professional
Kakeshita, Silva, Zanatta, Perocco and Almeida (2009) Brazil	Brazilian Silhouette Scale for Children	Adults ♂ ♀ 7-12 years old	Body dissatisfaction and distortion	Type: silhouette (11 figures) Nature: interval Clothes: yes	Software run by a qualified professional
Conti and Latorre (2009) Brazil	Silhouette Scale for Teenagers	Teenagers ♂ ♀ 10-17 years old	Body dissatisfaction and distortion	Type: figural (9 figures) Nature: interval Clothes: yes	Professional artist
Hager, McGill and Black (2010) EUA	Toddler Silhouette Scale	Parents of children aged 12-36 months ♂ ♀	Body dissatisfaction and distortion	Type: figural (7 figures) Nature: ordinal Clothes: yes	Professional artist
Cohen and Pasquet (2011) Cameroon	Body Image Scales (BIS)	Adults ♂ ♀ Over 18 years old	Body dissatisfaction and distortion	Type: pictorial (6 figures) Nature: interval Clothes: yes	Human photos
Griep et al. (2012) Brazil	Brazilian Silhouette Scale for Adults	Adults ♂ ♀ 35-74 years old	Body dissatisfaction and distortion	Type: figural (15 figures) Nature: interval Clothes: yes	Software run by a qualified professional
Rueda-Jaimes et al., (2012) Colombia	Escala de los trece dibujos del contorno de la figura (13-CS)	Teenagers ♂ ♀ Mean age 14.1 years old	Body dissatisfaction and distortion	Type: figural (13 figures) Nature: interval Clothes: no	Data from 19 year-old American adults
Rueda-Jaimes et al., (2012) Colombia	Standard Figural Stimuli (SFS)	Teenagers ♂ ♀ Mean age 14.1 years old	Body dissatisfaction	Type: figural (9 figures) Nature: ordinal Clothes: yes	Information not available
Swami et al., (2012) England	Photographic Figure Rating Scale	Adults ♀ 24 years old on average	Body dissatisfaction	Type: pictorial (10 figures) Nature: interval Clothes: yes	Photos
Francisco, Narciso, Alarcão, (2012) Portugal	Contour Drawing Rating Scale	Teenagers 12-21 years old and adults 24-71 years old ♂ ♀	Body dissatisfaction and distortion	Type: figural (9 figures) Nature: ordinal Clothes: yes	Professional artist
Adami et al. (2012) Brazil	Figure Rating Scale	Teenagers ♂ ♀ 10-19 years old	Body dissatisfaction and distortion	Type: figural (8 figures) Nature: ordinal Clothes: yes	Adults' drawing adaptations
Segura-García, Papaiani, Rizza, Flora and De Fazzio (2012) Italy	Body Image Dimensional Assessment (BIDA)	Teenagers and adults ♂ ♀ 14-48 years old	Body dissatisfaction	Type: silhouette (4 figures) Nature: interval Clothes: no	Information not available
Laus, Moreira, Morarole and Braga-Costa (2013) Brazil	Brazilian Silhouette Scale for Teenagers	Teenagers ♂ ♀ 14-17 years old	Body dissatisfaction and distortion	Type: silhouette (11 figures) Nature: interval Clothes: no	Software run by a qualified professional
Conti et al., (2013) Brazil	Stunkard's Figure Rating Scale	University students ♂ Mean age 25.6 years old	Body dissatisfaction	Type: figural (9 figures) Nature: ordinal Clothes: yes	Information not available
Morgado et al., (2013) Brazil	Three Dimensional Silhouette Scale	Congenital blind adults ♀ Mean age 36.7 years old	Body dissatisfaction	Type: Three Dimensional Scale (9 figures) Nature: ordinal Clothes: yes	Visual artist
Swami, Calvetti, Taylor and,	Breast Size Rating Scale (BSRS)	Adults ♀ Mean age 21.22	Body dissatisfaction	Type: pictorial (14 figures)	DazStudio 3.1

Tolvée (2015) England		years old		Nature: ordinal Clothes: yes	
Moussally, Grynberg, Goffinet, Simon, and Linden (2016) Switzerland	Computer-Generated Figure Rating Scale (CGFRS)	Adults ♀ 17-35 years old	Body dissatisfaction and distortion	Type: pictorial (27 figures) Nature: interval Clothes: yes	Moussally et al. database (2016)
Sharif (2017) Iran	Breast Size Satisfaction Scale (BSSS)	Adults ♀ Mean age 22.98 years old	Body dissatisfaction	Type: pictorial (16 figures) Nature: ordinal Clothes: yes	DazStudio 4.9
Souza et al., (2017) Brazil	Body Image Scale for Brazilian Women	Adults ♀ 18-55 years old	Body dissatisfaction	Type: pictorial (11 figures) Nature: ordinal Clothes: no	Information not available
Freire and Fisberg (2017) Brazil	Brazilian Silhouette Scale for Digital Use	University students ♂ ♀ 18-25 years old	Body dissatisfaction and distortion	Type: pictorial (15 figures) Nature: interval Clothes: yes	Software run by a qualified professional (480x340 pixels)
Castro, Morgado, & Freitas (2017) Brazil	Brazilian Photographic Figure	Adults ♀ Mean age 21.8 years old	Body dissatisfaction and distortion	Type: pictorial (8 figures) Nature: ordinal Clothes: yes	Software Photoshop CS3 Extended (Adobe)
Castro, Morgado, & Freitas, (2018) Brazil	Brazilian Photographic Figure Rating Scale for Men (BPFRRS-M)	Adults ♂ Mean age 22.4 years old	Body dissatisfaction and distortion	Type: pictorial (8 figures) Nature: ordinal Clothes: yes	Software Photoshop CS3 Extended (Adobe)
Ralph-Nearman and Filik (2018) England	Male Body Scale	Adults ♂ 18-50 years old	Body dissatisfaction and distortion	Type: figural (9 figures) Nature: ordinal Clothes: yes	Professional artist and graphic designer
Ralph-Nearman and Filik (2018) England	Male Fit Body Scale	Adults ♂ 18-50 years old	Body dissatisfaction and distortion	Type: figural (9 figures) Nature: ordinal Clothes: yes	Professional artist and graphic designer

In order to better understand the aspects related to body image assessment through figural scales, we chose to divide this systematic review into three categories, which will be discussed in the next sections.

Discussion

From the analysis of these studies, three main aspects were highlighted: 1) the dimensions of instruments composed of figures; 2) the specific characteristics of the groups of scales; and 3) the characteristics of the target audience of figural scales. It was observed that most of the scales are focused on the evaluation of body dissatisfaction and perception. The scales differ in their main features, among them, application, their shades, contour, clothes, hair, etc. Furthermore, when it comes to the target audience, females, especially young adults and teenagers, are the groups of greater research interest.

Dimension assessed through instruments composed of figures

In this review, it was observed that instruments composed of figural and silhouette scales continue to be the most used in order to assess body dissatisfaction, which is a component of the attitudinal dimension (Thompson & Altabe, 1991; Sherman et al., 1995; Williamson et al, 2001; Pulvers et al., 2014; Scagrusi et al, 2006; Swami et al., 2015; Swami et al., 2012; Swami, 2008; Rueda-James et al, 2012; Segura-Garcia et al., 2012; Conti et al., 2013; Morgado et al., 2013; Sharif, 2017; Souza et al., 2017.) However, the majority of the scales (61%) assessed the body distortion - perceptual dimension, besides the attitudinal dimension (Thompson & Gray, 1991; Gardner et al. 2009, Gardner et al.,1999; Williamson et al., 2000, Williams et al., 2001; Truby & Paxton, 2002; Gardner et al., 2009; Kakeshita et al, 2009; Conti & Latorre, 2009; Hager et al., 2010; Cohen & Pasquet, 2011; Griep et al., 2012; Rueda-James et al., 2012; Francisco et al., 2012; Adami et al., 2012; Laus et.al., 2013; Moussally et al, 2016; Freire & Fisberg, 2017; Castro, Morgado, & Freitas, 2017,2018; Ralph-Nearman & Filik, 2018).

It is possible to see that the silhouette scales that were identified are figures or body contours created, frequently, based on the BMI and aim at representing the human body. Such figures vary from a slimmer to a fatter silhouette. In this way, the individuals are instructed to choose two figures, one that represents their current body and another one that represents their ideal body. The subtraction between ideal and current silhouette

provides the body dissatisfaction assessment (Gardner et al., 1998). When assessing body distortion, individuals are instructed to choose the figure that represents their real body, which is compared to their BMI. When individuals chose an image that is different from their BMI, body distortion is identified. Since each figure represents a different BMI, depending on the range between the figures, it is possible that the body distortion assessment is underestimated.

According to Neves, Morgado, and Tavares (2015), the silhouette scales and the figural drawings are ideal when assessing body dissatisfaction. The authors affirm that, even though those scales are capable of assessing the perceptual dimension, it is necessary to consider that these instruments are only sensitive to the assessment of one dimension of the attitudinal component, which is the body dissatisfaction. It is important to mention that Gardner (2012) argues that the assessment of the perceptual dimension is complex, since the psychological processes of identification, organization, and comprehension are structured in the central nervous system, where the decodification of sensorial information of the body takes place. Therefore, in order to assess this dimension, it is necessary to use more sophisticated technological resources, which are able to identify and track these neurological processes (Neves et al., 2015).

Thus, instruments that incorporate evaluations of both dimensions may be more attractive and complete. However, it is necessary to consider the complexity of the perceptual dimension assessment. Future research should enable researchers to recognize validated methods that exclusively assess the perceptual dimension and also both dimensions of body image simultaneously, since the studies of eating disorders are focused both on body distortion and on body dissatisfaction (Gardner et al., 1999).

Specific Characteristics of Scales Sets that Assess Body Image

There are some differences between the types of scales that assess body image. Silhouette scales have black shades that shape human figures. Figural drawings are illustrations made by precise contour lines that shape human figures (Gardner & Brown, 2010). It is also possible to find picture scales that show real human bodies (Castro et al., 2017). Such scales are easily handled and they do not require any specific resources to show their figures. Their results are efficient when collecting data in groups (Gardner & Brown, 2010a; Gardner & Brown, 2010b). Besides these three types, there is a three-dimensional scale (Morgado et al., 2013), called Three Dimensional Silhouette Scale, which permits the visualization of the three body dimensions.

Some limitations were found on the scales identified in this review. First, there is a limitation of the field of visual, because only one of the scales permitted a three-dimensional visualization. The other scales are only available in one plane, considering only the frontal part of the body, neglecting the other ones. Another point concerns the reduced figural stimuli (Adami et al., 2012; Cohen & Pasquet, 2011; Conti & Latorre, 2009; Conti et al., 2013; Castro et al., 2018; Castro, Morgado, & Freitas, 2017; Francisco et al., 2012; Gardner et al., 1999; Hager et al., 2010; Morgado et al., 2013; Pulvers et al., 2004; Ralph-Nearman & Filik, 2018; Rueda-Jaimes et al., 2012; Scagliusi et al., 2006; Segura-García et al., 2012; Sherman et al., 1995; Thompson & Altabe, 1991; Thompson & Gray, 1995; Truby & Paxton, 2002; Williamson et al., 2001). Even though many instruments assess body dissatisfaction, most of them have this problem, since the restricted number of body shapes may induce the choice of figures selected by the participants (Gardner et al., 1998).

The nature of instruments also has limitations. Many of the scales identified are considered ordinal scales. In other words, the figures used to assess body image were created subjectively, based on these artists' conception of body (Conti & Latorre, 2009; Francisco et al., 2012; Hager et al., 2010; Ralph-Nearman & Filik, 2018; Thompson & Gray, 1995). As a result, in order to overcome these limitations, some instruments started to be developed as continuous scales (Freire & Fisberg, 2017; Gardner et al., 1999; Gardner et al., 2009; Kakeshita et al., 2009; Laus et al., 2013; Moussally et al., 2016; Thompson & Gray, 1995), in which the BMI serves as a parameter to create each figure, and also interval scales (Conti & Latorre, 2009; Cohen & Pasquet, 2011; Gardner et al., 1999; Griep et al., 2012; Rueda-Jaimes et al., 2012; Segura-García et al., 2012; Swami et al., 2012; Swami et al., 2008), which are the ones that present constant changes between adjacent figures.

It is possible that the lack of figures in these instruments is associated with the fact that most of the pioneer instruments were created by artists, based on their own body conceptions. Thus, including anthropometric data and BMI with the figurative stimuli makes these measurements more relevant and representative for their intended audience. However, even though the inclusion of these data is favorable to the instruments, this procedure impairs the cross-cultural adaptation of the instrument in other countries. Furthermore, we can also observe that there is a limited number of scales that incorporate interval properties in their figural stimuli. Some of the identified scales used computer programs that generated virtual human body models (Castro, Morgado, & Freitas, 2017; Castro, Morgado, & Freitas, 2018; Freire & Fisberg, 2017; Griep et al., 2012; Kakeshita et al., 2009; Laus et al., 2013; Sharif, 2017; Swami et al., 2015). This may be a good methodological strategy, considered more reliable and efficient for the process of the creation of scales, rather than the ones created artistically.

Finally, 31 out of the 36 identified scales had attributes like clothes, which are another limitation for these instruments. According to Gardner, Jappe and Gardner (2009), it is not recommended that scales present body details like hair, muscles, and clothes, because they can distract the participants, shifting their focus from the instrument. However, some scales had muscularity as their main objective (Novella, Gosselin; Danowski, 2015; Ralph-Nearman & Filik, 2018).

Characteristics of the Target Audience of the Figure Scales

We know that body image is a multifaceted, complex, and broad construct. As a result, some issues must be considered when creating scales that assess body image. Among the issues presented by Krawczyk et al. (2012), some of them, related to the characteristics of the target audience, must be addressed in this section. The scales identified in this review were created to assess body image in different people. Twenty-two out of the 36 studies selected present their samples as “adults,” even though the aging group ranges from 17 to 74 years old (Table 1). This fact represents a vulnerability of such studies, because the scales represented by figures that evaluate body image should present body attributes according to the specific age group. The studies should present an appropriate delimitation, taking into account the dynamic nature of body image (KRAWCZYK et al., 2012). Although limited to a lesser extent, the rest of the studies were focused on young adults (n=6), teenagers (n=6), and children (n=1). Among the studies conducted with “adults,” only five of them were more extensive, including people aged 60 years old or older.

Furthermore, the scales had the aim to assess body image between men and women (Table 1), demonstrating that the validated scales for males are still in initial stages, when compared to scales validated for women. It is also important to mention that two scales were validated with a neutral sex. In other words, only one scale was applied for both sexes (Hager et al., 2010; Segura-García et al., 2012). Performing studies that assess both men and women with the same scale may represent a significant limitation, since they have different appearance ideals. Among women, the beauty ideal is related to being slim, and among men, the beauty ideal is related to being muscular (KRAWCZYK et al., 2012).

Other factors regarding the sampling also need attention. Among the studies, only one of them observed Afro-American characteristics (Pulvers et al., 2004). Most of the scales do not consider the ethnic peculiarities of the population, which was almost exclusively dedicated to Caucasians. It shows a lack of studies that create or validate scales for different ethnic groups and populations with specific characteristics.

When it comes to the creation and/or validation of scales for individuals that present a specific characteristic, Morgado et al. (2013) developed and validated a scale for congenital blind people. This scale is the only three-dimensional instrument known. Besides including the three body dimensions, it also permits a tactile “visualization” by those who suffer from congenital blindness.

Conclusions

Body image assessments have increased significantly around the world. The increase of validated instruments with this objective demonstrates a need to investigate body concerns in different sociocultural contexts. Even though there are many validated scales, there is a lack of instruments created and validated by researchers, which meet rigorous criteria of scale elaboration methods. Such methods require careful attention from researchers and specialists when they choose the right instruments of assessment. As a result, we believe this research may help these professionals and specialists in their choice.

We suggest that future research create scales for different specific groups or age groups, especially those who have not been assessed yet in any research or clinical experiment. Conducting new research with other populations will bring important contributions to the field, which will aid in understanding and monitoring in which periods of life factors such as body dissatisfaction prevail. This will enable better understanding of which are the factors related to the emergence of body (or specific part of the body) dissatisfaction through longitudinal studies.

It is expected that, in future research, the assessment instruments of body image, with appropriate psychometric properties, be created and cross-culturally adapted for many different populations around the world, so that comparative research with people from different sociocultural contexts can be conducted.

Conflicts of interest - The authors have no conflicts of interest.

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