Instituto Superior Miguel Torga

# VALIDATION OF THE BODY ATTITUDES QUESTIONNAIRE IN A COMMUNITY SAMPLE OF PORTUGUESE WOMEN

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**Mestrado em Psicologia Clínica**

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# *Validation of the Body Attitudes Questionnaire in a community sample of Portuguese women*

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Dissertação Apresentada ao ISMT para Obtenção do Grau de Mestre em Psicologia Clínica na Área de Especialização em Terapias Cognitivo-Comportamentais

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**Article**

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**Abstract**

**Purpose:** To translate and validate the Body Attitudes Questionnaire (BAQ) for Portuguese women and examine its factorial structure, reliability, temporal stability, and convergent validity with body appreciation, self-compassion, and symptoms of depression, anxiety, and stress.

**Methods:** A community sample of 263 Portuguese women (18-78 years, $M = 29.4$, $SD = 11.0$) completed the BAQ, Body Appreciation Scale-2, Self-Compassion Scale, and Depression Anxiety Stress Scales-21. A subsample ($n = 54$) repeated the BAQ after 6-8 weeks to assess test-retest reliability. Confirmatory factor analysis tested the original six-factor model, followed by exploratory factor analysis with parallel analysis and Varimax rotation to identify the best-fitting structure.

**Results:** The original six-factor model showed inadequate fit; Exploratory analysis supported a three-factor solution: *Feeling Fat and Lower Body Fatness*, *Disparagement and Salience*, and *Attractiveness and Strength/Fitness* (explaining 42.63% of variance). Internal consistency was acceptable-to-good ($\alpha = .88$; .81; .74; total $\alpha = .73$). Temporal stability was high ($r = .91$; .78; .80; total $r = .82$; all $p < .001$). Convergent validity was consistent with theory: *Disparagement and Salience* correlated positively with depression, anxiety, and stress ($rs = .31$-$.44$, $p < .01$) and negatively with body appreciation and self-compassion ($rs = -.58$; $-.48$, $p < .01$). *Attractiveness and Strength/Fitness* showed the opposite pattern (body appreciation $r = .72$; self-compassion $r = .49$; depression/anxiety/stress $rs = -.23$ to $-.28$, $p < .01$). *Feeling Fat and Lower Body Fatness* was strongly associated with lower body appreciation ($r = -.43$, $p < .01$) but showed negligible links to emotional symptoms.

**Conclusions:** The Portuguese BAQ is a valid and reliable tool capturing both maladaptive and adaptive body attitudes in women. Findings support a culturally condensed three-factor structure and highlight distinct clinical correlates across dimensions. Nevertheless, the use of a convenience sample and the absence of confirmatory testing of the new structure warrant caution. Replication in larger and more diverse samples is needed, but the present findings provide a valuable step toward refining theoretical models of body attitudes and guiding culturally sensitive interventions.

***Keywords:*** Body Attitudes Questionnaire; body attitudes; validation; psychometrics; Portuguese women.

**Resumo**

**Objetivo:** Traduzir e validar o *Body Attitudes Questionnaire* (BAQ) para mulheres portuguesas e examinar a sua estrutura fatorial, fiabilidade, estabilidade temporal e validade convergente com apreço pelo corpo, autocompaixão e sintomas de depressão, ansiedade e stress.

**Método:** Uma amostra comunitária de 263 mulheres portuguesas (18-78 anos, $M = 29.4$, $DP = 11.0$) completou o BAQ, a *Body Appreciation Scale-2*, a *Self-Compassion Scale* e a *Depression Anxiety Stress Scales-21*. Um subgrupo ($n = 54$) respondeu novamente ao BAQ após 6-8 semanas para avaliar a fiabilidade teste-reteste. A análise fatorial confirmatória testou o modelo original de seis fatores, seguida de análise fatorial exploratória com análise paralela e rotação Varimax para identificar a estrutura mais adequada.

**Resultados:** O modelo original de seis fatores apresentou ajustamento inadequado; a análise exploratória apoiou uma solução de três fatores: *Feeling Fat and Lower Body Fatness*, *Disparagement and Salience* e *Attractiveness and Strength/Fitness* (explicando 42.63% da variância). A consistência interna foi aceitável a boa (α = .88; .81; .74; total α = .73). A estabilidade temporal foi elevada ($r = .91$; .78; .80; total $r = .82$; $p < .001$). A validade convergente foi consistente com a teoria: *Disparagement and Salience* correlacionou-se positivamente com depressão, ansiedade e stress ($rs = .31$-$.44$, $p < .01$) e negativamente com apreço pelo corpo e autocompaixão ($rs = -.58$; $-.48$, $p < .01$). *Attractiveness and Strength/Fitness* mostrou o padrão inverso (apreço pelo corpo $r = .72$; autocompaixão $r = .49$; depressão/ansiedade/stress $rs = -.23$ a $-.28$, $p < .01$). *Feeling Fat and Lower Body Fatness* associou-se fortemente a menor apreciação corporal ($r = -.43$, $p < .01$), mas apresentou ligações negligenciáveis com sintomas emocionais.

**Conclusões:** A versão portuguesa do BAQ revela-se um instrumento válido e fiável para avaliar atitudes corporais em mulheres, captando dimensões tanto mal-adaptativas como adaptativas. Os resultados apoiam uma estrutura culturalmente condensada de três fatores e evidenciam correlatos clínicos distintos entre as dimensões. Contudo, o uso de uma amostra por conveniência e a ausência de análise confirmatória da nova estrutura exigem prudência na interpretação. A replicação em amostras maiores e mais diversificadas é necessária, mas os resultados constituem um passo relevante para refinar modelos teóricos sobre atitudes corporais e orientar intervenções culturalmente sensíveis.

**Palavras-chave:** *Body Attitudes Questionnaire*; atitudes corporais; validação; psicometria; mulheres portuguesas.

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# Introduction

## Body image and body attitudes

Body image is a complex and multidimensional psychological construct that refers to an individual's perceptions, thoughts, feelings, and behaviors related to their physical appearance (Tylka & Wood-Barcalow, 2015b). It includes a behavioral component (body-related behaviors such as checking), a perceptual component (estimation of one's body size or weight), and a cognitive-affective component (cognitions, attitudes, and feelings towards the body) (Quittkat et al., 2019). While body image offers a broad account of how individuals perceive and experience their bodies, the concept of body attitudes is particularly relevant, as it specifies evaluative, emotional, and behavioral dispositions that shape body-related self-appraisals (Ben-Tovim & Walker, 1991a; Brown et al., 1990; McArthur et al., 2005). These include beliefs and feelings about attractiveness, body size and shape, and the perceived importance of appearance, as well as actions taken to maintain or alter one's body (Souza et al., 2014). Body attitudes are shaped by personal and sociocultural influences, such as thinness ideals, peer and family pressure, and media exposure (Czepczor-Bernat et al., 2017; Damiano et al., 2015; Levine & Chapman, 2011; Jones, 2011).

Traditionally, body image research has emphasized negative aspects such as dissatisfaction, shame, and appearance-related anxiety, often linked to internalized societal ideals and media pressures (Cash, 2005; Tylka, 2011). However, research has been adjusting from focusing only on negative dimensions to also addressing body appreciation or overall positive body image (Avalos et al., 2005; Tylka & Wood-Barcalow, 2015b).

Positive body image is defined as a multidimensional construct involving appreciation, acceptance and love of one's body, broadly conceptualizing beauty, adaptive appearance investment, emphasizing functional capacities of the body, recognizing inner positivity, and filtering information in a body-protective manner (Tylka & Wood-Barcalow, 2015b). Even though research on positive body image has been growing in the past decade, it is still much less developed compared to research on negative body image (Urke et al., 2021). Body appreciation, in particular, refers to accepting, respecting, and holding a positive view of one's body, as well as challenging unrealistic ideals presented in the media (Quittkat et al., 2019). Body appreciation and body dissatisfaction can coexist independently. Cross-sectional evidence suggests that body dissatisfaction is consistently higher in women than in men and remains relatively

stable across age in women, whereas body appreciation increases with age and is higher in women across all ages (Quittkat et al., 2019). Retrospective and qualitative research, however, indicates that women's body evaluations shift across adulthood: younger women tend to focus on weight and appearance, while in later life concerns move toward health and functionality, reflecting major life transitions such as pregnancy, ageing, and physical decline (Lee & Damhorst, 2022). Beyond developmental processes, historical comparisons show that women's thinness-oriented dissatisfaction has gradually decreased over the last three decades, while men's muscularity-oriented dissatisfaction has remained stable and consistently higher (Karazsia et al., 2017). These patterns are consistent with broader evidence of gender differences in body-related evaluations. Although the male body has been increasingly scrutinized as a beauty object (Baghurst et al., 2006), men remain less accountable to attractiveness standards than women (Franzoi & Klaiber, 2007; van der Berg et al., 2007). By contrast, women's bodies are more frequently criticized, which contributes to their higher negative body esteem (Feingold & Mazzella, 1998; Franzoi & Chang, 2000; Tiggemann & Rothblum, 1997) and to a tendency to perceive themselves through an outsider's perspective and engage in self-critical comparison (Franzoi et al., 2012). Empirical studies further confirm that women are more prone to perceive themselves as fatter (Claro et al., 2014) and report higher levels of body image disturbances and dissatisfaction than men (Laus et al., 2015; Gualdi-Russo et al., 2022). Men and women also differ qualitatively in their body ideals: while men typically aspire to muscularity and leanness, women tend to prefer thinness and weight loss (Andersen et al., 2000; Cafri & Thompson, 2004; Vartanian et al., 2001). Taken together, these findings highlight that body-related evaluations are dynamic, shaped by developmental transitions, sociocultural change, and gendered appearance norms.

Accordingly, negative body image has been linked to cultural factors (Ricciardelli & McCabe, 2001). Inter- and intracultural differences in body dissatisfaction are evident (Fuller-Tyskiewicz et al., 2012a), although comparisons can be difficult due to variations in the salience of body dimensions and parts (Fuller-Tyskiewicz et al., 2012a). Body ideals vary substantially across regions of the world. In Western societies, standards typically emphasize muscular bodies for men and thin bodies for women (McCabe & Ricciardelli, 2004; Murnen et al., 2003). In Pacific Island contexts, larger body sizes are traditionally valued (Becker, 1995; Mavoa & McCabe, 2008; Williams et al., 2006). In many Asian countries, slender physiques are idealized (Jung & Forbes, 2007; Leong et

al., 2004; Pon et al., 2004), while in Latin American contexts, such as Chile, preferences for leaner bodies have been observed (McArthur et al., 2005; Mellor et al., 2008). Western culture and its beauty standards have become globally influential, with growing evidence of body dissatisfaction across diverse cultures, often linked to processes of acculturation to Western ideals and lifestyles. Acculturation, understood as the incorporation of aspects of another culture without fully abandoning one's own (Rider et al., 2000), can reshape body ideals (Mussap, 2009) and encourage unhealthy eating and body change behaviors (Chan et al., 2010), frequently mediated by globalized exposure to foreign appearance standards through the media (Wang et al., 1998). For example, individuals in more Westernized Asian regions report greater body satisfaction than those in the United States, who nonetheless show higher levels of dissatisfaction compared to Europeans and Australians (Holmqvist & Frisen, 2010). Several studies have shown that sociocultural factors strongly influence self-perceptions and attitudes, contributing to body dissatisfaction and behaviors aimed at altering body shape and size (Halliwell & Harvey, 2006; Muris et al., 2005; Ricciardelli & McCabe, 2004; Shroff & Thompson, 2006). High levels of body dissatisfaction and engagement in body-altering practices are well documented among Caucasians in North America, Australia, and European countries, but similar issues have also been reported in other populations, such as ethnic minorities in the United States (Reddy & Crowther, 2007; Roberts et al., 2006), Asian populations (Chen et al., 2007; Lee, 2000), and Indigenous communities (Ricciardelli et al., 2004).

Cross-cultural comparisons within Europe further illustrate these dynamics. Although Portugal and Spain share many social and historical characteristics, they differ in certain cultural values. According to Hofstede's model, Spain scores higher on individualism, meaning that personal identity ("I") is emphasized more strongly than group belonging ("We"), and on masculinity, reflecting a stronger focus on competition, achievement, and status (Hofstede, 2001; Hofstede & Minkov, 2010). Moreover, a study by Francisco et al. (2015) found that low self-esteem significantly predicted body dissatisfaction in Spanish adolescents, whereas in Portuguese adolescents dissatisfaction was more evident when sociocultural ideals had been internalized. Their data suggest that, in Spain, physical appearance plays a central role in self-concept, so low general self-esteem can lead to dissatisfaction even without internalization of societal ideals. In contrast, in Portugal dissatisfaction emerged mainly among adolescents who had personally adopted sociocultural ideals (Francisco et al., 2015).

It is therefore particularly relevant to capture body image-related concerns, especially among women, as these predict adverse psychological outcomes such as low self-esteem, disordered eating, and poorer mental health, the latter being linked to stress and greater vulnerability to disease (Cohen et al., 2007; Johnson & Wardle, 2005; Wilson et al., 2013). Consistent with this, negative body image has also been related to lower overall well-being (Meland et al., 2007), as well as specific forms of psychopathology. It has been identified as a predictor of depression (Zhao et al., 2024), with body dissatisfaction showing significant associations with both depressive symptoms and eating disorders (Blashill & Wilhelm, 2014; Gan et al., 2011; Johnson, 2005). Links with anxiety have also been documented, including generalized, panic, and social anxiety symptoms (Azhaar et al., 2020; Vannucci & Ohannessian, 2017). Stress further plays a central role: Murray et al. (2013) found direct associations between stress and body dissatisfaction, and Warren et al. (2012) showed that stress moderated the relationship between "fat talk" and dissatisfaction - at low to moderate stress, fat talk predicted dissatisfaction, whereas at high stress levels dissatisfaction and drive for thinness remained elevated regardless of fat talk. Overall, these findings suggest that stress not only co-occurs with negative body image but amplifies its effects by reducing self-esteem and increasing the importance attributed to appearance, which in turn reinforces dissatisfaction (Murray et al., 2013).

It is equally important to mention the role of self-compassion, defined as an attitude of kindness and understanding towards one's struggles, encompassing mindfulness, self-kindness, and common humanity (Neff, 2003a, 2003b, 2009; Neff & Vonk, 2009). Self-compassion operates as a protective factor against poor body image and eating psychopathology (Tylka & Diest, 2015). Several studies report associations between body dissatisfaction and self-compassion, including Pinto-Gouveia et al. (2014), who found that higher self-compassion was linked to lower body dissatisfaction and less desire for thinness. Self-compassion has also been examined in relation to body image avoidance, defined as behaviors and appearance-related routines associated with negative body image (Rosen et al., 1991), showing significant associations (Homan & Tylka, 2015). Further evidence connects self-compassion to higher life satisfaction (Davis et al., 2020), lower depression and higher self-esteem (Baceviciene & Jankauskiene, 2020; Gillen, 2015). Individuals with greater self-compassion also report lower distress (MacBeth & Gumley, 2012) and healthier body image profiles, characterized by less dissatisfaction,

shame, and surveillance, and greater body appreciation and flexibility (Daye et al., 2014; Kelly et al., 2014; Mosewich et al., 2011; Wasylkiw et al., 2012).

**Assessment of body attitudes**

Despite its relevance, research on body attitudes remains comparatively limited when contrasted with the broader body image field. Worldwide, only a few instruments specifically assess body attitudes. Some focus on attitudinal or multidimensional body image, such as the Body-Self Relations Questionnaire (BSRQ; Brown et al., 2011), designed to capture attitudinal components of body image, and the Male Body Attitudes Scale (MBAS; Tylka et al., 2005), developed to evaluate men's body-related attitudes. Others address specific domains, including the Fat Attitudes Assessment Toolkit (FAAT; Cain et al., 2022), which assesses attitudes toward fatness and fat people, and the Body Attitude Test (BAT; Probst et al., 2007), created for patients with eating disorders.

Even in the area of negative body image and body dissatisfaction, the range of instruments is still scarce. Examples include the Body Image Disturbance Questionnaire (BIDQ; Cash et al., 2004a), which conceptualizes disturbance along a continuum; the Body Image Perception Scale (BIPS; Fatima et al., 2021), assessing beliefs and attitudes related to body image perception; the Body Dissatisfaction Scale Assessment Tool (BDSAT; Mutale et al., 2016), designed to measure dissatisfaction; the Male Body Dissatisfaction Scale (MBDS; Ochner et al., 2009); and the Adolescent Responses to Body Dissatisfaction (ARBD; Maxwell & Cole, 2012). Additional tools capture coping and concerns, such as the Body Image Coping Strategies Inventory (BICSI; Cash et al., 2005), assessing how individuals manage threats to body image, and the Body Image Scale (BIS; Moeen et al., 2013), which explored concerns in young adult females.

In Portuguese-speaking populations, a few adaptations exist, such as the Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015a; Marta-Simões et al., 2016), emphasizing body acceptance; the Body Image Scale (BIS; Moeen et al., 2013; Moreira et al., 2010); and the Male Body Attitudes Scale (MBAS; Tylka et al., 2005; Ferreira et al., 2018). Yet, none of these instruments fully captures the multidimensional and attitudinal nature of body-related self-evaluation - with the last being exclusively male-oriented - so the availability of psychometrically sound measures of female body attitudes remains restricted, particularly in European contexts. Most existing tools either address body image more broadly or emphasize its negative aspects, leaving the specific multidimensional nature of body attitudes relatively underexplored.

The Body Attitudes Questionnaire (BAQ; Ben-Tovim & Walker, 1991a) is one of the few instruments specifically developed to assess body attitudes. Created in Australia, it comprises 44 self-report items organized into six dimensions of women's evaluations of their bodies: Attractiveness (self-perceived attractiveness), Disparagement (feelings of disgust with the body), Feeling Fat (subjective sense of fatness), Salience of Weight and Shape (importance of weight and shape), Lower Body Fatness, and Strength/Fitness (self-assessed physical strength and fitness). Its multidimensional structure enables a comprehensive assessment of both negative attitudes (e.g., disgust captured in the Disparagement subscale) and potentially adaptive ones, such as perceived strength and fitness (Ben-Tovim & Walker, 1991a).

The BAQ has been used in both clinical and non-clinical populations and has generally shown good internal consistency across its subscales (Ben-Tovim & Walker, 1991a). It has been employed to distinguish women with eating disorders from women without psychopathology (Ben-Tovim & Walker, 1991a, 1992), to examine body attitudes in smokers and non-smokers (Ben-Tovim & Walker, 1991b), and to explore the effects of age and weight on women's body evaluations (Ben-Tovim & Walker, 1994). However, its psychometric performance has not been fully consistent. Fuller-Tyszkiewicz et al. (2012b), for example, reported non-invariant item intercepts between pregnant and non-pregnant women, suggesting measurement biases that may compromise group comparisons. Similarly, Scagliusi et al. (2005), applying the BAQ in Brazilian women with and without eating disorders, found that the clinical group scored higher on Feeling Fat, Disparagement, Salience of Weight and Shape, and Lower Body Fatness, lower on Attractiveness, and showed no difference on Strength/Fitness. Duncombe and colleagues also reported Cronbach's alphas ranging from .68 to .92 across four subscales at multiple time points, indicating acceptable but variable reliability. Overall, these results suggest that although the BAQ has demonstrated clinical utility, its properties vary across samples and contexts, warranting further validation.

Currently, the BAQ has not been validated in the Portuguese population. Given the well-documented gendered and cultural variations in beauty standards and body-related beliefs, and the evidence of cross-sample variability in its psychometric performance (e.g., Scagliusi et al., 2005; Fuller-Tyszkiewicz et al., 2012b), such validation would be relevant. Testing the validity of the BAQ in Portuguese women would not only fill the gap of psychometrically sound instruments addressing the multidimensional and

attitudinal nature of body-related self-evaluation but also allow for culturally sensitive assessment.

### The present study

Given the lack of validated measures focused specifically on body attitudes in Portuguese women, the present study aims to translate and validate the Body Attitudes Questionnaire (BAQ) for this demographic. Establishing a culturally adapted and psychometrically sound measure is expected to improve the accuracy of assessment and the robustness of research on body-related experiences among Portuguese women, thereby supporting the development of culturally sensitive tools - and, potentially, targeted interventions - aimed at understanding and promoting healthier body attitudes. Specifically, the study examined the BAQ's factorial structure, analysed item performance, and evaluated reliability through internal consistency, item-total correlations, alpha if item deleted, temporal stability, and intercorrelations between subscales. Convergent validity was assessed with theoretically related constructs, namely body appreciation, self-compassion, and symptoms of depression, anxiety, and stress. Based on prior studies reporting a six-factor structure, we hypothesized (H1) that confirmatory factor analysis (CFA) would support the same six dimensions - Attractiveness, Disparagement, Feeling Fat, Salience of Weight and Shape, Lower Body Fatness, and Strength/Fitness. We further expected (H2) good internal consistency; (H3) good temporal stability; and (H4) good convergent validity, with Attractiveness and Strength/Fitness showing moderate positive correlations with self-compassion and body appreciation (stronger for body appreciation), and Disparagement, Feeling Fat, Salience of Weight and Shape, and Lower Body Fatness showing moderate positive correlations with symptoms of depression, anxiety, and stress, as well as moderate negative correlations with self-compassion and body appreciation (again stronger for body appreciation).

## Method

### Study design

To achieve the purposed goals, a mixed-methods study was conducted, with a non-experimental, descriptive, and cross-sectional design.

### Participants

The sample comprised 263 Portuguese women aged 18-78 years ($M$ = 29.4, $SD$ = 11.0). Regarding marital status, 62% were single, 21% were married, 15% were in a civil partnership, 2% were divorced, and 1% were widowed. Most participants (74%) reported being in a romantic relationship.

Regarding education, 42% of participants held a bachelor's degree, 35% had completed high school, 17% a master's degree, 5% post-secondary non-tertiary education, 0.8% a doctoral degree, and 0.4% basic education. Concerning region of residence, 76% lived in the Center of Portugal, 18% in the North, 5% in the South, and 0.4% in Madeira. With respect to area type, 46% resided in urban areas, 30% in semi-urban areas, and 23% in rural areas. For socio-economic status, 57% reported a medium level, 23% a medium-low level, 17% a medium-high level, and 3% a low level. Regarding mental health, 87% reported no diagnosis and 13% reported a diagnosis; 78% were not receiving any psychological or psychiatric follow-up, while 22% reported being in such follow-up. As for physical activity in the last month, 48% reported none, 41% reported moderate-intensity activity, and 11% vigorous-intensity activity. The mean number of children was 1.45 ($SD$ = .80), and the mean BMI was 24.4 ($SD$ = 4.6).

**Procedures**

Firstly, there was a translation of the original scale to Portuguese and a retroversion to English, by independent and bilingual investigators.

The sample included Portuguese women. The inclusion criteria was to be over 18 years old, to have Portuguese nationality, understanding the Portuguese language and to identify themselves as cisgender[1] women. Non-cisgender individuals were not included, as the study focused on body attitudes within the specific sociocultural context of cisgender women. Prior research indicates that trans and non-binary individuals experience body image in ways influenced by distinct and intersecting social pressures, which differ from those of cisgender women (Richburg & Stewart, 2022). Thus, their exclusion would therefore limit inclusivity and generalizability.

Through a convenience sample method, the sample was collected online, via social media (*Facebook, Instagram, Whatsapp*). The participants fulfilled an evaluation protocol on the Google Forms platform, which contained, on the first page, information

[1] Note. The term *cisgender* refers to individuals whose gender identity corresponds to the sex assigned at birth (American Psychological Association; APA, 2015).

surrounding the goals of this study, the participants and the responsible people for the study, the voluntary participation and the confidentiality guidelines, according to the Helsinki declaration. It was given the contacts of the investigation team so that the participants could clarify any possible doubts. It was also given support contacts, just in case the fulfillment of the protocol would cause any type of discomfort or psychological distress. The participants provided informed consent by selecting the option, "I declare that I have read and understood the information provided about the study on body well-being in Portuguese women, and that I wish to proceed with my participation".

The protocol, which took approximately 15 minutes to complete, included the BAQ along with the following instruments: the Depression, Anxiety and Stress Scales (DASS-21; Lovibond & Lovibond, 1995; Pais-Ribeiro et al., 2004), the Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015a; Marta-Simões et al., 2016), and the Self-Compassion Scale (Neff, 2003b; Castilho & Pinto-Gouveia, 2011). Data collection took place between December 2024 and April 2025. To assess test-retest reliability, 54 participants completed the BAQ again after a 6-8 week interval, during May 2025. Permission to use both the original version of the BAQ and the Portuguese versions of the remaining scales was obtained from the respective authors.

**Instruments**

The protocol involved completing a socio-demographic questionnaire and four self-report questionnaires at the first moment, and a shortened socio-demographic questionnaire and one self-report questionnaire at the second moment. The socio-demographic questionnaires collected information on age, gender, marital status, presence of romantic relationships, academic qualifications, place and type of residence, socio-economic level, mental health diagnoses and whether participants were currently receiving psychological or psychiatric care, weight and height (to compute BMI), number of children (if applicable), and physical activity in the past month. Physical activity was classified according to the Portuguese Directorate-General of Health (DGS, n.d.) as none, moderate-intensity (≥150 min/week; e.g., brisk walking, cycling on flat terrain, water aerobics, light sports) or vigorous-intensity (≥75 min/week; e.g., running, group fitness classes, cycling, swimming, football, tennis). The four self-report questionnaires are described below.

***Body Attitudes Questionnaire – BAQ***

The Body Attitudes Questionnaire (BAQ; Ben-Tovim & Walker, 1991a) assesses women's attitudes toward their bodies. The scale consists of 44 self-report items grouped into six subscales, each reflecting a distinct dimension of body attitudes: Attractiveness (Self-perceived attractiveness), Disparagement (Feelings of disgust with the body), Feeling Fat (Feelings of fatness), Salience of Weight and Shape (The importance of weight and shape in the person's life), Lower Body Fatness, and Strength/Fitness (Self-assessed physical strength and fitness). Items are rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The BAQ has demonstrated good internal consistency (α = .87), as well as good test-retest reliability, and evidence of convergent, divergent, and discriminant validity, particularly in clinical samples involving women with anorexia nervosa (Ben-Tovim & Walker, 1991). The present study aimed to examine the factor structure and psychometric properties of the Portuguese version of the BAQ.

***Depression Anxiety Stress Scales-21 – DASS-21***

The Depression, Anxiety, and Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995; Portuguese version by Pais-Ribeiro et al., 2004) is a 21-item self-report measure assessing the frequency of depression, anxiety, and stress symptoms over the previous week. The items are evenly distributed across three subscales (seven items each) and rated on a 4-point Likert scale (0 = "Did not apply to me at all" to 3 = "Applied to me very much or most of the time"). Higher scores indicate more severe negative affective states. Internal consistency in the original validation was α = .91 for depression, .81 for anxiety, and .89 for stress; in the Portuguese version, α = .85, .74, and .81, respectively. In the present study, the internal consistency was α = .94 for depression, .88 for anxiety, and .91 for stress.

***Body Appreciation Scale-2 – BAS-2***

The Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015a; Portuguese version by Marta-Simões et al., 2016) is a 10-item self-report measure assessing positive body image, defined as respect, care, acceptance, and protection of one's unique body features, regardless of normative body image dissatisfaction. Items are rated on a 5-point Likert scale (1 = "Never" to 5 = "Always"), with higher scores indicating greater body appreciation. This measure has demonstrated excellent internal

consistency, with Cronbach's alpha values of .97 in the original version and .95 in the Portuguese validation. In the present study, Cronbach's alpha was .97.

### *Self-Compassion Scale - SCS*

The Self-Compassion Scale (SCS; Neff, 2003b; Portuguese version by Castilho & Pinto-Gouveia, 2011) is a 26-item self-report measure assessing self-compassion across six dimensions: self-kindness, common humanity, mindfulness, self-judgement, isolation, and over-identification. Items are rated on a 5-point Likert scale (1 = "Almost never" to 5 = "Almost always"), with higher scores indicating greater self-compassion. Only the total score was used in this study. Both the original and the Portuguese validation reported excellent internal consistency (α = .92). In the present study, Cronbach's alpha was .96.

## Data Analysis

Statistical analyses were carried out using the Statistical Package for the Social Sciences (SPSS), version 29.0.2.0 (IBM Corp., 2024) and Amos, version 29 (IBM Corp., 2022). Descriptive item characteristics were examined through means (*M*), standard deviations (*SD*), skewness, and kurtosis, considering |Sk| < 2 and |Ku| < 7 as acceptable (Byrne, 2010). Floor and ceiling effects were defined as >15% of respondents scoring the minimum or maximum, respectively (Terwee et al., 2007). For the reverse-scored items of the BAQ (items 3, 10, 11, 12, 16, 17, 20, 41 and 43), the floor and ceiling effect percentages were reversed. Outliers were identified using Mahalanobis distance ($D^2$).

A confirmatory factor analysis (CFA) tested the six-factor hierarchical structure of the Body Attitudes Questionnaire (BAQ) as proposed by Ben-Tovim and Walker (1991), with the first-order factors - Attractiveness, Disparagement, Feeling Fat, Salience of Weight and Shape, Lower Body Fatness, and Strength/Fitness - specified under a second-order latent factor (Body Attitudes). Maximum likelihood estimation was used with standardized items, reverse-scored where necessary. Robust estimates of standard errors, *p*-values, and 95% confidence intervals were obtained through bootstrapping with 5000 samples (Nevitt & Hancock, 2001). Model fit was evaluated using $\chi^2$ (non-significant desirable), normed $\chi^2$ ($\chi^2/df < 5$), CFI and TLI (> .90), and RMSEA (< .08, 90% CI) (Byrne, 2010). Factor loadings ≥ .50 and squared multiple correlations ≥ .25 were deemed acceptable (Marôco, 2021).

Exploratory factor analysis (EFA; principal components analysis with Varimax rotation) was also performed, guided by parallel analysis with 1000 random correlation matrices (Patil et al., 2008; Kiliç, 2022). Factors were retained when eigenvalues exceeded the 95th percentile of random data eigenvalues, confirmed via scree plot, and with KMO ≥ .50 and Bartlett's test $p < .05$ (Field, 2017). Items were excluded if they had loadings < .30, cross-loadings ≤ .20, a second loading > .30, corrected item-total correlations < .30, or exhibited floor/ceiling effects above 15%.

Internal consistency was assessed via Cronbach's alpha: < .50 unacceptable, .50-.59 poor, .60-.69 questionable, .70-.79 acceptable, .80-.89 good, and ≥ .90 excellent (George & Mallery, 2022), with $\alpha \geq .70$ recommended (DeVellis, 2012; Nunnally, 1978). Item removal effects on alpha were examined. Temporal stability was analyzed using Pearson correlations between test and retest scores, with $r > .70$ considered desirable (Nunnally, 1978). Intercorrelations between BAQ subscales and convergent validity with related constructs were also evaluated via Pearson's *r*, considering associations as very low (< .20), low (.21-.29), moderate (.30-.69), high (.70-.89), and excellent (.90-1.00), as suggested by Pestana and Gageiro (2008).

## Results

### Preliminary Analysis

No missing values were found. All values fell within the reference ranges ($|Sk| < 2$ and $|Ku| < 7$), indicating no significant deviations from normality (Table 1). Although some multivariate outliers were detected, no cases were removed. This choice aimed to preserve the ecological validity of the sample, recognizing that individual differences are expected in psychological constructs like body attitudes (Hair et al., 2019).

### Item characteristics

Many BAQ items presented floor effects greater than 15%, with items 6, 11, 15, 18, 19, 21, 24, 30, 31, 34, 35, 36, 37, and 38 standing out. Notably, item 15 ("I have considered suicide because of the way I look to others") had the highest floor effect at 77%, followed by item 34 ("People laugh at me because of the way I look"; 69%), item 21 ("I feel that my body has been mutilated"; 67%), item 6 ("People avoid me because of my looks"; 60%), and item 18 ("My life is being ruined because of the way I look"; 60%). Other items with substantial floor effects included item 24 ("I couldn't join in with games

or exercise because of my shape"; 53%), item 38 ("I feel fat when I am lonely"; 45%), item 37 ("I am a bit of an 'Iron Man'"; 35%), items 19 ("Wearing loose clothing makes me feel thin"), 35 ("I often feel fat"), and 36 ("I spend a lot of time thinking about my weight") (all 32%), and items 30 ("Thinking about the shape of my body stops me from concentrating") and 31 ("I am preoccupied with the desire to be lighter") (both 30%). In contrast, item 11 ("There are more important things in life than the shape of my body") showed a high ceiling effect (30%). Full descriptive statistics, including skewness and kurtosis for each item, are presented in Table 1.

**Table 1**

*Descriptive Statistics of the BAQ Items*

| BAQ's item | M | SD | Floor | Ceiling | S | K |
|---|---|---|---|---|---|---|
| Item 1 | 3.14 | 1.94 | 4% | 3% | -.35 | -.56 |
| Item 2 | 3.22 | 1.07 | 5% | 11% | -.12 | -.78 |
| Item 3 | 3.27 | .90 | 7% | 3% | -.28 | -.10 |
| Item 4 | 2.97 | 1.28 | 15% | 12% | -.02 | -1.17 |
| Item 5 | 3.10 | 1.36 | 18% | 15% | -.24 | -1.28 |
| Item 6 | 1.60 | .89 | 60% | 2% | 1.64 | 2.63 |
| Item 7 | 3.51 | 1.03 | 3% | 14% | -.56 | -.35 |
| Item 8 | 3.12 | 1.29 | 15% | 13% | -.26 | -1.13 |
| Item 9 | 3.01 | 1.08 | 11% | 7% | -.26 | -.49 |
| Item 10 | 3.49 | 1.18 | 19% | 7% | -.54 | -.71 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Item 11 | 2.08 | .97 | 2% | 30% | .90 | .60 |
| Item 12 | 3.46 | 1.13 | 19% | 6% | -.40 | -.55 |
| Item 13 | 2.68 | 1.25 | 20% | 9% | .29 | -.97 |
| Item 14 | 3.08 | 1.32 | 16% | 13% | -.23 | -1.20 |
| Item 15 | 1.42 | .89 | 77% | 2% | 2.30 | 4.72 |
| Item 16 | 2.94 | 1.21 | 12% | 11% | .14 | -1.00 |
| Item 17 | 3.22 | 1.27 | 20% | 9% | -.09 | -1.13 |
| Item 18 | 1.61 | .89 | 60% | 0.4% | 1.36 | 1.13 |
| Item 19 | 2.22 | 1.10 | 32% | 2% | .59 | -.58 |
| Item 20 | 3.70 | 1.02 | 24% | 2% | -.45 | -.55 |
| Item 21 | 1.57 | .97 | 67% | 2% | 1.83 | 2.82 |
| Item 22 | 2.96 | 1.07 | 10% | 7% | -.06 | -.59 |
| Item 23 | 2.85 | 1.34 | 23% | 11% | .00 | -1.37 |
| Item 24 | 1.71 | .91 | 53% | 0.4% | 1.26 | .91 |
| Item 25 | 2.57 | 1.26 | 25% | 7% | .31 | -1.05 |
| Item 26 | 2.88 | 1.17 | 15% | 7% | -.08 | -.90 |
| Item 27 | 2.40 | 1.23 | 29% | 6% | .52 | -.86 |
| Item 28 | 2.89 | 1.35 | 21% | 12% | -.02 | -1.28 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Item 29 | 3.48 | .95 | 2% | 11% | -.46 | -.28 |
| Item 30 | 2.20 | 1.11 | 32% | 3% | .67 | -.49 |
| Item 31 | 2.37 | 1.21 | 30% | 5% | .49 | -.87 |
| Item 32 | 2.77 | 1.32 | 24% | 8% | -.01 | -1.34 |
| Item 33 | 2.53 | 1.23 | 29% | 6% | .31 | -1.15 |
| Item 34 | 1.49 | .88 | 69% | 2% | 2.11 | 4.39 |
| Item 35 | 2.71 | 1.44 | 32% | 12% | .13 | -1.42 |
| Item 36 | 2.39 | 1.32 | 32% | 9% | .60 | -.87 |
| Item 37 | 2.10 | .99 | 35% | 0.8% | .40 | -.77 |
| Item 38 | 2.12 | 1.26 | 45% | 5% | .82 | -.55 |
| Item 39 | 3.03 | 1.34 | 19% | 13% | -.22 | -1.26 |
| Item 40 | 3.18 | 1.01 | 6% | 8% | -.28 | -.97 |
| Item 41 | 3.11 | 1.14 | 12% | 7% | -.01 | -.96 |
| Item 42 | 3.17 | 1.38 | 18% | 18% | -.33 | -1.20 |
| Item 43 | 3.08 | 1.28 | 14% | 13% | -.11 | -1.14 |
| Item 44 | 2.93 | 1.26 | 16% | 10% | -.03 | -1.13 |

*Note.* BAQ = Body Attitudes Questionnaire; M = Mean; SD = Standard Deviation; S = Skewness; K = Kurtosis.

**Confirmatory Factor Analysis**

A confirmatory factor analysis (CFA) was initially conducted to test the factorial validity of the BAQ based on the original six-factor model proposed by Ben-Tovim and Walker (1991). These authors conceptualized the scale as assessing six distinct but related components of body attitudes: Attractiveness, Disparagement, Feeling Fat, Salience of Weight and Shape, Lower Body Fatness, and Strength/Fitness. In addition to allowing the calculation of subscale scores, the authors also reported a total score with acceptable internal consistency ($\alpha = .87$), which theoretically supports the existence of a broader, second-order latent construct - overall body dissatisfaction or general negative body attitudes.

Therefore, a second-order CFA was tested first, reflecting this hierarchical structure. However, the results indicated poor model fit, $\chi2(899) = 2654.17$, $p < .001$; $\chi2/df = 2.95$; CFI = .67; TLI = .65; RMSEA = .086, 90% CI [.083, .090], and revealed that the first-order factors Attractiveness and Strength/Fitness were weakly explained by the higher-order latent factor, with standardized loadings close to zero. This suggested that a global latent factor may not adequately capture the shared variance across all subscales in this sample.

Subsequently, a first-order CFA was conducted, allowing the six factors to correlate freely, in line with the original multidimensional structure of the BAQ. Despite slightly better fit indices, $\chi2(887) = 2291.09$, $p < .001$; $\chi2/df = 2.58$; CFI = .74; TLI = .72; RMSEA = .078, 90% CI [.074, .082], several factors showed weak intercorrelations - especially between Feeling Fat and Strength/Fitness ($r = -.20$), as well as between Lower Body Fatness and Strength/Fitness ($r = -.17$) - raising questions about the internal coherence of the scale. In both models, multiple items continued to present standardized loadings below .50 and very low explained variance ($R^2 < .25$), particularly within the Attractiveness, Salience, and Strength/Fitness subscales.

Given these findings and in line with recommendations for model respecification when CFA results do not support the theoretical structure (Brown, 2015), an exploratory factor analysis (EFA) was subsequently conducted to empirically assess the latent structure of the BAQ in this sample of Portuguese women.

**Exploratory Factor Analysis**

An exploratory factor analysis (EFA) was conducted to examine the structure of the BAQ. Kaiser Meyer-Olkin test (.91) and Bartlett's test of sphericity, $\chi2(946) = 5885.83$; $p < .001$ confirmed the adequacy of the data. An initial EFA with Varimax rotation and

no fixed number of factors, following Ben-Tovim and Walker (1991), yielded ten components explaining 64.34% of the variance. However, the scree plot suggested a three-factor solution, and cross-loadings were frequent. Parallel analysis (Patil et al., 2008) indicated that four components had eigenvalues exceeding the 95th percentile of those obtained from random data. A subsequent EFA forcing four factors explained 47.51% of the variance but proved unsatisfactory, as one factor lacked meaningful loadings and included only two items - from the original Salience factor - with loadings above .40: *I think it is ridiculous to have plastic surgery to improve your looks* (item 12) and *Losing one kilogram in weight would not really affect my feelings about myself* (item 41). Therefore, a three-factor solution was tested, consistent with the scree plot and the weak performance of the fourth factor. These solutions explained 42.63% of the variance. Following the established criteria (primary loading > .40; secondary < .30; minimum .20 difference), Factor 1 included six items from the original Feeling Fat subscale (5, 8, 10, 14, 17, 42) and two from Lower Body Fatness (23, 27). Several items from both subscales were removed due to cross-loadings, weak loadings, conceptual misfit, or floor effects (4, 13, 19, 25, 28, 35, 38, 39, 44). Factor 2 combined items from Disparagement (6, 15, 18, 21, 24, 34) and Salience (11, 30, 31). Although some showed floor or ceiling effects (e.g., items 11, 15, 21), they were retained due to their conceptual relevance. Items 2 and 33 (Disparagement) and items 12, 20, 32, 36, and 41 (Salience) were removed due to cross-loadings, weak loadings, or floor effects. Factor 3 included items from Attractiveness (1, 7, 40) and Strength/Fitness (16, 22, 29). Items 3, 9, 26, 37, and 43 were removed due to weak or cross-loadings, floor effects, or possible interpretation issues. Table 2 shows the factor loadings resulting from the EFA with three factors.

**Table 2**

*Factor loadings from the Exploratory Factor Analysis of the BAQ*

| | Factor 1 *Feeling fat and Lower body fatness* | Factor 2 *Disparagement and Salience* | Factor 3 *Attractiveness and Strength/fitness* |
|---|---|---|---|
| **1. "I usually feel physically attractive."** | -.23 | -.41 | **.57** |
| 2. "I prefer not to let other people see my body." | .27 | **.39** | -.29 |
| 3. "People hardly ever find me sexually attractive." | -.17 | -.31 | **.34** |
| 4. "I get so worried about my shape that I feel the ought to diet." | **.55** | **.43** | .06 |
| **5. "I feel fat when I can't get clothes over my hips."** | **.78** | .25 | -.00 |
| **6. "People avoid me because of my looks."** | .08 | **.71** | -.12 |
| **7. "I feel satisfied with my face."** | -.06 | -.40 | **.44** |
| **8. "I worry that other people can see rolls of fat around my waist and stomach."** | **.58** | .29 | -.22 |
| 9. "I think I deserve the attention of the opposite sex." | .20 | -.01 | .13 |
| **10. "I hardly ever feel fat."** | **.68** | .08 | -.34 |
| **11. "There are more important things in life than the shape of my body."** | -.06 | **.41** | -.27 |
| 12. "I think it is ridiculous to have plastic surgery to improve your looks." | -.05 | -.06 | -.32 |
| 13. "I like to weigh myself regularly." | .16 | .16 | **.39** |
| **14. "I feel fat when I wear clothes that are tight around the waist."** | **.77** | .24 | -.07 |
| **15. "I have considered suicide because of the way I look to others."** | -.04 | **.66** | .05 |
| **16. "I quickly get exhausted if I overdo it."** | -.15 | -.30 | **.40** |
| **17. "I have a slim waist."** | **.60** | -.08 | -.24 |
| **18. "My life is being ruined because of the way I look."** | .11 | **.77** | -.10 |
| 19. "Wearing loose clothing makes me feel thin." | **.31** | **.45** | .01 |

| | | | |
|---|---|---|---|
| 20. "I hardly ever think about the shape of my body." | **.35** | .16 | -.37 |
| **21. "I feel that my body has been mutilated."** | .13 | **.60** | -.04 |
| **22. "I am proud of my physical strength."** | -.02 | -.19 | **.69** |
| **23. "I feel that I have fat thighs."** | **.69** | .20 | -.10 |
| **24. "I couldn't join in with games or exercise because of my shape."** | .23 | **.44** | -.21 |
| 25. "Eating sweets, cakes or other high calorie food, makes me feel fat." | **.58** | .42 | .14 |
| 26. "I have a strong body." | **.55** | -.01 | **.38** |
| **27. "I think my buttocks are too large."** | **.50** | .21 | .00 |
| 28. "I feel fat when I have a photo taken." | **.75** | **.35** | -.07 |
| **29. "I try and keep fit."** | -.09 | -.01 | **.61** |
| **30. "Thinking about the shape of my body stops me from concentrating."** | .29 | **.64** | -.08 |
| **31. "I spend too much time thinking about food."** | .16 | **.46** | .15 |
| 32. "I am preoccupied with the desire to be lighter." | **.72** | **.37** | .08 |
| 33. "If I catch sight of myself in a mirror or shop window it makes me feel bad about my shape." | **.48** | **.62** | -.23 |
| **34. "People laugh at me because of the way I look."** | .05 | **.70** | -.04 |
| 35. "I often feel fat." | **.76** | **.44** | -.09 |
| 36. "I spend a lot of time thinking about my weight." | **.42** | **.70** | -.03 |
| 37. "I am a bit of an 'Iron Man'." | .16 | **.36** | **.44** |
| 38. "I feel fat when I am lonely." | **.59** | **.56** | -.05 |
| 39. "I worry that my thighs and bottom look dimply." | .33 | **.33** | -.15 |
| **40. "People often compliment me on my looks."** | -.25 | -.12 | **.58** |

| | | | |
|---|---|---|---|
| 41. "Losing one kilogram in weight would not really affect my feelings about myself." | -.16 | .08 | -.13 |
| **42. "I feel fat when I can no longer get into clothes that used to fit me."** | **.79** | .16 | -.06 |
| 43. "I have never been very strong." | **.50** | -.08 | .05 |
| 44. "I try to avoid clothes which make me especially aware of my shape." | **.43** | **.34** | -.13 |

*Note.* Items in bold were retained in EFA. BAQ = Body Attitudes Questionnaire.

## Reliability

Reliability was α = .88 for the Feeling Fat and Lower Body Fatness subscale and α = .81 for the Disparagement and Salience subscale, both indicating good internal consistency, and α = .74 for the Attractiveness and Strength/Fitness subscale, indicating acceptable internal consistency. For the BAQ total (α = .73), showing acceptable internal consistency.

All items showed a corrected item-total correlation superior to .30. Cronbach's alpha coefficients did not improve when any item was eliminated from the subscale (Table 3).

Temporal stability was examined in 54 participants across two evaluation moments, separated by six to eight weeks. Test-retest correlations were high and statistically significant: for the Feeling Fat and Lower Body Fatness dimension, $r = .91$, $p < .001$; for Disparagement and Salience, $r = .78$, $p < .001$; for Attractiveness and Strength/Fitness, $r = .80$, $p < .001$; and for the BAQ total score, $r = .82$, $p < .001$.

**Table 3**

*Reliability of the BAQ*

| | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted | Cronbach's Alpha for each dimension |
|---|---|---|---|
| *Feeling Fat and Lower Body Fatness* | | | .88 |
| Item 5 | .74 | .85 | |
| Item 8 | .58 | .87 | |

| | | | |
|---|---|---|---|
| Item 10 | .64 | .86 | |
| Item 14 | .75 | .85 | |
| Item 17 | .50 | .88 | |
| Item 23 | .68 | .86 | |
| Item 27 | .49 | .88 | |
| Item 42 | .72 | .85 | |
| *Disparagement and Salience* | | | .81 |
| Item 6 | .65 | .78 | |
| Item 11 | .32 | .82 | |
| Item 15 | .54 | .79 | |
| Item 18 | .71 | .77 | |
| Item 21 | .54 | .79 | |
| Item 24 | .45 | .80 | |
| Item 30 | .52 | .79 | |
| Item 31 | .34 | .82 | |
| Item 34 | .63 | .78 | |
| *Attractiveness and Strength/Fitness* | | | .74 |
| Item 1 | .56 | .68 | |
| Item 7 | .40 | .72 | |
| Item 16 | .41 | .73 | |
| Item 22 | .56 | .68 | |
| Item 29 | .49 | .70 | |
| Item 40 | .46 | .71 | |

Note. BAQ = Body Attitudes Questionnaire.

### *Intercorrelations between the BAQ dimensions*

Table 4 presents the intercorrelations among the BAQ dimensions. All were statistically significant and of moderate magnitude (|r| = .39-.46). Feeling Fat and Lower Body Fatness correlated positively with Disparagement and Salience ($r$ = .42, $p$ < .01). Attractiveness and Strength/Fitness correlated negatively with both Feeling Fat and Lower Body Fatness ($r$ = -.39, $p$ < .01) and Disparagement and Salience ($r$ = -.46, $p$ < .01), the latter being the strongest association in absolute terms.

**Table 4**

*Intercorrelations between the BAQ dimensions*

| | 1 | 2 | 3 |
|---|---|---|---|
| 1. *Feeling Fat and Lower Body Fatness* | – | | |
| 2. *Disparagement and Salience* | .42* | – | |
| 3. *Attractiveness and Strength/Fitness* | -.39* | -.46* | – |

Note. *$p$ < .01

### *Convergent Validity*

Convergent validity was assessed through correlations between the BAQ total score and its three factors - Feeling Fat and Lower Body Fatness, Disparagement and Salience, and Attractiveness and Strength/Fitness - with the BAS-2, the DASS-21 subscales (Depression, Anxiety, Stress), and the SCS (Table 5).

At the total scale level, the BAQ showed a small-to-moderate negative correlation with body appreciation (BAS-2; $r$ = -.24, $p$ < .01) and a small negative correlation with self-compassion (SCS; $r$ = -.13, $p$ < .05). Correlations with the DASS-21 subscales were small (Depression: $r$ = .13, $p$ < .05; Anxiety: $r$ = .12, ns; Stress: $r$ = .09, ns).

At the factor level, Feeling Fat and Lower Body Fatness correlated negatively with BAS-2 ($r$ = -.43, $p$ < .01) and SCS ($r$ = –.21, $p$ < .01), but showed negligible associations with depression, anxiety, and stress ($rs$ = .07-.08, ns). Disparagement and Salience showed moderate negative correlations with BAS-2 ($r$ = -.58, $p$ < .01) and SCS ($r$ = -.48,

$p < .01$), and moderate positive associations with depression ($r = .44$, $p < .01$), anxiety ($r = .40$, $p < .01$), and stress ($r = .31$, $p < .01$). By contrast, Attractiveness and Strength/Fitness showed a high positive correlation with BAS-2 ($r = .72$, $p < .01$) and a moderate positive correlation with SCS ($r = .49$, $p < .01$), while correlating negatively with depression ($r = -.28$, $p < .01$), anxiety ($r = -.25$, $p < .01$), and stress ($r = -.23$, $p < .01$).

**Table 5**

*Convergent validity between the BAQ Dimensions/Total and the BAS-2, the DASS-21 and the SCS*

| | DASS-21 *Depression* | DASS-21 *Anxiety* | DASS-21 *Stress* | BAS-2 | SCS |
|---|---|---|---|---|---|
| BAQ Total | .13* | .12 | .09 | -.24** | -.13* |
| 1. *Feeling Fat and Lower Body Fatness* | .07 | .07 | .08 | -.43** | -.21** |
| 2. *Disparagement and Salience* | .44** | .40** | .31** | -.58** | -.48** |
| 3. *Attractiveness and Strength/Fitness* | -.28** | -.25** | -.23** | .72** | .49** |

Note. BAQ = Body Attitudes Questionnaire; BAS-2 = Body Appreciation Scale - 2; DASS-21 = Depression, Anxiety, and Stress Scales - 21; SCS = Self Compassion Scale; *p<.05; **$p < .01$

## Discussion

In order to understand body image as a whole, it is necessary to comprehend its components, such as body attitudes. Especially, when there is growing evidence that body dissatisfaction is consistently higher in women, with empirical evidence indicating women are more likely to perceive themselves as overweight and report greater body image dissatisfaction compared to men (Claro et al., 2014; Laus et al., 2015; Gualdi-Russo et al., 2022). This body dissatisfaction can lead to adverse psychological outcomes, showing significant associations with both depressive symptoms and eating disorders (Blashill & Wilhelm, 2014; Gan et al., 2011; Johnson, 2005). Since the psychometric

instruments which specifically target body attitudes remain restricted, particularly in Europe, with no instrument referring to the multidimensional and attitudinal nature of body-related self-evaluation, and knowing how these influence mental health, it becomes important to validate, namely in the Portuguese context, an instrument which measures the attitudinal component of body image, such as the Body Attitudes Questionnaire. The present study translated and validated the Body Attitudes Questionnaire (BAQ) for the Portuguese female population, by developing a culturally adapted and psychometrically robust instrument, expecting that this will enhance the precision of assessment and strengthen research on body-related experiences in Portugal. Such validation may also contribute to the creation of culturally sensitive tools and inform targeted interventions designed to create healthier body attitudes.

Regarding hypothesis 1, it was not supported. Although not initially expected, the difficulties found in replicating the original six-factor structure of the BAQ can be understandable. Moreover, as Osborne & Fitzpatrick (2012) note, exploratory factor analysis (EFA) is highly sensitive to the characteristics of the sample, the analytical decisions made (such as the number of factors extracted or the rotation method), and the complexity of the constructs being studied. This helps explain why some items showed cross-loadings or did not perform as in the original version. These challenges are particularly common in body image scales, which often include several conceptual dimensions and may behave differently in new populations. In our case, we first conducted a confirmatory factor analysis (CFA), which did not confirm the original structure, and then carried out several EFAs with different parameters, which still yielded inconsistent or unclear results. It is also important to note that the original validation by Ben-Tovim and Walker (1991a) relied only on EFA, without confirmatory testing, which may further contribute to the difficulty in replicating the structure in a culturally distinct sample. A review by Silva et al. (2021) on cross-cultural adaptations of body image measures also reported similar issues, including the need to repeat EFAs and difficulties in obtaining stable structures. This suggests that some variation is to be expected and reflects both the complexity of the construct and the influence of the cultural and sample context. Therefore, it can be explained why, for example, the 'Feeling Fat' and 'Lower Body Fatness' dimensions gathered in one during our EFA, since they both may refer to feelings of fatness. A similar rationale may apply to the merging of the 'Disparagement' and 'Salience' dimensions, as higher importance attributed to weight and shape (Salience) could be associated with greater body dissatisfaction and, consequently, with stronger

self-disgust or repulsion (Disparagement), which may justify their convergence into a single dimension.here is also the possibility that the dimensions 'Attractiveness' and 'Strength/Fitness' have clustered into one because they both share a rather common base, which is positive perceptions of the body (feeling attractive, feeling strong, feeling that one has a healthy/active body). Instead of two separate dimensions, individuals might comprehend both as dimensions which reflect appreciation of the body. For example, in a study conducted by Swami et al. (2007), which compared body weight preferences in three countries (United Kingdom, Spain and Portugal), BMI was the principal determinant of physical attractivity, with the waist-to-hip ratio being a significant predictor of attractiveness in the Spanish and Portuguese groups, which indicates that there is a relation between the body's curvature (indicator of shape and health) and what is considered as attractive.

Also, for each dimension, some items were discarded based on the EFA. The first dimension combined items from the original 'Feeling Fat' (5, 8, 10, 14, 17, 42) and 'Lower Body Fatness' (23, 27) subscales. This convergence appears conceptually coherent, as all retained items capture subjective perceptions or feelings of fatness. In contrast, several excluded items showed misalignment with this content or statistical issues. For example, item 4 ("I get so worried about my shape that I feel I ought to diet") reflects general weight concern rather than perceived fatness; item 19 ("Wearing loose clothing makes me feel thin") does not directly capture perceived fatness and may reflect avoidance or compensatory behaviors, also presenting a 32% floor effect. Items 25, 28, 35, 38, and 44 were excluded for cross-loadings and floor effects (16-45%). From the original 'Lower Body Fatness' dimension, item 13 ("I like to weigh myself regularly") had a weak loading, a 20% floor effect, and conceptually reflects weight monitoring rather than concern with specific regions. Item 39 ("I worry that my thighs and bottom look dimply") had ambiguous meaning - "dimply" relating to skin texture rather than perceived fatness - and showed a 19% floor effect. This pattern suggests that the "Feeling Fat and Lower Body Fatness" dimension captures fatness-related concerns as a unified construct, whereas items reflecting weight control behaviors or ambiguous content did not load clearly on this dimension.

The 'Disparagement and Salience' dimension retained items 6, 11, 15, 18, 21, 24, 30, 31, and 34, originating from both the original Disparagement (6, 15, 18, 21, 24, 34) and Salience (11, 30, 31) subscales. Although all retained items showed floor or ceiling effects, they were kept as they appear to capture more extreme or socially shaped

dimensions of body attitudes. For example, item 11 ("There are more important things in life than the shape of my body") showed a 30% ceiling effect, item 15 ("I have considered suicide because of the way I look to others") had a 77% floor effect and reflects severe emotional distress related to body image, and item 21 ("I feel that my body has been mutilated"), with a 67% floor effect, may represent an experience perceived as too extreme or not easily relatable for most respondents. Several items from these subscales were removed due to inadequate loadings or cross-loadings. From Disparagement, item 2 ("I prefer not to let other people see my body") loaded only .39, and item 33 ("If I catch sight of myself in a mirror or shop window it makes me feel bad about my shape") showed cross-loadings and a 29% floor effect. From Salience, item 12 ("I think it is ridiculous to have plastic surgery to improve your looks") had a weak loading, a 19% floor effect, and likely reflects broader appearance-related beliefs rather than body weight or shape; item 20 also showed poor loading and a 24% floor effect. Items 32 and 36, though originally from Salience, loaded more strongly on Factor 1 and presented floor effects (24% and 32%), while item 41 did not load on any factor. The resulting configuration suggests that this dimension integrates emotional distress and self-disgust with the personal salience attributed to body weight and shape, supporting their conceptual convergence.

The 'Attractiveness and Strength/Fitness' dimension retained items 1, 7, 16, 22, 29, and 40, combining items from the original Attractiveness and Strength/Fitness subscales. Items 3 and 9 (Attractiveness) were excluded due to low factor loadings (.34 and .13, respectively); in particular, item 9 ("I think I deserve the attention of the opposite sex") was adapted in Portuguese as "I think I deserve the attention of people I could be attracted to," broadening the reference beyond the opposite sex, though this change may have introduced interpretation issues. From Strength/Fitness, item 26 ("I have a strong body") loaded more strongly on Factor 1, suggesting that participants associated it more with fatness than with physical strength. Item 37 ("I am a bit of an 'Iron Man'") showed a 35% floor effect and cross-loaded on Factor 2, indicating possible misinterpretation or negative connotations, while item 43 ("I have never been very strong"), although not explicitly about fatness, also loaded on Factor 1, suggesting that respondents may have interpreted it in terms of fatness rather than strength. The items retained in this dimension appear to reflect positive body evaluations, focused on perceived attractiveness and physical competence.

For hypothesis 2, it was supported. The internal consistency values of the BAQ dimensions and BAQ total were satisfactory, with Cronbach's Alpha values going from

acceptable (α = .74) to good (α = .88) and the BAQ total presenting an acceptable value of α = .73. These results might show that the dimensions present homogeneity and can be used independently to evaluate body attitudes.

Concerning hypothesis 3, it was also supported. The temporal stability analysis showed strong and significant correlations from $r$ = .78 to $r$ = .91, during the temporal interval of six to eight weeks, confirming the temporal stability of the BAQ and that this temporal interval might be adequate to evaluate the body attitudes construct, since it might be relatively stable across time. A study conducted by Tiggeman (2004), showed that during adulthood, body dissatisfaction stayed stable, especially in women, till advanced age, being in line with our results.

In respect to hypothesis 4, results supported the expected associations, with correlations in the predicted magnitude and direction. The convergent validity analysis showed significant links between the BAQ dimensions and body appreciation, depression, anxiety, stress, and self-compassion.

At the total scale level, the BAQ showed weaker correlations with other constructs, suggesting that the separate dimensions may capture body attitudes more effectively than the overall score. The BAQ total correlated negatively with body appreciation and self-compassion, and positively, though weakly, with depression, but not with anxiety or stress. These findings suggest that, overall, negative body attitudes are modestly linked to lower protective factors and to depressive symptoms, but less clearly related to anxiety or stress.

At the factor level, distinct patterns emerged. The Feeling Fat and Lower Body Fatness dimension correlated strongly and negatively with body appreciation and moderately with self-compassion, but showed negligible associations with depression, anxiety, and stress. This suggests that this factor captures more specific and localized perceptions of body fatness, which may reflect immediate and situational dissatisfaction rather than broader psychopathology. By contrast, the Disparagement and Salience dimension showed strong negative correlations with both body appreciation and self-compassion, and moderate positive correlations with depression, anxiety, and stress. This indicates that global attitudes of repulse and preoccupation with body weight and shape are more closely tied to emotional vulnerability and self-critical evaluation, making this factor more strongly connected to general psychological distress. Finally, the Attractiveness and Strength/Fitness dimension correlated positively with body appreciation and self-compassion, and negatively with depression, anxiety, and stress.

This indicates that perceiving oneself as attractive and physically competent is linked to fewer emotional symptoms and to stronger psychological resources.

Taken together, these findings support the validity of the Portuguese BAQ in capturing both maladaptive and adaptive dimensions of body attitudes. They also highlight an important distinction: while localized fatness perceptions ('Feeling Fat and Lower Body Fatness') can exist without clinical distress, global negative evaluations involving disparagement and salience appear more strongly associated with vulnerability to psychopathology. In contrast, positive evaluations of attractiveness and physical competence ('Attractiveness and Strength/Fitness') are associated with greater protective resources.

When compared with the original BAQ (Ben-Tovim & Walker, 1991a), which comprised six dimensions, our three-factor structure reflects a more condensed and integrated organization of body attitudes. For instance, Feeling Fat and Lower Body Fatness, which were strongly correlated but separate in the original study, emerged here as a single factor. Similarly, Disparagement and Salience, only weakly associated in the original, clustered together in our data, while Attractiveness and Strength/Fitness, previously more distinct, formed a unified dimension in opposition to fatness-related perceptions.

This more cohesive structure may reflect temporal, cultural or sample-specific influences in how body attitudes are organized and experienced. The original BAQ was developed in 1991, and much has shifted since then in how body image is shaped by social ideals, campaigns promoting body acceptance, and prevention programs aimed at reducing body dissatisfaction (Bacon & Aphramor, 2014; Karazsia et al., 2017; Stice et al., 2000; Stice & Presnell, 2007; Unilever, 2015; Wilksch & Wade, 2009). For instance, results from a study by Cash et al. (2004b) suggested that thinness-oriented body dissatisfaction increased until the early to-mid-1990s, after which body image concerns stabilized or decreased. Such changes may also account for differences in structure and validity across studies and contexts. Indeed, previous adaptations of the BAQ, such as Fuller-Tyszkiewicz et al. (2012b) with pregnant women and Kagawa et al. (2007) with Japanese participants, also reported reorganized factor structures, underscoring the need to consider cultural, temporal, and sample-specific factors.

When it comes to limitations, the use of convenience sampling prevents direct generalization of the results. Future studies should include participants from different

sociocultural backgrounds and samples more representative in terms of gender, age, and geographical region.

Another limitation concerns the instrument itself, namely the risk of memory bias and its length, which may reduce applicability. Additionally, the initial aim of validating the BAQ in both pregnant and non-pregnant Portuguese women was not feasible due to the small number of pregnant participants, preventing meaningful group comparisons. Considering this, the validation was carried out in a general sample of Portuguese women.

A further limitation is that a confirmatory factor analysis (CFA) was not conducted after the exploratory factor analysis (EFA), leaving the stability and replicability of the three-factor solution to be tested in future studies with Portuguese women. The factor structure observed in this study may also reflect specific cultural, social, and sample characteristics, which could explain differences from the original six-dimension BAQ. Researchers should take this into account when interpreting results. Finally, the psychometric properties of the BAQ should be further examined in both clinical and community samples to strengthen its reliability and ensure broader applicability across contexts.

**Conclusion**

The present study translated and validated the Body Attitudes Questionnaire (BAQ) for Portuguese women, providing a culturally adapted and psychometrically robust instrument to assess the attitudinal component of body image. The findings support a three-factor structure - *Feeling Fat and Lower Body Fatness*, *Disparagement and Salience*, and *Attractiveness and Strength/Fitness* - which reflects a more integrated organization of body attitudes than the original six-factor model. This reorganization may be shaped by cultural and temporal influences, underscoring the importance of adapting body image measures across contexts.

Psychometric analyses demonstrated satisfactory internal consistency, temporal stability, and convergent validity, confirming that the BAQ captures both maladaptive and adaptive dimensions of body attitudes. Importantly, the results highlighted meaningful distinctions: localized perceptions of fatness were less tied to psychological distress, while global negative evaluations of the body were more strongly associated with vulnerability to depression, anxiety, and stress. In contrast, positive evaluations of attractiveness and physical competence emerged as protective factors linked to greater body appreciation and self-compassion.

Although replication with more diverse and representative samples is needed, this study provides an important step toward advancing research on body image in Portugal. The validated BAQ can contribute not only to the refinement of theoretical models of body attitudes but also to the design of culturally sensitive interventions aimed at promoting healthier body-related experiences.

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# Appendices

## **Appendix A.** Ethics Committee Opinion

INSTITUTO SUPERIOR MIGUEL TORGA
COIMBRA 1937

### Parecer da Comissão de Ética

**Parecer: CE-P28-25**

**Projeto de Investigação**: "Validação da Escala de Atitudes Corporais (BAQ) numa amostra portuguesa de mulheres grávidas e não grávidas"

**Investigadora:** Ana Sofia Pacheco Teixeira Mendes

**Orientadora:** Professora Doutora Cláudia Pires

**Data entrada**: 16 de janeiro de 2025

**Data de apreciação**: 14 de fevereiro de 2025

**Fundamentação do parecer:**

A investigação intitulada "Validação da Escala de Atitudes Corporais (BAQ) numa amostra portuguesa de mulheres grávidas e não grávidas" apresentada pela Mestranda Ana Sofia Pacheco Teixeira Mendes sob a orientação da Professora Doutora Cláudia Pires apresenta fundamentação teórica e metodológica. O objetivo desta investigação é o desenvolvimento e validação da *Body Attitudes Questionnaire* (Questionário de Atitudes Corporais; BAQ) numa amostra portuguesa de mulheres grávidas e não grávidas.

A Investigadora enuncia os procedimentos éticos a desenvolver, estão claramente descritos os critérios de participação, a metodologia de recolha dos dados e envolvimento dos participantes, o consentimento informado, está garantido o tratamento e recolha anónima dos dados e o cumprimento do pedido de autorização aos/às autores/as dos instrumentos utilizados. O estudo apresenta-se como estando de acordo com os pressupostos da declaração de Helsínquia, a participação é voluntária e os dados recolhidos garantem a confidencialidade e a privacidade dos/as participantes.

A Comissão de Ética do Instituto Superior Miguel Torga, após análise e consideração dos aspetos éticos deste estudo, emite parecer positivo.

Coimbra, 14 de fevereiro de 2025

P'la Comissão de Ética

(Joana Sequeira, PhD)

Página 1 de 1

Largo da Cruz de Celas, nº 1
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**Appendix B.** Submission of authorization requests to the authors and the corresponding responses

Dear Professor Ben-Tovim,
I hope this message finds you well. My name is Ana Sofia Pacheco, and I am a Master's student in Clinical Psychology at Instituto Superior Miguel Torga, in Coimbra, Portugal under the supervision of Professor Cláudia Pires.
I am writing to request your permission to use the Body Attitudes Questionnaire (BAQ) in my research project, which will focus on understanding how pregnant and non-pregnant women in Portugal perceive body image during a pregnancy, or the idea of a pregnancy. I believe that the BAQ would be an invaluable tool for my study, and we would greatly appreciate your authorization to include it.
If granted permission, we will ensure that the questionnaire is used in accordance with ethical guidelines and if the results of this research get published, we will guarantee that proper credit is given to you for the development of the BAQ and your authorization for inclusion in our study.
Thank you very much for considering my request.
I look forward to hearing from you.

Best regards,

Ana Sofia Pacheco.

**4th November 2024, 11:08am**

Dear Ms Sofia
Thanks for your request. I am delighted to give you permission to use the BAQ.
Best wishes
David Ben-Tovim

**5th November 2024, 04:33am**

Cara Professora Doutora Joana Marta-Simões,

Espero que este email a encontre bem. O meu nome é Ana Sofia Pacheco e sou aluna do mestrado de Psicologia Clínica no Instituto Superior Miguel Torga em Coimbra, sob supervisão da Professora Cláudia Pires.

Estou a escrever para pedir permissão para utilizar a versão portuguesa da "Body Appreciation Scale" na minha dissertação de mestrado, cujo foco é entender a forma como mulheres grávidas e não grávidas em Portugal, percebem a sua imagem corporal durante a gravidez ou a ideia de uma gravidez. No caso de obter a sua autorização, gostaria de saber se seria possível também obter os seus itens e respetivas instruções de aplicação.

Acredito que esta escala será uma ferramenta valiosa para o meu estudo e gostaríamos muito de ter autorização para a incluir.
Se tivermos a sua aprovação, asseguraremos que o questionário é utilizado de acordo com normas éticas e, no caso dos resultados desta pesquisa serem publicados, garantiremos que seja atribuído o devido reconhecimento à Professora.
Desde já, grata por considerar o meu pedido.
Aguardo pela sua resposta.

Grata, Ana Sofia Pacheco.

**7th November 2024, 09:59am**

Cara Ana Sofia, parabéns e boa sorte para o seu estudo que me parece muito interessante.
Quando referirem a escala em língua portuguesa, peço o favor de a referirem como escala de pfvr Apreço pelo Corpo, penso que no site do cineicc ficou apreciação mas considero uma expressão errada. A cotação faz-se pela média dos scores.

Votos de sucesso,

**7th November 2024, 15:16pm**

**Appendix C.** Informed consent for the participants

Consentimento Informado

Eu, abaixo assinada _____ (nome completo) estou de acordo em participar no estudo sobre bem-estar corporal em mulheres portuguesas grávidas e não grávidas no âmbito de uma tese de Mestrado em Psicologia Clínica, pelo Instituto Superior Miguel Torga (Coimbra). Esta investigação está sob orientação da Professora Doutora Cláudia Pires.

Foi-me fornecida uma explicação integral da natureza e objetivos do estudo e concedida a possibilidade de colocar questões e esclarecer tudo o que me pareceu relevante. Sei que devo responder de forma sincera, e que não existem respostas certas ou erradas.

Sei que sou livre de abandonar o estudo, se for esse o meu desejo.

Foi-me garantido que os dados a serem recolhidos serão apenas utilizados para fins de investigação e concordo em que sejam analisados pelos investigadores envolvidos no estudo, sob a autoridade delegada pelo investigador principal.

Caso aceite participar, assinale, por favor, o quadrado abaixo.

Aceito participar neste estudo ☐

A participante,

_____

(nome completo)

Data

____/____/____

**Appendix D.** Sociodemographic Questionnaire

## Questionário sociodemográfico

Idade: _____

Género: Feminino ☐ Masculino ☐ Outro ☐

Estado civil: Solteira ☐ União de facto ☐ Casada ☐ Divorciada ☐ Viúva ☐

Encontra-se em alguma(s) relação(ões) amorosa(s) significativa(s), neste momento? Sim ☐ Não ☐

Habilitações literárias: Ensino Básico (1.º ano ao 9.º ano) ☐ Ensino Secundário (10.º ao 12.º ano) ☐
Pós-secundário não superior ☐ Licenciatura ☐

Área de residência atual: Norte ☐ Centro ☐ Sul ☐ Região Autónoma dos Açores ☐
Região Autónomo da Madeira ☐

Considera que reside numa zona: Urbana ☐ Semi-urbana ☐ Rural ☐

Como classifica o seu nível socioeconómico atual? Baixo ☐ Médio-baixo ☐ Médio ☐
Médio-alto ☐ Alto ☐

Tem alguma condição de saúde mental/neurodiversidade diagnosticada? Sim ☐ Não ☐

Se respondeu "Sim" à questão anterior, e se não importar, indique qual: _____

Neste momento tem algum acompanhamento em algum serviço de saúde mental? Sim ☐ Não ☐

Se respondeu "Sim" à questão anterior, e se não se importar, indique genericamente o motivo:
_____

Peso (Kg): _____

Altura (Cm): _____

Tempo de gestação em semanas (se não estiver grávida, coloque "0"). _____

Número de filhos (excluindo possível gravidez atual; se não tiver filhos coloque "0").
_____

Praticou habitualmente algum tipo de atividade física no último mês? *Nota: Atividade física de intensidade moderada (>150 minutos semanais, aumento de pulsação e sudação. Consegue falar pausadamente mas não consegue, por exemplo, cantar. Inclui atividades como marcha rápida, andar de bicicleta em terreno plano, fazer hidroginástica, alguns tipos de dança, desportos leves, etc.); Atividade física de intensidade vigorosa (>75 minutos semanais, grande aumento da pulsação e sudação, dificuldade em falar sem fazer pausas para respirar. Inclui atividades como a corrida, aula de grupo em ginásio, andar de bicicleta, natação, jogar futebol, ténis, etc.). Atividade física recomendada (Direção Geral de Saúde [DGS], s.d.)* https://alimentacaosaudavel.dgs.pt/atividade-fisica-recomendada/.

Não ☐ Sim, atividade física de intensidade moderada ☐ Sim, atividade física de intensidade vigorosa ☐