

Maria Fernanda Laus<sup>I</sup>  
Idalina Shiraishi Kakeshita<sup>I</sup>  
Telma Maria Braga Costa<sup>II</sup>  
Maria Elisa Caputo Ferreira<sup>III</sup>  
Leonardo de Sousa Fortes<sup>IV</sup>  
Sebastião Sousa Almeida<sup>V</sup>

# Body image in Brazil: recent advances in the state of knowledge and methodological issues

## Imagem corporal no Brasil: avanços recentes no estado de conhecimento e em questões metodológicas

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### ABSTRACT

**OBJECTIVE:** To analyze Brazilian literature on body image and the theoretical and methodological advances that have been made.

**METHODS:** A detailed review was undertaken of the Brazilian literature on body image, selecting published articles, dissertations and theses from the SciELO, SCOPUS, LILACS and PubMed databases and the CAPES thesis database. Google Scholar was also used. There was no start date for the search, which used the following search terms: “body image” AND “Brazil” AND “scale(s)”; “body image” AND “Brazil” AND “questionnaire(s)”; “body image” AND “Brazil” AND “instrument(s)”; “body image” limited to Brazil and “body image”.

**RESULTS:** The majority of measures available were intended to be used in college students, with half of them evaluating satisfaction/dissatisfaction with the body. Females and adolescents of both sexes were the most studied population. There has been a significant increase in the number of available instruments. Nevertheless, numerous published studies have used non-validated instruments, with much confusion in the use of the appropriate terms (e.g., perception, dissatisfaction, distortion).

**CONCLUSIONS:** Much more is needed to understand body image within the Brazilian population, especially in terms of evaluating different age groups and diversifying the components/dimensions assessed. However, interest in this theme is increasing, and important steps have been taken in a short space of time.

**DESCRIPTORS:** Body Image. Scales. Questionnaires. Evaluation, methods. Review.

<sup>I</sup> Programa de Pós-Graduação em Psicobiologia. Universidade de São Paulo. Ribeirão Preto, SP, Brasil

<sup>II</sup> Curso de Nutrição. Universidade de Ribeirão Preto. Ribeirão Preto, SP, Brasil

<sup>III</sup> Faculdade de Educação Física. Instituto de Ciências Humanas. Universidade Federal de Juiz de Fora. Juiz de Fora, MG, Brasil

<sup>IV</sup> Núcleo de Educação Física e Ciências do Esporte. Centro Acadêmico de Vitória. Universidade Federal de Pernambuco. Vitória de Santo Antão, PE, Brasil

<sup>V</sup> Departamento de Psicologia. Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto. Universidade de São Paulo. Ribeirão Preto, SP, Brasil

#### Correspondence:

Sebastião Sousa Almeida  
Laboratório de Nutrição e Comportamento  
Departamento de Psicologia  
Faculdade de Filosofia, Ciências e Letras de  
Ribeirão Preto - USP  
Av. Bandeirantes, 3900 Monte Alegre  
14040-901 Ribeirão Preto, SP, Brasil  
E-mail: sebasalm@usp.br

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## RESUMO

**OBJETIVO:** Analisar a literatura brasileira sobre imagem corporal e os avanços teóricos e metodológicos alcançados.

**MÉTODOS:** Foi realizada revisão crítica da literatura sobre imagem corporal no Brasil e selecionados apenas artigos, dissertações e teses publicados. A busca foi realizada nas bases de dados: SciELO, SCOPUS, LILACS, PubMed, Banco de Teses da CAPES e também por meio da ferramenta de busca Google Acadêmico. Não foi estipulado limite mínimo de data para as publicações e foram utilizados os seguintes descritores: “body image” AND “Brazil” AND “scale(s)”; “body image” AND “Brazil” AND “questionnaire(s)”; “body image” AND “Brazil” AND “instrument(s)”; “body image” limited to Brazil e “imagem corporal”.

**RESULTADOS:** A maioria das medidas disponíveis foi voltada à população de universitários, metade das quais foi sobre avaliação de satisfação/insatisfação com o corpo. Mulheres e adolescentes de ambos os sexos foram os grupos mais estudados. Houve aumento expressivo no número de medidas de avaliação disponíveis. No entanto, ainda há grande quantidade de estudos que utilizaram medidas não validadas e muita impropriedade no uso de termos adequados (e.g., percepção, insatisfação, distorção).

**CONCLUSÕES:** É preciso muito mais para a compreensão da imagem corporal na população brasileira, especialmente por meio da avaliação de populações em diferentes faixas etárias e da diversificação dos componentes/dimensão acessados. Entretanto, o interesse pelo tema é crescente e passos importantes têm sido dados rapidamente.

**DESCRIPTORIOS:** Imagem Corporal. Escalas. Questionários. Avaliação, métodos. Revisão.

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## INTRODUCTION

Internationally, research on body image dates back to the 1900s, with studies of “ghost limbs” by neurologists who described the subject as “body scheme.” In 1935, Schilder used a biopsychosocial approach to investigate body image, with emphasis on the need to consider the neurological, psychological, and sociocultural aspects of the construct. Recently, studies in several areas of this field have advanced, mainly in psychology.<sup>16</sup>

In Brazil, the issue of body image has received attention in the past three decades, with changes in the sociopolitical, cultural, and epidemiological contexts.

Goldenberg<sup>50</sup> (2010) stated that the Brazilian population glorifies the body, which must be in conformity with certain aesthetic standards. In Brazil, the body plays a fundamental role in people’s lives to achieve

social ascension and develop successful relationships. Brownell<sup>12</sup> (2012), in the foreword to the Encyclopedia of Body Image and Human Appearance, reported that billions of dollars are invested and spent on physical appearance worldwide. This book includes articles that discuss such costs by mentioning the pharmaceutical and cosmetic industries, gyms, food products, and nutritional supplements. The relationship between these investments and health improvements is also discussed.

These facts are especially true in Brazil, and global research conducted with 3,200 women from 10 different countries attests to this affirmation.<sup>9</sup> In this study, Brazilians had the highest prevalence of stating that beauty increases opportunities in life (66.0%). Additionally, more than a half of all women in Brazil have already considered having cosmetic surgery, and

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<sup>9</sup> Etcoff N, Orbach S, Scott J, D’Agostino H. The real truth about beauty: a global report. Findings of the global study on women, beauty and well-being. Toronto: Unilever Canada; 2004 [cited 2013 May 5]. Available from: [http://www.campaignforrealbeauty.ca/uploadedFiles/dove\\_white\\_paper\\_final.pdf](http://www.campaignforrealbeauty.ca/uploadedFiles/dove_white_paper_final.pdf)

7.0% reported having undergone some kind of cosmetic procedure – the highest of all countries surveyed. Brazil was also the world's largest consumer of weight-loss medications *per capita*.

In the present sociocultural context, in which physical appearance is highly valued and investments have increased at all levels, studying and understanding body image issues, such as what body image represents, what its perception means, and the magnitude of its effects on people's behavior is essential.

The aim of this study was to analyze the Brazilian literature on body image and the theoretical and methodological advances achieved.

## METHODS

A detailed review was undertaken of the literature on body image in Brazil, guided by two key questions: what is the current situation of body image research in Brazil in theoretical and methodological terms? And what form do advances in knowledge of the area take?

### Conceptualization of the body image construct

Body image today is recognized as “how people experience their own embodiment, especially, but not exclusively, their physical appearance characteristics, including their physical functional competencies and biological integrity.”<sup>17</sup> It integrates components related to physical appearance, such as the mental representation of one's own size, shape, and facial features, and attitudes about appearance, such as cognition, feelings, and behaviors. The attitudinal component has been approached in two dimensions: one dimension that assesses body image relative to body satisfaction or dissatisfaction and beliefs about the body and another dimension regarding the cognitive, behavioral, and emotional importance that one places on their own body.

Considering the cognitive-behavioral model that is assumed to be the body image concept presented above, determining which body image component, perceptual or attitudinal, will be assessed is essential to the choice and use of suitable instruments.

### Methodological considerations about body image research

Experts have drawn attention to the importance of a strict research methodology for reliable advances of knowledge and published several recommendations.<sup>17,18,48,49,104</sup> Thompson<sup>104</sup> (2004) highlighted not

only the determination of the specific body image component to be investigated and its suitable instrument but also several other recommendations, such as (1) the use of several measurements (especially in exploratory studies), (2) the use of tools that have had their reliability and validation tested for the studied sample, (3) evaluation of the reliability and validation for the studied sample, (4) adapting measurement tools to the objectives of the study with authorization from the authors of the original work, (5) determination of whether the use of such tools is recommended to measure an aspect or feature of body image, such as body image exposition in the media or immediate body image state (experience), and (6) indications for clinical contexts with prior and post use and a particular intervention. Another recommendation refers to carefully determining the application protocol because it may have affective or cognitive (i.e., rational or intellectual) features or characteristics that should comply with the aim of the study. Finally, Thompson recommended considering the participants' peculiarities for the analysis and interpretation of the results by evaluating the data using normal and clinical statistical tests. With regard to body image evaluation, Gardner & Brown<sup>48</sup> (2010) and Gardner et al<sup>49</sup> (1998) suggested using methodological caution in such studies, especially when using silhouette scales, because numerous problems continue to be identified with their use.

The translation and adaptation of psychometric instruments and their use have well-established guidelines in Brazil and abroad.<sup>b,c</sup> According to the Standards for Educational and Psychological Tests,<sup>55,60,78</sup> the adaptation process for an existing instrument must follow the same steps as for the development of new instruments. Adaptation implies accuracy, validation, and standardization or rules, including translation, equivalence to other sociocultural realities, and appropriate conventions.

Considering the present scenario of globalization and the growing importance of transcultural research, providing suitable adaptations or developing psychometric instruments for body image evaluation is essential in the Brazilian context so that the obtained results are consistent and ensure higher international visibility of body image research in Brazil.

Although a plethora of tools exist worldwide for the assessment of body image, researchers who are interested in this field of study in Brazil have faced difficulties because of the limited number of instruments available in the country. We performed extensive research to identify the tools that are being developed or adapted to our population using the following databases: SCOPUS,

<sup>b</sup> Beaton D, Bombardier C, Guillemin F, Ferraz MB. Recommendations for the cross-cultural adaptation of health status measures. Rosemont: American Academy of Orthopedic Surgeons; 2002.

<sup>c</sup> International Test Commission. Instituto Brasileiro de Avaliação Psicológica. Diretrizes para o uso de testes. Campinas: Laboratório de Avaliação e Medidas Psicológicas da PUCCAMP; 2003.

LILACS, SciELO, PubMed, Medline, and the CAPES thesis database. We also evaluated the publications that were available using Google Scholar. We used the keywords “body image” AND “Brazil” AND “scale(s)”; “body image” AND “Brazil” AND “questionnaire(s)”; and “body image” AND “Brazil” AND “instrument(s)”. The survey was conducted in January/February 2013, and we did not stipulate date limits in any of the databases consulted. The first tool was published in 2002, and the latest tool was published in 2013.

We selected only published/accepted studies (articles and theses/dissertations) and included three types of instruments: (1) those that were developed in Brazil, (2) those for which only translation was performed, and (3) those that were translated and had at least some psychometric characteristics tested.

The decision to describe not only the scales/questionnaires that presented good psychometric data was made based on the purpose of discussing recent advances in this field in Brazil. Although not all of the instruments cited herein were appropriate because of the poor results obtained in the validation process, in the past five years, researchers have been engaged in supplying measures that could be used in the Brazilian population. Additionally, this survey may serve as a reference for those interested in this topic because it described instruments that still needed to be tested or required reformulation.

The availability of instruments in the country is directly reflected by the number of studies conducted here and also by the type of investigation. To evaluate the current scenario of such research in Brazil, we performed a detailed survey of the following databases: SciELO (keyword: “body image” limited to Brazil), SCOPUS (keyword: “body image” limited to Brazil), and the CAPES thesis databases (keyword: “*imagem corporal*”). Again, we did not stipulate date limits in any of the databases consulted, so we used the full search range that the databases offered until 2012. The first publication found was in 1987.

## RESULTS AND DISCUSSION

At the end of our search, we found 44 measures: 10 were developed in the country (Table 1), four were only translated to Brazilian Portuguese (Table 2), and 30 were both translated and tested (Table 3).<sup>d</sup> The tables present the names of the instruments, the authors responsible for them, the components assessed, a brief description of their composition, the steps that were performed in the validation process, and the sample in which the instrument was applied. The psychometric results obtained from the tested measures are not presented herein because it was not our intention to characterize each of them but rather to indicate the attempts to provide assessment tools.

Three important considerations must be made with regard to the results. The first consideration is related to the availability of the measures for each sex. We found nine instruments that were to be used exclusively with men, 15 that were to be used only with women, and 20 that could be applied for both sexes. Notably, the instruments that were able to assess body image in men were published in the past five years. According to Thompson et al<sup>103</sup> (2012), when an instrument was not developed exclusively for males, its reliability and validity may be doubtful when used with men. Several measures that can theoretically be applied for both men and women include items that are more relevant to females (e.g., the Body Shape Questionnaire). Today, tools that were designed for men are available and take into account issues related to muscularity. Therefore, even when a measure is suitable for both sexes, using different instruments for males and females is necessary.

The second consideration refers to the number of instruments proposed or adapted to different age groups. Although the majority of assessment tools were intended to be used in college students, only two instruments were found for the evaluation of children, and three could be applied in middle-aged women. Notably, the adaptation of scales and questionnaires to be used in adolescents has grown fast in the last five years. Importantly, assessments must be sex- and age-appropriate for the intended sample.<sup>18</sup> Therefore, measures that were developed for certain groups may not be appropriate for use in other samples.<sup>103</sup> With regard to that reservation, studies with older men, for example, still cannot be conducted in Brazil. This is important because many researchers have been testing specific samples using measures that were adapted or validated for different groups. This strategy assuredly produces doubtful results that should be analyzed with caution. Body image is largely known to change over the years, so instruments designed to assess it in different age groups must consider important aspects of the construct within several stages of life. Moreover, the cognitive skills and ability to understand what is being asked vary with age and should be considered in studies of body image.

The third consideration is related to the great discrepancy in the number of measures available to assess different components of body image. Half of them ( $n = 22$ ) were able to evaluate satisfaction/dissatisfaction with the whole body or parts of it. Seven could be used to examine body image perception (of these, only two were exclusively perceptive measures). Eight assessed the cognitive component. Six evaluated the behavioral component, and four assessed affective aspects of the construct. Notably, the great majority of instruments that assess these last dimension/components have appeared in the Brazilian context during the last five years, a fact that could have caused difficulty in studying them.

<sup>d</sup> Four instruments were tested in distinct target populations and thus were considered to be different measures.

**Table 1.** Measures of body image developed in Brazil.

Instrument	Author/Year	Component	Evaluation	Description	Psychometric measure	Sample
Children						
Escala de Silhuetas	Kakeshita <sup>a</sup> (2008)	Perceptive satisfaction	Perception of actual silhouette and whole body satisfaction in individuals from 7 to 12 years old	11 figures of each sex, ranging from 12 to 29 kg/m <sup>2</sup> , with a constant difference of 1.7 kg/m <sup>2</sup>	Content and criterion validities and test-retest reliability	160 children (94 ♀ and 66 ♂)
Adolescents						
Escala de Silhuetas de adultos de Kakeshita (2008)	Laus et al <sup>70</sup> (2013)	Perceptive satisfaction	Perception of actual silhouette, whole body satisfaction, and ideal silhouette for the same sex and opposite sex in individuals older than 18 years old	15 figures of each sex, ranging from 12.5 to 47.5 kg/m <sup>2</sup> , with a constant difference of 2.5 kg/m <sup>2</sup>	Construct validity and test-retest reliability	112 adolescents from 14 to 17 years old (55 ♀ and 57 ♂)
Adults						
Instrumento de Avaliação da Satisfação com a Imagem Corporal	Ferreira & Leite <sup>40</sup> (2002)	Satisfaction	Degree of overall body satisfaction	25 items in two factors: satisfaction with appearance and weight concern	Factorial analysis, internal consistency, and concurrent validity	277 undergraduates (♀)
Escala de Medida da Imagem Corporal	Souto & Garcia <sup>49</sup> (2002)	Perceptive	Body image disturbances in nursing practice	23 items in three factors: body reality, body ideal, and body presentation	Analysis of construct, content and discriminant validities, and reliability	375 undergraduates (♀)
Escala de Silhuetas	Kakeshita <sup>a</sup> (2008)	Perceptive satisfaction	Perception of actual silhouette, whole body satisfaction, and ideal silhouette for the same sex and opposite sex in individuals older than 18 years old	15 figures of each sex, ranging from 12.5 to 47.5 kg/m <sup>2</sup> , with a constant difference of 2.5 kg/m <sup>2</sup>	Content and criterion validities and test-retest reliability	280 adults (138 ♀ and 142 ♂) from 18 to 59 years old
Escala de Silhuetas para Avaliação da Imagem Corporal de Fisiculturistas	Castro et al <sup>19</sup> (2011)	Perceptive	Perception of actual silhouette	7 figures, ranging from 24.1 to 35.6 kg/m <sup>2</sup>	Inter-evaluator reliability	20 bodybuilders (♂)
Escala Situacional de Satisfação Corporal (ESSC)	Hirata & Pilati <sup>38</sup> (2010)	Satisfaction	Body satisfaction, ranging from parts to overall body at the exact moment of its application	28 items in four factors: lower parts, muscle and satisfaction, external parts, and fat and dissatisfaction	Factorial analysis and construct validity	451 undergraduates (200 ♂ and 251 ♀)
Escalas de Silhuetas Tridimensionais (EST) para o deficiente visual	Morgado <sup>b</sup> (2009)	Satisfaction	Body satisfaction in congenitally blind subjects	9 male silhouettes and 9 female silhouettes made with plaster	Content and construct validities, internal reliability, reliability	8 ♂ and 8 ♀ blind individuals from 24 to 50 years old (content validity) 30 ♂ and 28 ♀ blind individuals from 18 to 60 years old (other measures)
Escalas Brasileiras de Normalização e Internalização de Normas Corporais	Hirata et al <sup>37</sup> (2012)	Cognitive	Internalization of social norms about appearance and behavioral intentions to achieve the current standard of beauty	Female scale: 22 items in two factors: general internalization and behavioral intention Male scale: 28 items in two factors: general internalization and behavioral intention	Factorial analysis	960 adults (691 ♀ and 269 ♂) - studies 1 and 3 451 undergraduates (251 ♀ and 200 ♂) - study 2
Escala de Avaliação do Transtorno Dismórfico Corporal (EA-TDC)	Ramos & Yoshida <sup>31</sup> (2012)	Affective	Intensity of concern and suffering with a defect in appearance and impairment in social, occupational, and other important areas of functioning	28 items in one factor	Factorial analysis, internal consistency, and criteria validity	30 patients with Body Dysmorphic Disorder (21 ♀ and 9 ♂) 400 undergraduates (298 ♀ and 102 ♂)

<sup>a</sup> Kakeshita IS. Adaptação e validação de escalas de silhuetas para crianças e adultos brasileiros [tese de doutorado]. Ribeirão Preto: Universidade de São Paulo; 2008.

<sup>b</sup> Morgado FFR. Validação e confiabilidade de uma escala de silhuetas tridimensionais para o cego congênito [dissertação de mestrado]. Juiz de Fora: Universidade Federal de Juiz de Fora; 2009.

**Table 2.** Measures of body image translated to Portuguese (Brazil).

Instrument	Author/Year	Component	Evaluation	Description	Psychometric measure	Sample
Tripartite Influence Scale	Conti et al <sup>28</sup> (2010)	Cognitive	Sociocultural influences on body image	39 items in three factors: media, family, and friends	IC: $\alpha > 0.80$	108 undergraduates (51 ♂ and 57 ♀)
Body Checking Cognitions Scale (BCCS)	Kachani et al <sup>65</sup> (2011)	Cognitive	Cognition associated with weight checking behaviors	19 items in four factors: objective verification, reassurance, safety beliefs, and body control	IC: $\alpha = 0.95$	154 undergraduates (♀)
Male Body Checking Questionnaire (MBCQ)	Carvalho et al <sup>15</sup> (2012)	Behavioral	Body checking behavior in men	19 items in four subscales: global muscle checking, chest and shoulder checking, other comparative checking, and body testing	IC: $\alpha = 0.96$	62 undergraduates (♂)
Body Change Inventory (BCI)	Conti et al <sup>23</sup> (2012)	Behavioral	Strategies used to alter body size among adolescents	48 items in six subscales: eating practices, food supplements, strategies to decrease body size, strategies to increase body size, and strategies to increase muscle size	–	47 undergraduates (20 ♀ and 27 ♂)

Nevertheless, despite the disparities mentioned above, progress is undeniably being made in providing tools to assess body image in the Brazilian population. Since 2002, the number of instruments proposed in the country increased from two to 41, showing the advances that are occurring in this area of study.

### Current scenario of research on body image in Brazil

Figure A describes the results of this survey and the course of the research in the past decades in the country. The number of academic investigations was five-times higher between 2001 and 2011 (387 dissertations/theses) compared with 1987-2000 (71). Similarly, the number of papers published in peer-reviewed journals indexed in SciELO (Figure B) increased from three (1990-2000) to 152 (2001-2012), and the number of papers in SCOPUS (Figure C) increased from 13 to 308 during the same time.

Although the amount of research has increased rapidly, disparities still exist with regard to sex, age, and the component or dimension assessed. Although some of these discrepancies may be explained by the availability of measures for specific groups in Brazil, others contradict this reality. First, the majority of investigators target the female population, irrespective of age.<sup>4,5,10,32,38,81,105</sup> In all of the databases consulted, the number of studies that explored the female sex was almost twice as large than those that included men.<sup>30,35,66,75,88</sup> As mentioned above, only during the last five years have researchers

concentrated their efforts on creating or adapting measures that can be used with men; however, even recent publications continued to have women as the object of study.

Second, disproportions were also observed concerning the age of the participants. In all of the databases consulted, adolescents were the target population most often evaluated,<sup>2,11,20,24,31,38,68,73,e</sup> followed by undergraduates.<sup>4,51,66,69,74,87,96</sup> Studies with children<sup>6,14,53,81,85,86,106</sup> and the older adults<sup>8,21,41,82,105</sup> have also been conducted, but they were notably less frequent. This is important when we consider that measures that have this age group as the target population started to be adapted only in 2009. Thus, several studies published before this date had used non-validated instruments. Moreover, studies with children and older people were mostly conducted using non-validated instruments.

Third, Brazilian researchers have been concentrating their efforts on the evaluation of aspects related to global satisfaction. Indeed, the results from our survey showed that (dis)satisfaction is undeniably the most assessed component in all of the databases consulted, whereas the perceptual dimension and cognitive, behavioral, and emotional components of body image have been neglected. In this sense, data from studies within the Brazilian population are only able to provide evidence that dissatisfaction with the whole body or parts of it have become a common

<sup>e</sup> Fernandes AER. Avaliação da imagem corporal, hábitos de vida e alimentares em crianças e adolescentes de escolas públicas e particulares de Belo Horizonte [dissertação de mestrado]. Belo Horizonte: Universidade Federal de Minas Gerais; 2007.

**Table 3.** Measures of body image translated and tested in the Brazilian population.

Instrument	Author/Year	Component	Evaluation	Description	Psychometric measure	Sample
Children Eating Behaviours and Body Image Test (EBBIT)	Galindo & Carvalho <sup>46</sup> (2007)	Satisfaction	Symptoms that indicate possible eating behavior disorders	42 items in two factors: body image dissatisfaction and food restriction, and binge eating	Translation, factorial analysis, and internal consistency	261 ♀ from 9 to 12 years old
Adolescents Body Area Scale (BAS)	Conti et al <sup>26</sup> (2009)	Satisfaction	Degree of personal satisfaction or dissatisfaction with one's weight and with different body areas	24 body parts	Translation, internal consistency, construct validity, and reproducibility	386 adolescents (208 ♀ and 178 ♂) from 10 to 17 years old
Escala de Evaluación de Insatisfacción Corporal	Conti et al <sup>29</sup> (2009)	Satisfaction	Body dissatisfaction in adolescents	32 items regarding frequency of behaviors related to body care, body awareness, and social and family influence	Translation, internal consistency, factor analysis, construct, discriminant, and concurrent validities, and reproducibility	386 adolescents (208 ♀ and 178 ♂) from 10 to 17 years old
Body Shape Questionnaire (BSQ)	Conti et al <sup>22</sup> (2009)	Satisfaction	Concern regarding body shape and weight, particularly the frequency with which individuals with or without eating disorders experience a sensation of "feeling fat"	34 items related to situations over the preceding 4 weeks	Internal consistency, discriminate and concurrent validities, and reliability	386 adolescents (208 ♀ and 178 ♂) from 10 to 17 years old
Escala de Silhueta para Adolescentes	Conti & Latorre (2009) <sup>27</sup>	Perceptive satisfaction	Perception and body shape dissatisfaction	18 figures (9 of each sex)	Validity construct and reproducibility	386 adolescents (208 ♀ and 178 ♂) from 10 to 17 years old
Questionário de Imagem Corporal após o câncer de mama	Souza <sup>a</sup> (2010)	-	Assess the body image of women affected by breast cancer who underwent surgery for resection, with total or partial loss of the breast in the process	47 items in two factors for the scale of agreement (defectiveness and positive body image) and two for the frequency range (concern with illness and physical capacity, and perception of defect by others)	Factor analysis and reliability	268 patients ♀ from 28 to 80 years old
Body Image Scale - Offer Self-Image Questionnaire (OSIQ)	Conti et al <sup>25</sup> (2011)	Cognitive	Awareness of self-image	7 items	Internal consistency, discriminate and concurrent validities, and reliability	386 adolescents (208 ♀ and 178 ♂) from 10 to 18 years old
Figure Rating Scale for adolescents adapted by Childress, Brewerton, Hodges, & Jarrel (1993)	Adami et al <sup>11</sup> (2012)	Satisfaction	Body shape dissatisfaction	8 figures representing a range of body shapes, ranging from very slim (contour 1) to obese (contour 8)	Construct validity	232 adolescents (106 ♂ and 126 ♀) from 10 to 19 years old

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Adults									
Body Attitudes Questionnaire (BAQ)	Scagliusi et al <sup>94</sup> (2005)	Affective	Body image attitudes (feelings and emotions women have about their bodies)	44 items in six factors: feeling fat, disparagement, strength and fitness, sallience, attractiveness, and lower body fatness	Translation, discriminant and convergent validities, and test-retest reliability	39 ♀ with eating disorders and 62 undergraduates (♀)			
Stunkard's Figure Rating Scale	Scagliusi et al <sup>95</sup> (2006)	Perceptive satisfaction	Perception of the actual size and satisfaction with the whole body	9 female figures, ranging from very thin (1) to very obese (9)	Concurrent and discriminative validities	98 undergraduates (♀) and 16 bulimic (♀)			
Body Checking Questionnaire (BCQ)	Campana <sup>b</sup> (2007)	Behavioral	Frequency of body checking behaviors	12 items in four factors: checking by observation of the body, checking by measurements of body parts, checking by comparisons between own body and body of others, and search for perceptive information	Translation, factorial analysis, construct validity, and reliability	561 undergraduates (♀)			
Body Image Avoidance Questionnaire (BIAQ)	Campana <sup>b</sup> (2007)	Behavioral	Frequency of body image avoidance behaviors	13 items in three factors: strategies to control hunger and body shapes, strategies of refusal to expose body, and strategies of accommodation	Translation, factorial analysis, construct validity, and reliability	561 undergraduates (♀)			
Body Investment Scale (BIS)	Gouveia et al <sup>52</sup> (2008)	Affective	Emotional investment in the body	20 items in three components: body image, body care, and body touch	Translation, semantic evaluation, factorial analysis, internal consistency	317 ♀ from 15 to 58 years old			
Body Dysmorphic Disorder Examination (BDDE)	Jorge et al <sup>62</sup> (2008)	Satisfaction	Degree of dissatisfaction relating to a given physical feature in patients who underwent plastic surgery	34 items	Translation, internal consistency, intra- and inter-observer reliability, and construct validity	60 patients (52 ♀ and 8 ♂) - cultural equivalence			
Muscle Appearance Satisfaction Scale (MASS)	Silva Junior et al <sup>97</sup> (2008)	Satisfaction	Satisfaction with muscular appearance	19 items in four dimensions: checking, dependence, substance use, and satisfaction	Translation, factorial analysis, internal consistency	30 preoperative patients (♀) from a plastic surgery clinic - validity and reliability			
Body Shape Questionnaire (BSQ)	Di Pietro & Silveira <sup>36</sup> (2009)	Satisfaction	Concern regarding body shape and weight, particularly the frequency with which individuals with or without eating disorders experience the sensation of "feeling fat"	34 items related to situations over the preceding 4 weeks	Translation, factorial analysis, and internal consistency	200 ♂ who practice bodybuilding 164 undergraduates (93 ♂ and 71 ♀)			

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Continuation								
Sociocultural Attitudes Towards Appearance-3 Questionnaire-3 (SATAQ-3)	Amaral et al <sup>7</sup> (2011)	Cognitive	Media influence on body image. Evaluates the acceptance and knowledge of models imposed by social norms about attractiveness	30 items in five subscales: internalization-general, internalization-athletic, pressures, information, and reverse score items	Translation, internal consistency, factorial analysis, reliability, and convergent validity	60 undergraduates (30 ♂ and 30 ♀) - verbal comprehension 86 undergraduates (40 ♂ and 46 ♀) - internal consistency 587 undergraduates (211 ♂ and 295 ♀) - psychometric data		
Body Image Quality of Life Inventory (BIQLI) for burn patients	Assunção <sup>6</sup> (2011)	-	Positive or negative impact of body image on individuals' quality of life. It quantifies how a person's body image experiences affect a broad range of life domains, including sense of self, social functioning, sexuality, emotional well-being, eating, exercise, grooming, etc.	19 items in one factor	Translation, factorial analysis, construct validity	Patients from 18 to 62 years old from a burn treatment unit at a public hospital 4 patients - semantic analysis 4 patients - pretest 77 patients (43 ♀ and 34 ♂) - construct validity		
Body Appreciation Scale (BAS)	Campana <sup>4</sup> (2011)	Satisfaction	Positive body image exclusively in men	9 items in one factor	Translation, factorial analysis, reliability, and discriminant and convergent validities	878 ♂ from 18 to 39 years old with different schooling degrees		
Body Esteem Scale (BES)	Campana <sup>4</sup> (2011)	Satisfaction	Satisfaction of individuals in relation to their body and appearance	35 items in five factors: satisfaction with musculature, satisfaction with adiposity, satisfaction with body functions, satisfaction with face appearance, and satisfaction with body appearance	Translation, factorial analysis, reliability, and discriminant and convergent validities	878 ♂ from 18 to 39 years old with different schooling degrees		
Social Physique Anxiety Scale (SPAS)	Campana <sup>4</sup> (2011)	Affective	Degree of anxiety that a person experiences when others are watching and evaluating his/her body and anxiety caused by the expectation that this external evaluation happens	10 items in one factor	Translation, factorial analysis, reliability, and discriminant and convergent validities	878 ♂ from 18 to 39 years old with different schooling degrees		
Drive for Muscularity Scale (DMS)	Campana <sup>4</sup> (2011)	Behavioral	Extent to which men desire to have a more muscular body and act upon that desire	12 items in two factors: orientation to muscularity and behaviors to become strong	Translation, factorial analysis, reliability, and discriminant and convergent validities	878 ♂ from 18 to 39 years old with different schooling degrees		
Swansea Muscularity Attitudes Questionnaire (SMAQ)	Campana <sup>4</sup> (2011)	Cognitive	Men's concerns about their muscles, desire to be muscular, and bodybuilding behavior	15 items in three factors: investment, value given to muscularity, and masculinity and muscularity	Translation, factorial analysis, reliability, and discriminant and convergent validities	878 ♂ from 18 to 39 years old with different schooling degrees		
Continue								

Continuation									
Masculine Body Ideal Distress Scale (MBIDS)	Campana <sup>d</sup> (2011)	Cognitive	Degree of anxiety of a man for not having a body that meets the standards of beauty	6 items in one factor	Translation, factorial analysis, reliability, and discriminant and convergent validities	878 ♂ from 18 to 39 years old with different schooling degrees			
Body Checking and Avoidance Questionnaire (BCAQ)	Kachani et al <sup>101</sup> (2011)	Behavioral	Evaluation of body checking behaviors in subjects with and without eating disorders	22 items about the frequency of various checking and avoidance behaviors across body parts and weighing frequency	Translation, factorial analysis, and discriminant and concurrent validities	85 ♀ with eating disorders (44 anorexia and 41 bulimia) and 40 control ♀			
Body Appreciation Scale (BAS)	Swami et al <sup>101</sup> (2011)	Satisfaction	Positive body image	13 items in two factors: general body appreciation and body image investment	Translation and factorial analysis	311 undergraduates (195 ♀ and 116 ♂)			
Sociocultural Attitudes Towards Appearance-3 Questionnaire-3 (SATAQ-3)	Swami et al <sup>101</sup> (2011)	Cognitive	Media influence on body image. Evaluates the acceptance and knowledge of models imposed by social norms about attractiveness	30 items in four subscales: internalization-general, internalization-athletic, pressures, and information	Translation and factorial analysis	311 undergraduates (195 ♀ and 116 ♂)			
Body Esteem Scale (BES)	Caetano <sup>e</sup> (2011)	Satisfaction	Satisfaction of individuals in relation to their body and appearance	33 items in four factors: modifiable physical features with physical exercise and nutrition, non-modifiable physical features with physical exercise and nutrition, physical condition and sexuality	Translation, factorial analysis, and internal consistency	500 ♀ from 40 to 60 years old			
Body Shape Questionnaire (BSQ)	Caetano <sup>e</sup> (2011)	Satisfaction	Concern regarding body shape and weight, particularly the frequency with which individuals with or without eating disorders experience a sensation of "feeling fat"	32 items related to attitudes, thoughts, and feelings about the body over the preceding 4 weeks	Translation, factorial analysis, and internal consistency	500 ♀ from 40 to 60 years old			
Body Appreciation Scale (BAS)	Caetano <sup>e</sup> (2011)	Satisfaction	Positive body image	10 items in one factor	Translation, factorial analysis, and internal consistency	500 ♀ from 40 to 60 years old			

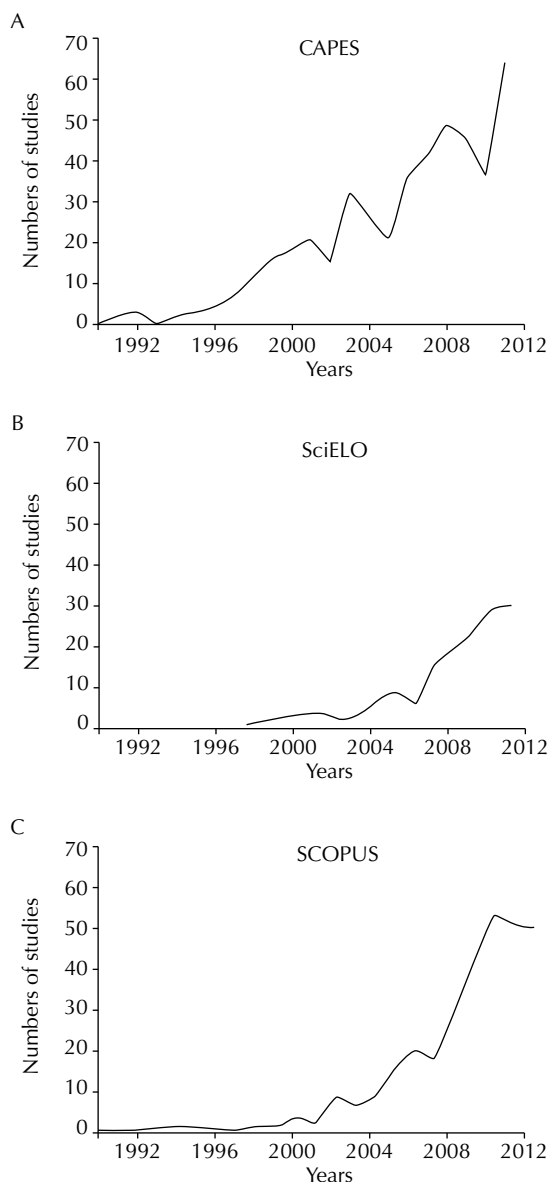
<sup>a</sup> Souza VC. Validade e fidedignidade da versão brasileira do questionário imagem corporal após o câncer de mama [dissertação de mestrado]. Uberlândia: Universidade Federal de Uberlândia; 2010.

<sup>b</sup> Campana ANNB. Tradução, adaptação transcultural e validação do "Body Image Avoidance Questionnaire (BIAQ)" e do "Body Checking Questionnaire (BCQ)" para a língua portuguesa no Brasil [dissertação de mestrado]. Campinas: Universidade Estadual de Campinas; 2007.

<sup>c</sup> Assunção FFO. Body Image Quality of Life Inventory - BIQLI: adaptação para o português e validação para pacientes brasileiros, vítimas de queimaduras [dissertação de mestrado]. Ribeirão Preto: Universidade de São Paulo; 2011.

<sup>d</sup> Campana ANNB. Relações entre as dimensões da imagem corporal: um estudo em homens brasileiros [tese de doutorado]. Campinas: Universidade Estadual de Campinas; 2011.

<sup>e</sup> Caetano AS. Tradução, adaptação cultural e estrutura fatorial do Body Shape Questionnaire, Body Esteem Scale e Body Appreciation Scale para mulheres brasileiras na meia-idade [tese de doutorado]. Campinas: Universidade Estadual de Campinas; 2011.



**Figure.** (A) Theses and dissertations indexed in the CAPES Thesis Database from 1987 to 2011 (N = 459). (B) Articles indexed in the SciELO database from 1998 to 2012 (N = 155). (C) Articles indexed in the SCOPUS database from 1992 to 2013 (N = 321).

feature in the country, regardless of sex and age. These studies showed that dissatisfaction affected approximately 60.0%-83.0% of children,<sup>84,106,f</sup> 60.0%-80.0% of adolescents,<sup>2,31,80</sup> 60.0%-87.0% of adults<sup>30,35,75,88,92,96</sup> and 55.0%-73.0% of the older adults.<sup>21,82,105</sup> Notably, the results have been consistent with regard to showing that

body image disturbances are more frequent in females. Nevertheless, although this research was conducted with men, these studies utilized instruments that were not the most appropriate because they focused on thinness and body fat instead of muscularity, as recommended by Cash & Smolak<sup>16</sup> (2011). In Brazil, few scales or questionnaires have been developed with such characteristics.

In the last decade, some specific groups have gained attention in the Brazilian context. One example is athletes. Several research groups have substantially increased their number of publications concerning this particular population.<sup>19,39,42,43,44,54,77,83,107,108</sup> Moreover, individuals with various clinical conditions have also been investigated. Since the beginning of the 2000s, body image began to be explored in patients with rheumatoid arthritis,<sup>61</sup> cancer,<sup>3,56,79,93,98</sup> visual disability,<sup>45,59</sup> physical disability,<sup>90</sup> human immunodeficiency virus/autoimmune deficiency syndrome,<sup>13,71,89</sup> Parkinson's disease,<sup>47</sup> obesity and bariatric surgery,<sup>14,34,67,76,g</sup> burns,<sup>9,33,63</sup> and pregnancy.<sup>102,h</sup>

After much reflection about the data obtained from this survey and in an attempt to understand the reasons for the lack of important information concerning certain groups, the most plausible explanation we found relies on the availability of instruments. As already exemplified in the case concerning studies conducted with men and women, researchers have faced difficulties assessing several aspects of body image in vast age ranges and physical and mental conditions because of the limited number of instruments available in the country. Moreover, a considerable number of the studies analyzed used tools that may not be entirely suitable for the target population.

Another necessary consideration is the common mistake made by Brazilian researchers with regard to the dimension/component assessed. When studying body image, researchers must acknowledge that this is a multidimensional construct. We noticed that much confusion still exists in the use of appropriate terms (e.g., studies that assessed body dissatisfaction but referred to it as body image perception). Knowledge of its definition and dimensions is essential when selecting appropriate measures. Thus, the results from several published studies should be analyzed with caution.

### Future directions

Despite the progress that has been made in the past several years, the actual state of knowledge about

<sup>f</sup> Fernandes AER. Avaliação da imagem corporal, hábitos de vida e alimentares em crianças e adolescentes de escolas públicas e particulares de Belo Horizonte [dissertação de mestrado]. Belo Horizonte: Universidade Federal de Minas Gerais; 2007.

<sup>g</sup> Rezende FF. Percepção da imagem corporal, resiliência e estratégias de coping em pacientes submetidos à cirurgia bariátrica [dissertação de mestrado]. Ribeirão Preto: Universidade de São Paulo; 2011.

<sup>h</sup> Cairoli PB. Avaliação da imagem corporal e da (in)satisfação com o corpo grávido pela escala de medida em imagem corporal em gestantes inscritas no programa de pré-natal da rede básica de saúde de Vinhedo - SP [dissertação de mestrado]. Campinas: Universidade Estadual de Campinas; 2009.

body image in Brazil is still far from what is known in more developed countries, especially the United States, Australia, and some European countries. Researchers in these advanced centers of study are seeking to understand this theme in fairly diverse populations, develop several new assessment instruments, identify risk and protective factors in body image disturbances, and improve prevention and treatment strategies.<sup>23</sup> Furthermore, in addition to the sociocultural elements that are already well known to influence the development of body image, several new perspectives are being proposed to understand this multidimensional construct. Behavioral and molecular genetic studies have been conducted to identify factors other than psychological ones related to increased susceptibility to poor body image. Similarly, neuroimaging techniques are being applied to explore specific areas of the brain that may be implicated in such disorders.<sup>118</sup>

In Brazil, the study of body image is still in its infancy, and the initiative that is most prominent is providing assessment tools that are essential to advancing research in this area. Importantly, we noted that some specific groups are being studied extensively, whereas others are being relatively overlooked. One might think that this may be attributable to the lack of instruments available, but the tools that have been developed or adapted do not focus on these ignored groups. Therefore, efforts must be made especially in this direction.

Appearance-related issues have pronounced importance in the Brazilian population. Body image has been taken into account in several surveys conducted by the Brazilian government (e.g., National Survey of Scholars Health<sup>1</sup>), and the results have supported the Ministry of Health in planning and implementing health promotion because these evaluations have generated evidence to guide and estimate the impact of interventions to reduce the prevalence of risk factors.

## CONCLUSIONS

By analyzing the current situation of body image research in Brazil, we may conclude that the majority of measures available are intended to be used in college students. Half of these instruments evaluate satisfaction/dissatisfaction with the whole body or parts of it. Females and adolescents of both sexes are the most studied population, and researchers have concentrated their efforts only on the assessment of body satisfaction. The advances that have been made in the field are mainly represented by the large increase in the number of available instruments. Nevertheless, many published studies have used non-validated instruments, with much confusion in the use of appropriate terms. In summary, much more is needed to understand body image in the Brazilian population, but interest in this theme is increasing, and important steps have been taken by scientists in the country.

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<sup>1</sup> Instituto Brasileiro de Geografia e Estatística. Pesquisa nacional de saúde do escolar 2009. Rio de Janeiro; 2009 [cited 2013 Apr 23]. Available from: <http://www.ibge.gov.br/home/estatistica/populacao/pense/pense.pdf>

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