

Body shaming in family and school as a risk factor for body dissatisfaction in adolescents

Yolanda Sevilla-Vera^{1b} , Natalia Solano-Pinto^{1a}  & Jorge J. Ricarte² 

^{1a} Research Group on Health, Education and Society. Critical Perspective. Health Research Institute of Castilla-La Mancha. Red Interdisciplinary Research Network on Childhood and Adolescence. Department of Psychology. University of Castilla-La Mancha, School of Education, Toledo (Spain) ^{1b} Research Group on Health, Education and Society. Critical Perspective. Health Research Institute of Castilla-La Mancha. Department of Psychology. University of Castilla-La Mancha, School of Education, Cuenca (Spain) ² Research Group on Victimology and Psychopathology of Childhood and Adolescence. Department of Psychology. School of Education. University of Castilla-La Mancha, Albacete (Spain)

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Corresponding author:

Yolanda Sevilla

(yolanda.sevilla@uclm.es)

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Abstract

Body dissatisfaction (BD) is a psychopathological vulnerability factor in childhood and adolescence. However, the impact of body shaming on BD in childhood remains unexamined. The present study explored the phenomenon of body shaming in family and school settings, focusing on its association with the development of BD. The sample comprised 482 school students aged from 11 to 13 (11.8 years; 49% girls). Standardized instruments were administered to measure the level of body dissatisfaction and distortion, body silhouette according to body mass index (BMI), perceived silhouette and body shaming experiences in family and school settings. A multinomial logistic regression model was used to identify significant predictors of BD level (none, moderate and severe). The descriptive analyses revealed that 70% of the participants reported body shaming, primarily in the family environment. Moderate or severe levels of BD were found in 75% of the children. The multinomial logistic regression showed that having experienced body shaming increased the likelihood ($OR = 18.48$; $p < .001$) of BD, compared to those that had not been teased for their physical appearance. A significant association between body shaming and childhood BD was corroborated, with such shaming being highly frequent in family settings. These findings highlight the need to design preventive strategies against the use of body shaming in family and school environments.

Keywords: Body dissatisfaction, body image, adolescence, body shaming, family and school.

La humillación corporal en la familia y la escuela como factor de riesgo de insatisfacción corporal en adolescentes

Resumen

La insatisfacción corporal (IC) constituye un factor de vulnerabilidad psicopatológico en la infancia y adolescencia. Sin embargo, el impacto de las burlas sobre el cuerpo en la insatisfacción corporal durante la infancia aún no ha sido examinado. Este estudio ha explorado el fenómeno de la humillación corporal en contextos familiares, escolares y su asociación en el desarrollo de IC. Participaron 482 escolares de entre 11 y 13 años (11.8 años; 49% chicas). Se aplicaron instrumentos estandarizados para medir el grado de insatisfacción y distorsión de la imagen corporal, silueta correspondiente al Índice de Masa Corporal (IMC), silueta percibida y haber sido objeto de burlas en el contexto familiar y escolar. Se utilizó un modelo de regresión logística multinomial con el fin de identificar predictores significativos del grado de IC. Los análisis descriptivos revelaron que el 70% de los participantes reportaron burlas sobre su cuerpo, principalmente en el contexto familiar. El 75% de los niños presentó niveles moderados o severos de IC. La regresión logística multinomial identificó que haber padecido humillación corporal aumenta la probabilidad ($OR = 18.48$; $p < .001$) de experimentar IC, frente a los que no han recibido burlas sobre su aspecto físico. Se corroboró la asociación significativa entre la humillación corporal y la IC en la infancia, siendo este tipo de burlas muy frecuentes en el entorno familiar. Estos resultados ponen de manifiesto la necesidad de diseñar estrategias preventivas de la humillación corporal en el ámbito familiar y escolar.

Palabras clave: Insatisfacción corporal, imagen corporal, adolescencia, humillación corporal, familia y escuela.

Body dissatisfaction (BD), defined as the discrepancy between perceived body and ideal body is often associated with low self-esteem and emotional distress (Morán et al., 2024). Most importantly, childhood BD leads to eating disorders (EDs), other psychopathological variables and more serious psychological problems in adolescence and adulthood (Mitchison et al., 2020; Pérez-Bustinzar et al., 2023). Recent years have seen a growing interest in the concept of body shaming, understood as any critical comment, attitude or behavior towards an individual's body (Cerolini et al., 2024). This construct is considered to act as a form of symbolic violence that emotionally impacts and undermines the development of body image, particularly when occurring during childhood (Chung et al., 2021; De Valle et al., 2021). Such body shaming may foster the emergence of feelings of shame, social withdrawal and psychological distress, functioning as an invalidating experience that directly affects a child's self-concept (Gam et al., 2020). Other studies suggest that this term aligns with the concept of "mockery of physical appearance", particularly when referring to verbal or behavioral interactions that ridicule, reject or devalue an individual's body (Gozu, 2025).

It is worth underlining that adolescence is a crucial period in which the foundations of self-esteem and self-image are consolidated (World Health Organization [WHO], 2024; Wojtowicz & von Ranson, 2012). The study of risk and protective factors, especially in children aged between 9 and 13 years, provides knowledge on the variables associated with the formation of body image and an individual's optimal holistic development (Benítez & Maciel, 2024). Children at this life stage are particularly vulnerable to comments and comparisons related to their appearance (De Oliveira et al., 2017). Such factors, in addition to a constant concern with an age-inappropriate ideal of beauty and the use of filters on social media, may exacerbate body image distortion and influence the development of a healthy self-image (Camacho-Vidal & Sabariego-García, 2023). Recent studies have reported that gender differences in BD tend to decrease in pre-adolescence, possibly due to increased exposure to standardized digital content such as that found on TikTok or Instagram (Virós-Martín et al., 2025), where young men and women are presented with normative body aesthetic ideals. Girls typically interact more on platforms such as Instagram and TikTok, where they are exposed to ideals of beauty based on edited and distorted images (Thompson & Harriger, 2023), thus internalizing ideals of beauty associated with thinness and altered body image (Donovan et al., 2020; Feltman & Szymanski, 2018; Ruan et al., 2025).

Given this scenario of concern for child and adolescent well-being (Duno & Acosta, 2019), the study of BD is of particular importance. In fact, data recently published by the WHO (2024) show that at least 20% of children and adolescents present a mental health disorder such as depression or anxiety (Prado-Molina et al., 2023). It has also been reported that 70% of psychological disorders emerge during childhood and adolescence (Fundación IDIS, 2025). Although BD does not necessarily equate to an eating disorder, it is considered a significant source of psychological vulnerability, being particularly exacerbated by sustained or recurrent body shaming behaviors (Barbierik et al., 2023; Xiang & Kong, 2024). It is thus essential to focus on all forms of body shaming in both school and family environments (de Vries et al., 2016).

BD is the result of a complex interaction between various factors, including those related to the media and relationships with peers and family (Straughan & Chengwei, 2022; Dahill et al., 2021). Shaming may occur primarily in family and school settings. Nonetheless, relationships with the nuclear family and with peers are key in establishing both protective and risk factors for the development of psychological disorders (Cosma et al., 2024). Indeed, the lack of communication within the family unit is one of the most significant indicators of poor-quality family relationships. The family is the first setting for socialization and is where the first forms of symbolic violence are learned, with these being frequently normalized or overlooked, even in the absence of explicit intent (Dahill et al., 2022). Such practices, when repeated over time and left unchallenged, may lead to a negative self-image that persists throughout an individual's development, as significant figures play a key role in shaping the bodily self, especially when their discourse involves unattainable ideals and is founded in repeated aesthetic criticism (Cerea & Scaltritti, 2024; Duchin et al., 2016; Guiza, 2022; Tatangelo et al., 2016). Moments of family socialization and interactions with peers play a key role in the construction of body image. Recent studies have reported that children exposed to negative comments on their appearance by members of their family or peers are more likely to develop BD and maladaptive eating behaviors (Canals & Arijia-Val, 2022; Sanzari et al., 2023). Available findings show that weight-related teasing has moderate associations with body dissatisfaction, appearance, and possible eating disorder symptoms (Menzel et al., 2010; Ruiz-Lázaro et al., 2022). The EAT-IV Project (Eating and Activity in Teens and Young Adults) monitors that most adolescents, especially those who are overweight, report experiences of teasing from peers or family members, which is linked to episodes of binge eating (Haines et al., 2005; Plumed et al. 2019). Furthermore, studies using broader measures of bullying have identified significant relationships with eating disorders (Lie & Bang, 2021), suggesting that the phenomenon may not be limited to weight teasing, but rather that body shaming could constitute a risk factor for the development of eating disorders.

However, there is a need for further research to delve more deeply into the specific role of shaming on body image and its association with the emergence of body dissatisfaction and potentially with eating psychopathologies in adolescent population.

Body shaming in the family and school settings typically takes the form of teasing, nicknames or disparaging comments. These behaviors often go unnoticed in close relational environments, which are considered to be spaces of safety and trust but are not actually so for those who experience such phenomena, with the use of derogatory expressions being socially accepted (Deviantony et al., 2024). Additionally, body-shaming practices during the school years, which are increasingly present on social media, not only negatively impact self-esteem but can also act as forms of symbolic violence and social aggression with lasting effects on adolescents (Schlüter et al., 2023).

Another significant element traditionally related to body perception is body mass index (BMI). A high BMI is frequently associated with greater body dissatisfaction, especially in contexts where the notion of slimness predominates (Inzunza et al., 2023). The combination of high BMI and body shaming

experiences may have particularly negative impacts on young people's mental health and emotional well-being. Such individuals may feel more stigmatized and exhibit higher levels of stress and anxiety (Guiza, 2022; Hendy et al., 2025).

The present study aims to examine whether having been shamed for one's physical aspect is associated with a higher level of body dissatisfaction in adolescent population and to explore whether BMI silhouette is related to perceived level of BD. We also seek to establish a significant relationship between the body image distortion index and the severity of BD between sexes and, finally, to delve into gender differences in levels of BD. We expect to find that adolescents who have been victims of body shaming present higher levels of BD and that participants who perceive their body as having a larger volume (estimated by means of body self-perception and the silhouette corresponding to their BMI) also present higher levels of BD. Additionally, the body image distortion index is expected to be markedly related to more severe BD in girls compared to boys. Finally, girls are expected to show a higher frequency of BD and higher rates of body image distortion compared to boys.

Method

Participants

The sample comprised 482 participants aged between 11 and 13 years, with a mean age of 11.8. The students, 246 boys (51%) and 236 girls (49%), were all enrolled at Spanish schools, 9 public schools (81.8%) and 2 state subsidized private school (18.2%), with a total of 255 attending schools in rural areas and 227 (47.03 %) in urban areas.

Variables and Instruments

Anthropometric measures: The students' weight was measured using a digital scale (Orbegozo®). The children were weighed bare-foot but clothed. Height was measured using a stadiometer, with the children standing against the wall, with their heels touching the wall and their feet together. Body mass index was then calculated by means of the following formula: $BMI = \text{weight (kg)} / [\text{height (m)}]^2$. These data were used to calculate the BMI percentile, which serves as an indicator of nutritional status. The classification followed the reference standards for adolescents established by the WHO (2024). The results were recoded into the categories of underweight, normal weight, and overweight. In terms of anthropometric measures, the boys presented higher mean values for BMI (18.28 vs. 17.93) and weight (39.12 kg vs. 38.24 kg).

Ad hoc questionnaire designed for the present research. Three ad hoc questions were formulated for the purpose of evaluating experiences of mockery and criticism related to body image. The key items were as follows: *Do you remember having been criticized or mocked for your body or physical appearance?* with a dichotomous response of 0 = No, 1 = Yes. In addition, the *degree of impact* was evaluated using an ordinal Likert-type scale assessing frequency or intensity, with the response options being none, slight, moderate, considerable and extreme. The source of body shaming was categorized as either family, friends, other adults, or other children.

IMAGEN questionnaire (Solano-Pinto & Cano-Vindel, 2010). The 38-item IMAGEN questionnaire measures body

image dissatisfaction (BID) across three dimensions. These are the cognitive-emotional domain (21 items): thoughts and emotions associated with BID; perception (10 items): subjective body image distortion; and behavior (7 items): frequency of behaviors to alter physical appearance. The items are scored on a scale from 0 ("never") to 4 ("almost always/always"). A total score is obtained by summing the three dimensions, which is interpreted according to gender-specific reference values. Levels of dissatisfaction are categorized as follows: none (0–5 for boys and 0–16 for girls), moderate (6–16 for boys and 17–36 for girls), and severe (17–152 for boys and 41–152 for girls). In the original study, Cronbach's alpha for the internal consistency of each factor of the IMAGEN questionnaire was above .80, considering the corresponding psychometric data published in the manual provided by the original authors. For the present study, the reliability of the instrument was assessed by means of Cronbach's alpha for each of the dimensions analyzed, with values indicating adequate internal consistency. The cognitive-emotional and perception dimensions obtained a Cronbach's alpha of .87, indicating excellent reliability and a high correlation between the items in these dimensions. The behavioral dimension showed a value of .81, which is also indicative of acceptable reliability.

Collins Silhouette Test (Collins, 1991). This test consists of seven figures depicting boys or girls that progressively increase in size, covering a range from extreme thinness to obesity, but only desire for thinness has been selected.

These figures correspond to human silhouettes that progressively increase in dimension (from extremely thin to extremely large), with each figure being assigned a specific percentile. The test assesses body image perception in children using silhouettes with varying levels of BMI. A high level of dissatisfaction is considered when $BMI \geq 30$ and the child wishes to be at least five silhouettes thinner, or $BMI < 30$ and the child wishes to be 3 to 4 silhouettes thinner. In the present study, facial expressions were removed to avoid bias. Participants were asked to select one figure to describe themselves and another figure that they would ideally like to resemble, responding to the following questions: Which figure most looks like you? Which figure would you least like to resemble? Which figure do you most wish you looked like?

Body image distortion index. This index is obtained by subtracting the silhouette corresponding to the participant's real body profile from the silhouette selected as their perceived body image. A negative value indicates a distortion characterized by the perception of a smaller body size than the respondent's actual body profile, while a positive value reflects a tendency to overestimate, that is, the participant's perceived body size is larger than that corresponding to their actual percentile.

Body Dissatisfaction Index. This index reflects the discrepancy between the perceived and the desired body silhouette. A positive value indicates a desire for a thinner body figure than that perceived, while a negative value suggests a desire for a heavier figure than the one perceived.

Rejection index. This index reflects the discrepancy between perceived and undesired body shape. A comparison is made with the degree of body dissatisfaction to observe the behavioral component.

Recruitment

The recruitment procedure adhered to the following protocol: first, ethical informed consent was obtained, with the mother, father or guardian being asked to submit the informed consent signed by the parents. Finally, the children who wished to voluntarily participate in the study, without any type of compensation, were recruited.

Ethical Considerations

This study was by the Clinical Research Ethics Committee of the Hospital of Toledo (Spain) (Registration N.º 724). Following this approval, the project was presented at the schools, which were informed of the objectives of the research and the voluntary and anonymous nature of participation. Once the schools had accepted the project and agreed to participate, informed consent was obtained from the families, who were assured of the anonymity of the data and the voluntary nature of participation. The various communication channels set up by the school to engage with the educational community were used to send the informed consent forms to the families to be signed through. The aims of the study were then explained to the children, who were also informed that their participation was entirely voluntary and that they could drop out at any time. Finally, the participants were given a booklet specifically designed for this research.

The students were evaluated collectively, using the assessment booklet that included sociodemographic information and the IMAGEN questionnaire (Solano-Pinto & Cano-Vindel, 2010). The database was securely stored by the principal investigator. The study was conducted in accordance with the Declaration of Helsinki in terms of privacy, confidentiality, and informed consent. It also complied with the data protection law currently in force in Spain.

Data Analysis

To evaluate the relationships between the predictor variables and the level of body dissatisfaction as categorized into three levels (none, moderate, and severe), we used multinomial logistic regression model. This statistical technique is suitable for modeling a categorical dependent variable with more than two levels, allowing for the estimation of the relative probabilities of belonging to each category based on the predictor variables included in the model.

The variable of body dissatisfaction level was organized by tertiles. This process divides the sample into three groups that are approximately equal in size, based on the cumulative frequency of the existing categories. This is achieved by identifying cut-off points that divide the distribution into tertiles, assigning each tertile to a different category (low, medium and high). This approach simplifies the analysis and facilitates comparison between the levels of the variable.

The analysis included the following predictor variables: body dissatisfaction index; BMI silhouette; body image distortion index, obtained by comparing the actual percentile with the child's perceived image of their body; rejection index, sex, and the absence of shaming (yes/no).

To code the body dissatisfaction index, it was necessary to create a correspondence variable relating the BMI percentile to

the corresponding silhouette. Meanwhile, the distortion index was defined by calculating the difference between the silhouette selected by the participant in Question 1 (as described in the section on the study questionnaire) and the silhouette corresponding to their actual BMI percentile.

Each of these variables was evaluated in terms of its capacity to predict a child's being classified into either the "moderate" or "severe" category, using the "none" category as the reference level for the degree of body dissatisfaction according to the IMAGEN questionnaire. The estimated coefficients (β) represent the logarithmic change in the relative probabilities, while the derived odds ratios (ORs) offer a more direct interpretation of the predictor variables. We calculated 95% confidence intervals (95% CI) for the ORs, which allowed us to assess the precision of the estimates. Furthermore, *p*-values were used to determine the statistical significance of the coefficients, with significance being set at a conventional level ($p < .05$). The model was fitted using the maximum likelihood estimation method, which optimizes parameter estimation by maximizing the likelihood of the observed data given the model. Model fit was assessed using the likelihood ratio test and McFadden's pseudo- R^2 , providing indicators of the proportion of variability explained by the predictor variables. All the statistical analyses were conducted using SPSS Version 29.

Results

Descriptive Analysis of the Quantitative Variables

The results of the Collins Silhouette Test revealed the following descriptive metrics for the key study variables:

The Body Dissatisfaction Index showed a mean of -0.30 ($SD = 1.46$), with a median of 0 and an interquartile range of 1. The values ranged from a minimum of -5 to a maximum of 6, indicating variability in the degree of discrepancy between the perceived and desired silhouette.

For the BMI silhouette, the mean was 2.29 ($SD = 1.89$), with a median of 2 and an interquartile range of 3. The minimum observed was 1 and the maximum was 8, reflecting considerable diversity in body size perception related to body mass index.

The mean for the body image distortion index was 2.37 ($SD = 1.95$), with a median of 2 and an interquartile range of 3. The values ranged from -5 to 5, indicating the presence of both underestimation and overestimation of the actual body silhouette.

Finally, the body rejection index showed a mean of 3.97 ($SD = 1.56$), with a median of 4 and an interquartile range of 5. The scores ranged between -7 and 7, revealing marked differences in the participants' attitudes of rejections towards their own bodies.

Descriptive Analysis of Variables

Table 1 depicts the analysis of the variables. The most important findings show that a significant percentage of the sample (70%) report having been victims of body shaming (Table 2), highlighting the high prevalence of the experience of body shaming in this population (Table 3). Moreover, as regards the variable of body dissatisfaction level, most of the participants are placed in the highest categories (2 and 3, accounting for 75% of the sample). This suggests a tendency towards higher

levels of this study variable, which might suggest more pronounced or extreme perceptions in the dimension measured by this category.

Table 1. Descriptive analysis of the qualitative variables of the sample

Variable	Category	Frequency (Percentage)
Sex	boys	246 (51%)
	girls	236 (49%)
Shaming	Has not experienced	92 (19%)
	Has experienced	390 (81%)
Level of body dissatisfaction	None	136 (28%)
	Moderate	120 (25%)
	Severe	226 (47%)

Table 2. Level of impact of body shaming

Level of impact	Frequency	Percentage
None	284	59%
Slight	63	13%
Moderate	67	14%
Considerable	39	8%
Extreme	29	6%

Table 3. Source of body shaming

Who body shames		
Family	209	43%
Friends	22	5%
Other adults	77	16%
Other children	3	1%
Family and friends	137	28%
Family and other adults	23	5%
Friends and other children	9	2%
Adults and other children	2	0%
All	0	0%

The data presented in Tables 2 and 3 reveal that, despite a majority of the participants (59%) reporting feeling unaffected by the body shaming experienced, a significant percentage do reference some level of impact, with 13% reporting a slight one, 14% a moderate one, 8% a considerable one and 6% an extreme one, such that a total of 41% report feeling some type of impact. With respect to the provenance of the body shaming, the family is the primary source (43%), followed by other adults (16%) and friends (3%). Additionally, 28% of the participants report having been body shamed by both family and friends.

Logistic Regression Prediction Model

The statistics for the goodness of fit of the multinomial logistic regression model were as follows. An adjusted log-likelihood of -1211.487 was obtained, reflecting the degree of fit of the estimated model. McFadden's Pseudo- R^2 was .239, indicat-

ing that the model explains approximately 23.9% of the variability in the dependent variable, which represents a highly acceptable fit. The likelihood-ratio test yielded a value of 758.72, with 15 degrees of freedom, confirming that the predictor variables significantly enhance the model's fit. These results show that the adjusted model performs better than the null one, and that the predictors included significantly contribute to explaining body dissatisfaction. In the "moderate" category, BMI silhouette showed a significant positive effect ($\beta = .28$, OR = 1.32, CI 95% = [1.11, 1.59], $p = .0011$), as shown in Table 4. The body shaming variable (yes/no) showed the strongest impact in this category ($\beta = 2.981$, OR = 19.71, CI 95% = [12.92, 29.85], $p < .001$). The indices of dissatisfaction, distortion and rejection, as well as sex, exhibited no statistically significant effects for the category of moderate body dissatisfaction ($p > .05$).

Table 4. Multinomial logistic regression for "moderate" with the reference category of "none"

Variable	B	SE	OR	CI 95% Lower	CI 95% Higher	p-value
Dissatisfaction index	.042	.071	1.04	.91	1.20	.54
BMI silhouette	.315	.088	1.37	1.15	1.64	.0009***
Distortion Index	.074	.083	1.08	.93	1.26	.30
Rejection index	.057	.041	1.06	.98	1.14	.13
Sex	.12	.17	1.13	.79	1.62	.53
Body shaming	2.99	.22	19.91	13.03	30.31	<.0001***

With regard to the "severe" category, as shown in Table 5, the findings underline the importance of some of the previously observed factors, but with more robust effects. The BMI silhouette showed a significant effect, stronger than that observed in the moderate category ($\beta = .315$; OR = 1.37; 95% CI = [1.15, 1.64]; $p = .0009$). Additionally, the distortion index exhibited an effect in this category, albeit a statistically non-significant one ($\beta = .074$; OR = 1.08; 95% CI = [0.93, 1.26]; $p = .30$). This suggests that an increase in the degree of body image distortion may enhance the likelihood of belonging to the severe dissatisfaction group, although, in this case, the effect was not statistically significant. Once again, the body shaming variable (yes/no) had the most prominent effect in this category ($\beta = 2.99$; OR = 19.91; CI 95% = [13.03, 30.31]; $p < .001$). The existence of body shaming considerably increases the likelihood of presenting severe body dissatisfaction. In contrast, the variables of body dissatisfaction ($\beta = .042$; OR = 1.04; CI

Table 5. Multinomial logistic regression for "severe" with the reference category of "none"

Variable	β	SE	OR	CI 95% Lower	CI 95% Higher	p-value
Dissatisfaction index	.037	.069	1.04	0.91	1.19	.59
BMI silhouette	.5	.09	1.65	1.39	1.95	.00***
Distortion Index	.41	.074	1.5	1.3	1.74	.00***
Rejection index	.021	.036	.98	.91	1.05	.56
Sex	.10	.17	1.1	.79	1.55	.57
Body shaming	.52	.37	18.48	8.87	3.84	.00***

95% = [.91; 1.20]; $p = .54$), rejection index ($\beta = .057$; OR = 1.06; CI 95% = [.98; 1.14]; $p = .13$) and sex ($\beta = .12$; OR = 1.13; IC 95% = [.79; 1.62]; $p = .53$) showed no statistically significant effects in this category.

Discussion

Previous research has demonstrated a strong association between BD, low self-esteem and emotional distress (Morán et al., 2024). Disparaging attitudes towards the body in family and school settings and on social media may serve as a robust predictor of BD (Ruan et al., 2025) when internalized as part of the negative self-talk engaged in by adolescents in relation to their body image (Pila et al., 2021; Shroff & Thompson, 2006). Our findings are consistent with those of research alerting of the effects of continued exposure to body shaming, in both family contexts (Dahill et al., 2022; Pecini et al., 2023) and school environments (Escofet-Martín et al., 2025; Ruiz-Lázaro et al., 2022). In cases where primary attachment figures are responsible for the body shaming, the harm may be intensified, as the protective function of the immediate affective environment is compromised (Baldry et al., 2019). The recent literature has reported a significant association between early exposure to body shaming and increased social avoidance behaviors in later stages of development (Méndez & Cerquera, 2020). Experiences of physical rejection, especially during stages of psycho-affective vulnerability such as the participants in our sample, may generate persisting negative cognitive schemas about the body (Gam et al., 2020; Larraín et al., 2013).

The results obtained show that adolescents who are frequently body shamed for their physical appearance, be it in the family or school environment, tend to feel more dissatisfied with their body. This relationship between shaming and body dissatisfaction is particularly significant. The family is the main source of body shaming, being responsible in 63% of the cases. This finding coincides with previous studies reporting that the influence of the family environment on body perception and the development of dissatisfaction with one's own body image (Rodgers et al., 2020; Zarychta et al., 2019) may lead individuals to internalize unrealistic aesthetic standards and contribute to the development of maladaptive eating behaviors, especially in adolescents and young adults (Gardam et al., 2023; Lessard et al., 2020; Wu et al., 2024).

Secondly, 11% of the participants reported having been body shamed by other adults, which suggests that figures of authority in school or social settings may have a negative impact on body self-perception. Exposure to disparaging comments from teachers, coaches or extended family members (uncles or aunts, grandparents) may bolster insecurity about physical appearance (Jankowski et al., 2021). Additionally, 3% of the participants refer to body shaming by friends. Although the influence of peers on body dissatisfaction has been extensively evidenced (Brown & Batterham, 2022; Schvey et al., 2011), the incidence reported in the present study is low. However, the normalization of such comments may intensify self-criticism and contribute to a decline in self-esteem in the long term (Bufferd et al., 2022; Guiza, 2022). Meanwhile, 18% of our participants reported having been victims of body shaming by both family members and friends, suggesting that the combination of these sources may magnify the negative impact on body perception. The existence

of multiple sources of body shaming has been associated with higher levels of psychological distress, depressive symptoms and a greater likelihood of developing eating disorders (Hooper et al., 2021). In this sense, Solano-Pinto et al., (2021), underline that when adolescents are exposed to constant body-related criticism in their environment, they may internalize such messages and apply them to themselves, even without having been direct victims of body shaming.

Finally, 2% of the participants reported having been body shamed by all the groups mentioned, suggesting the presence of a highly invalidating environment and a greater risk of developing more severe psychological issues, including anxiety and social isolation (Rubin et al., 2009). It is worth noting that, despite 69% of our participants reporting feeling unaffected by the body shaming experienced, our findings reveal that these experiences do, in fact, have a significant impact on the likelihood of presenting moderate or severe BD. In particular, the body shaming variable is strongly associated with severe BD, suggesting that children that report having been victims of body shaming are more likely to develop negative perceptions of their body image despite claiming that body shaming does not affect them. This finding suggests that the conscious perception of the impact of body shaming may be underestimated, or that psychological mechanisms such as denial or minimization may lead individuals to report a low subjective impact. Objectively, however, these experiences affect the construction of body image, since, as stated by authors such as Plumed et al. (2019); Rojo-Moreno et al. (2013) and Merino et al., (2024), there exists a significant correlation between body shaming and BD, even when the individuals involved do not explicitly recognize feeling affected (Salaberria & Rodríguez, 2007).

These findings on the sources of body shaming underscore the need to promote programs focused on emotional education, awareness of the psychological impact of shaming, and self-acceptance of body image, which could be effective in reducing the negative impact of body shaming on body image (Aznar et al., 2022). Additionally, strategies designed to train parents, educators, and other adults interacting with children may help reduce body shaming behaviors and foster an environment of acceptance and respect across children's development. Furthermore, future research should address weight stigma, especially in socio-educationally vulnerable populations (Hooper, 2021).

Regarding the hypothesis associating the perception of a larger body size (as estimated through body self-perception and the BMI silhouette) with levels of body dissatisfaction, our findings support this notion, specifically for the category of moderate BD. The likelihood of experiencing moderate BD increased by 32% in participants that selected a thinner silhouette, indicating that as the perceived body size increases, so does the probability of feeling dissatisfied with one's own body image. Not only does body perception impact satisfaction with one's own body image, but it is also a key component of self-concept during adolescence (Uribe-Salas et al., 2018). Multiple factors shape this perception, including personal experiences such as body shaming. The discrepancy between perceived and idealized body image can lead to internal conflicts that negatively impact emotional well-being and contribute to the development of eating disorders (Feijoo et al., 2023). In this sense, authors such as Heidelberg and Smith (2018)

highlight that distorted self-perception may be an obstacle to psycho-emotional well-being.

This finding reinforces the line of research suggesting that a body perception that deviates from the socially promoted aesthetic ideal can lead to distress and dissatisfaction with one's own appearance, as reported by authors such as Donovan et al. (2020) and Ruan et al. (2025). Furthermore, we found no significant gender-related differences, suggesting that this relationship develops similarly in girls and boys, which coincides with previous studies. Moreover, the importance of accurately perceiving one's body shape is highlighted, as this promotes greater body acceptance and a more positive attitude toward adopting healthy habits (Solano-Pinto et al., 2020).

Our results suggest that the association between body image distortion and severe BD is independent of gender, which partly contradicts our initial hypothesis on gender differences. This finding is consistent with recent research reporting that boys are also increasingly exposed to social pressure related to unrealistic body ideals, which are promoted by models on social media, videogame personalities and youtubers (Christakis & Hale, 2025). This aligns with previous theories positing that perceptual distortions about one's own body are a critical risk factor for the development of BD and maladaptive behaviors related to body image (Shroff & Thompson, 2006). Various studies have shown that excess weight gain from childhood to adulthood is associated with increased risk of depression and greater severity of symptoms in adult years. These studies, however, had no prior information on the participants' mental health (Gallagher et al., 2023).

Furthermore, the interaction between body image distortion and body image suggests that children with a more biased body perception may be more vulnerable. This supports the importance of intervening in body perception from an early age to reduce the likelihood of developing high levels of BD (Smolak & Levine, 2001; Smolak & Thompson, 2009). Hence, we are unable to confirm the hypothesis on gender differences, which suggests that the greater vulnerability exhibited by girls might be the result of a more rigid and punitive social construction of the female body from early ages (Martínez et al., 2024). In other words, although there might exist individual differences, gender cannot be considered a determinant of body image distortion as a main predictor of BD. Hence, although the social constructions of the female body continue to be more inflexible and castigatory (Martínez et al., 2024), it cannot be ruled out that boys may be developing an increasing vulnerability to such pressures, which underlines the need for early preventive interventions regardless of gender.

Finally, our last hypothesis proposing that the girls would present a greater frequency of BD and greater body image distortion compared to the boys was not confirmed by our results. No gender-related differences were found in the levels of either BD or body image distortion.

It is worth noting that the results of the analysis of the overall sample reveal considerable variability in the discrepancy between the perceived and the desired body silhouette. This variability might be the result of sociocultural factors that promote the ideal of a slim figure as a generalized norm, which is internalized by adolescents of both sexes (Zitzmann & Warschburger, 2020).

In addition, the mean score on the body image distortion index evidences both the underestimation and overestimation of the actual body silhouette, which aligns with the findings of Gam et al. (2020) and Méndez & Cerquera (2020), who highlight the impact of the subjective interpretation of the body during adolescence.

This all reflects considerable diversity in the perception of body size in relation to body mass index, supporting the notion of a complex process of body appropriation that is not necessarily differentiated by sex.

Limitations and Directions for Future Research

Although the present study contributes important information on the impact of body shaming on adolescents, taking into account their school and family settings, it is not without limitations that must be considered when interpreting the results.

First, the cross-sectional nature of the design prevents causal relationships being established between the variables analyzed, which limits the possibility of understanding their evolution or the directions of influences between variables.

Second, we did not include certain relevant variables that might have enriched the analysis, such as self-esteem, internalization of body ideals and other variables that the literature has underscored as determinants of body perception and satisfaction during adolescence. The absence of these variables limits a complete understanding of the phenomenon, while including them might have helped explain the lack of significant differences between sexes.

Thirdly, in the case of the Collins Silhouette test, it is observed that the test allows the evaluation of the desire for thinness/volume, but only the desire for thinness has been selected, which is a limitation of the study.

It is proposed that future research adopt a longitudinal design and integrate key psychosocial variables, such as perceived aesthetic pressure, social media use, and the level of internalization of body ideals. This study helps address gaps in the field of body image and appearance-related shaming by focusing on adolescents and examining the link between body dissatisfaction and experiences of teasing during this critical developmental stage. While acknowledging the need for longitudinal research, the present work provides empirical evidence that advances understanding of these phenomena and lays the foundation for future studies. Including these factors would allow for a deeper understanding of the mechanisms that might explain the absence of significant differences between boys and girls, as well as providing a more complete and dynamic vision of body image development in adolescence.

Conclusion

The present study provides evidence of the relationship between body shaming, body image distortion, and body dissatisfaction in children an issue hitherto unexplored. The high prevalence of the family environment as the primary source of body shaming highlights the importance of preventive interventions in this context. Future studies might explore psychological resilience strategies and the impact of socio-emotional education programs in mitigating the effects of body shaming on BD.

Research on body shaming in the family and its impact on children's and adolescents' mental health is critical for the development of effective intervention strategies. Although no significant gender differences emerged, acknowledging gender-specific patterns in body dissatisfaction is essential. Recent studies have underscored the importance of addressing this issue from a holistic perspective, including family therapy, parent education, and the promotion of self-esteem.

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Conflicts of interest

The authors report no conflicts of interest.

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