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Fit and Fun: Content Analysis Investigating Positive Body Image Dimensions of Adolescents' Facebook Images

Sandra Torres^{1,2} & Pedro Quelhas Brito^{3,4}

¹ Faculty of Psychology and Education Sciences, University of Porto, Porto, Portugal

² Center for Psychology, University of Porto, Porto, Portugal

³ LIAAD/INESC-Tec, Porto, Portugal

⁴ Faculty of Economics, University of Porto, Porto, Portugal

Abstract

Body-positive content on social media offers a promising approach to promote positive body image (PBI). However, we need further research in order to better characterize and understand its nature. This study provides a content analysis of adolescents' image-based posts on Facebook. We aimed to determine whether the theoretical six-facet conceptualization of PBI was reflected in adolescents' posts, and whether there were different trends according to gender and time, over a 3-year period. A set of 6,503 images posted by 66 adolescents (51.5% male), were coded for PBI attributes. The results indicate that inner positivity and appreciation of body functionality through involvement in sports and fun activities were the most represented PBI facets. Conversely, imagery representing taking care of the body via healthy food/beverage choices, embracing body diversity, and filtering information in a body-preserving manner, was rarely used to project self-image on Facebook. Gender differences were only found in the appreciation of body functionality via sports activities (more prevalent in boys) and investment in appearance using benign methods, such as the use of cosmetics (more prevalent in girls). Posts addressing appearance and health-promoting self-care behaviors tended to increase in mid-adolescence. We conclude that the adolescents' posts on Facebook reflected several PBI characteristics, with a particular focus on those that enhance a functional view of the body. Future social media and school-level initiatives should prioritize the development of attuned self-care as well as mechanisms to filter messages that could endanger PBI, while also increasing the visibility of the diverse bodies that exist in the world.

Keywords: body-positive content; positive body image; body image; social media; social networking sites; Facebook

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Introduction

Adolescence is an important time for preventing body dissatisfaction and the development of positive body image (PBI; Rodgers et al., 2016). Sociocultural theories of body image, such as the Tripartite model (Shroff & Thompson, 2006), propose that social media are a primary source of influence on body image development. Social media platforms contain a profusion of idealized body-related content, which has been found to promote unfavorable

appearance comparisons and reinforce appearance as a central feature of identity (Holland & Tiggemann, 2016). In response to these detrimental effects, there is a growing proliferation of the so-called “body-positive movement” on social media. This depicts content that challenges sociocultural ideals of appearance and promotes acceptance of diverse body types (Cwynar-Horta, 2016; Sastre, 2014). Fueled by the assumption that online body-positive messages could encourage viewers’ positive body image (Rodgers et al., 2022), attention has now turned towards the characteristics of this content. Researchers have questioned whether messages disseminated across leading body-positive accounts reflect the core features of PBI conceptualized by Tylka and Wood-Barcalow (2015b). Despite the fact that social media is extensively used by adolescents (Shychuk et al., 2022) and this period is critical in body image development (Voelker et al., 2015), there is currently a lack of research analyzing the PBI content posted by adolescents in social media. To fill this gap, this study aimed to determine the frequency of adolescents’ image-based posts on Facebook that are aligned with the theoretical construct of PBI and their variation according to gender and time, over a 3-year period.

Body Positivity

In recent years, the body-positive movement (or body positivity) has developed in social media as a reaction to the dominance of images promoting unrealistic and unattainable standards of beauty (R. Cohen et al., 2021). Body positivity advocates that all bodies deserve respect and encourages individuals to adopt a positive stance towards their body by accepting and taking care of it (Cwynar-Horta, 2016; Sastre, 2014). Body-positive content has spread on social network sites (SNS), such as Instagram, Facebook, and Twitter. It mainly includes photos of bodies that are underrepresented in traditional media (e.g., women happily displaying their stomach rolls or other supposed “flaws”; R. Cohen, Irwin, et al., 2019), as well as inspirational memes, text or quotations. Photos and other images (e.g., cartoons) are often accompanied by a caption (text) to provide context and reinforce the message (Rodgers et al., 2022).

A recent scoping review offers support for the potential for body-positive social media content to be beneficial for body image (Rodgers et al., 2021). This finding may be particularly relevant in the context of adolescence, as this is a period of increased awareness of bodily cues and self-reflection on physical appearance triggered by a pubertal growth spurt. In addition, physical changes in puberty typically initiate a redefinition of perceptions, beliefs, attitudes, and behavioral reactions towards one’s own body (Thompson, 2004). Overall, self-image issues have a significant influence on identity formation, which is a key developmental task in adolescence (Alsaker & Kroger, 2006; Berger, 2006). For these reasons, it is extremely important that, during this period, adolescents develop in an environment that favors the promotion of PBI. As social media has become an indispensable part of adolescents’ lives, exposure to online messages congruent to PBI can be an important context to consider.

Effects of Body-Positive Content on Body Image

The benefits to body image of being exposed to body-positive messages on social media may be better understood in light of the recent construct of PBI (R. Cohen et al., 2021). PBI involves accepting the body as it is and appreciating its uniqueness and functionality. It is theoretically described as a multifaceted construct consisting of six core components: (1) appreciation of the function, health, and characteristics of the body, (2) body acceptance and love, even if not completely satisfied with all aspects of the body (3) a broad conceptualization of beauty (i.e., perceiving beauty based on a variety of looks, appearances, body sizes/shapes, and inner characteristics); (4) adaptive investment in appearance (i.e., enhancing one’s natural features via benign methods, such as grooming behaviors), (5) inner positivity that influences outer demeanor (i.e., a feeling that you are beautiful and worthwhile, which may radiate outward to positive feelings, body confidence, and adaptive behaviors) and (6) filtering information in a body-protective manner (i.e., creating a filter to block out negative body-related images and messages and internalize information that is consistent with PBI; Tylka & Wood-Barcalow, 2015b). Body appreciation - a key element of PBI that involves respecting and appreciating the features, functionality, and health of the body (Avalos et al., 2005) - is linked to diverse indicators of psychological and physical health (for a review see Linardon et al., 2022; Tylka, 2019) and has been proposed as a significant factor in preventing psychosocial problems (Carrard et al., 2019). This makes PBI an important area to develop in adolescence, and body positivity on social media offers a promising approach to enhance it.

There are theoretical and empirical arguments that reinforce the usefulness of both posting and viewing body-positive content in SNS for promoting PBI. Regardless of whether the content reflects authentic self-expression or

contains some degree of self-idealization, by posting body-positive messages, adolescents may become more receptive and motivated to engage in congruent body-related attitudes. This motivation can also be reinforced if these posts generate supportive interactions (e.g., likes, positive comments), which serve as social rewards (Bandura, 2001; Zhu et al., 2019). On the other hand, the exposure to body-positive content in social media can also be beneficial. Applied to mass communication, Social Cognitive Theory asserts that a vast amount of information about human thinking and behavior is retrieved from observational learning in the media (Bandura, 2001). Empirical data have also shown that viewing social media content that promotes diverse and realistic physical appearances and encourages people to accept and love their body, has a positive effect on mood, body satisfaction (R. Cohen, Fardouly, et al., 2019; Stevens & Griffiths, 2020), body esteem (Davies et al., 2020), and body appreciation (R. Cohen, Fardouly, et al., 2019; Tiggemann et al., 2020). However, findings from the study by R. Cohen, Fardouly, et al. (2019) also drew attention to the risk of body-positive content reinforcing the focus on appearance and, consequently, increasing self-objectification (i.e., viewing oneself as an object to be evaluated by others based on one's appearance; Fredrickson & Roberts, 1997).

To reduce this detrimental effect, some authors have advocated that body-positive posts on social media may benefit from further emphasis on other PBI components, such as appreciation of body function (Mulgrew et al., 2018; Paraskeva et al., 2017) and adaptive investment in body care (R. Cohen et al., 2021), rather than solely focusing on appearance. For instance, there is some evidence that functionality appreciation may cause improvements in additional facets of PBI (Alleva & Tylka, 2021), which reinforces the perspective that multiple components of PBI are complementary and can leverage each other (Tylka & Wood-Barcalow, 2015b). Hence, exposure to multifaceted body-positive content on social media may enhance the beneficial effects on body image. These findings have thus called attention to the need to examine the content (i.e., type and diversity of PBI themes) portrayed on social media.

Body-Positive Content on Social Media

While body positivity continues to grow in popularity, there has been limited research examining its nature (R. Cohen et al., 2021). It is worth noting that systematic analysis of body-positive content on social media can assist future prevention initiatives and research (R. Cohen, Irwin, et al., 2019) by providing valuable information about (a) the congruence of the depicted messages with the PBI construct; (b) the PBI dimensions that are underrepresented and need to be further developed; and (c) the expectable barriers to promoting PBI. The social arena created in SNSs is very informative in terms of both established and emerging social norms, as well as individuals' desirable identity (Zhao et al., 2008). Thus, wider representation of a given body-positive content is indicative of its acceptability; in other words, it suggests that the expressed PBI feature is in line with normative expectations and is acceptable at social and individual levels, without necessarily being incorporated into one's self-concept and behaviors. Lastly, it should be stressed that this line of research could also help to extend our understanding of the PBI concept, which is continually evolving as a result of multiple methods of inquiry and analysis.

Studies in this field have analyzed the content posted in SNS accounts from body-positive themed hashtags on Instagram (R. Cohen, Irwin, et al., 2019; Lazuka et al., 2020) and online forums of body acceptance commenters (Rodgers et al., 2020). In general, they conclude that the content conveyed messages aligned with theoretical definitions of PBI, with a particular emphasis on a broad conceptualization of beauty, by depicting bodies with diverse sizes and physical attributes (R. Cohen, Irwin, et al., 2019; Lazuka et al., 2020; Rodgers et al., 2020), body acceptance (Rodgers et al., 2020), and inner positivity (Lazuka et al., 2020). Conversely, themes of filtering information in a body-protective manner and adaptive investment in body care were less frequently represented (R. Cohen, Irwin, et al., 2019; Lazuka et al., 2020).

Despite these characteristics in common, some differences in content were also found depending on the source of the posts. The study by Lazuka et al. (2020), which analyzed body-positive posts from the broad community (Instagram users with public profiles) rather than popular body-positive accounts/websites (R. Cohen, Irwin, et al., 2019; Rodgers et al., 2020), found that body positivity posts by general users often contained contradictory messages (e.g., weight loss promotion) and mostly portrayed components of mainstream beauty ideals. Overall, these content analyses suggest that, despite some features in common, body-positive content in social media is heterogeneous (Rodgers et al., 2022), and call for a more refined understanding of its characteristics in a greater diversity of online settings.

It is noteworthy that these studies only analyzed posts tagged/labelled as body-positive content. They were sampled from body-positivity related forums (Rodgers et al., 2020) and Instagram accounts, whether of body positivity influencers (R. Cohen, Irwin, et al., 2019) or general users utilizing the hashtag #BodyPositivity (Lazuka et al., 2020). The users are mainly women of different ages, who are predictably interested in and engaged with this topic. Consequently, due to the gendered nature of appearance ideals, the analyzed content predominantly represents female subjects (R. Cohen, Irwin, et al., 2019; Lazuka et al., 2020). Thus, findings from previous studies may not be representative of user-generated content from general SNS accounts (i.e., not labeled as body-positive content). Moreover, they do not specifically concern adolescents. Therefore, acknowledging the capacity for the online body-positive messages to promote multifaceted PBI and provide a counterpoint to self-objectification, this study aimed to analyze the extent to which adolescents' posts in SNS are reflective of the theoretical six-facet conceptualization of PBI (Tylka & Wood-Barcalow, 2015b). Consequently, we explored these research questions:

RQ1: Do adolescents' image-based posts on Facebook depict themes congruent with PBI?

RQ2: Which PBI dimensions are more frequently portrayed in adolescents' posts and which are underrepresented?

The focus of this study is image-based posts, in view of the fact that adolescents' social media use is dominated by visual communication, and in particular, photo sharing (Nesi et al., 2018). The content was selected from the user-generated image submissions on Facebook. This platform was chosen because of its popularity in Portugal at the time of data collection (2016–2019), including among adolescents (FutureBehind, 2017).

Gender and Developmental Differences

Gender differences were found in the use of social media. Adolescent girls tend to use more photo-based platforms (Marengo et al., 2018) as well as engaging more in self-objectification than boys (Salomon & Brown, 2019). Studies of visual self-presentation on social media platforms also reveal gender differences between adolescent boys, who often present themselves as strong and active, and adolescent girls, who tend to present themselves as attractive and in a seductive manner (Herring & Kapidzic, 2015; Rose et al., 2012). The internalization of gender roles may lead girls to experience a degree of pressure to make their bodies visible and engage in appearance-related activities on social media (Rodgers & Rousseau, 2022). Thus, it seems plausible to hypothesize that boys and girls may direct their attention to different facets of PBI by posting different content.

Gender differences in body appreciation have been reported in the literature, with adolescent girls presenting lower levels than boys (e.g., Góngora et al., 2020; Lemoine et al., 2018). This finding reinforces the relevance of exploring gender differences in body-positive content posted on social media, based on the assumption that the content posted may vary according to the individuals' experience of the body. Given that adolescents often use SNSs to explore the physical self and project a socially desirable self-image (Rose et al., 2012), the way they perceive their body may influence the type of photos posted and their engagement with body-image related messages. Thus, this study aimed to address the following research question:

RQ3: Are there gender differences in the frequency of PBI themes addressed in adolescents' posts on Facebook?

In the same vein, body-positive content can also differ depending on the stage of adolescence. Body appreciation can be shaped by developmental transitions (Quittkat et al., 2019) with particular regard to adolescence. Each stage of adolescence has its biological and psychosocial particularities, which may play an important role in shaping adolescents' feelings about their bodies. For instance, in early adolescence, young people experience rapid physical changes; in mid-adolescence, pubertal growth stabilizes but appearance gains additional importance due to an interest in romantic relationships (Christie & Viner, 2005). Although developmental factors may influence the content posted, no longitudinal study has been carried out to explore this research question:

RQ4: Are there different trends in the body-positive content posted on Facebook from early- to mid-adolescence?

Thus, by means of a longitudinal design, we aimed to investigate this research question by examining the evolution of the frequency of adolescents' posts in each PBI dimension over three years. Identifying the emerging PBI themes and those that are rarely addressed in this transition phase may be important to inform the timing and scope of promotional activities.

Methods

Participants

We contacted the Porto education council (in Portugal), which suggested a list of middle schools. Three of them indicated their willingness to cooperate but only two agreed to participate. Following our university's ethical code protocol, which requires anonymity and explicit parental consent for the three years of the study, we asked both the parents and the students for their consent. They were informed that the purpose of the study was to analyze the dynamics of Facebook use in terms of productions (text, images, emoticons) and feedback (likes, comments, shares), and its evolution during adolescence. This study was part of a broader project examining the emotional language in addition to PBI imagery (e.g., Brito et al., 2020). It was emphasized that those who volunteered to participate were free to stop at any time. Data collection took place between November 2016 and November 2019. All participants allowed the researchers to be their Facebook friends and to perform the observation task. Although the researchers' role was silent and without any interference or participation, all the participants were aware of the nature of the role. Initially, 100 adolescents agreed to participate, but by the end of study, only 82 still had an active Facebook account. The final sample used in this study was selected based on two inclusion criteria: (1) age range corresponding to early adolescence (participants aged 13 to 15 years confirmed their "real" age); and (2) having a minimum of 30 image-based posts during the study period. This criterion was met by 66 adolescents, with a mean age of 13.90 years ($SD = 0.89$). We coded the gender based on Facebook profile information: 48.5% were female and 51.5% male. All participants were White and attended public schools in the district of Porto.

Image Selection

Images of two different types were eligible for this study: photographic (i.e., photos) and illustrative. Images were considered illustrative if they comprised any sort of computer-assisted illustrative format, infographics, textual information in the form of quotations, or memes (Lee et al., 2020). Illustrative images containing quotations were coded on the basis of the content of the quotation. Associated textual content in the original post (e.g., photo captions/descriptions) was excluded from the analysis. Given that, without accompanying text, the intended message of photographic posts is more difficult to access, some PBI categories with a prominent cognitive component were only analyzed in illustrative images, thus reducing the subjectivity of the photo interpretation. Videos were not analyzed because they dynamically combine a diversity of communication elements, such as moving images, audio, spoken language, written language, and gesture (acting), which increases the complexity of the message.

Selected image-based posts were copied to the database and numbered. A total of 6,503 images were collected during the three-year period.

Coding Procedures

Using a deductive approach, the codebook (Table 1) was developed by the authors in order to reflect content that was thematically similar to the multifaceted definition of PBI (Tylka & Wood-Barcalow, 2015b). Posts were coded for the presence of six themes: (1) body appreciation; (2) body acceptance/love; (3) broad conceptualization of beauty; (4) interpreting information in a body-protective manner; (5) adaptive investment in appearance; and (6) inner positivity. For each theme, coding categories were expanded from the thematic codes created by R. Cohen, Irwin, et al. (2019) to analyze body-positive imagery according to the multidimensional conceptualization of PBI. The construction of categories was also assisted by qualitative studies exploring PBI experiences (Bailey et al., 2015; Frisén & Holmqvist, 2010; Wood-Barcalow et al., 2010; for more details see Table 1). Moreover, additional categories were developed based on empirical literature. For instance, we created a category to represent body functionality when participating in fun activities (Functionality—Having fun), as bodily senses and sensations are important domains of body functions (Alleva, Martijn, et al., 2015) and joy was found to be an important motivation for adolescents with PBI to be physically active (Frisén & Holmqvist, 2010). Physical contact was considered as a possible attribute of body acceptance (feeling comfortable with one's body), in line with published data reinforcing a link between these features (Lev-ari et al., 2020). Body exposure was also set as a category within this theme

based on the study by Bernard et al. (2019), which found that the extent of nudity alone is not in itself indicative of self-objectification; rather, the latter is mostly driven by the sexual connotation conveyed by body posture.

Self-objectification and PBI are two seemingly opposing constructs (Fredrickson & Roberts, 1997) and, as such, we analyzed the presence of elements of objectification. Similar to the coding procedures adopted by (R. Cohen, Irwin, et al., 2019), images featuring one or more of the following aspects were coded with *no* in all codebook categories (indicating that PBI attributes were not present): a) a specific body part is the main focus of the image; b) a sexually suggestive pose; and c) absence of a clearly visible head and/or face. In addition, in the case of images containing quotations, a separate judgement was made as to whether the quotation might be considered incongruent to PBI construct, based on misconceptions of the PBI facets pointed out by Tylka and Wood-Barcalow (2015b; see Table 1). Here, we paid particular attention to posts that clearly conveyed narcissism or vanity, or that depicted/encouraged behaviors towards the body that were aimed at pursuing body image standards, comparing oneself with others' physical features, or basing self-worth on appearance. Investment in appearance was only considered adaptive if it could fall into the categories of self-care or personal grooming and involved the use of benign methods to enhance natural body features or project a sense of style. Posts introducing or advertising appearance-altering methods (e.g., dermal fillers, chemical peels, lasers) were considered non-benign and therefore beyond the scope of the PBI construct (Tylka & Wood-Barcalow, 2015b).

The preliminary version of the codebook was critically analyzed by one expert in body image research, and minor changes were made. The theoretical definition of the themes and the coding categories used (final version) are outlined in Table 1. Images were coded for all content categories in Excel with *yes*, *no*, or *cannot code* (when unclear). Thematic codes were not mutually exclusive such that multiple content categories could be present in one post. Only yes/no ratings were used in the data analysis. Posts that did not fit any category (e.g., pictures of pets, pictures of parents) were not excluded; in these cases, all content categories were rated with *no*.

Coder Training and Reliability Analysis

Three research assistants (one male and two female postgraduate students) served as coders for this project. The coding team met with the study authors for a series of training sessions involving the iterative process of consensus. The next phase of coder training involved each coder independently rating several images to ensure consistency. During this process, some updates were made to the original coding guide. Following completion of the training process, each of the three coders went on to independently rate image posts by 22 participants. All conflicts identified in the coding were resolved via discussion between the three coders. To establish inter-rater reliability, a fourth coder analyzed a random selection of 100 images. Kappa values for the included categories ranged from .71 to .87, which indicates acceptable agreement. Additional categories were coded but omitted here (e.g., posts encouraging acceptance of one's body; posts revealing favorable opinions about the body; posts revealing gratitude related to body features). This was because as they did not display sufficient representativeness or an adequate level of inter-rater reliability according to the established guidelines (minimum .70; Landis & Koch, 1977; Neuendorf, 2017).

Data Analysis

We computed the participant's number of posts over the three years in each category. This variable was then recoded into a binary variable—posting condition—to code the presence (Post-Yes) or absence (Post-No) of posts addressing each category content. A chi-square test for goodness of fit (one-sample chi-square) was used to compare the proportion of participants with and without posts in each category. In addition, we explored whether posting condition (Post-Yes vs. Post-No) was associated with gender (male vs. female) by means of a chi-square test for independence with Yates Continuity Correction. The Fisher's Exact Test was used when at least one cell had an expected frequency less than 5. Effect size (phi coefficient) was interpreted according to the commonly used J. Cohen's (1988) guidelines: .10 for small effect, .30 for medium effect and .50 for large effect.

To determine whether there was a change in the frequency of posts in each category across the three years (year 1, year 2, and year 3), we applied the Friedman Test, assuming that the data has marked deviations from normality. We conducted post-hoc comparisons to find out which years were significantly different from year 1 (year 1 vs. year 2; year 1 vs. year 3), using Wilcoxon Signed Rank Tests, with Bonferroni adjusted alpha value ($p < .025$). Effect size for this test (r) was calculated by dividing the z value by the square root of N , and values were interpreted according to the abovementioned J. Cohen's (1988) guidelines. Data were analyzed using IBM SPSS 26 for Windows.

Table 1. Description of Coding Strategy and Summary of Image Content.

Themes	Conceptualization	Categories	Operationalization and Examples	Posts (N)
Body Appreciation	<p><i>Definition:</i> Appreciation of function, health, and characteristics of the body. It encompasses praising the body for what it is able to; i.e., gratitude for the functions related to physical capacities and bodily senses.^{1,2,3} It also involves making healthy decisions to take care of the body.⁴</p> <p><i>Misconception:</i> Body appreciation is not solely appreciating one's appearance.¹ Body functionality is not equated with "physical fitness."²</p>	Healthy Food/Beverages	Post emphasizes healthy foods and beverages (high nutritional value and/or low in fat/kilojoules, e.g., fruits, salads, water, all-natural juices, smoothies). [P, I]	43
		Functionality—Sports	Post encourages engaging in physical activity for pleasure or for improving health, wellness or body competence (independent of clubs/teams); Photo depicts the participant performing sports/physical activities. [P, I]	697
		Functionality—Having fun	Post advertises or promotes fun activities (e.g., adventure activities, amusement parks, karaoke, cultural activities); Photo depicts the participant engaging in fun activities that involve physical capacities, creative endeavors (e.g., play an instrument), and/or bodily senses and sensations (e.g., experiencing pleasure). [P, I]	1,729
Body Acceptance	<p><i>Definition:</i> Expressing love for and comfort with the body. Accepting the body with its "imperfections".¹</p> <p><i>Misconception:</i> Body acceptance is not the same as narcissism or vanity.¹</p>	Body Exposure	Photo depicts the participant with exposed skin (e.g., bare thighs/legs, midriff) or wearing revealing clothes (e.g., swimwear/ beachwear, tight clothes; cleavage visible) without objectifying features; Perceived "flaws" of the participant are visible in the photo (i.e., attributes incongruent with societal beauty ideals such as cellulite, stretch marks, acne, bodily hair, and rolls of fat on stomach). [P]	205
		Physical Contact	Photo depicts the participant touching or being touched by someone (social or affective touch; e.g., holding hands, giving a hug, tickling, be caressed) or by one self (self-touch). [P]	566
Broad Conceptualization of Beauty	<p><i>Definition:</i> Perceiving beauty based on a wide range of appearances, body sizes/shapes, and inner characteristics.¹</p> <p><i>Misconception:</i> This concept is not limited to bodily features and it is not the same as sexual attractiveness.¹</p>	Embrace Body Diversity	Post supports (a) acceptance, celebration and/or admiration of diversity of appearances and personal styles; and/or (b) criticism or motivation to bring awareness about appearance-based discrimination and bullying (e.g., weight, physical disability). [P, I]	41
		Inner Beauty	Post emphasizes that beauty may draw from inner characteristics (e.g., personality, self-confidence, generosity) and/or encourages to cultivate them. [I]	454
Interpreting Information in a Body-Protective Manner	<p><i>Definition:</i> Protective filtering of information by rejecting thin-ideal related messages and reframing appearance-based criticism from others.^{1,4}</p>	Protective Filtering	Post challenges appearance ideals and the unrealistic and fabricated nature of media images; Post criticizes or devaluates negative appearance-related commentaries, and/or reveals awareness of their negative effect. [I]	22

	<p><i>Misconception:</i> Positive filtering is not fool-proof and sometimes individuals absorb negative information. However, they did not allow this information to shape their overall body image.^{1,4}</p>			
Adaptive Investment in Appearance	<p><i>Definition:</i> Appearance-related self-care by the use of benign methods to enhance natural body features or project a sense of style.¹</p>	Fashion Accessories	Post introduces, advertises or comments on fashion accessories (e.g., earrings, necklaces, wallets, sunglasses, hats, watches); Fashion accessory is prominently featured in participant' photo. [P, I]	377
	<p><i>Misconception:</i> Adaptive appearance investment is not engaging in potentially destructive appearance-altering methods to fit external standards of beauty.¹</p>	Clothing/Footwear	Post introduces, advertises or comments on clothes (e.g., t-shirts, jeans, coats) and shoes (e.g., sneakers, shoes, sandals, slippers). Clothing or footwear is prominently featured in participant' photo. [P, I]	63
		Cosmetics	Post introduces, advertises or comments on make-up techniques (e.g., lipstick, eye shadow, blush) or non-invasive self-care methods (e.g., getting manicures) or products (e.g., face mask, hair mousse) to nourish, hydrate, perfume, protect, or enhance appearance. Cosmetics are prominently featured in participant' photo. [P, I]	197
Inner Positivity	<p><i>Definition:</i> Inner qualities that radiate outward and translate into positive feelings (e.g., optimism, happiness) and body confidence (e.g., smiling, holding the "head up high").^{1,4,5}</p>	Positive Feelings	Post expresses personal happiness and/or other positive feelings (e.g., optimism, gratitude, love) [P, I]	509
	<p><i>Misconception:</i> Inner positivity is not expressed in vain or narcissistic acts.¹</p>	Body confidence—Move	Photo depicts the participant performing action (e.g., jumping, dancing). [P]	346
		Body confidence—Smile	Photo depicts the participant smiling with head held high and keeping eye contact. [P]	2,024

Note. Image type considered in each category: P = Photographic images; I = Illustrative images. ¹Tylka & Wood-Barcalow (2015b), ²Alleva, Martijn, et al. (2015), ³Frisén & Holmqvist (2010), ⁴Wood-Barcalow et al. (2010), ⁵Bailey et al. (2015).

Results

Description of the Image Posts

During the three years of the study, the participants posted a total of 6,503 images, mainly photos ($n = 5,184$; 79.7%). The distribution of images posted over the years indicated an increase over time: 723 images in year 1 ($M = 8.03$, $SD = 12.94$); 2,399 images in year 2 ($M = 26.66$, $SD = 30.98$); and 3,381 images in year 3 ($M = 37.57$, $SD = 53.79$). A summary of image content covered in each category and the number of posts addressing them is displayed in Table 1. The categories with a higher frequency of posts were Body Confidence—Smile ($n = 2,024$), Functionality—Having Fun ($n = 1,729$), and Functionality—Sports ($n = 697$), indicating a greater representation of two PBI themes: Body Appreciation and Inner Positivity.

PBI Content of Adolescents' Image Posts on Facebook

A chi-square goodness-of-fit test indicated that there was a significant difference in the proportion of adolescents with and without posts in all categories ($p < .05$), with the exception of Clothing/Footwear, $\chi^2(1) = 0.97$, $p = .325$, and Body Exposure, $\chi^2(1) = 44.18$, $p = .140$ (see Table 2). We observed a higher proportion of participants (between 68.2% and 75.8%) without posts in three categories: Healthy Food/Beverages, $\chi^2(1) = 10.24$, $p < .001$, Embrace Body Diversity, $\chi^2(1) = 8.73$, $p = .003$, and Protective Filtering, $\chi^2(1) = 17.52$, $p < .001$. The remaining nine content categories, distributed by the six PBI themes, tended to be addressed by the participants (between 66.3% and 100%, $p < .01$).

Descriptive statistics for categories by gender are presented in Table 2. A chi-square test indicated no significant association between gender and posting condition in almost all categories. A significant relationship between these variables was only found in Functionality—Sports (more boys than girls posted), $\chi^2(1) = 9.01$, $p = .003$, $\phi = .40$, and Cosmetics (more girls than boys posted), $\chi^2(1) = 22.12$, $p < .001$, $\phi = .61$.

Evolution of PBI Posts Over the Three Years

The Friedman test carried out to compare the frequency of posts over the three time points was significant for all categories ($p < .05$; Table 3). Post-hoc analysis revealed that there was an increasing trend in the number of posts in years 2 and 3 when compared to year 1. This trend was found in 10 out of 14 categories. Conversely, in the following four categories, the increase in the number of posts only occurred later, in year 3: Healthy Food/Beverages, Functionality—Having Fun, Body Exposure, and Fashion Accessories.

Most changes in the number of posts addressing PBI themes were of moderate effect size (r between .30 and .42), with the exception of the Body Appreciation and Interpreting Information in a Body-Protective Manner themes (small magnitude; r between .17 and .27).

Table 2. Comparison of the Proportion of Participants With (Post-Yes) and Without (Post-No) Posts in Each PBI Category and its Association With Gender (N = 66).

	Post-No n (%)			Post-Yes n (%)			One-sample chi-square test* Posts-No x Post-Yes	Chi-square independence test* Post (No/Yes) x Gender (M/F)
	Boys	Girls	Total	Boys	Girls	Total		
Body Appreciation								
Healthy Food/ Beverages	25 (37.9)	21 (31.8)	46 (69.7)	9 (13.6)	11 (16.7)	20 (30.3)	$\chi^2(1) = 10.24, p < .001$	$\chi^2(1) = 1.85, p = .667, phi = .09$
Functionality—Sports	6 (9.1)	18 (27.3)	24 (36.4)	28 (42.4)	14 (21.2)	42 (63.6)	$\chi^2(1) = 4.91, p = .027$	$\chi^2(1) = 9.01, p = .003, phi = .40$
Functionality—Having Fun	3 (4.5)	3 (4.4)	6 (9.1)	31 (47.0)	29 (43.9)	60 (90.9)	$\chi^2(1) = 44.18, p < .001$	$\chi^2(1) = 0.01, p = 1.00, phi = -.01^a$
Body Acceptance								
Body Exposure	18 (27.3)	9 (13.6)	27 (40.9)	16 (24.2)	23 (34.8)	39 (59.1)	$\chi^2(1) = 44.18, p = .140$	$\chi^2(1) = 3.24, p = .072, phi = .25$
Physical Contact	2 (3.9)	1 (1.5)	3 (4.5)	32 (48.5)	31 (47.0)	63 (95.5)	$\chi^2(1) = 54.55, p < .001$	$\chi^2(1) = 0.29, p = 1.00, phi = .07^a$
Broad Conceptualization of Beauty								
Embrace Body Diversity	23 (34.8)	22 (33.3)	45 (68.2)	11 (16.7)	10 (15.2)	21 (31.8)	$\chi^2(1) = 8.73, p = .003$	$\chi^2(1) = 0.01, p = .999, phi = -.01$
Inner Beauty	8 (12.1)	3 (4.5)	11 (16.7)	26 (39.4)	29 (43.9)	55 (83.3)	$\chi^2(1) = 29.33, p < .001$	$\chi^2(1) = 1.47, p = .226, phi = .19$
Interpreting Information in a Body-Protective Manner								
Protective Filtering	28 (42.4)	22 (33.3)	50 (75.8)	6 (9.1)	10 (15.2)	16 (24.2)	$\chi^2(1) = 17.52, p < .001$	$\chi^2(1) = 1.00, p = .317, phi = .16$
Adaptive Investment in Appearance								
Fashion Accessories	15 (22.7)	8 (12.1)	23 (34.8)	19 (28.8)	24 (36.4)	43 (65.2)	$\chi^2(1) = 6.06, p = .014$	$\chi^2(1) = 1.88, p = .171, phi = .20$
Clothing/ Footwear	18 (27.3)	19 (28.8)	37 (56.1)	16 (24.2)	13 (19.7)	29 (43.9)	$\chi^2(1) = 0.97, p = .325$	$\chi^2(1) = 0.77, p = .781, phi = -.07$
Cosmetics	26 (29.4)	5 (7.6)	31 (47.0)	8 (12.1)	27 (40.9)	35 (53.0)	$\chi^2(1) = 15.13, p < .001$	$\chi^2(1) = 22.12, p < .001, phi = .61$
Inner Positivity								
Positive Feelings	8 (12.1)	5 (7.6)	13 (19.7)	26 (39.4)	27 (40.9)	53 (80.3)	$\chi^2(1) = 24.24, p < .001$	$\chi^2(1) = 0.25, p = .619, phi = .10$
Body Confidence—Move	8 (12.1)	4 (6.1)	12 (18.2)	26 (39.4)	28 (42.4)	54 (81.8)	$\chi^2(1) = 26.73, p < .001$	$\chi^2(1) = 0.71, p = .400, phi = .14$
Body Confidence—Smile	0 (0.0)	0 (0.0)	0 (0.0)	34 (51.5)	32 (48.5)	66 (100)	—	—

Note. ^aAt least one cell has expected frequency less than 5 (Fisher's Exact Test). *Significant *p*-values are in bold.

Table 3. *Distribution of the PBI Posts Over the Three Years of Study.*

	Year 1 <i>M (SD)</i>	Year 2 <i>M (SD)</i>	Year 3 <i>M (SD)</i>	Friedman Test*	Post-hoc**	Effect size (<i>r</i>)
Body Appreciation						
Healthy Food/ Beverages	0.06 (0.30)	0.14 (0.55)	0.45 (1.02)	$\chi^2(2) = 11.20, p = .004$	Year 1 < Year 3	Y1/3 = .27
Functionality—Sports	0.92 (2.03)	3.88 (10.98)	5.76 (25.37)	$\chi^2(2) = 9.72, p = .008$	Year 1 < Years 2, 3	Y1/2 = .27; Y1/3 = .22
Functionality—Having Fun	7.06 (15.01)	7.92 (12.12)	11.21 (21.04)	$\chi^2(2) = 7.25, p = .027$	Year 1 < Year 3	Y1/3 = .17
Body Acceptance						
Body Exposure	0.56 (1.31)	0.88 (1.58)	1.67 (3.18)	$\chi^2(2) = 9.60, p = .008$	Year 1 < Year 3	Y1/3 = .26
Physical Contact	1.20 (2.09)	2.94 (3.96)	4.44 (6.88)	$\chi^2(2) = 24.64, p < .001$	Year 1 < Years 2, 3	Y1/2 = .32; Y1/3 = .39
Broad Conceptualization of Beauty						
Embrace Body Diversity	0.03 (0.17)	0.21 (0.60)	0.44 (0.99)	$\chi^2(2) = 15.21, p < .001$	Year 1 < Years 2, 3	Y1/2 = .22; Y1/3 = .30
Inner Beauty	0.85 (1.92)	2.02 (2.91)	4.02 (8.06)	$\chi^2(2) = 22.35, p < .001$	Year 1 < Years 2, 3	Y1/2 = .29; Y1/3 = .33
Interpreting Information in a Body-Protective Manner						
Protective Filtering	0.02 (0.12)	0.17 (0.51)	0.15 (0.40)	$\chi^2(2) = 7.13, p = .028$	Year 1 < Years 2, 3	Y1/2 = .20; Y1/3 = .24
Adaptive Investment in Appearance						
Fashion Accessories	0.80 (1.99)	0.62 (1.21)	4.29 (7.98)	$\chi^2(2) = 34.69, p < .001$	Years 1 < Year 3	Y1/3 = .42
Clothing/ Footwear	0.06 (0.24)	0.38 (0.99)	0.52 (0.95)	$\chi^2(2) = 19.08, p < .001$	Year 1 < Years 2, 3	Y1/2 = .26; Y1/3 = .35
Cosmetics	0.18 (0.58)	1.36 (4.57)	1.44 (3.96)	$\chi^2(2) = 16.97, p < .001$	Year 1 < Years 2, 3	Y1/2 = .25; Y1/3 = .30
Inner Positivity						
Positive Feelings	0.52 (0.81)	2.00 (2.66)	5.20 (11.99)	$\chi^2(2) = 21.70, p < .001$	Year 1 < Years 2, 3	Y1/2 = .38; Y1/3 = .39
Body Confidence—Move	0.80 (1.88)	2.21 (3.04)	2.23 (5.18)	$\chi^2(2) = 16.66, p < .001$	Year 1 < Years 2, 3	Y1/2 = .35; Y1/3 = .29
Body Confidence—Smile	3.74 (4.94)	9.71 (10.33)	17.21 (20.21)	$\chi^2(2) = 39.59, p < .001$	Year 1 < Years 2, 3	Y1/2 = .41; Y1/3 = .50

Note. Y1/2 = Year 1 vs. Year 2; Y1/3 = Year 1 vs. Year 3. *Significant p-values ($p < .05$) are in bold. **Bonferroni adjusted alpha value ($p < .025$).

Discussion

This study provides an analysis of the frequency of theoretically derived PBI dimensions in adolescents' image-based Facebook posts. This investigation is the first that we are aware of to analyze body positivity in adolescents' SNS accounts. Recognizing the potential contribution of online body-positive messages to promoting multifaceted PBI (R. Cohen, Fardouly, et al., 2019; Davies et al., 2020; Stevens & Griffiths, 2020; Tiggemann et al., 2020), this study provides new insights into the dimensions of the construct that are more prevalent in adolescents' posts, and that therefore are suggestive of individual and social acceptability. It also highlights those facets that are underrepresented and could benefit from further promotion. In short, our results suggest that functionality appreciation and inner positivity were the most represented PBI facets. Conversely, few images were found that enhanced the value of a wide range of appearances and called attention to the unrealistic nature of media images and appearance ideals.

In line with previous studies (R. Cohen, Irwin, et al., 2019; Lazuka et al., 2020; Rodgers et al., 2020), we found messages in adolescents' posts that were consistent with the key theoretical tenets of PBI (Tylka & Wood-Barcalow, 2015b). However, depending on the online setting in which the content was sampled, the conclusions regarding the PBI components that are over- or under-represented seem to diverge. A broad conceptualization of beauty emerged as the most common theme in analyses of content labelled as body positivity on social media (R. Cohen, Irwin, et al., 2019; Lazuka et al., 2020; Rodgers et al., 2020), but it was underrepresented in our study, which focused on unlabeled user-generated posts. We are inclined to argue that the promotion of this PBI facet is the core message disseminated by the body-positive movement. In turn, among community SNS users, inner positivity emerges as a prominent theme, as documented by Lazuka et al. (2020) and findings from the current study. Interestingly, the theme of body appreciation is not a common topic reported in previous studies, but it seems to be very popular among adolescents, in particular in relation to body functionality. In spite of these differences, the existing research concurs in identifying the theme of filtering information in a body-protective manner as one of the least addressed in social media. This PBI dimension should receive more attention in future intervention programs. Overall, this study gives added strength to the idea that body-positive social media content is heterogeneous (Rodgers et al., 2022) and may vary according to the nature of virtual communities and users' characteristics.

A closer inspection of the body-positive content posted by adolescents on Facebook revealed that, for the inner positivity theme, the most frequent category was smiling in photos with the head held high and keeping eye contact—attributes of confident body language (Tylka & Wood-Barcalow, 2015b). In addition, we found other content that expressed positive feelings, such as optimism, gratitude, and serenity. All the categories within this theme were addressed by a high proportion of the participants (between 80% and 100%). These findings are encouraging because they indicate that inner positivity is a socially desirable self-projection feature among adolescents, with an increased trend from early- to mid-adolescence. Hypothetically, if adolescents find this feature to be important, they may be more willing to invest in its development. Feeling beautiful on the inside can have a broad effect on PBI, as it may radiate outward to external appearance and behavior (Tylka & Wood-Barcalow, 2015b).

Sharing experiences of fun activities was also revealed to be popular among the participants and seems to create an attractive representation of themselves. Previously, Slater (2015) also noted a trend among adolescents to post photos when doing something 'cool'. These posts, together with the expression of inner positivity, have a feature in common: communicating positive feelings and experiences. This "positivity" in online communication can have intrapersonal and interpersonal benefits. At the intrapersonal level, sharing positive experiences and emotions allows the user to re-experience and prolong these positive events. Interpersonal benefits, in turn, comprise positive social interaction and positive feedback from other SNS users (Sas et al., 2009).

A wide range of posts depicting the participants' engagement in fun activities (e.g., adventure activities, amusement parks) can be a way for adolescents to enhance their body's functionality. Sharing what the body is capable of doing, including the bodily senses that this enables, seems to be socially desirable among the adolescents and suggests that these body attributes are appreciated in self-presentation. Along the same lines, a previous study by Frisén and Holmqvist (2010) found that a functional view of the body was considered a core dimension of appearance satisfaction by early adolescents. Finding this PBI dimension reflected in adolescents' posts can be interpreted positively, as body functionality encompasses a diverse range of attributes (e.g., physical capacities, bodily senses, creative endeavors, communication with others), from which adolescents can derive

satisfaction. However, this result also has its downside: the functional perspective of the body pictured in these posts represents the context of adolescents without a disability/difference and is, therefore, very homogeneous. It would be desirable that the messages in social media depict more inclusive models of functionality, broadening the construct beyond the normative view of physical abilities and the narrow focus on physical fitness and performance (Rice et al., 2021).

We found a large number of image-based posts showing the participants' engagement and interest in physical activities. Being proud of sporting achievements suggests an emphasis on the functionality of the body, which can be motivated by the perception of exercise as joyful and health-promoting (Frisén & Holmqvist, 2010). The fact that about 64% of the participants address this topic is encouraging, as playing sports has been strongly associated with an improved body image in adolescents (Baceviciene & Jankauskiene, 2020; Hausenblas & Fallon, 2006). However, there is also a risk that these posts align with "fitspiration"—an online trend designed to inspire individuals to exercise. This has been linked to an unhealthy obsession with fitness and the dissemination of a particular body type (lean and toned) as a new body ideal (Tiggemann & Zaccardo, 2018). Although we did not include posts containing fitspiration elements that typically have negative effects on the viewer's body image, such as objectified body parts (Murashka et al., 2021; Tiggemann & Zaccardo, 2018), an explicit motivation to exercise for appearance reasons (Boepple et al., 2016; Simpson & Mazzeo, 2017), or extreme attitudes towards health and fitness (Boepple & Thompson, 2016; Tiggemann & Zaccardo, 2018), it is possible that posts in this category reflect a very limited range of body types and inaccurately conflate fitness with thinness (or muscularity).

It should also be noted that there was a difference in the proportion of boys and girls addressing this PBI category. Over half of the girls did not post this content, which suggests that body functionality linked to physical activity may be less relevant to girls' self-image projection. Boys may possibly tend to appreciate attributes associated with sporting achievement, whereas girls, on the other hand, place greater importance on appearance (e.g., looking nice in general). This hypothesis is congruent with the study by Siibak (2009), which concluded that girls value the aesthetic aspect of photography more than their male counterparts when creating their virtual self. This finding also converges with previous research in documenting the prevalence of physical activity among adolescents, which has consistently found lower levels in girls relative to boys (Guthold et al., 2020; Marques et al., 2020). It is estimated that about 70% of girls between 10–14 years old drop out of sports (Eime et al., 2020) due to several intrapersonal factors, such as appearance dissatisfaction, body-image-related concerns, weight stigma (Davelaar, 2021), lack of confidence in skills, and an overarching sense of gender inequality (Cowley et al., 2021). To reduce this gender gap, it is important to create school and community environments that encourage physical activity among adolescent girls.

Being physically active is considered an adaptive self-care behavior, as is healthy eating and drinking. Taking care of the body via healthy behaviors is one indicator of body appreciation, in addition to functionality (Tylka & Wood-Barcalow, 2015b). Interestingly, we found that healthy food and beverages (i.e., with a high nutritional value and/or low in fat/kilojoules) were only posted by a small percentage of participants (30%) in contrast with sporting activities (64%). This finding suggests that healthy eating/drinking choices might not be a socially desirable PBI attribute. This is not a surprising result, considering that adolescents report experiencing peer pressure to consume snacks and soft drinks in social contexts (Chan et al., 2009). It is also known that adolescents are aggressively targeted by food marketing messages, primarily for unhealthy foods (Truman & Elliott, 2019). Furthermore, marketing techniques often associate the consumption of unhealthy food and beverages with fun, enjoyment, and peer acceptance (Hawkes, 2002). In the online world, the expectations and norms of the reference group matters to create favorable impressions (Siibak, 2009). In the light of this, it is plausible to assume that social norms and peer pressure can be relevant factors to constrain a more favorable view of healthy diet as a self-care behavior. Interestingly, this may also help us to understand the increase in these posts in the final year of the study. Over the last few years, there appears to have been increased interest in alternative diets (e.g., vegetarian, vegan, macrobiotic) in society in general, motivated by health, moral, and environmental viewpoints (Rudloff et al., 2019). If this trend takes hold, it is possible that the prevalence of these posts will increase in the coming years. This is a hypothesis to be explored in future studies.

Other PBI categories that were only addressed by a smaller proportion of participants were embracing body diversity (32%; PBI theme: Broad conceptualization of beauty) and protective filtering (24%; PBI theme: Interpreting information in a body-protective manner). However, the low percentages must be interpreted with caution, because content analysis in these categories was only based on illustrative images, which were smaller in number compared to the photos. Even though higher percentages would be desirable, they are not negligible. In addition, longitudinal data are indicative of increased attention to these issues in the last two years of the study.

For the other PBI themes, we found that physical contact in photos was the only predominant category of body acceptance. With regard to adaptive investment in appearance, only posts encompassing fashion accessories tended to be present, and manifested later, in year 3. We conclude that these particular characteristics are well accepted by both male and female adolescents.

The similarity between boys and girls regarding the PBI content represented on Facebook is an interesting finding of this study. In addition to body functionality via playing sports, gender differences were only found in investment in appearance through benign methods (Cosmetics category; more prevalent in girls). The scarce literature in this field suggests that boys and girls with a PBI share several characteristics and experiences (Frisén & Holmqvist, 2010) and our study adds that male and female adolescents use similar PBI attributes to create their virtual self.

Longitudinal data shows a growing trend towards posts in all categories from the first year onwards that can be interpreted as reflecting increased use of Facebook over time. Nevertheless, some PBI features only increased in popularity during the last year of the study, namely, interest in bodily health (healthy food/ beverages) and personal appearance (fashion accessories), and body exposure without objectifying features. These findings suggest increasing attention to appearance and health-promoting self-care behaviors. On the other hand, they could also reflect the socially acceptable age norms for these behaviors, in other words, what ages are considered appropriate for fashion, wearing revealing clothes and exposing skin. Likewise, these categories can also be seen as features that emerge as part of mid-adolescent self-expression.

Implications for Practice

School and community-based interventions have the potential to enable attitudes and active decisions that contribute to a healthy body image. Numerous interventions to improve body image in adolescents have been developed but have only limited effectiveness (for a review, see Alleva, Sheeran, et al., 2015; Yager et al., 2013). Interventions commonly target risk factors for body dissatisfaction with the focus being on prevention. In the light of current knowledge in this field, a broader approach to the concept must be considered (Torres, 2021). Based on our findings, we propose that future iterations of these programs should be aimed more towards a health-promotion approach and include a greater focus on three topics that derive from the underrepresented elements of PBI observed in the sample of this study. Specifically, taking care of the body via healthy behaviors, embracing body diversity, and interpreting information in a body-protective manner.

Firstly, we believe that a focus on body health, by stressing the relevance of being aware of and attentive to the body's needs, can be an important path to follow. Among other health behaviors, attuned self-care can foster healthy and intuitive eating (i.e., an adaptive form of eating essentially based on hunger and satiety cues to regulate food intake; Tylka & Wood-Barcalow, 2015a), which is revealed to be unpopular among youth, despite a growing trend. At the same time, public service advertisements should emphasize healthy eating, mainly in social contexts.

Secondly, some school-based programs address the nature and source of societal appearance ideals (e.g., Diedrichs et al., 2021), which is a good starting point for enhancing the value of a wide range of appearances. However, as appearance comparisons with peers are common in adolescence, the standardization of beauty tends to persist. To deal with this difficulty, it appears sound to adopt a pragmatic and hands-on approach and look at the SNS as a potential avenue for disseminating a broad conceptualization of beauty. Interventions should encourage adolescents to reflect on the extent to which their posts contain a flexible definition of beauty. Government and non-governmental organizations can also be challenged to leverage social media to disseminate different appearances and styles.

Thirdly, the development of skills to filter information in a body-protective manner can be extended beyond the media literacy that is often promoted during interventions in schools (Yager et al., 2013). We suggest that practical day-to-day situations, such as comments on appearance posted in social media, could be used as a basis for adolescents to identify strategies that make it possible to internalize positive information and reject or reframe negative information. Indeed, we strongly recommend that school programs explore what positive body image means online. We believe that this approach could raise adolescents' awareness of the content they post in SNS, while simultaneously encouraging them to maintain or creatively expand the pro-PBI posting that they are already doing.

Micro- and macro-level strategies to create a favorable environment for the development and maintenance of PBI in adolescence seem appropriate for application in a mixed-gender setting. We found few gender differences in

the PBI dimensions represented in image posts on Facebook. That does not mean, however, that some topics may not be gender specific. For instance, a focus on physical activity, as a dimension of functionality and health, may use a different approach for girls. Here, schools could: (a) provide alternative and diverse physical activities that are enjoyable, sociable and non-competitive; (b) celebrate girls' sporting achievements (Cowley et al., 2021); (c) encourage teachers and family to be more supportive towards girls' sports and physical activity participation (Okely et al., 2017); and (d) implement programs that focus on intrapersonal development by increasing perceived competence and reducing feelings of judgement by others (Coleman et al., 2008; Cowley et al., 2021). At a community level, it is crucial to have coordinated responses across multiple sectors and for stakeholders to make physical activity opportunities more locally accessible (James et al., 2018). Social media campaigns can also be developed, preferably using active female role models engaging in joyful physical activities (Guthold et al., 2020; Mulgrew et al., 2018).

Lastly, social media is a vehicle for spreading tendencies and ideologies, but it can also be an incubator of new ideas. Body-positive posts and peer influences can interact to co-construct social norms of beauty (Meier & Gray, 2014). This means it is possible to use this mechanism to promote positive, non-appearance focused qualities.

Limitations

Our findings should be understood in the context of several limitations. In our view, one important constraint is the impossibility of outlining a complete picture of the PBI facets using the categories selected for coding. As body image encompasses an interaction between cognitive, behavioral, attitudinal, and emotional components (Cash & Pruzinsky, 2002), some characteristics are difficult to represent in an image. The content analysis of inner positivity, for example, was fragmented because it was not possible to establish a connection between inner qualities and outer demeanor. Future research would benefit from exploring body-positive content in social media using other indicators, such as written posts and videos. Analyzing videos, in particular, would be an additional source of information considering adolescents' growing interest in video production and their sharing on social media platforms, such as TikTok. We should, however, make it clear that these difficulties underlying the object of study only restricted the range of analysis of the PBI features projected on Facebook, as no conclusions were supposed to be drawn regarding their real presence in the participants. In fact, this study was not designed to measure the adolescents' level of PBI.

A further issue of note is the subjective nature of some categories that, ultimately, might not convey the intended meaning of the PBI facet. For instance, when we inferred that posts addressing fashion accessories, clothes or cosmetics would align with adaptive investment in appearance via self-care, there is also a risk of them translating an excessive focus on aesthetic attributes and the pursuit of cultural beauty ideals. Similar reasoning can be applied to sports/physical activities, as they can reinforce a particular physical appearance or physical characteristics and trigger unfavorable comparisons with one's own level of ability. In the healthy food/beverages category, despite the fact that we looked for attributes consistent with food choices favoring health, they can actually convey a preoccupation with food or diet, which contrasts with intuitive eating (Tylka & Kroon Van Diest, 2013). Also, photos with exposed skin or revealing clothes can be a cue of body acceptance but, on the other hand, they can also denote self-objectification. Even though we have set criteria for detecting objectifying features, this risk still exists.

Another limitation of this study is inherent to the data collection methodology, which implies, for ethical principles, that the participants allowed the researchers to be their Facebook friends. Knowing that their Facebook account was being observed by the researchers may have conditioned the content posted by the participants.

Lastly, there are three factors that could limit the generalizability of the findings. First, the content analysis was based on just one social media website. Future studies should examine other SNS, especially those that emphasize the sharing of images. Second, the convenience sample used in this study, in addition to the small number of participating schools, prevents the results from being regarded as representative of the entire adolescent population. Both schools were public and located in an urban area, and this setting may have influenced the content posted. Future research could expand on our work by including a more diverse sample of adolescents in terms of geographical region, urbanicity, and type of school. Third, we did not control for variables related to SNS use, such as engagement (e.g., posting and usage frequency) and motivations (e.g., seeking appearance content), nor to adolescents' perceptions of appearance (e.g., self-evaluation, body mass index), which could also have influenced the content posted. Lastly, this study focused on early adolescence, given that it is the target population for most interventions to improve body image. More research needs to be undertaken with older samples to

determine changes that can occur in the projected PBI facets on SNS with shifts between developmental stages. Addressing this question could be particularly relevant for guiding public health actions.

Conclusions

Even with these limitations, the present study offers an interesting perspective on the acceptability of PBI dimensions among early adolescents. The current findings indicate that adolescents share images that exemplify several core theoretical components of PBI. Posts expressing body functionality and inner positivity were the most popular. Conversely, imagery representing self-care by means of a healthy diet, a broad conceptualization of beauty, and filtering information in a body-preserving manner was rarely used—by both male and female adolescents—to project self-image on Facebook. These components emerge as relevant topics to be examined in greater depth in interventions targeting body image.

Conflict of Interest

The authors have no conflicts of interest to declare.

Authors' Contribution

Sandra Torres: conceptualization, formal analysis, investigation, methodology, writing—original draft, writing—review & editing. **Pedro Quelhas Brito:** conceptualization, investigation, methodology, project administration, supervision, writing—review & editing.

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About Authors

Sandra Torres is an assistant professor of psychology at University of Porto, Portugal. Her work has focused on positive body image and its relationship with health and well-being, covering different age groups.

Pedro Quelhas Brito is an associate professor at University of Porto (FEP), Portugal, and senior researcher at LIAAD/INESC-Tec. His research interests include consumer psychology applied to tourism, retailing and digital technologies.

✉ **Correspondence to**

Sandra Torres, Faculty of Psychology and Education Sciences, R. Alfredo Allen, 4200-135 Porto, Portugal,
storres@fpce.up.pt

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