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Be thinner or larger? Correlates of body dissatisfaction in a large sample of French-Canadian children

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Abstract

Objective: To assess body dissatisfaction among children between 9 and 14 years and to examine factors (age, gender, Body Mass Index (BMI), perceived shape, and self-esteem) associated with wanting a thinner or a larger shape.

Study design: Through at-school questionnaires, 1,515 preadolescent children (51.2% girls) were asked to fill out the *Culture Free Self-Esteem Inventory* and the *Contour Drawing Rating Scale* (body dissatisfaction). Trained assessors then weighed and measured the students individually.

Results: Overall, 50.5% of girls wanted a thinner shape compared to 35.9% of boys. More boys wanted a larger shape compared to girls (21.1% vs. 7.2%). Most of the preadolescents who were overweight or obese were unsatisfied whereas 58.0% of girls and 41.6% of boys who were underweight were satisfied with their body. Results of a multinomial logistic regression revealed that age, gender, BMI, perceived shape, and self-esteem were significant correlates of the four body dissatisfaction contrasts (wanting a slightly thinner, much thinner, slightly larger, and much larger shape) and explained 50% of the variance. An interaction between gender and perceived shape was found, revealing that girls who perceived themselves as having a larger shape were more likely to desire a thinner shape than boys.

Conclusions: The high prevalence rate of body dissatisfaction among children suggests that current approaches in our society to prevent problems related to body image must be improved. The different results between girls and boys highlight the need to take into account gender differences when designing prevention programs that aim to decrease body dissatisfaction.

Key words: Body image, BMI, weight, self-esteem, children, gender

Introduction

Until recently, many believed that body dissatisfaction developed mainly in adolescence. However, an increasing number of studies show that body dissatisfaction sets in well before adolescence. Based on the discrepancy between the perceived body shape and the ideal one, prevalence of body dissatisfaction vary markedly among children and preadolescents. The desire of a thinner body shape ranges from 28 to 55% among girls, and from 17% to 47% among boys. In contrast, the desire of a larger body shape range from 0% to 36% among girls and from 13 to 48% among boys.¹⁻⁶ Body dissatisfaction increases with age^{3, 6, 7} and affects girls more than boys.^{3, 8, 9} This gender difference, however, is more pronounced in adolescence and adulthood.¹⁰ Overweight and obese children are also more dissatisfied than other children, as has been found in several regions of the world.^{1, 3, 7, 8, 11, 12} Some studies indicate that body dissatisfaction is associated with lower self-esteem, although the size of this effect varies across studies.^{11, 13-15}

Considering the many consequences of body dissatisfaction in children, such as depression^{16, 17} and eating pathologies,^{3, 18} it is important to understand the factors that are related to its manifestation in children. However, the literature on body dissatisfaction in children and preadolescents is sparse compared to that on adolescents. In addition, several of the studies mentioned above used samples composed of both children and adolescents.^{7, 11, 14, 19, 20} Thus it remains unclear how children's experiences differ from those of adolescents with respect to body dissatisfaction. This study, which was conducted among French-Canadian preadolescents, adds to the previous data collected in other parts of the world and provides a unique cultural opportunity to investigate body image in a country which values and strives for gender equality.

The objective of this study was, firstly, to document the levels of body dissatisfaction among preadolescents aged 9 to 14 years. Secondly, we evaluated if age, gender, body mass

index (BMI), and self-esteem were related to body dissatisfaction. Body dissatisfaction was assessed using silhouette images depicting different shapes, weights and sizes of the human body, ranging from very thin to excessively overweight. It was evaluated based on the discrepancy between the perceived shape and the ideal one, which enabled us to assess both the desire to be thinner and the desire to be larger for both genders and to quantify its magnitude (i.e., wanting a slightly or a much thinner/larger shape). In addition to its ease and flexibility in administration,²¹ the use of figure drawings allowed the evaluation of factors involved in both aspects of body dissatisfaction. A better understanding of the factors related to body dissatisfaction in children is undoubtedly useful in developing interventions to promote a healthy body image in childhood.

Methods

Participants and procedure

This study was conducted among 1,515 Francophone students aged 9 to 14 years ($M = 10.31$; $SD = 1.07$; 50.4% girls) enrolled in the third grade to the sixth grade of primary school. The children were from 12 primary schools in the Quebec province of Canada that were randomly selected from about 200 schools that expressed an interest in participating in the study. These schools were located in four regions of Quebec: two in Saguenay, two in Sherbrooke, three in the Quebec City area, and five in Montreal. Children were also from two Francophone schools in Moncton, New Brunswick. Some of these schools were located in privileged areas and others in disadvantaged areas.

Three weeks before the start of data collection, the research protocol was presented to the school administration and their consent was obtained. Data collection was entirely anonymous making it impossible to identify the respondents at any time. Trained assessors met the students in their physical education classes in order to take their anthropometry measurements and to administer the questionnaires. The children were free to withdraw

themselves from the study at any time without any consequences. This study was approved by the Université du Québec à Chicoutimi Ethics Committee.

Measurement instruments

A **sociodemographic questionnaire** was used to collect data on the child's age, gender, and school attended.

Body Mass Index (BMI). Trained assessors weighed and measured the students individually and out of sight of their peers and only one time, as recommended by Lohman et al.²² Height was measured using a portable stadiometer (Seca, model 214, Hanover, MD) to the nearest 0.1 cm. Body mass was recorded using a portable calibrated mechanical scale (Seca, model 760 body mass scale, Hanover, MD) to the nearest 0.5 kg. Students were dressed minimally (physical education outfit) and without shoes. BMI was calculated using the following formula: $\text{Body mass (kg)}/\text{Height}^2 \text{ (m}^2\text{)}$. Under 18 years of age, the BMI should be classified taking into account the child's growth and sex. The BMI was thus classified into three categories (underweight, healthy weight, and overweight) according to the standards from the work of Cole and colleagues.^{23, 24} These categories were used in the analyses, unless specified otherwise.

Self-esteem. Form B of the *Culture Free Self-Esteem Inventories-2*²⁵ was used to assess the children's level of self-esteem. The questionnaire consists of 30 statements, and the preadolescents had to choose whether they agreed with each item. The total score was used in this study, which included the compute of 25 items comprising four subscales: 1) general scale (the perception that individuals have of themselves), 2) social scale, 3) academic scale, and 4) parental scale. The psychometric properties have been established and are satisfactory.²⁵ Cronbach's alpha for the total scale was 0.77 in this sample.

Perceived shape and body dissatisfaction. The *Contour Drawing Rating Scale*²⁶ was used to evaluate the child's perceived shape and body dissatisfaction. This questionnaire

comprises two scales each presenting 9 figure drawings (ranging from very thin to obese). For the first scale, students were asked, using the gender-appropriate figure drawings, to identify the figure that best matched their current appearance; the figure selected representing their *perceived shape*. For the second series, students identified the figure that best matched what they would like to be (*ideal shape*). Then, the discrepancy between the perceived and the ideal shape provided an indication of the level of *body dissatisfaction* (a negative score indicated a desire for a thinner body shape, and a positive score a desire for a larger body shape).²⁶ For this current study, 5 measures were derived to assess body dissatisfaction: 1) preadolescents satisfied with their perceived shape (perceived shape and ideal body shape being the same; $N = 646$); 2) those wanting a *much thinner shape* (discrepancy between perceived body shape and ideal body shape ranging from -8 to -3; $N = 124$); 3) those wanting a *slightly thinner shape* (discrepancy between perceived body shape and ideal body shape of -1 or -2; $N = 531$); 4) those wanting a *slightly larger shape* (discrepancy between perceived body shape and ideal body shape of 1 or 2; $N = 194$); and 5) preadolescents wanting a *much larger shape* (discrepancy between perceived body shape and ideal body shape ranging from 3 to 8; $N = 20$). The reliability and validity of the scale have been demonstrated with a sample of 1,056 girls aged between 11 and 14 years.²⁷ In this study, the correlation between the perceived body shape and the BMI was .55 and for weight it was .51, which indicates good construct validity. In addition, the physical education teacher also chose a figure representing each of the evaluated children. The correlation between the figures chosen by the student and the teacher was .67, also increasing the validity of this scale in our sample.

Results

Overall, 57.7% of girls and 57.0% of boys were unsatisfied with their body shape. However, the type of body dissatisfaction differed significantly according to the child's gender ($\chi^2 = 70.66$, $p < .001$). Indeed, 50.5% of girls wanted to be thinner (i.e., 87.5% of the

unsatisfied girls), while this rate was 35.9% for boys (i.e., 62.9% of the unsatisfied boys). A higher proportion of boys than girls wanted to be larger (21.9% vs. 7.2%). The results indicate that satisfaction also differed according to BMI among both boys ($\chi^2 = 226.27$, $p < .001$) and girls ($\chi^2 = 141.40$, $p < .001$); most of the preadolescents who were overweight or obese were dissatisfied with their shape (see Figures 1 and 2). It is interesting that more than half of underweight girls (58.0%) and 41.6% of underweight boys were satisfied with their body shape.

A multinomial logistic regression analysis was performed to examine the factors associated with body dissatisfaction. This type of regression was selected to take into account not only those who wanted a thinner body from those who wanted a larger body, but also the size of this dissatisfaction. Gender, age, BMI, perceived shape, and self-esteem were entered into a regression analysis model following a hierarchical procedure against body dissatisfaction, yielding four contrasts: 1) satisfied versus those wanting a *much thinner shape*; 2) satisfied versus those wanting a *slightly thinner shape*; 3) satisfied versus those wanting a *slightly larger shape*; 4) satisfied versus those wanting a *much larger shape*. To ease the interpretation of the statistical results, the continuous independent variables in the regression analysis (age, perceived shape, and self-esteem) were standardized (z scores), thus allowing comparisons among adjusted odds ratios (ORs) representing a 1 standard deviation (SD) change in the variable. BMI was analyzed as two dichotomous variables (underweight (yes/no) and overweight/obese (yes/no)).

Main effects for gender, BMI, perceived shape, and self-esteem were obtained (age was not significant; $p = .055$ in the overall model). Taken together, all variables explained 50% (Nagelkerke Pseudo R-Square) of the variance in body dissatisfaction. Table 1 presents the ORs, 95% CIs, and p values for all correlates (except age as it was not significant) for the four contrasts (wanting a slightly thinner, much thinner, slightly larger, or much larger shape).

Overall, there were significant main and strong effects for gender and BMI on body dissatisfaction in three contrasts. More specifically, the probability of wanting a slightly thinner or much thinner body shape was 3.8 to 5.7 times higher, respectively, among girls than boys, compared to children satisfied with their body shape. On the contrary, the probability of wanting a slightly larger body shape was 6.9 times higher among boys than girls (gender was not, however, related to the desire to have a much larger body shape). These findings indicate that more girls than boys wanted a thinner shape and more boys than girls wanted a larger shape. As for the BMI, the probability of wanting a slightly thinner or much thinner body shape than the perceived body shape, as compared to children satisfied with their body shape, was respectively 4.4 to 9.2 times higher among overweight children. The probability of wanting a slightly larger body shape was 2.6 times higher among underweight preadolescents. Further, underweight children were 2.1 times less likely to want a slightly thinner body shape.

Self-perceived shape (i.e. the figure selected that best matched their current body shape appearance) showed significant main effects in the four body dissatisfaction contrasts. A one-point increase in perceived shape was associated with a 2.1 and 5.2 increase in wanting a slightly thinner and a much thinner shape respectively, when compared to children satisfied with their shape. On the contrary, a one-point increase in perceived shape was associated with 2.0 and 8.1 decrease in wanting a slightly larger or much larger shape when compared to children satisfied with their shape. These results indicate that preadolescents who perceived their body shape as thinner were more likely to desire a larger body and those who perceived themselves as larger were more likely to desire a thinner body. Finally, self-esteem had main effects in the four contrasts. Interpretation of the results revealed that low self-esteem was associated with an increase in wanting both a thinner and a larger shape as compared to children satisfied with their shape (ODs ranging from 0.5 to 0.7).

Gender interaction analyses revealed that children's perceived shape was differently related to body dissatisfaction for boys and girls. Compared to boys, girls had a greater desire for a slightly thinner body shape ($p < .029$) or a much thinner body shape ($p < .001$) when they perceived their figure as being larger than girls who were satisfied with their body shape. Figure 3 shows this interaction effect in the case of wanting a much thinner body shape. There was no interaction according to gender for the contrasts of wanting a slightly or a much larger body shape. Further, the interactions between gender and the other variables were found to be non significant (and thus excluded, by parsimony, from the final analysis).

Discussion

In the literature, the fact that body dissatisfaction is a widespread problem in adolescence is already well documented.²⁸ The results of this study and those conducted in different regions of the world^{1, 2, 6, 10, 20} among children and preadolescents extend this finding. Indeed, our results indicate that this dissatisfaction was also very present among Francophone preadolescents in Quebec and New Brunswick in Canada. According to Smolak,¹⁰ the high prevalence of body dissatisfaction in children could be explained by the fact that they are exposed to messages of female and male beauty ideals increasingly earlier in life. The many social comparisons experienced by school-aged children, especially with siblings and peers, can also contribute to this strong trend.¹⁰

This study was also one of the first to assess both the desire to be thinner and the desire to be larger among both girls and boys and to quantify the size of body dissatisfaction (slightly/much thinner/larger). Although the level of body dissatisfaction did not differ according to gender, a closer look at the data revealed that a majority of girls wanted a thinner body shape, while boys' dissatisfaction was divided between a desire to be larger or thinner. This observation has similarly been found in other studies.^{3, 4, 7} Socialization in Western societies can help explain this gender differentiation because it encourages two distinct

silhouettes: a thin silhouette for girls and a mesomorphic silhouette (characterized by a large muscle mass, little or no adipose tissue and shoulders wider than the hips) for boys.²⁹ These results also confirm the importance not only of studying body dissatisfaction, but also of looking at it in both directions, that is, the desire to be thinner and the desire to be larger. Previous research has also found among adolescents that most girls with body dissatisfaction want a thinner shape, whereas some unsatisfied boys want to be thinner and others want to be larger.^{28, 30, 31} In this regard, these findings suggest that body dissatisfaction observed in adolescents extends in the same magnitude and presentation in preadolescents.

As expected^{1, 3, 7, 8, 11, 12, 32}, being overweight was significantly associated with the desire to be slightly thinner or much thinner. Underweight preadolescents children had also a greater desire to be slightly larger, but not much larger. These results suggest that to be satisfied with their body shape, it is necessary to be thin, but not skinny, and not to be too large. It is also interesting that boys and girls with similar BMIs were not experiencing the same kind of satisfaction and dissatisfaction, which was also found in previous studies.^{33, 34} For example, among dissatisfied underweight children, girls were more likely to want a thinner body shape and boys, a larger body shape. These results are worrisome, as being underweight may also be related to health issues.³⁵ Moreover, body dissatisfaction in children may lead to changes in BMI, which may play an important role in their growth process. For example, results of two recent longitudinal studies indicate that body dissatisfaction is an important factor in the prediction of BMI.^{2, 32} If body dissatisfaction lead to weight gain or loss, it may worsen any ongoing trends towards the use of risky strategies to gain or lose weight. These results should raise public health concerns for preadolescents, as weight related disease such as anorexia has important negative consequences.³⁶

Contrary to a previous research,³⁷ our results did not reveal an interaction between gender and BMI in the final analysis. An interaction was rather obtained between gender and

self-perceived body shape (figure selected to represent current appearance) for the two contrasts related to a desire for a thinner body shape. This result is innovative because it helps explain differences between boys and girls body dissatisfaction (which has not previously been clearly shown in preadolescents). Therefore, it seems that girls, more than boys, want a thinner body shape when they self-perceive their body as being larger. In this regard, the body shape perception (subjective data) seems an equally important indicator as weight (objective data in this study) when it comes to body dissatisfaction in girls. However, although correlated with BMI, body shape perception may not necessarily be congruent with real anthropometry characteristics and may lead to under or overestimation of body size.³⁸ These results corroborate the findings of previous work on the importance of body shape and weight perception when evaluating body dissatisfaction and dieting.³⁹ Furthermore, the differences obtained according to children's gender and the type of body dissatisfaction reiterates the importance of researchers considering both the desire for a thinner body shape as well as for a larger body shape. Even in a society as gender egalitarian as that of the Quebec province of Canada, these gender differences in body dissatisfaction highlight the significance of gender in adolescents' body image and warrant further study to better understand this phenomenon.

Like other studies addressing the relationship between self-esteem and body dissatisfaction in children,^{11, 13-15} this study has identified self-esteem as a factor significantly associated with body dissatisfaction, as much in preadolescents who would like to be thinner as those who would prefer to be larger. This relationship can go both ways: children who are dissatisfied with their body can develop lower self-esteem, but it is also possible that low self-esteem influences their perception of their body and causes dissatisfaction.

Age was not found to be a factor significantly associated with body dissatisfaction, which is possibly related to the participants' narrow age range. Thus, to better understand the

differences according to age, it is important to conduct longitudinal studies with a sample of participants with a greater age range.

Strengths and limitations of the study

This study has some limitations that must be taken into account in interpreting the results. First, the cross-sectional nature of the study does not allow the link between cause and effect to be determined. It would be relevant to replicate the results with a longitudinal design to clarify the nature of the relationships between the variables. Although the measurement of two dimensions of body dissatisfaction (the desire to be thinner and the desire to be larger) is a strength of the study, it could have been interesting to subdivide the desire to be larger by separating the children who want to be more muscular from the children who want to gain weight. This would be particularly relevant for understanding body dissatisfaction among boys, who are more likely than girls to want to be larger. In their literature review on body dissatisfaction among men and boys, McCabe and Ricciardelli⁴⁰ conclude that, because the majority of studies focus on girls and most only measure the desire to be thinner, it remains unclear whether boys are actually less affected by messages of beauty ideals, or if their body dissatisfaction is simply underestimated because the measurements are more suited to girls. This question could be clarified by distinguishing not only the desire to be thinner from the desire to be larger in body dissatisfaction measurements, but also by distinguishing the desire to be more muscular from the desire to gain weight. The *Contour Drawing Rating Scale* used in this study may have biased this distinction (between being larger versus more muscular). It would be interesting to modify this scale in future studies to also represent muscularity. This addition could provide valuable findings to better understand body dissatisfaction among boys. Although the mediatization of the body increasingly focuses on the contemporary man,⁴¹ the fact that there are far fewer studies on the body image of boys versus girls may contribute to hiding the problems associated with boys' body images.⁴² Finally, although the

majority of children in this study were probably prepubescent, puberty could be one of those potential confounders that we did not measure.

Despite these limitations, this study is a significant contribution to the literature on body dissatisfaction in children. The fact that it was conducted among a large sample of Francophone children from different regions of Quebec and New Brunswick increases the chances that the results are representative of the reality of Francophone children in these two provinces of Canada. Having included boys in the sample is also a strength since a large proportion of studies on body dissatisfaction in children have only been conducted with girls. By evaluating both the desire to be thinner and the desire to be larger, this study has increased our understanding of body dissatisfaction in children, and also takes a step toward measurement instruments better suited to boys' experiences. Finally, the BMI is often self-reported in studies whereas the objective evaluation of weight and height with calibrated instruments at the data collection sites is another strength of the study, which increases the validity of the BMI measurements. Indeed, children are likely to slightly underestimate their weight and height.⁴³

Conclusion

Findings of this research contribute to the current literature by examining both the desire to be thinner and to be larger among preadolescents, a population that has been less studied in this aspect. The results of this study indicate that self-esteem, the perception that children have of their own body shape, and BMI are factors associated with body dissatisfaction. The results also show that body dissatisfaction is quite common among both boys and girls. This high prevalence suggests that current approaches in our society to reduce and prevent problems related to body image must be improved. In consequence, there is an urgent social need for effective preventive programs for children. This need underlies the

promotion of more governmental initiatives to reduce body dissatisfaction like the Quebec Charter for a Healthy and Diverse Body Image, which value body diversity.

Prevention and intervention programs should take sex differences into account, focus on the importance of accepting one's body, and address body satisfaction in interventions to promote better self-esteem. Longitudinal research is needed to identify factors that can halt the development of body dissatisfaction in childhood. Considering the many negative consequences of body dissatisfaction, it is important to better understand the risk and protective factors related to its development, and also the ways to intervene most appropriately.

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