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Examining how sociocultural appearance pressures relate to positive and negative facets of body image and eating behaviors in adolescents: An exploratory person-centered approach

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ABSTRACT

The present study explored how patterns of sociocultural appearance pressures were linked to positive and negative facets of body image and eating behaviors in an adolescent sample ($N = 438$). Latent profile analyses indicated three distinct subgroups of perceived sociocultural appearance-related pressures: a Generalized-Pressure profile (28.8%) (moderate pressure from mother, father, and peers, and relatively high pressure from the media), a High-Media-Pressure profile (38.8%) (low pressure from mother, father, peers, and relatively high pressure from the media), and a Low-Pressure profile (32.4%) (low pressure from all sources). Overall, adolescents in the Generalized-Pressure profile reported a less positive relationship with food and their bodies (i.e., higher internalization of the thin ideal, body dissatisfaction, and bulimia symptoms, and lower body esteem and intuitive eating) than adolescents in the High-Media-Pressure profile, who exhibited poorer outcomes than those in the Low-Pressure profile. These findings highlight the importance of exploring how sociocultural appearance pressures from various sources combine in distinct ways, and how these configurations relate to different aspects of body image and eating behaviors in adolescents.

1. Introduction

Concerns about body size and shape are prevalent among adolescents (Cash & Smolak, 2011). The combination of pubertal changes, exposure to social media that endorses muscular and thin body ideals, and a heightened propensity for social comparison can make young people feel dissatisfied with their appearance (Aimé et al., 2022). This dissatisfaction is associated with various disordered eating behaviors, such as dietary restriction, fasting for entire days, inducing vomiting, and using laxatives or appetite suppressants to alter body weight and size (e.g., Roy & Gauvin, 2013). Disordered eating is associated with a range of negative psychological and health-related issues among adolescents, including depression, anxiety, self-harm, and feelings of isolation (Brausch & Gutierrez, 2009). Thus, understanding the risk factors associated with body image disturbances and disordered eating behaviors in this population remains essential.

The Tripartite Influence Model of body image and eating disturbance (Thompson et al., 1999) is a prominent framework used to understand the contribution of sociocultural factors, appearance comparisons and internalization of Western body ideals, such as thinness and muscularity, to adolescents' body perceptions and patterns of disordered eating (Papp et al., 2013; Roberts et al., 2022; Shahyad et al., 2018). According to this model, the internalization of body ideals and engagement in body comparisons serve as explanatory mechanisms linking sociocultural appearance pressure from parents, peers, and the media to adolescents' negative body perceptions and eating disorder symptomology.

Additionally, to the best of our knowledge, all previous work based on the Tripartite Influence Model has used variable-centered approaches for analysis, such as regression or structural equations modeling (e.g., Hockey et al., 2021; Maher et al., 2021; Schaefer et al., 2021). The variable-centered approach remains the dominant approach in the social sciences (Howard & Hoffman, 2017). A variable-centered approach examines relations among variables within a given population and treats individuals in a sample as a unified group. A limitation of this method is that it does not allow for the identification of subgroups of individuals with distinct profiles within a given sample, nor does it capture how

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profile membership may be associated with unique trajectories (Howard & Hoffman, 2017). In contrast, a person-centered approach aims to identify subgroups (or profiles) of individuals within a sample who share similarities on specific variables (Howard & Hoffman, 2017). Latent profile analysis is a person-centered approach that allows for the identification of latent profiles of individuals based on variables that are not directly observable (Spurk et al., 2020). In other words, latent profile analysis seeks to uncover unobservable latent characteristics that may underlie variations in observable behavioral patterns. This method thus recognizes that individuals within the sample can be categorized into different subgroups (or profiles), each characterized by unique patterns of responses. This analytical method proves valuable for estimating the number of categories (with specific qualitative characteristics) required to explain the variability observed in the behaviors of a given group. In the present study, a latent profile analysis was used to 1) identify subgroups of adolescents based on the level of perceived appearance-related pressure from parents, peers, and the media, and 2) examine how unique patterns of perceived appearance-related pressure from these sources are associated with body and eating-related outcomes that are included in the Tripartite Influence Model. Filling key knowledge gaps in the field, this study included male and female adolescents, examined internalization of muscular and thin body ideals, addressed both positive (i.e., esteem) and negative (i.e., dissatisfaction) facets of body image, and assessed eating-related outcomes that reflect disordered (i.e., bulimic symptoms) and adaptive (i.e., intuitive) eating. Bulimic symptoms, in particular, are significant predictors of the onset of eating disorders (Garner, 2004) and are associated with severe psychological distress in adolescents, including social isolation, depression, and suicidal thoughts (Ferreiro et al., 2014; Rotenberg & Sangha, 2015). In contrast, intuitive eating, which involves being attuned to one's hunger and satiety cues, represents the antithesis of the restrictive or compulsive behaviors commonly observed in disordered eating patterns (Tylka, 2006).

The proliferation of the positive body image movement in the scientific literature underscores the importance of generating more knowledge about factors associated with positive relations with the body and eating. Growing evidence in this field has also highlighted the nuances in relations with the body and eating, such that low levels of dissatisfaction or disturbance is distinct from positive or flourishing states involving the body or eating (Tylka & Wilcox, 2006; Tylka & Wood-Barcalow, 2015). This underscores the need to continue to generate evidence about shared and distinct factors associated with more negative and positive relations with the body and eating.

1.1. Tripartite Influence Model

The Tripartite Influence Model identifies three main sources of influence on body image and eating behaviors: parents, peers, and the media. The model also includes two explanatory mechanisms: social comparison and the internalization of appearance ideals (Thompson et al., 1999). Initially focused solely on the thin ideal, the model now reflects modern body ideals characterized by thinness and muscularity (Girard et al., 2017; Roberts et al., 2022; Schaefer et al., 2021). These ideals are unattainable for most individuals, leading many to perceive a discrepancy between their body and cultural ideals, eliciting body dissatisfaction. The saliency of body ideals may be exacerbated in adolescence given adolescents' tendency to engage in appearance comparisons (Jones, 2004). To meet these ideals, adolescents may engage in extreme dieting practices, such as restrictive eating, which is unsustainable for large periods of time and can lead to vicious cycles of overeating following periods of restriction (Schaefer et al., 2021; Vuong et al., 2021). This notion is supported by several studies testing the Tripartite Influence Model in adolescent girls, whereby pressures from parents, peers, or the media are directly or indirectly associated with bulimia symptoms through body ideal internalization and body dissatisfaction (Keery et al., 2004; Shahyad et al., 2018; Shroff & Thompson, 2006). Overarchingly, the Tripartite Influence Model highlights the role of interpersonal relationships (with peers and parents) and the media in communicating standards and norms related to appearance. These sources uniquely contribute to adolescents' propensity to engage in body comparisons, internalize body ideals, and influence their body perceptions and eating behavior (Keery et al., 2004; Roberts et al., 2022; Shroff & Thompson, 2006).

1.2. Appearance pressure from parents and peers in adolescence

In adolescence, parents and peers are powerful socializing agents for communicating societal ideals and norms surrounding body size, shape, and weight, and eating behavior (Barbeau et al., 2022; Chow & Tan, 2018; Roberts et al., 2022). Pressure to adhere to and value Western body norms can occur in more explicit, direct ways, such as through weight teasing and directed comments toward an adolescent's body or eating habits, or indirectly through exposure to parent and peer-related appearance commentary and modelling (Barbeau et al., 2022; Lacroix et al., 2022; Quiles Marcos et al., 2013). For instance, a longitudinal study by Haines and colleagues (2006) demonstrated that weight-related teasing was associated with binge eating and dieting among adolescent boys and girls over a five-year period. Olvera and colleagues (2013) cross-sectionally observed that parental and peer weight teasing was associated with adolescents' emotional eating behaviors. Additionally, a longitudinal study in adolescents observed that appearance-related teasing was a risk factor for a trajectory of low body esteem over a four-year period (Lacroix et al., 2022). A meta-analysis conducted by Quiles Marcos et al. (2013) found that modelling has the strongest influence on adolescents' disordered eating, with peers having more of a profound effect than parents. Studies often observe that perceived appearance pressure from peers is more directly associated with adolescents' eating behaviors by modelling eating norms (i.e., dieting) and socially reinforcing body ideals through appearance-related communication. In contrast, perceived appearance pressure from parents has a more indirect influence, primarily operating through self-evaluative processes and internalization of body ideals (Barbeau et al., 2022; Keery et al., 2004; Roberts et al., 2022).

A review of the literature conducted by Rodgers and Chabrol (2009) supports the notion that both parents contribute to adolescents' body image and disordered eating; however, studies have shown a sex-dependent effect whereby mothers have a stronger influence on girls, while fathers have more influence on boys. Studies exploring gender dyads within family systems found that girls are more attuned to conversations that represent cultural standards about women's bodies, such as the thin ideal, from their mother's, whereas boys are more attuned to conversations that represent cultural standards about men's bodies, such as the muscular ideal, from their father's (Berge et al., 2013; Bussey & Bandura, 1999). Thus, the sex-dependent effect of the parent-child dyad may be a stronger determinant of the content of appearance-related communication. This was supported in a more recent qualitative study with adolescents, where participants reported hearing more health-focused commentary from their mothers that emphasized the outcomes of behavior, such as monitoring eating to manage weight, rather than focusing on the behaviors themselves (i.e., how to modify diet quality; Dahill et al., 2023). Regarding prevalence, there are more studies supporting that mothers are perceived as exerting greater pressuring appearance-related commentary to their children, regardless of the child's gender, compared to fathers (Dahill et al., 2021, 2023; Lawrence et al., 2022). When this is found, studies report that, in comparison to fathers, mothers appearance-related commentary is more strongly associated with adolescents' body image, as mothers have a higher tendency to model and reinforce dieting behaviors (Arroyo & Andersen, 2016; Hart & Chow, 2020). However, there are some studies in adolescent populations that have found that perceived appearance-related commentary is comparable from mothers and fathers in a mixed gender sample (Lessard et al., 2023) or is perceived

more from fathers in a female sample (Keery et al., 2005). Findings in a qualitative study with adolescents conducted by Dahill and colleagues (2023) offer a nuanced interpretation of the mixed findings in the literature. Although the study found that adolescents perceived more appearance-related commentary from their mothers compared to their fathers, the delivery (i.e., humor, negativity), context, and parent-child relationship played a role in the perception of health-related information as being perceived as pressuring. Thus, the unique family dynamic, parent-child relationship (i.e., adolescent's anxiety or comfort about giving feedback about commentary), and parental projections of self-related body and health concerns, can modulate perceptual differences. Qualitatively, the association between parental commentary and adolescents' internalization of body ideals, body perceptions, disordered forms of eating to lose weight, remain distinct, with effects from either parent being more influential on girls than boys, warranting further investigation (Lessard et al., 2023). There is a continued need to balance the literature by exploring the effect of fathers' appearance-related commentary to provide clarity on mixed findings. In addition to interpersonal influences, the media has been shown to shape adolescents' body image and eating behaviors, and at times, has shown to be a stronger predictor than perceived pressure from parents and peers (Roberts et al., 2022; Shroff & Thompson, 2006).

1.3. Appearance pressure from the media in adolescence

Appearance pressure from the media refers to the internalization of appearance standards promoted by the media, including ideals of thinness and muscularity (Schaefer et al., 2017). The adolescent period is marked by increased exposure to and consumption of media, particularly social media, with 95% of adolescents owning a personal device and 70% checking social media platforms multiple times a day (Anderson & Jiang, 2018; Rideout & Robb, 2018). Appearance-related pressure from social media is associated with adolescent girls' thin and muscular ideal internalization and influences body esteem through the internalization of these ideals, particularly the thin ideal (Roberts et al., 2022). Other cross-sectional research testing the Tripartite Influence Model have also found an association between appearance-related pressure from the media and greater body dissatisfaction in adolescents, primarily by increasing the internalization of body ideals and through body comparisons (Keery et al., 2004; Shroff & Thompson, 2006). There is also longitudinal evidence: a study conducted by Rodgers et al. (2015) and colleagues found that media-ideal internalization was a precursor of social appearance comparisons which, in turn, increased body dissatisfaction in adolescent girls. A recent systematic review examining the association between social media and eating disorder pathology have demonstrated that both passive and interactional exposure to media is associated with disordered eating behavior in adolescents and adults (Padin et al., 2021). Taken together, there is evidence to suggest that adolescents who have high perceived appearance-related pressure from the media would exhibit greater body ideal internalization, more negative body perceptions, and more disordered (vs adaptive) eating patterns.

1.4. Applying a person-centered approach using latent profile analysis to identify profiles based on sources of perceived appearance pressure in adolescents

Based on the Tripartite Influence Model, this study examines adolescents' perceived appearance-related pressures from their mothers, fathers, peers, and the media using a person-centered approach. Considering the evidence that has found positive associations between appearance pressure from social agents with body dissatisfaction and disordered eating, we hypothesized that adolescents in profiles with higher levels of perceived appearance pressure will experience more negative outcomes related to body image and eating behaviors. However, given that no prior research has used a latent profile approach in exploring this prediction, and that the number of profiles depends on the unique characteristics of the sample, we did not formulate specific hypotheses regarding the number of profiles that would emerge nor what varied levels of appearance pressure would be associated with more positive facets of body image or eating.

2. The present study

The purpose of this exploratory study was to identify latent profiles representing adolescents' experiences of different types of sociocultural pressures (i.e., from fathers, mothers, peers, and the media). The second purpose was to determine if the identified profiles differed on the degree of internalization of (muscular and thin) body ideals, body perceptions (i.e., esteem and dissatisfaction), and adaptive (i.e., intuitive) and disordered (i.e., bulimia symptoms) forms of eating.

3. Material and methods

3.1. Participants and procedure

The initial sample consisted of 455 participants, of whom 438 met the inclusion criteria and provided complete data on the relevant variables. The final sample thus comprised 438 adolescents (n = 353 girls, 80.6%; n = 57 boys; 13.0%; n = 28 gender diverse, 6.4%) who were between 14 and 17 years old (M = 15.72, SD = 1.03). Most adolescents self-identified as White (n = 408, 93.2%). Participants were recruited through paid advertisements on Facebook, which specifically targeted teenagers from the province of Quebec (Canada) aged 14 to 17. The study was advertised as an online research project focusing on young people's attitudes and behaviors regarding body image and eating behaviors. The survey measures were in French. As a token of appreciation for their participation, participants were offered the chance to enter a prize draw for the opportunity to win one of five gift cards valued at $50 CAD. Informed consent was obtained from each participant digitally through the survey, and ethical approval for the study was granted by the Research Ethics Committee at the University of Quebec in Trois-Rivieres (CER-20-271-07.06).

3.2. Measures

3.2.1. Demographic variables

Participants provided demographic information such as their age, sex, gender, ethnicity, and current living situation (i.e., whether they are currently living with both parents, only one parent, etc.). Participants were instructed that they would have to answer questions about their "mother" and "father", and they were asked to indicate who they would have in mind when responding to those questions (e.g., biological mother/father, stepmother/stepfather, grandmother/grandfather, foster mother/father). Most participants indicated that they would respond to survey questions according to experiences with their biological mother (n = 429, 97.9%) and biological father (n = 410, 93.6%).

3.2.2. Appearance-related social pressure

Perceived appearance-related pressure from parents, peers, and the media were assessed using three subscales from the Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4; Rodgers et al., 2016). Items on the parent subscale were modified to capture adolescents' perceptions of appearance pressure from each of their parents separately. Therefore, four items assessed appearance pressure from the father (e.g., "I feel pressure from my father to look thinner"; $\alpha = .85$) and four other items assessed pressure from the mother (e.g., "I feel pressure from my mother to improve my appearance"; $\alpha = .82$). Participants also completed the four-item peer subscale (e.g., "I feel pressure from my peers to decrease my level of body fat"; $\alpha = .88$) and the four-item media subscale (e.g., "I feel pressure from the media to look in better shape"; $\alpha = .96$). Subscale scores were averaged to create a mean pressure score

for father, mother, peers, and the media. Items were rated on a 5-point Likert scale ranging from 1 (*Definitely Disagree*) to 5 (*Definitely Agree*).

3.2.3. Internalization of the thin and muscular body ideal

Internalization of appearance ideals were assessed using the internalization of the thin/low body fat ideal and the internalization of the muscular/athletic ideal subscales of the SATAQ-4 (Rodgers et al., 2016). Each subscale comprises five items (e.g., thin/low body fat ideal: "I want my body to look very thin"; muscular/athletic ideal: "It is important for me to look athletic") that are rated on a 5-point Likert scale ranging from 1 (*Definitely Disagree*) to 5 (*Definitely Agree*). Items on each subscale were averaged to create a mean score for internalization of the thin ideal and internalization of the muscular ideal. Subscale scores demonstrated good internal consistency in the current sample (thin: $\alpha = .87$; muscular: $\alpha = .91$).

3.2.4. Body dissatisfaction

To account for the distinct ways in which body dissatisfaction is expressed across genders, we used different validated tools: the Body Dissatisfaction subscale from the Eating Disorder Assessment for Men (EDAM; Stanford & Lemberg, 2012) for boys and the Body Dissatisfaction subscale from the Eating Disorder Inventory-3 questionnaire (EDI-3; Garner, 2004) for girls. Both scales have been extensively used in gender-specific research on body image and are well-established measures for assessing body dissatisfaction in their respective populations. The Body Dissatisfaction subscale from the EDAM is composed of 12 items rated on a 5-point scale, ranging from 0 (*Never*) to 4 (*Always*) (e.g., "I wish my abdominal muscles were more defined"; Cronbach's alpha = 0.81). The Body Dissatisfaction subscale from the EDI-3 is composed of 10 items rated on a 6-point Likert scale ranging from 0 (*Never*) to 5 (*Always*) (e.g., "I think my stomach is too big"; $\alpha = .89$). Since these scales have different score ranges – 5 for the EDAM and 6 for the EDI-3 – we applied a rescaling procedure, a method for comparing data from different measures with varying score ranges (Rust & Golombok, 2009), to ensure comparability between boys and girls. This process involved multiplying the EDAM scores by a factor of 6/5, thereby adjusting the range to match that of the EDI-3. This approach preserves the integrity of each scale while enabling direct comparisons between boys and girls on body dissatisfaction.

3.2.5. Body esteem

Participants completed the appearance and weight subscales of the Body Esteem Scale (BES; Mendelson et al., 2001). These two subscales are composed of 10 and 8 items, respectively, and are rated on a 5-point Likert scale ranging from 1 (*Never*) to 5 (*Always*). A sample item is "I am proud of my body." Items of the two subscales were averaged and combined to create a global score, which showed good internal consistency in the present study ($\alpha = .96$).

3.2.6. Bulimia symptoms

Considering the distinct ways in which bulimia symptoms are expressed among individuals of different genders, distinct tools were used to evaluate boys vs. girls' bulimia symptoms. Bulimia symptoms among boys were assessed with the 12 items from the Binge eating subscale (e.g., "I feel as if I cannot stop eating once I start") and the 5 items related to purging behaviors (e.g., "I eat with the plan of throwing up afterwards") from the Eating disorder subscale of the Eating Disorder Assessment for Men (EDAM; Stanford & Lemberg, 2012). The 17 items, each rated on a 5-point scale ranging from 0 (*Never*) to 4 (*Always*), were averaged to create a global score. The subscale showed good internal consistency in the current study ($\alpha = .84$). Symptoms of bulimia in girls were assessed using the Bulimia symptoms subscale from the Eating Disorder Inventory (EDI-3; Garner, 2004), which is composed of eight items. These items were rated on a 6-point Likert scale, with options ranging from 0 (*Never*) to 5 (*Always*). A sample item is: "I have gone on eating binges where I felt I could not stop." The scale displayed strong internal consistency in the present sample ($\alpha = .88$). EDAM scores were multiplied by a factor of 6/5, thereby adjusting the range to match that of the EDI-3. This approach preserves the integrity of each scale while enabling direct comparisons between boys and girls on bulimia symptoms.

3.2.7. Intuitive eating

Participants completed the Intuitive Eating Scale-2 (IES-2; Carbonneau et al., 2016; Tylka & Van Diest, 2013). This scale consists of 23 items rated on a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). A sample item is: "I trust my body to tell me when to eat." Items were averaged to create a mean intuitive eating score. The scores on the scale showed good internal **consistency** in the current study ($\alpha = .90$).

3.3. Data analysis

Originally, 9 cases were removed due to missing data across all predictor variables and 2 dependent variables. For the remaining missing data, each variable had less than 5% missing data, totaling nine missing values across all variables. Expectation Maximization method for data imputation was used for missing values. At this point, our sample size was ($N = 446$). Univariate outliers (z-score of $\pm$ 3.29) were winsorized to the next highest value within range. Multivariate outliers were screened for and removed for the latent profile analysis ($n = 6$) and MANOVA ($n = 2$), with a total of eight participants removed. The final sample consisted of 438 participants. This sample size was considered adequate to detect meaningful profile patterns with sufficient statistical power. Previous research suggests that a sample size of 300 or more cases is desirable for such analyses (e.g., Nylund-Gibson & Choi, 2018; Weller et al., 2020). Means, standard deviations, and Pearson's correlations between all study variables are presented in Table 1.

Latent profile analyses were conducted to identify clusters of adolescents' experiences related to appearance pressure using Mplus 7.2 (Muthén & Muthén, 2012). We investigated the number of latent profiles using adolescents' response patterns on the well-validated Sociocultural Attitudes Towards Appearance Questionnaire-4, which assesses perceived appearance-related pressure from parents, peers, and the media (Rodgers et al., 2016). Specifically, latent profiles were generated based on the pattern of means of the four indicators of appearance pressure: father, mother, peers, and the media. To select the optimal number of latent profiles regarding adolescents' perceived appearance pressure, we considered models with one to five latent profiles. As recommended by Spurk et al. (2020), our decision for selecting the number of latent profiles was based on model fit (statistical considerations), profile size, and conceptual relevance and theoretical backing. The following goodness-of-fit indices were used to select the most appropriate model solution: the Akaike information criterion (AIC), the Bayesian information criterion (BIC), the Sample size-adjusted BIC (SABIC), and the entropy value. When comparing model solutions, lower AIC and BIC values are preferred, as well as higher entropy values (with values above 0.80 considered high) (Nylund et al., 2007; Spurk et al., 2020). We also conducted the Lo-Mendell-Rubin adjusted likelihood ratio test (LRT). Statistically significant findings for this test indicate that a model with X number of latent profiles has a better fit than a model with X-1 latent profiles (Tein et al., 2013). Finally, we aimed for a minimum of 10% of our sample in each profile. This decision was based on a practitioner's guide to latent class analysis (Sinha et al., 2021), which states that models comprising three or more classes with a class or classes containing less than 10% of the sample suggest poor fitting. To visualize the differences between latent profile solutions, we created a line graph illustrating the three latent profiles defined by standardized means on the four sources of appearance-related pressure among adolescents. Although we did not specify a research question related to gender, including gender as a covariate aligned with previous research indicating that gender may influence body image and eating behaviors.

Table 1
Means, standard deviations, and correlations of study variables.

	M (*SD*)	Mother's pressure	Father's pressure	Media pressure	Peer pressure	Internalization of the thin ideal	Internalization of the muscular ideal	Body dissatisfaction	Body esteem	Bulimia symptoms	Intuitive eating
Mother's Pressure	2.08 (0.98)										
Father's Pressure	1.99 (0.97)	0.604**									
Media Pressure	3.23 (1.43)	0.354**	0.280**								
Peer Pressure	1.82 (0.91)	0.626**	0.600**	0.423**							
Internalization of the thin ideal	3.26 (1.10)	0.347**	0.275**	0.578**	0.333**						
Internalization of the muscular ideal	2.83 (1.12)	0.117*	0.171**	0.264**	0.234**	0.448**					
Body dissatisfaction	3.34 (1.15)	0.399**	0.338**	0.598**	0.442**	0.662**	0.281**				
Body esteem	2.96 (0.99)	−0.414**	−0.353**	−0.593**	−0.470**	−0.634**	−0.249**	−0.880**			
Bulimia symptoms	2.24 (0.99)	0.414**	0.383**	0.346**	0.428**	0.368***	0.210**	0.539**	−0.587**		
Intuitive eating	3.33 (0.69)	−0.397**	−0.367**	−0.456**	−0.444**	−0.518**	−0.181**	−0.685**	0.707**	−0.752**	

Note. $N = 438$ adolescents. *$p < .05$. **$p < .01$. ***$p < .001$.

Following the recommendations of Weller et al. (2020), we used the automatic R3Step approach to incorporate gender, specifying it as an auxiliary variable. This permits to regress the profiles on the covariate (gender), thus accounting for misclassification from posterior probability estimation (Vermunt, 2010). The categorical variable (gender) with categories (girl, boy, and gender diverse) was transformed into three dummy variables, enabling their inclusion in the latent profile analysis.

After selecting our final profile solution, a multivariate analysis of variance (MANOVA) with Bonferroni post-hoc analysis was performed in SPSS to detect mean differences between the profiles on the six outcomes: internalization of the thin ideal, internalization of the muscular ideal, body dissatisfaction, body esteem, bulimia symptoms, and intuitive eating. All assumptions for MANOVA were met except for normality and homogeneity of variances and covariances. Pillai's trace for multivariate effects was reported as it is robust to violations to assumptions.

4. Results

4.1. Latent profile analysis

Profiles of Appearance-Related Pressures Model fit information of the latent profile analysis ($N = 438$) for the 1-profile to 5-profile solutions are presented in Table 2. The Lo-Mendel Likelihood Ratio Test suggested that either the 2-profile or the 3-profile solutions would best fit the data. The 4-profile and the 5-profile solutions did not show acceptable fit. By observing the number of adolescents in the smallest profile of each latent profile solution, we also noted that the 5-profile solution was not an acceptable solution as the smallest profile included only 7.5% of the total sample. As for the AIC, BIC, and adjusted BIC indices, they presented decreasing values from the 2-profile to the 5-profile solutions. Given that we want to see these indices decrease, the 3-profile solution seems to be a better fit than the 2-profile solution. Furthermore, for all five solutions, the relative entropy was found to be satisfactory (above 0.8). In sum, we favored the 3-profile solution for the following reasons: 1) based on the theoretical contribution of the 3-profile solution which includes a latent profile with high levels of media pressure coupled with lower levels of pressure from peers and parents, 2) improved AIC, BIC, and adjusted-BIC indices when compared to the 2-profile solution, 3) an acceptable percentage of our sample in the smallest profile ($n = 126$; 28.8%), and 4) a significant Lo-Mendel Likelihood Ratio Test.

Profile 1: Low-Pressure Profile (see Fig. 1) is composed of adolescents who reported low levels of appearance pressure from their father ($M = 1.57$; $SD = 0.63$), mother ($M = 1.60$; $SD = 0.60$), peers ($M = 1.29$; $SD = 0.48$), and the media ($M = 1.41$; $SD = 0.54$). This profile is composed of 142 adolescents (32.4% of the sample). In this profile, 93.0% of adolescents identified as White, 72.5% are girls, 23.2% are boys, and 4.2% are gender diverse. Model parameters within the Low-Pressure Profile indicate that father's pressure is significant ($B = 1.57$, SE = 0.06, 95% CI [1.45, 1.68]), mother's pressure is significant ($B = 1.60$, SE = 0.05, 95%

Table 2
Fit statistics for the 1 through 5-profile solutions.

Fit statistics	1-profile solution	2-profile solution	3-profile solution	4-profile solution	5-profile solution
AIC	5179.124	4592.830	4455.243	4383.748	4326.700
BIC	5211.782	4645.898	4528.723	4477.639	4441.002
Adjusted BIC	5186.394	4604.643	4471.600	4404.648	4352.145
Entropy	–	0.894	0.879	0.857	0.862
Smallest n	438	134	126	43	33
LRT	–	$p < .000$	$p < .000$	$p = .241$	$p = .386$

Note. AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion, LRT = Lo-Mendell-Rubin adjusted likelihood ratio test.

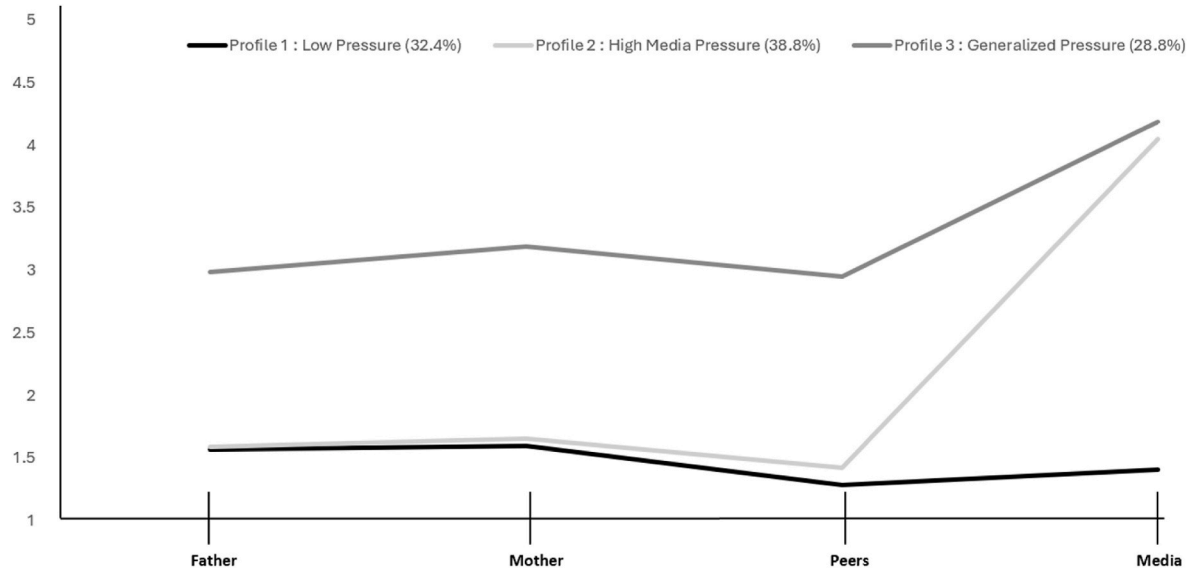

Fig. 1. Depiction of the three latent profiles defined by standardized means on four sources of appearance-related pressure among adolescents (n = 438).

CI [1.49, 1.70]), peer pressure is significant ($B = 1.27$, SE = 0.04, 95% CI [1.19, 1.36]), and media pressure is significant ($B = 1.45$, SE = 0.06, 95% CI [1.33, 1.56]).

Profile 2: High-Media-Pressure Profile is composed of adolescents who reported relatively high level of media appearance pressure ($M = 4.05$; $SD = 0.70$) and low levels of father ($M = 1.59$; $SD = 0.62$), mother ($M = 1.66$; $SD = 0.58$), and peer appearance pressure ($M = 1.42$; $SD = 0.54$). This profile is composed of 170 adolescents (38.8% of the sample). In this profile, 92.9% of adolescents identified as White, 89.4% are girls, 5.9% are boys, and 4.7% are gender diverse. Model parameters within the High-Media-Pressure Profile indicate that father's pressure is significant ($B = 1.60$, SE = 0.07, 95% CI [1.48, 1.73]), mother's pressure is significant ($B = 1.68$, SE = 0.06, 95% CI [1.57, 1.78]), peer pressure is significant ($B = 1.44$, SE = 0.06, 95% CI [1.33, 1.55]), and media pressure is significant ($B = 4.04$, SE = 0.07, 95% CI [3.91, 4.17]).

Finally, Profile 3: Generalized-Pressure Profile is composed of adolescents who reported moderate levels of father ($M = 2.99$; $SD = 0.94$), mother ($M = 3.19$; $SD = 0.88$), and peer ($M = 2.95$; $SD = 0.67$) appearance pressure, and relatively high level of media appearance pressure ($M = 4.19$; $SD = 0.79$). This profile is composed of 126 adolescents (28.8% of the sample). In this profile, 93.7% of adolescents identified as White, 77.8% are girls, 11.1% are boys, and 11.1% are gender diverse. Model parameters within the Generalized-Pressure Profile indicate that father's pressure is significant ($B = 2.98$, SE = 0.10, 95% CI [2.79, 3.17]), mother's pressure is significant ($B = 3.17$, SE = 0.10, 95% CI [2.97, 3.38]), peer pressure is significant ($B = 2.94$, SE = 0.08, 95% CI [2.78, 3.10]), and media pressure is significant ($B = 4.17$, SE = 0.09, 95% CI [4.01, 4.34]).

As reported by Weller et al. (2020), while no official guidelines exist for determining class size, it has been suggested that latent class analysis (LCA) classes should include at least 50 cases (Muthén & Muthén, 2000) or represent at least 5% of the total sample (Shanahan et al., 2013). In the present study, we used LPA, a method similar to LCA but using continuous indicators, for which comparable guidelines are considered applicable. In our study, of the 438 adolescents, 32.4% (n = 142) were classified into Profile 1, 38.8% (n = 170) into Profile 2, and 28.8% (n = 126) into Profile 3, which aligns with these best-practice guidelines.

Finally, the automatic R3Step approach tested gender (as a covariate) in relation to profile membership (see Table 3). The analysis revealed that gender was significantly associated with latent profile membership. Compared to gender-diverse individuals, boys were significantly less likely to belong to high-pressure profiles (High-Media-Pressure: β = −1.64, p = 0.030; Generalized-Pressure: β = −1.75, p = 0.004). No significant difference was observed between girls and gender-diverse individuals for the Generalized-Pressure profile (β = −0.94, p = 0.079) or the High-Media-Pressure profile (β = −0.15, p = 0.809). These results should, however, be interpreted with caution due to the small sample size of the gender-diverse group (n = 28).

Table 3
Gender as predictor of different groups.

Predictor (covariate)	β	SE	*p*
High-Media-Pressure			
Girl	0.15	0.620	0.809
Boy	−1.64	0.753	0.030
Gender diverse	0.00	0.000	1.000
Generalized-Pressure			
Girl	−0.94	0.532	0.079
Boy	−1.75	0.697	0.004
Gender diverse	0.00	0.000	1.000

Note. $N = 438$ (353 girls; 57 boys; 28 gender diverse). Low-Pressure Profile was set as reference.
[a] β column reflects standardized logistic regression coefficients.

4.2. Associations between appearance-related pressure profiles and body image and eating behavior outcomes

The MANOVA revealed a significant multivariate effect of appearance-related pressure profiles, (Pillai's trace (12, 862) = 17.45, $p < .001$, $np^2 = 0.195$). Follow-up univariate tests revealed a significant difference between appearance-related profiles for internalization of the thin ideal (F [2435] = 76.05, $p < .001$, $np^2 = 0.259$), internalization of the muscular ideal (F[2435] = 14.11, $p < .001$, $np^2 = 0.061$), body dissatisfaction (F[2435] = 86.84, $p < .001$, $np^2 = 0.285$), body esteem (F [2435] = 91.60, $p < .001$, np2 = 0.296), bulimia symptoms (F[2435] = 44.67, $p < .001$, $np^2 = 0.170$), and intuitive eating (F[2435] = 56.36, $p < .001$, $np^2 = 0.206$).

In relation to body ideals, Bonferroni post-hoc comparisons revealed that adolescents in the Generalized-Pressure Profile reported significantly more internalization of the thin ideal compared adolescents in the High-Media-Pressure ($p < .05$) and Low-Pressure Profiles ($p < .001$), and those in the High-Media-Pressure profile reported significantly higher internalization of the thin ideal compared to those in the Low-Pressure Profile ($p < .001$) (see Tables 4 and 5 for outcome means and mean

differences). Similarly, adolescents in the Generalized-Pressure profile reported significantly more internalization of the muscular ideal compared to adolescents in the High-Media and Low-Pressure Profiles (*ps* < 0.001); however, there were no differences between the High-Media and Low-Pressure Profiles ($p = 1.000$).

In relation to body image, Bonferroni post-hoc comparisons revealed that adolescents in the Generalized-Pressure profile reported significantly higher body dissatisfaction and lower body esteem compared to those in the High-Media and Low-Pressure Profiles (*ps* < 0.001). Additionally, those in the High-Media profile experienced significantly higher body dissatisfaction and lower body esteem compared to those in the Low-Pressure Profile ($p < .001$).

In relation to eating behaviors, Bonferroni post-hoc comparisons revealed that adolescents in the Generalized-Pressure reported significantly higher levels of bulimia symptoms and lower levels of intuitive eating compared to adolescents in all other profiles (*ps* < 0.001). Adolescents in the High-Media-Pressure Profile experienced significantly higher levels of bulimia symptoms and lower levels of intuitive eating compared those in the Low-Pressure Profile (*ps* < 0.001).

5. Discussion

This study was based on the Tripartite Influence Model, which posits that body image and eating behaviors are shaped by appearance-related pressure from various social agents, including parents, peers, and the media. The main objective of this exploratory study was to identify profiles of perceived appearance-related pressure from different social agents among adolescents, and to examine how these profiles relate to internalization of body ideals, as well as positive and negative facets of body image and eating behavior. Results of the latent profile analysis revealed three distinct profiles that represented adolescents within our sample. The first profile (Low-Pressure; $n = 142$ participants) included adolescents perceiving low levels of pressure from all four sources: father, mother, peers, and the media. The second profile (High-Media-Pressure; $n = 170$ participants) was composed of adolescents perceiving relatively high levels of media appearance pressure, alongside low levels of pressure from their father, mother, and peers. Finally, the third profile (Generalized-Pressure; $n = 126$ participants) consisted of adolescents perceiving moderate levels of pressure from their father, mother, and peers, along with a relatively high level of pressure from the media. Overall, adolescents in the Low-Pressure Profile exhibited less body dissatisfaction and bulimia symptoms, as well as higher body esteem and intuitive eating compared to adolescents in the other profiles.

Results from the latent profile analysis offer insights into the proportion of adolescents perceiving higher and lower levels of appearance-related pressure. Most adolescents (71.2%) fell into profiles characterized by low appearance-related pressure from interpersonal sources (father, mother, peers), which aligns with previous studies reporting rates of perceived parental weight teasing of being between 17% and 29% and peer weight teasing at 34% in adolescent samples (Eisenberg et al., 2006; Hooper et al., 2021; Neumark-Sztainer et al., 2002). Given that our study replicated the proportion of adolescents perceiving appearance-related pressure from studies conducted several years ago, it highlights the need for continued effort in addressing negative appearance-related commentary in these interpersonal contexts. It therefore remains important to integrate family-inclusive prevention programs into community resources designed to support families and interpersonal systems in communicating about bodies and eating behaviors.

It is also interesting to note that within these low interpersonal appearance pressure profiles, appearance-related pressure from mothers and fathers was perceived at similar magnitudes by adolescents. This

Table 4
Mean and standard deviations in body image and eating behaviours across profiles.

	Profile 1: Low-Pressure	Profile 2: High-Media-Pressure	Profile 3: Generalized-Pressure
Body image/eating behaviors outcomes	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Internalization of the thin ideal	2.47^{a} (1.04)	3.52^{b} (0.96)	3.80^{c} (0.80)
Internalization of the muscular ideal	2.44^{a} (1.12)	2.97^{b} (1.16)	3.09^{b} (0.93)
Body dissatisfaction	2.50^{a} (0.99)	3.53^{b} (1.04)	4.02^{c} (0.87)
Body esteem	3.68^{a} (0.81)	2.82^{b} (0.88)	2.32^{c} (0.80)
Bulimia symptoms	1.79^{a} (0.65)	2.18^{b} (0.95)	2.83^{c} (1.09)
Intuitive eating	3.72^{a} (0.58)	3.31^{b} (0.66)	2.92^{c} (0.58)

Note. $N = 438$ adolescents. Different superscript letters on a row indicate statistically significant differences.

Table 5
Mean differences in body image and eating behaviours across profiles.

Body image/eating behaviors outcomes	Profile Comparison	Mean Difference (SE)	95% CI	*p*-Value
Internalization of the thin ideal	Generalized-Pressure vs. High-Media-Pressure	0.28 (0.11)	0.01, 0.55	<0.05
	Generalized-Pressure vs. Low-Pressure	1.33 (0.12)	1.05, 1.61	<0.001
	High-Media-Pressure vs. Low-Pressure	1.05 (0.11)	0.79, 1.30	<0.001
Internalization of the muscular ideal	Generalized-Pressure vs. High-Media-Pressure	0.12 (0.13)	−0.19, 0.42	1.000
	Generalized-Pressure vs. Low-Pressure	0.65 (0.13)	0.33, 0.97	<0.001
	High-Media-Pressure vs. Low-Pressure	0.53 (0.12)	0.23, 0.83	<0.001
Body dissatisfaction	Generalized-Pressure vs. High-Media-Pressure	0.49 (0.11)	0.21, 0.76	< 0.001
	Generalized-Pressure vs. Low-Pressure	1.52 (0.12)	1.24, 1.81	< 0.001
	High-Media-Pressure vs. Low-Pressure	1.03 (0.11)	0.77, 1.30	<0.001
Body esteem	Generalized-Pressure vs. High-Media-Pressure	−0.49 (1.00)	−0.73, −0.26	<0.001
	Generalized-Pressure vs. Low-Pressure	−1.36 (0.10)	−1.60, −1.11	<0.001
	High-Media-Pressure vs. Low-Pressure	−0.86 (1.00)	−1.09, −0.63	<0.001
Bulimia symptoms	Generalized-Pressure vs. High-Media-Pressure	0.66 (0.11)	0.40, 0.91	<0.001
	Generalized-Pressure vs. Low-Pressure	1.04 (0.11)	0.78, 1.31	<0.001
	High-Media-Pressure vs. Low-Pressure	0.38 (0.10)	0.14, 0.63	<0.001
Intuitive eating	Generalized-Pressure vs. High-Media-Pressure	−0.39 (0.07)	−0.56, −0.21	<0.001
	Generalized-Pressure vs. Low-Pressure	−0.80 (0.08)	−0.98, −0.62	<0.001
	High-Media-Pressure vs. Low-Pressure	−0.41 (0.07)	−0.58, −0.24	<0.001

Note. $N = 438$ adolescents.

supports the notion that mothers and fathers are perceived to exert similar levels of pressuring appearance-related commentary in adolescence, particularly in a mixed gender sample (Lessard et al., 2023). Research by Dahill and colleagues (2023) suggests that both parents may convey similar health values to their child. Similarly, in the present study, it is plausible that co-parents share aligned values and internalized cultural standards regarding bodies and food. This shared perspective likely shapes how they address weight and body-related topics with their children, leading adolescents to perceive comparable levels of appearance-related pressure from both parents. While mothers may communicate these messages more directly and with a negative tone, fathers may convey them more indirectly (e.g., through non-verbal cues) or with humor, as noted by Dahill and colleagues (2023). Future research is needed to further explore these ideas and examine how different family configurations (e.g., single-parent households, same-sex parents) shape adolescents' experiences of appearance-related pressure.

It is interesting to note that two-thirds (67.6%) of the adolescents in our sample were found to belong to a profile characterized by a relatively high level of appearance pressure from the media (i.e., either the High-Media-Pressure or the Generalized-Pressure). As shown in Fig. 1, even within the Generalized-Pressure Profile, media-induced pressure was particularly prominent. Other studies testing the Tripartite Influence Model have demonstrated that appearance-related pressure from the media is often higher than that of other sources, such as parents and peers, and therefore exerts a more profound influence on adolescents' body image and eating behaviors (Roberts et al., 2022; Shroff & Thompson, 2006). Given that most adolescents perceive higher levels of appearance-related pressure from the media, our study corroborates the importance of prevention programs aimed at increasing media literacy (Rodgers et al., 2024).

In the present study, the higher proportion of boys in the Low-Pressure Profile—used as the reference category in the analysis—compared to gender-diverse individuals underscores the need for more targeted prevention and intervention strategies. These strategies should address broader societal gender issues, including power dynamics, the commodification of women's bodies, and the gendered targeting of diet culture, among other factors. Nonetheless, it is essential to continue recruiting diverse samples to better understand the experiences and dynamics at play among boys, girls, and individuals identifying as gender minorities.

Overall, perceiving moderate to high levels of appearance-related pressure from all sources (mother, father, peers, and the media) was found to be more detrimental in terms of various aspects of body image and eating behavior outcomes compared to experiencing high pressure from only one source (i.e., the media). This finding is consistent with previous studies that have highlighted the interactive and cumulative role of social factors, such as the family environment and peer group appearance pressure, on outcomes related to body image and eating behaviors in adolescents (see, for example, the meta-analysis by Tort--Nasarre et al., 2021). The finding that adolescents in the High-Media-Pressure profile demonstrated better body and eating behavior-related outcomes compared to adolescents in the Generalized-Pressure Profile, but worse outcomes compared to those in the Low-Pressure Profile, may suggest a dose-response relationship between appearance-related pressure and body dissatisfaction, body esteem, thin ideal internalization, bulimia symptoms, and intuitive eating.

The observation that adolescents in the High-Media-Pressure profile showed more favorable body and eating behavior-related outcomes than those in the Generalized-Pressure profile may underscore the protective impact that parents can have against the detrimental effects of media on body image. For instance, a study by De Vries et al. (2019) found that among adolescents aged 12 to 19, the link between media consumption and body dissatisfaction was significantly weaker for those who reported positive relationships with their mothers. Similarly, research involving children aged 10–12 years highlights that a trusting relationship with fathers can mitigate the negative impact of social media on body satisfaction (De Coen et al., 2023). This underscores the important role of a nurturing parent-child bond in shielding (pre)adolescents from social media's negative influence on their body perceptions. Although no research to date has directly examined the role of peers in buffering the negative effects of the media on body image outcomes, a study by Barbeau and colleagues (2022) found that peers' positive body talk was associated with less evaluative concerns and higher self-compassion. Self-compassion, a recognized protective factor against negative body image and disordered eating (Turk & Waller, 2020), has been shown to buffer against the negative impact of thin ideal media pressure on negative body perceptions and disordered eating behaviors (Gobin et al., 2022; Tylka et al., 2015). For instance, a brief self-compassion intervention was shown to reduce weight and appearance dissatisfaction in young adult women following exposure to thin ideal images on Instagram (Gobin et al., 2022). These characteristics, such as positive relations with parents, peers, and resilient attributes, like self-compassion, may also give insight on the characteristics and explanations for the outcomes observed for adolescents in the Low-Pressure Profile.

Thus, our findings may provide valuable insights to inform and refine intervention programs. By identifying distinct profiles of adolescents based on the sources and intensity of sociocultural appearance-related pressures, interventions can be tailored with greater precision. For example, beyond family-focused programming and resources, adolescents perceiving moderate to high pressure from multiple sources (the Generalized-Pressure profile) may benefit from comprehensive programs that address media literacy and societal gender issues, alongside resources on how to resist and give feedback to parents and peers about pressuring appearance-related commentary (Dahill et al., 2023). These resources can also focus on bolstering internal processes that protect body image and support more adaptive coping with situations that prompt feelings of inadequacy, such as exercises used to bolster self-compassion (Turk & Waller, 2020). Conversely, adolescents primarily facing pressure from the media (the High-Media-Pressure profile) might benefit from targeted interventions that focus specifically on media literacy and unpacking the gendered nature of beauty ideals and diet culture, helping them critically assess media messages and build resilience against unrealistic body standards. Moreover, our findings highlight the potential protective role of perceived low appearance pressure from parents and peers in buffering adolescents against media-induced appearance pressure. As such, prevention programs should incorporate both peer and parental components, emphasizing the critical influence these social agents have in shaping adolescents' relationships with their bodies and food.

The present study sheds light on the factors that facilitate adolescents' internalization of the muscular ideal. The absence of differences in muscular ideal internalization between adolescents in the Generalized-Pressure and High-Media-Pressure profiles suggests that the media exerts a substantial influence in promoting this ideal. This finding aligns with the results of Roberts and colleagues (2022), who observed that appearance-related pressure from social media, along with peer pressure, was positively associated with the internalization of the muscular ideal among adolescents, whereas pressures from family and traditional media showed no such association Thus, when adolescents perceive high appearance-related pressure from the media, low levels of appearance pressure from parents and peers do not appear to offer a buffering effect. This may be attributed to the pervasive popularity of fitspiration content and cultural values on social media that emphasize leanness and muscularity in both boys and girls (Donovan et al., 2020; Roberts et al., 2022). Adolescents are regularly exposed to images and videos promoting fitness ideals, including workout routines and diets, on platforms like Instagram and TikTok (Donovan et al., 2020). It is therefore essential for media literacy and body image promoting programs to address both types of body ideals. In sum, because adolescents are highly exposed to these media platforms, perceiving low levels of pressure from family and friends may be insufficient to protect them

from the appearance pressure experienced through these platforms.

5.1. Strengths and limitations

This study has notable strengths. To our knowledge, this study is the first to examine how combined sources of sociocultural pressures and unique profiles based on these pressures are associated with adolescents' body image and eating behaviors. This study incorporated both negative and positive dimensions of body image and eating behaviors, thereby providing a nuanced analysis that reflect risk and protective factors, in addition to expanding the exploration of fathers' appearance-related commentary on adolescents' body perceptions and eating behaviors.

However, it's important to acknowledge potential limitations. The sample's homogeneity limits the generalizability of the findings to more diverse populations. There remains a need to expand research to include underrepresented populations, like individuals who are diverse in terms of culture, sexual orientation and gender. These populations may have unique perceived appearance-related pressure profiles and stronger or weaker links with body image and eating behavior-related outcomes. For instance, a test of the Tripartite Influence Model in White, Black, Hispanic, and Asian women revealed that links between perceived appearance-related pressure and internalization of ideals, body satisfaction and eating restraint are weaker or stronger depending on ethnic group membership (Burke et al., 2021). Furthermore, a study in heterosexual, bisexual and lesbian women observed that perceived appearance-related pressure from peers was higher in bisexual woman and therefore perceived pressure from peers had the strongest relationship with thin ideal internalization and body dissatisfaction (Hazzard et al., 2019). Moreover, the study's cross-sectional design and the self-reported data constrain our ability to ascertain the directionality of the associations in the current study. No causal relationships can be inferred, and we must keep in mind social desirability in participants' responses. Also, there was a small number of boys in our sample compared to girls (80.6 %), which may suggest that the results are more generalizable to adolescent girls. Furthermore, when assessing the Tripartite Influence Model, future studies could benefit from expanding the range of variables to comprehensively evaluate eating behaviors, including restrictive behaviors, secretive eating, binge eating, and emotional eating. Additionally, other body image variables, such as body functionality, body appreciation, internalization of body ideals, body surveillance, and body shame, could be incorporated. Finally, the recruitment method used in the present study represents a limitation, as not all adolescents use Facebook. Furthermore, it is important to acknowledge that individuals who actively use Facebook may experience media-induced body pressure differently from those with limited social media engagement. For instance, it is plausible that adolescents who use more social platforms perceive higher levels of media-induced appearance-related pressure. Consequently, Facebook users might represent an adolescent population that engages with a wide range of popular social media platforms, thereby increasing their exposure to pressuring media. Further studies should consider employing varied recruitment methods, such as reaching out to schools with diverse socio-economic backgrounds. Additionally, the study was advertised as an online research project on attitudes and behaviors related to body image and eating behaviors. This recruitment strategy may have introduced potential bias, as adolescents who feel uncomfortable discussing body image and eating topics might have been discouraged from participating.

6. Conclusion

In sum, the present study identified three distinct profiles of sociocultural appearance pressure: (1) Low-Pressure Profile (characterized by low levels of pressure across all four sources), (2) High-Media-Pressure Profile (characterized by high levels of media pressure and low levels of pressure from the other three sources), and (3) Generalized-Pressure Profile (characterized by moderate to high levels of pressure from all four sources). Compared to gender-diverse individuals, boys were more likely to be classified in the Low-Pressure Profile than in the other two profiles, whereas no significant differences were observed in the distribution of girls across the different profiles. Adolescents within the Generalized-Pressure Profile reported more problematic eating behaviors and body image concerns than those in the High-Media-Pressure Profile, who, in turn, reported poorer outcomes than participants in the Low-Pressure Profile. These findings are important as they underscore the association between perceived appearance pressure from distinct sociocultural agents and eating behaviors and body image in adolescents. Future research is necessary to examine more diverse populations, different family configurations, and potentially qualitative profiles to identify other types of appearance-related pressures.

CRediT authorship contribution statement

Carolanne Tanguay: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Kheana Barbeau:** Writing – review & editing, Writing – original draft. **Geneviève Lavigne:** Writing – review & editing, Formal analysis. **Noémie Carbonneau:** Writing – review & editing, Supervision, Funding acquisition, Conceptualization.

Ethical statement

All procedures were performed in compliance with relevant laws and institutional guidelines and have been approved by the research ethics board of the University of Quebec in Trois-Rivières (CER-20-271-07.06). The validity period of the ethical approval is from January 27, 2021, to January 27, 2025. The privacy rights of human subjects have been respected, and informed consent was obtained when we surveyed human subjects to respond to our questionnaire.

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Declaration of competing interest

Declarations of interest: none. All authors have no interest to declare.

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Data availability

Data will be made available on request.

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