



ISSN: 2230-9926

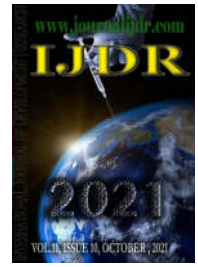
Available online at <http://www.journalijdr.com>

IJDR

International Journal of Development Research

Vol. 11, Issue, 10, pp. 50709-50712, October, 2021

<https://doi.org/10.37118/ijdr.22946.10.2021>



RESEARCH ARTICLE

OPEN ACCESS

PERCEPTIONS OF THE BODY IMAGE OF MOTHERS AND CHILDREN

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ARTICLE INFO

Article History:

Received 10th July, 2021

Received in revised form

14th August, 2021

Accepted 16th September, 2021

Published online 23rd October, 2021

Key Words:

Mother-child Relationships,
Self-image, Child; Body Image.

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ABSTRACT

Objective: To understand the relationship between the level of distortion and body image dissatisfaction of mothers and children. **Material and Method:** Cross-sectional, analytical study with 190 children of both sexes and ages between 7 and 12 years and their respective mothers by means of body silhouette scale. Data were collected in a Basic Health Unit in Fortaleza. From the data, correlations were tested between the distortion of the child's image and distortion of the mother's image; distortion of the child's image and distortion of the view that the mother had in relation to the image of the child; and distortion of the child's image and distortion of the child's view in relation to the mother's image. Body dissatisfaction was also tested in these three situations. **Results:** There was a low positive correlation between the body distortion of the children and the distortion of the image that mothers have of their children; there was a moderate positive correlation between children's dissatisfaction and the mother's dissatisfaction with the child's image. **Conclusion:** It was evidenced that the distortion and dissatisfaction that the mother has in relation to the child's image are correlated with the distortion and dissatisfaction that the child has about his/her self-image.

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Citation: Maria Lucia Holanda Lopes, Yanne Holanda Lopes, Rosiane de Paes Borges Herculano and Elton Jonh Freitas Santos et al. "Perceptions of the body image of mothers and children", *International Journal of Development Research*, 11, (10), 50709-50712.

INTRODUCTION

Body image is a subjective phenomenon that undergoes changes throughout the life of each human being (1) The phase of adolescence, in which important transformations occur in the body, is admittedly a period of many changes in body image. However, in childhood, concerns may arise with body shape, weight and muscularity that may later culminate in more serious issues, such as eating disorders (1). Sociocultural factors, such as parents, friends and the media, have great influence on body image construction (2). Parents can act on their children's body image directly or indirectly. Comments on the weight of the child; attitudes and conversations related to body shape and food; and pressures that children change their aesthetic pattern can have consequences on children's thoughts and behaviors (3). However, few studies propose to analyze the relationship of maternal body distortion and dissatisfaction with the body perception and dissatisfaction of children. It is important to address this issue, because from it we can know even more about the different ways that parents influence the construction of their children's body image and seek ways to prevent body distortion and

dissatisfaction and unhealthy eating behaviors early childhood. Thus, the aim of this study was to evaluate the associations between dissatisfaction and body image distortion of mothers and children.

MATERIALS AND METHODS

An analytical, cross-sectional study was conducted. The study subjects were children aged between seven and twelve years, of both sexes, and respective female guardians who accompanied them at the time (mothers, grandparents or close relative) who, after the ethical precepts were clarified, agreed to participate in the research and signed the assent and informed form. As almost all guardians were mothers (90% of the total), we chose to call all guardians mothers and all children of children. Data were collected in a Primary Health Care Unit (PHCU). The sample was non-probabilistic, however it was calculated from a universe of children aged between 7 and 14 years living in the municipality (168,092) (4), sampling error of 5.5% and a minimum prevalence of body image distortion of 16% (5). Thus, the final sample was 190.

To evaluate the perception of body image of mothers and their children, Kakeshita silhouette scale (6) was used, adapted and validated for Brazilian children and adults from what was developed by Stunkard (7). This scale consists of eleven silhouettes for children and fifteen for adults, containing different versions for each sex. Silhouette scale figures range from a smaller image to a larger image. Each silhouette represents a certain range of BMI and weight. Thus, it is possible to calculate the current body image by measuring BMI. Body distortion can be analyzed by comparing the image perceived by the subject (real) and the current one; and we can estimate body dissatisfaction by comparing the desired image (ideal) with the current image. In the assessment of nutritional status, we used the Body Mass Index (BMI), in which weight in kilograms is divided by height in meters squared (kg/m^2). In children, BMI was age-related and classified using the z-score. The BMI classification cuts complied with the recommendations of the World Health Organization (8,9). Weight and height were obtained at the same time of the interview, using a 100g digital precision scale and a millimeter-meter stadiometer. Participants were weighed and measured twice in circuit form. We asked them to be barefoot, remove objects from the pockets and props that could alter the measurements or impair the measurement. In the evaluation of body image distortion and dissatisfaction, we present to the children the 11 infant silhouettes ordered in an increasing form of size. So the children answered questions about their body image (what image most looks like your body?; what image would you like your body to look like?).

To know if there would be an association between the perception of the children in relation to the body image of the mothers and the self-image of the children, we showed them the 15 adult female silhouettes organized in increasing order of BMI. Thus, the children answered some questions about their mothers' body shape (what image most resembles your mother?; what image would you like to look like your mother?). In the analysis of the mothers, in addition to the 11 silhouettes representing the children, we present the same 15 silhouettes directed to adult people that were previously evaluated by the children. So we asked questions related to their own images and those of their children (which image most looks like your body?; what image would you like your body to look like?; what image most looks like your child?; what image would you like him/her to look like?). The evaluation of body image distortion was obtained from the subtraction between the real and the current image. When the result of the operation was negative, we characterized underestimation of body image; if the value was positive, the self-image was considered overestimated; if it was null, there was no distortion. When more negative or more positive the result of subtraction, lower or greater was the degree of distortion of the body image. To find and quantify the degree of body dissatisfaction, the silhouette considered ideal was subtracted from the current image. In cases where the result was different from 0, there was body dissatisfaction. If the difference was a positive number, we consider that the subject would like to have a larger body dimension. If it was a negative number, we interpret that the individual wishes to have a smaller silhouette. Categorical variables were presented in frequencies and percentages, numerical variables in mean \pm standard deviation. The normality of numerical variables was tested with Shapiro Wilk and Spearman's test was used to evaluate the correlation of the level of distortion and body image dissatisfaction of children and mothers. The significance level considered was 5% ($p < 0.05$). The research was approved by a Research Ethics Committee (CEP) institutionalized under number 1.068.539.

RESULTS

The studied sample consisted of a similar number of boys and girls ($M=49.5\%$; $F=50.5\%$). The mean age of the mothers was 36.3 ± 9.27 years and the children were 9.2 ± 1.6 . Regarding BMI, $27.6 \pm 5.2 \text{ kg}/\text{m}^2$ was found in mothers and $17.9 \pm 3.3 \text{ kg}/\text{m}^2$ in children. Table 1 shows that most children are eutrophic, while mothers are predominantly overweight or obese. Both children and mothers presented body distortion and dissatisfaction.

However, while the largest proportion of mothers had the perception that their silhouette was larger, in their children the opposite occurred, that is, they saw themselves smaller than they really were. Regarding body dissatisfaction, most children and mothers preferred to have a smaller body. Another data that we can observe is that even prevailing the state of eutrophy in the children, only a small portion of them were satisfied with their body shape. The body distortion of the children showed a positive correlation with the distortion of the image that mothers have of their children (table 2), showing that the greater the distortion that the children have with their self-image, the greater the distortion of the perception that mothers have of the image of the children. There was a positive correlation between the dissatisfaction of the children's body image and all other variables tested (table 3). However, the only correlation with moderate coefficient was between the dissatisfaction of the children with their image and the dissatisfaction of the mothers in relation to the image of the children.

DISCUSSION

According to what we present, there is an association between the distortion that children have about their image and the distortion that mothers have about the image of their children. Regarding body dissatisfaction, we found associations between all the variables tested, that is, the body dissatisfaction of the children is correlated with the mothers' dissatisfaction with their image and that they have of their children; and also in relation to the image that children have of their mothers. In this research, the major correlations occurred when we analyzed the association between the perception that children had of their body image with the perception of mothers about the image of their children. That is, the fact that mothers distort or are dissatisfied with their children's body image is related to their children's distortion and dissatisfaction about their body self-image. This conclusion reaffirms the Three Factors Influence Model (2), in which the sociocultural influence on the construction of body image comes from parents, friends and the media. A literature review study showed that the overweight or obese mother and child are associated with the distortion that the mother has in relation to the child's image (10).

In our study, the prevalence of overweight or obese mothers was high (68.4%) and more than 30% of children had high weight for age. This may explain the positive correlation between the distortion of the children's body image and the distortion that the mother has on the child's body. The literature also suggests that this erroneous perception of parents about the image of the child can be absorbed by the child him/herself (11). As already mentioned, the relationship between parents and children is of great importance in the formation of the body image of children. A family environment where there are healthy connections tends to provide support to the human being in formation, and from there the children can hit their body image in a positive way before all the physical and psychological transformations that are taking place in the transition from childhood to adolescence (12).

Therefore, it is easily demonstrated that the body dissatisfaction of children and adolescents is linked, among other factors, to "deficits" in the support of parents (13), children's expectation regarding their parents' opinion regarding their weight (14) and the parents' view of whether or not the children are adequately weighted (15). In line with these conclusions, our study found that the greater the dissatisfaction mothers have in relation to their image, the greater the dissatisfaction that children have with themselves. In another study, this association was found only in girls, presenting a weak correlation ($r = 0.16$), as occurred in our study (16). According to the literature, the association between parents and children concerning body form and eating attitudes and behaviors is expressed through two main modes of influence. One of them is the model, that is, the body image and eating behaviors of the children are modeled by those of their parents. For example, if the mother usually does constant diets, the child can absorb and adopt this habit, using it to lose weight. In the other mode of influence, called attitudinal, it is adults, who through verbal messages in the form of provocation, criticism and stimulation of loss

Table 1. Evaluation of the corporeal mass index, distortion and dissatisfaction of the body image of mothers and children. Fortaleza - CE, Brazil, 2016

VARIABLE	CHILDREN		MOTHERS	
	n (190)	%	n (190)	%
BMI				
Thinness	8	4.2	2	1.1
Eutrophic	119	62.6	58	30.5
Overweight/Obesity	63	33.2	130	68.4
Distortion of the image				
Absent	61	32.1	22	11.6
Overestimated	46	24.2	119	62.6
Underestimated	83	43.7	49	25.8
Image dissatisfaction				
Absent	24	12.6	32	16.8
Have higher body dimension	71	37.4	49	25.8
Have smaller body dimension	95	50.0	109	57.4

Table 2. Correlation between the distortion of the body image of the children and the distortion of the image of Mothers and Children, Fortaleza - CE, Brazil, 2016

VARIABLE	LEVEL OF CHILDREN'S DISTORTION	
	Correlation coefficient*	p
Distortion of the image		
Mother	0.0394	0.589
Mother in relation to her child	0.3232	0.001**
Child in relation to the mother	0.1104	0.129

*Test – Spearman **P - value ≤ 0.05

Table 3. Correlation between the dissatisfaction of the body image of the children and the body dissatisfaction of mothers and children Fortaleza - CE, Brazil, 2016

VARIABLE	CHILD'S DISSATISFACTION LEVEL	
	Correlation coefficient*	p
Insatisfação da imagem		
Mother	0.2037	0.004**
Mother in relation to her child	0.6400	<0.001**
Child in relation to the mother	0.2920	0.001**

*Test – Spearman **P - value ≤ 0.05

or weight control, will influence the body shape of their children and their eating and weight behaviors (15). According to some articles, this mode of attitudinal influence has greater importance on the issue of body dissatisfaction than influence by model (16,17). It was also found that the greater the dissatisfaction of mothers in relation to their children, the greater the dissatisfaction of children with their own image. We found a study with 573 children from 8 to 10 years of age that presents this same conclusion, in which when the mother thought that the child was not adequately weighted, this fact contributed to the increase in the dissatisfaction of the child (15).

These data once again confirm that in very young children parents play a big role in the image of their children. Another study with 20 bulimic women with a mean age of 20 years and their respective mothers showed a positive correlation ($r=0.533$) between self-image dissatisfaction in daughters with bulimia (they wished to have a much smaller silhouette) and the dissatisfaction that mothers had in relation to their daughter (they wanted them to have a greater silhouette) (3). In the literature, we did not find studies that tested the correlation between the body dissatisfaction of children and the dissatisfaction of children regarding the body image of mothers, as we did. We found only research stating that the perception of children about the mother's desire for their body image can impact on their own child's degree of body dissatisfaction (14,18). Therefore, our study advances in showing a new perspective of analysis, and thus suggests that the origin of the children's body dissatisfaction regarding the image of mothers is in the model that they end up passing on to their children. This question demonstrates how sociocultural factors (parents, friends and media) influence satisfaction with body image. When the child internalizes the ideal of thinness (that is, when he/she agrees and chooses the social model of body), he/she starts to classify people

around from this social pattern. In our study, we demonstrated that the dissatisfaction of the children regarding the image of mothers (who reached a percentage of almost 70% of overweight/obesity) was related to the dissatisfaction of the children about their self-image (even 62% of the boys and girls being eutrophic). That is, even if the children did not have the "need" to feel dissatisfied, the fact that the mothers were overweight and the children were dissatisfied with the maternal image, it ended up having some relation with the esteem that the children themselves have with their body. This study presented the following advantages: the use of a validated, simple and low-cost methodology that can analyze the body image of mothers and children adequately; and personal contact with all participants, providing greater interactivity and accuracy regarding the data collected. As a limitation, this study aimed to analyze only the association between distortion and dissatisfaction of body image between mothers and children. As the correlation does not indicate causality between the variables studied, a longitudinal study would bring answers regarding the real influence of dissatisfaction and distortion that mothers have on their children's self-image.

CONCLUSION

The distortion and dissatisfaction that mothers have in relation to the image of their children are correlated with the distortion and dissatisfaction that children have about their self-image. The use of correlation in the analysis of distortion and dissatisfaction between mothers and children is scarce in the literature and this study may corroborate the already established idea that parents are related to the formation of their children's body image and the presence or not of body dissatisfaction in them.

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