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## ORIGINAL ARTICLE

**Self-reported distortion of body image among classical ballet students in Brazil: classification according to the Body Shape Questionnaire**

***Distorção autorrelatada da imagem corporal entre estudantes de balé clássico no Brasil: classificação segundo o Body Shape Questionnaire***

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## Abstract

Body image is an important component of the complex mechanism of personal identity. The subjective component of body image refers to individuals' satisfaction with their body size or specific parts of their body. Ballet has been cited in some studies on feeding behavior among athletes as yet another specific group, who value low weight and overvalue esthetics. The present study aimed to evaluate the potential body image disorders among classical ballet students in Brazilian schools through identifying self-reported body image distortion, using the Body Shape Questionnaire (BSQ) as the instrument. This study is fundamental for the formation of all corporal work that physiotherapists do together with dancers, students or professionals. This was a descriptive study conducted in three schools that are officially recognized as training centers for professional dancers in Brazil. The results indicate homogeneity among the BSQ values attained by the students at the participating schools. Differing from the literature, there was no significant difference between the genders in terms of scoring and distribution of classification of the BSQ levels. We conclude that dissatisfaction with body image is a constant variable and important when dealing with ballet students, and that this importance goes beyond just the esthetic values and towards professional performance. Body image distortions can alter the way in which dance students codify their body, which may facilitate disorders in their physical and mental health.

**Key-words:** classical ballet, body image, musculoskeletal system.

## Resumo

A imagem corporal é um componente importante do complexo mecanismo de identidade pessoal. O componente subjetivo da imagem corporal refere-se à satisfação dos indivíduos com seu tamanho corporal ou partes específicas de seu corpo. O balé tem sido citado em alguns estudos sobre comportamento alimentar entre atletas como outro grupo específico, que valoriza o baixo peso e a estética supervalorizada. O presente estudo teve como objetivo avaliar o potencial de distúrbios da imagem corporal em escolares de ballet clássico em escolas brasileiras através da identificação da distorção da imagem corporal autorreferida, utilizando o Body Shape Questionnaire (BSQ) como instrumento. Este estudo é fundamental para a formação de todo trabalho corporal que os fisioterapeutas realizam junto aos bailarinos, estudantes ou profissionais. Trata-se de um estudo descritivo realizado em três escolas oficialmente reconhecidas como centros de formação de bailarinos profissionais no Brasil. Os resultados indicam homogeneidade entre os valores de BSQ obtidos pelos alunos nas escolas participantes. Diferentemente da literatura, não houve diferença significativa entre os gêneros em termos de pontuação e distribuição de classificação dos níveis de BSQ. Concluímos que a insatisfação com a imagem corporal é uma variável constante e importante quando se trata de estudantes de balé, e que essa importância vai além dos valores estéticos e do desempenho

profissional. As distorções da imagem corporal podem alterar a maneira como os estudantes de dança codificam seu corpo, o que pode facilitar distúrbios em sua saúde física e mental.

**Palavras-chave:** balé clássico, imagem corporal, sistema musculoesquelético.

## Introduction

Body image is an important component of the complex mechanism of personal identity. Gardner [1] defined it as "the mental picture we have of measurements, contours and shapes of our bodies and the feelings relating to these characteristics and to the parts of our bodies." The subjective component of body image refers to individuals' satisfaction with their body size or specific parts of their body [2].

Sociocultural theories of body image disorders refer to the influences of established body ideals on experiences and expectations, and the etiology and maintenance of body image disorders. In this sense, there is a prominent negative influence exerted by the mass media, confirming the conflict between the ideal of beauty prescribed by current society and the somatotype of the majority of the population, and the pressure that such a model represents [3]. Therefore, the cultural environmental conditions appear to be one of the determining factors for the development of distortion and subjective disturbances of body image.

Body image is understood as the way in which the body is presented to the person, i.e. it is seen according to what we think of it, taking into account environmental, emotional and social factors and other opinion-formers [4]. Different situations will modify individuals' own body image and other people's images in a dynamic process, resulting from memories and present perceptions. Thus, body image goes on being formed from our experiences, linked to the experiences of others with their own bodies [5].

It can be said that the search for the ideal body image among dancers goes beyond the parameters in the general population and, as they become professionals, the need to maintain proper weight increases [6]. From this context, the present study is justified by the fact that dancers form a group whose activity involves constant physical training, in which the demand for a proper esthetic standard can lead to dissatisfaction and distortion of their relationship with body image [7]. Dance works directly with the body and it is through the body that the dancer experiences different emotions and transmits the esthetic of the choreography. Their body image, therefore, is always in evidence and is part of their routine [8].

The model of beauty imposed by society today corresponds to a lean body without, however, taking into consideration issues relating to health and the different physical constitutions of the population, which are in part determined by genetic inheritance and the human groups within which the subjects are included. These behaviors are considered to be precursors of Feeding Behavior Disorder (FBD), which include anorexia nervosa and bulimia nervosa, and the so-called nonspecific eating disorders, among which Binge Eating Disorder (BED) can be highlighted [9].

People affected by anorexia nervosa or bulimia nervosa have in common excessive concern with weight and diet, as well as dissatisfaction and distortion of their body image and, in general, are resistant to treatment. Significant energy restriction and subsequent weight loss over a short period of time produce a decrease in basal metabolic rate, and losses of skeletal muscle, cardiovascular, endocrine and thermoregulatory functions and difficulties regarding attention and concentration [10,11].

These feelings lead to extreme behavior, such as provocation of vomiting, misuse of laxatives and/or diuretics and excessive practice of physical activity, in addition to extreme diets or fasting, with the aim of avoiding the possible consequences of the food that was consumed in excess. The close relationship between body image and physical performance causes athletes to be a group particularly vulnerable to establishment of these disorders, in view of the emphasis on weight control [12,13].

Studies have cited the influence exerted by coaches, sponsors and family members, through their comments on athletes' weight and shape, as a powerful element in establishing abnormal eating behavior. Sports that advocate low body weight and place excessive value on esthetics, using this as a criterion for obtaining good results in competitions - as occurs, for example, in gymnastics, synchronized swimming, running and ballet - have been shown by research conducted in this area to be the ones with highest incidence of eating disorders and behaviors that are considered precursors of FBD [14,15].

Ballet, in addition to being considered an art form, has been cited in some studies on feeding behavior among athletes as yet another specific group, among other groups of athletes, who value low weight and overvalue esthetics [9].

Thus, it is extremely necessary to provide clarification for dancers and their teachers regarding risky behaviors, such as restrictive diets for rapid weight loss, which consequently may lead to the development of severe FBD [16-18].

The present study aimed to evaluate the potential body image disorders among classical ballet students in Brazilian schools through identifying self-reported body image distortion, using the Body Shape Questionnaire (BSQ) as the instrument [16,17], in order to construct guidelines through analysis on the empirical data collected, which would support a theoretical proposal on this subject in relation to other elements and dimensions.

## Methods

This was a descriptive study using quantitative methodology, in which the epidemiological method was highlighted. It was conducted in three schools that are officially recognized as training centers for professional dancers in Brazil.

To evaluate body image dissatisfaction we used the Body Shape Questionnaire (BSQ), as validated by Cooper *et al.* [19], which measures the degree of concern about body shape, self-depreciation due to physical appearance and the feeling of being fat. According Cordás [20], this questionnaire distinguishes two aspects of body image: the accuracy of estimated body size and feelings towards the body. The instrument consists of 34 items, with six choices of answers: 1) never, 2) rarely, 3) sometimes, 4) frequently, 5) very frequent, or 6) always. According to the answer marked for each item, the numerical value of the alternative chosen corresponds to greater or lesser dissatisfaction or devaluation of body image (for example: never is worth one point and always is worth six).

The total number of points obtained in the instrument is summed and the value is calculated for each evaluation. The results are classified from the total number of points scored, which reflects the level of concern with body image. Results less than or equal to 80 points show normal patterns and are taken to be absence of body image distortion. Results between 81 and 110 points are classified as mild distortion of body image; between 111 and 140, moderate body image distortion; and over 140 points, severe body image distortion.

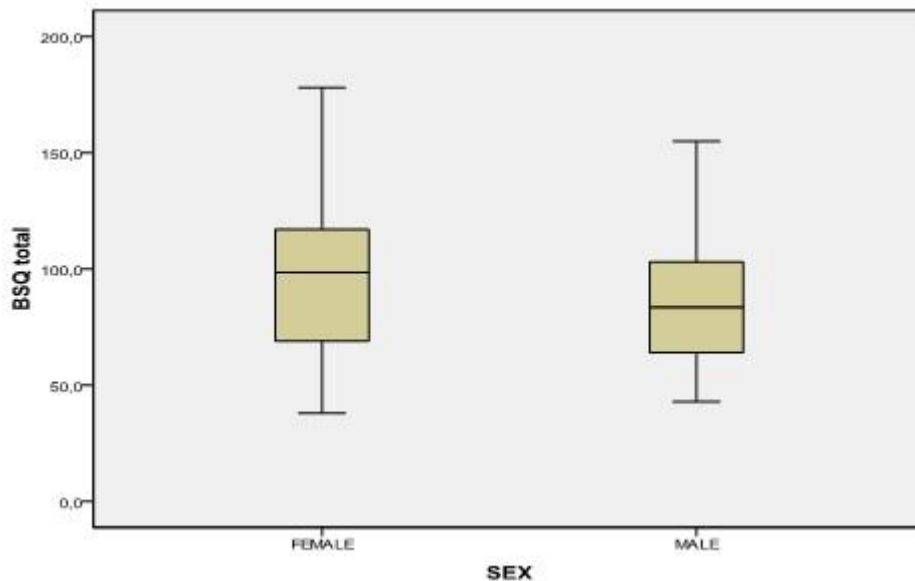
This project was approved by the Research Ethics Committee of UFRJ, and each participant received a free and informed consent statement for them to sign, thereby indicating their agreement (or not) regarding participation in the study, in accordance with CONEP Resolution 196/96.

Quantitative data were collected and analyzed using the SPSS software, version 17.0, in which statistical tests were conducted (chi-square) to obtain data for discussion and completion of the study.

## Results

Hundred students from vocational classical ballet schools in Brazil participated in this study, among whom 70 were female and 30 were male. All the participants completed the self-administered Body Shape Questionnaire (BSQ) and the results showed that on average there was no statistical difference in the distribution of values attained between the male and female students, as shown in Graph 1. However, although not statistically significant, the average for females in the BSQ was shown to be slightly higher than the average for males.

Thus, we chose to show the distribution of the BSQ scores in their classification levels and analyzed them together (males and females combined). We observed that the mean for the combination was distributed in the same way as when separated. In analyzing this distribution in Table I, we observed that 66% of the study population presented image disorders according to the BSQ, and 6% of these individuals had severe body image disorders.



**Graph 1** – Distribution of BSQ according to sex.

**Table I** – Distribution and classification of BSQ.

BSQ	n	%	% accum	95% CI*
Normal (up to 80)	34	34,0	100,0	
Mild (81 to 110)	40	40,0	66,0	56,3% - 74,8%
Moderate (111 to 139)	20	20,0	26,0	18,1% - 35,2%
Severe (140 or more)	06	06,0	06,0	2,5% - 12,1%
Total	100	100,0		

\*95% confidence interval for the accumulated percentage

From evaluating the anthropometric characteristics, using the data presented in Table II, the gender variable was shown to be an important factor in evaluating the data on measured and desired weight and height. The table also shows the difference between the measured and desired data). The girls, with a mean age of 17.8 years, were dissatisfied with their weight, wanting to lose an average of 3.8 kg (with a maximum desired loss of 16.1 kg), and were almost satisfied with their height, with a wish to gain 3 cm on average. The boys, with a mean age of 19.1 years, were on average satisfied with their weight, wanting to gain 0.3 kg (although there was a desire to lose a maximum of 9.5 kg), and also seem satisfied with their average height, wanting to gain only 5 cm on average.

**Table II** – Anthropometric characteristics according to sex.

sex	statistics	Age (years)	Weight (kg)			Height (m)		
			Measured	Desired	Difference*	Measured	Desired	Difference*
F N=70	Average	17,8	51,7	47,9	-3,8	1,63	1,66	0,03
	Standard deviation	2,0	5,9	4,2	3,6	0,05	0,04	0,04
	Minimum	13,0	38,0	40,0	-16,1	1,50	1,54	-0,06
	Median	18,0	51,2	48,0	-3,2	1,63	1,65	0,03
	Maximum	25,0	67,0	60,0	3,0	1,76	1,83	0,21
M N=30	Average	19,1	66,0	66,3	0,3	1,73	1,78	0,05
	Standard deviation	2,0	6,9	6,0	6,2	0,07	0,05	0,04
	Minimum	16,0	53,0	55,0	-9,5	1,60	1,68	-0,01
	Median	19,0	66,0	65,0	-0,3	1,74	1,80	0,05
	Maximum	25,0	81,9	79,0	19,0	1,85	1,88	0,15
<b>P-value for the Mann-Whitney test/comparison between sexes</b>		0,001	<0,001	<0,001	<0,001	<0,001	<0,001	0,065

\*Desired values minus the measured values, representing "dissatisfaction" with the weight and height.

In making correlations between the anthropometric variables and the indexes presented in the BSQ, it caught our attention that the women, on average, really wanted to lose weight and the men did not. Furthermore, regarding height, the men, on average, wanted to be taller, in comparison with the women's desires, but without any statistically significant difference between these data (Table III).

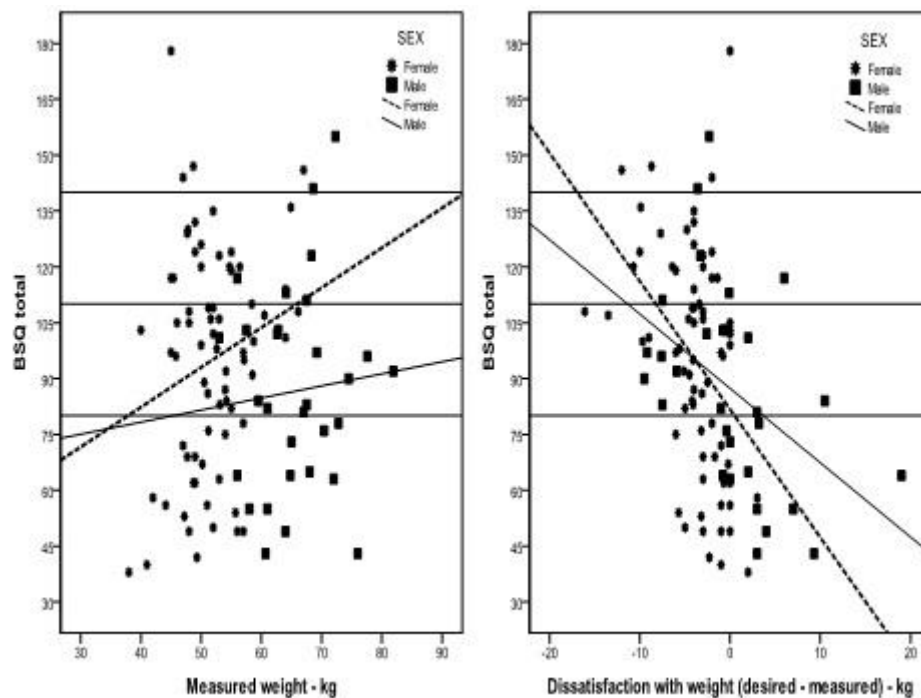
**Table III – Correlation between body characteristics and BSQ.**

Characteristics	Spearman Correlation	Characteristics					
		BSQ	Age	Weight	Dissatisfaction with weight	Height	Dissatisfaction with height
BSQ	$r_s$	1	-0,105	0,119	-0,403	-0,113	-0,014
	p-value		0,389	0,325	0,001	0,352	0,909
Age (years)	$r_s$	0,164	1	0,255	-0,141	0,170	0,086
	p-value	0,387		0,033	0,245	0,159	0,479
Weight (kg)	$r_s$	0,056	0,230	1	-0,679	0,509	-0,199
	p-value	0,767	0,221		<0,001	<0,001	0,099
Dissatisfaction* with weight	$r_s$	-0,547	-0,340	-0,558	1	-0,090	-0,038
	p-value	0,002	0,066	0,001		0,457	0,758
Height	$r_s$	-0,111	-0,044	0,614	-0,149	1	-0,502
	p-value	0,561	0,816	<0,001	0,432		<0,001
Dissatisfaction* with height	$r_s$	-0,078	0,202	-0,334	0,179	-0,628	1
	p-value	0,682	0,284	0,072	0,343	<0,001	

Correlations in the upper right triangle (area marked in pink) refer to females, and those in the lower left triangle (area marked in blue) refer to males.

Regarding BSQ, Graph 2 helps to evaluate the numerical data of Table III, and it can be seen that there was a positive correlation between the weight measured in the population and the indices obtained in the BSQ. In other words, the individuals who were heavier showed higher levels in the BSQ, meaning that greater weight generated an impact on body image.

In correlating the BSQ with dissatisfaction with weight, we found that the majority of the population was distributed in low levels of dissatisfaction with weight, with a correlation close to zero. The individuals with higher levels in the BSQ were the ones who wanted to lose more weight, and those with lower levels in the BSQ were the ones wished to gain more weight. Thus, there were negative correlations for both sexes (-0.403 for the girls and -0.547 for the boys).



**Graph 2 – BSQ correlations with measured weight and dissatisfaction with weight.**

## Discussion

According to Léon [21], the systemic model of the ideal for a dancer's body is structured starting from its scenic beauty, which will significantly structure the potential efficiency of the transitive aspects of art-movement-technique. The qualitative assessment of the scenic beauty of the dancer's body includes evaluating the fat, slimness, height, proportionality and the dynamic capacity for beauty of movement.

In addition to having higher rates of eating disorders, dancers are also more concerned with diet and body image than are non-athletes and non-dancers. These data can be explained by the fact that the body image of these professionals is a broad construct that relates to visual images and body attitudes [2,22].

A review published by Toro [23] revealed that the majority of published studies had reported higher prevalence of eating disorders among dance students than among the general population of adolescent girls. This raised the possibility that there may be specific features as risk factors and protective factors in the populations studied, which led the author to think that there may have been differences, given that the pedagogic processes were different at each dance school.

The BSQ assesses concerns about body shape, self-deprecation due to physical appearance and the feeling of being "fat", and it has also been validated in a population of Brazilian university students by Di Pietro [24].

In developed countries, both in adolescents and in adults, dissatisfaction with body image affects between 50% and 70%. Studies in Brazil have shown that body dissatisfaction among adolescents and children ranges from 64% to 82%. In the study by Miranda [26] the results showed that the prevalence of body dissatisfaction was 26.4% (BSQ) among young people living in cities with up to five thousand inhabitants, which was lower than in corresponding published studies.

The average score from the BSQ in that study was  $66.78 \pm 29.63$  points, and was significantly higher in females and in overweight and obese subjects. The body dissatisfaction classification of the BSQ showed that 296 adolescents (73.6%) were free from body dissatisfaction and 106 students (24.6%) presented levels of dissatisfaction with their physical appearance from mild to severe. Between the sexes, it was found that 11.5% of the girls and 3.5% of the boys presented body dissatisfaction classified as moderate or severe [25].

Those data differed from our study, in which the rates were not statistically different according to gender, with only 34% of the students free from image disorders. This indicates to us that among dancers, concern with body image is greater than among non-dancers.

In a study conducted by Grego *et al.* [26], the results showed that the classical dancers have body weight, height and body mass index that are lower than in other groups, which emphasizes that the search for an appropriate body image in classical ballet means maintaining a lightweight body and low body fat percentage. Most of the adolescents (66%) did not show any signs of dissatisfaction with body image in the study by Conti [27], and only 5% showed severe dissatisfaction, although among girls this figure rose to almost 10%.

According to Bosi *et al.* [28], when dissatisfaction with body image exists, inappropriate eating behaviors and ways of reducing body weight are frequently adopted among women. In their study, the entire population with moderate or severe BSQ scores showed dissatisfaction with body weight, and the vast majority (90.9%) had the desire to lose more than 2 kg, thus indicating a clear desire to lose weight. Analysis on the instrument used showed that the average score from the BSQ among the students in their study was  $81.2 (\pm 33.6)$ . The final classification according to levels of concern with body image showed that 59.6% of the students did not have any change in body image, while 6.2% had severe distortion. In our study on ballet students, the average level of severe distortion remained close to 6%, but there was a smaller number of individuals without disturbances, thus showing that in dancing, a larger number of people presented alterations [7].

Another study by Bosi [29] showed a relationship between the results from the BSQ and dissatisfaction with weight, such that even in the group of students who had normal or mildly abnormal levels of concern with body image, a significant percentage would like to lose two kg or more (58.7%). Among those with moderate or severe abnormalities of body self-image, almost all the university students had that same desire (94.3%), which corresponds to a high degree of distortion detected, and a risk factor for disorders in the sphere of nutrition. A longitudinal study on Norwegian girls found that body image was a predictor for practicing diets

and had a direct relationship with increasing age. Moreover, the practice of frequent dieting was a risk factor for the development of eating disorders, especially states of anorexia nervosa.

The need to maintain an appropriate body standard among dancers often results in dissatisfaction with and distortion of body image, as shown in the study by Ravaldi *et al.* [30], on 110 non-professional ballet dancers and a control group of 59 people in the city of Florence, Italy.

Dissatisfaction was proven by Souza [31] and it could be seen that only 34.2% of the female adolescents did not have any body image disorder. Among the male adolescents, the presence of body image disorders according to the self-administered BSQ was much smaller: only 11.4 and 7.2% had mild and moderate disorders, respectively.

Students at ballet schools have greater desire to slim and greater perfectionism, and are more likely to use diet to control their weight than are students who are not dancers, and they also have a high risk of developing image disturbance. This higher risk has been attributed mainly to the high prevalence of particular personality features in younger individuals [23].

This information was reflected in our study, both by the indexes from the BSQ and by the desire for body modification with weight loss, as the main factor for improving the levels of dissatisfaction with their body image.

## Conclusion

The results indicate homogeneity among the BSQ values attained by the students at the participating schools. Differing from the literature, there was no significant difference between the genders in terms of scoring and distribution of classification of the BSQ levels.

Comparison with studies that assessed non-dancers showed that dance students had greater body image distortion values than shown by the rest of the population, but that the rates of greater severity were similar.

The disorders assessed using the BSQ showed a positive relationship with dissatisfaction regarding weight and height, with differences between the genders. Girls wished that they were slimmer, where the heaviest girls showed greater abnormality of BSQ values because of their desire to lose weight. On the other hand, the boys wanted to be taller.

We conclude that dissatisfaction with body image is a constant variable and important when dealing with ballet students, and that this importance goes beyond just the esthetic values and towards professional performance. The job market selects only those that reach a body pattern characteristic for practicing classical ballet, i.e. long and slender bodies.

Lastly, body image distortions and abnormalities can alter the way in which dance students codify their body, which may facilitate disorders in their physical and mental health.

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