

BODY IMAGE DISSATISFACTION AMONG GYM-GOERS IN BRAZIL



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INSATISFAÇÃO COM A IMAGEM CORPORAL EM FREQUENTADORES DE ACADEMIAS DE GINÁSTICA NO BRASIL

INSATISFACCIÓN CON LA IMAGEN CORPORAL EN FREQUENTADORES DE GIMNASIOS EN BRASIL

Luciana Rossi¹ (Nutritionist)

Julio Tirapegui¹ (Biochemist)

1. Universidade de São Paulo (USP), Department of Eating Habits and Experimental Nutrition, Escola de Ciências Farmacêuticas, São Paulo, SP, Brazil.

Correspondence:

Luciana Rossi. Av. Professor Lineu Prestes, 580, Bloco 14, São Paulo, SP, Brazil. 05508-900. lrossi@usp.br

ABSTRACT

Introduction: During decades of epidemiological investigation, a consensus was reached regarding physical activity and its association with benefits for the health of the population, including a reduced risk for coronary diseases, hypertension, obesity, osteoporosis and depression. Such associations led to the promotion of an active life style to be included in guidelines and governmental programs and absorbed by the fitness and supplement industries, often displaying different interests although there is growing evidence of an increase in body dissatisfaction. **Objective:** To evaluate body dissatisfaction among gym-goers and its relationship with age, sex, participation in gym activities and nutritional status. **Methods:** Participants were 227 users of 3 fitness academies with an average age of 31.4 (12.3) years; 51.5% of the participants were men. Collected data were related to anthropometry and fitness activity participation, and a body image scale was applied. **Results:** Body image dissatisfaction was found in 67.4% of the sample, of which 64.8% expressed a desire to be slimmer. Such dissatisfaction was also present in those of normal weight, of whom 11.5% were male and 9.2% female. For women of average weight, the odds of dissatisfaction were estimated to be 0.20-fold greater than for men ($p < 10^{-6}$). **Discussion:** Fitness academies in Brazil and several other parts of the world, with an approach based on the fitness model that emphasizes the cult of the body beautiful, are likely to attract a male audience more inclined to experience body dissatisfaction. Constant monitoring of nutritional care is recommended for these individuals, in order to prevent exaggerated body dissatisfaction patterns. **Conclusions:** Body image dissatisfaction was greater among female athletes who wished to achieve a slimmer look. Due to the large number of eutrophic gym-goers with body image dissatisfaction, campaigns for adequate body weight maintenance are recommended. These would take the emphasis off the adoption of body types with low fat percentages and risky behaviors like diets and food restriction, which trigger eating disorders. **Level of Evidence I; Diagnostic studies – Investigating a diagnostic test.**

Keywords: Body image; Physical activity; Body mass index; Fitness centers.

RESUMO

Introdução: Durante décadas de investigação epidemiológica, foi estabelecido um consenso para a prática de atividade física e sua associação aos benefícios para a saúde da população, incluindo a redução do risco de doenças coronarianas, hipertensão, obesidade, osteoporose e depressão. Tais associações levaram à promoção de um estilo de vida ativo a ser incluído nas diretrizes e programas governamentais e absorvido pelas indústrias de fitness e suplementos, muitas vezes mostrando diferentes interesses, embora haja cada vez mais provas de aumento da insatisfação corporal. **Objetivo:** Avaliar a insatisfação corporal de frequentadores de academia de ginástica, e a sua relação com idade, sexo, participação nas atividades da academia e estado nutricional. **Métodos:** Participaram no total 227 frequentadores de três academias de ginástica, com média de idade de 31,4 (12,3) anos, sendo 51,5% do sexo masculino. Foram coletados dados antropométricos e de participação na academia, e uma escala de imagem corporal foi aplicada. **Resultados:** Constatou-se insatisfação com imagem corporal em 67,4% da amostra, sendo que 64,8% expressaram desejo de ser mais magros. Essa insatisfação ainda foi presente naqueles com peso normal, sendo 11,5% do sexo masculino e em 9,2% do feminino. Para as mulheres com peso normal, foi estimada chance de insatisfação de 0,20 vezes maior do que para os homens ($p < 10^{-6}$). **Discussão:** É provável que as academias de ginástica no Brasil e em várias outras partes do mundo, com uma abordagem baseada no modelo de fitness que enfatiza o culto do corpo, provavelmente atrairão convergência de um público masculino mais propenso à insatisfação corporal. **Aconselha-se permanente monitoração do cuidado nutricional para estes indivíduos, a fim de coibir padrões de insatisfação corporal exacerbados. Conclusões:** A insatisfação com imagem corporal foi maior entre desportistas do sexo feminino que desejam alcançar uma imagem mais magra. Devido ao grande número de frequentadores de academia eutróficos insatisfeitos com a imagem corporal, aconselham-se campanhas de manutenção de peso corporal adequado. Essas campanhas devem evitar a ênfase sobre a adoção de tipos corporais com baixo percentual de gordura e comportamentos de risco, como dietas e restrição alimentar, que desencadeiam transtornos alimentares. **Nível de Evidência I; Estudos diagnósticos - Investigação de um exame para diagnóstico.**

Descritores: Imagem corporal; Atividade física; Índice de massa corporal; Academias de ginástica.



RESUMEN

Introducción: Durante décadas de investigación epidemiológica, se estableció un consenso para la práctica de actividad física e su asociación a los beneficios para la salud de la población, incluyendo la reducción del riesgo de enfermedades coronarias, hipertensión, obesidad, osteoporosis y depresión. Estas asociaciones llevaron a la promoción de un estilo de vida activo a ser incluido en las directrices y programas de gobierno y absorbido por las industria de "fitness" y suplementos, aunque hay cada vez más pruebas del aumento de la insatisfacción corporal. Objetivo: Evaluar la insatisfacción corporal de frequentadores de gimnasios y su relación con edad, sexo, participación en las actividades de los gimnasios y estado nutricional. Métodos: Participaron en total 227 frequentadores de tres gimnasios, con promedio de edad de 31,4 (12,3) años, siendo el 51,5% del sexo masculino. Se recogieron datos antropométricos y de participación en el gimnasio, y una escala de imagen corporal fue aplicada. Resultados: Se constató insatisfacción con la imagen corporal en 67,4% de la muestra, siendo que el 64,8% expresó deseo de ser más delgados. Esta insatisfacción aún estaba presente en aquellos con peso normal, siendo el 11,5% del sexo masculino y el 9,2% del femenino. Para las mujeres con peso normal, se estimó una probabilidad de insatisfacción de 0,20 veces mayor que para los hombres ($p < 10^{-6}$). Discusión: Es probable que los gimnasios en Brasil y en varias otras partes del mundo, con un enfoque basado en el modelo de fitness que enfatiza el culto al cuerpo, probablemente atraerán la convergencia de un público masculino más propenso a la insatisfacción con el cuerpo. Se aconseja permanente monitoreo del cuidado nutricional para estos individuos, a fin de cohibir patrones de insatisfacción corporal exacerbados. Conclusiones: La insatisfacción con la imagen corporal fue mayor en entre los deportistas del sexo femenino que desean alcanzar imagen más delgada. Debido al gran número de frequentadores eutróficos de los gimnasios insatisfechos con la imagen corporal, se aconseja campañas de mantenimiento del peso corporal adecuado. Estas campañas deben evitar el énfasis en la adopción de tipos corporales con bajo porcentaje de grasa y comportamientos de riesgo, como dietas y restricción alimentaria, que desencadenan trastornos alimentarios. Nivel de Evidencia I; Estudios de diagnósticos – Investigación de un examen para diagnóstico.

Descriptor: Imagen corporal; Actividad física; Índice de masa corporal; Centros de acondicionamiento.

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INTRODUCTION

Body image (BI) is defined as the image we have in our mind of the size, contour and form of our body, as well as the feelings related to its features and constituting parts.¹ BI has two compounds: a) perceptive or of body perception, which refers to the image created in our mind, and b) attitudinal, which refers to the feelings, thoughts and actions related to the picture of the body.² Body dissatisfaction can be described as the discrepancy between the ideal and the perceived body;³ such dissatisfaction can be associated with depressive symptoms, stress, low self-esteem, food restriction and physical activity.² As regards the self-conception of our body, it has been documented that the start of physical activity practicing is many times motivated by the dissatisfaction with both the own body and the body image.^{4,5} Such body dissatisfaction and the search for the "ideal" body can lead to the adoption of inadequate attitudes concerning physical activity, favoring the development of eating disorders like anorexia and bulimia nervosa,⁶ exercise dependence,⁷ use of anabolic steroids,⁸ anxiety⁹ and others.

According to Morgado et al,¹⁰ in the postmodern society, the cultural ideal body is athletic, muscular, thin and beautiful; this permeates the collective imaginary, leading, even involuntarily, to body dysmorphic disorders. Brazil is the second country in the world with the largest number of gyms which, similarly to different regions of the world, are probably based on the fitness model that emphasizes the body cult, becoming convergence places for a public more inclined to body image changes.^{4,5} Results have indicated that expectations and yearnings related to the practice of physical exercises at gyms should be monitored in order to prevent the development of image disorders like muscle dysmorphia in men. Sardinha et al.¹¹ reported that the increasing number of muscle dysmorphia cases concomitant

to the use of anabolic substances in male teenagers and young men is not frequently recognized by health professionals, differently from eating disorders.¹² Theodoro and collaborators¹³ identified young male bodybuilding practitioners showing excess intake of protein supplements and body image change, which indicates that nutritional support is needed at the gyms, since nutritional inadequacies could negatively affect the health and goals of costumers.

Another body self-perception study in Caxias do Sul (n=87) indicated that male practitioners wished that they had a larger physique.¹³ Considering walking practitioners of both sexes (n=186), the ideal body image tend to be more voluminous and strong for men but less voluminous and thinner for women.¹⁴ For women, in particular, several studies involving different age ranges, professions and physical activity levels have shown a tendency of choice for a silhouette thinner than the current perception.¹⁵

Studies have evidenced that body dissatisfaction can be considered a first-order symptom in the development of inadequate eating behaviors and can lead to eating disorders.¹⁶ For the male population, data about the prevalence of disorders are more controversial than those for female teenagers (approximately 15%) but are believed to be close to the rate of 10:1, compared to women.¹⁶

Brazil is currently the second country in the world with the largest number of gyms, approximately 24 thousand units; the USA ranks first with 30 thousand establishments.¹ Although there has been a transition in management and philosophy from the fitness to the wellness model, a large number of gyms still propagate in their environments the cult to thin and athletic body, diets with no nutritional basis and uncontrolled supplement intake.¹⁷

The aim of this study was to evaluate body dissatisfaction among gym-goers and its relationship with their age, sex, participation in the gym and nutritional status.

METHODS

Data were collected from three different gyms at the metropolitan region of São Paulo (south, west and southeast central); the gyms were medium (500 to 1.200 customers) to large (>1.200 customers).¹⁸ Previous contact was made with the owners of the gyms for explanation of the proposals and aims of the study; then, permission was requested to access the practitioners at convenient dates and times, when an appointment room was reserved for data collection.

The invited participants were physically active gym-goers, older than 19 years, of both sexes, regardless of their frequency of attendance, permanence or loyalty. Recruitment was done by means of verbal invitation, posters or even recommendation by professors or the staff at the gym. After hearing explanations about the study, its relevance, risk and benefits, the individuals were instructed to sign, in case they agreed, a free and informed consent term, according to the model approved by the Ethics Committee of the School of Pharmaceutical Sciences - USP (Protocol 632.237).

The sampling size (n) was obtained based on the ratio: $n = p \times (1-p) \times z^2 / e^2$, where $z = 1.96$ is the percentage corresponding to 95% confidence level, the margin of error is estimated at 6.5% and p is considered equal to 50%, which thus results in a sampling size of $n = 227$ individuals.¹⁹

A nutritional questionnaire was applied by means of interview to obtain data related to the name, birth date, sex and objective of practicing physical exercises (diversification, frequency, permanence and loyalty).¹⁷ Information related to self-reported anthropometric measures of body mass (BM: kg) and height (H: cm) was also requested, which is a valid procedure, according to Coqueiro et al.,²⁰ for evaluating the nutritional status of the Brazilian population and for body satisfaction studies involving teenagers.²¹ These data were used to calculate the Body Mass Index (BMI: kg/m²), and the nutritional status was classified according to WHO.²²

In general, the subjective body image self-evaluation is estimated by employing Questionnaires and Silhouette Scales composed of images created especially for this purpose.²³

For body image evaluation in the present study, we employed a scale of 10 images of both sexes with variation of $18.5 < \text{BMI} \leq 40 \text{ kg/m}^2$, proposed in 2008 by Harris et al.²⁴ This scale was developed based on photographs worked on a computer by using the software Photoshop® (Adobe Systems; EUA), showing Pearson's correlation between the referred BMI and the chosen present image of $r=0.86$ for men and $r=0.88$ for women, and the best results for scale validation in Brazil have been found within $0.66 < r < 0.87$.¹⁵ Participants were given the Image Scale corresponding to their sex and asked which would best represent: a) their current physique (CI), and b) ideal physique (II). Body dissatisfaction (BD) was evaluated based on the difference between CI and II, i.e., $\text{BD} > 0$ (wish to be thinner) or $\text{BD} < 0$ (wish to be larger), while $\text{BD} = 0$ corresponds to body satisfaction.^{2,25}

The statistical software R (R Development Core Team - 2011) was used for data analysis. Results were shown as central tendency and variability, absolute (n) and relative (%) frequencies or quantitative variables (number of the chosen image on the scale). Comparisons between body images were made by employing Wilcoxon non-parametric paired tests. Correlation among the variables BD, age and BMI was verified based on Spearman's coefficients. Comparison among groups of categorized data (BMI and BD) was made according to Fisher's exact test. For all tests, the standard significance level of 5% was adopted to reject the underlying null hypothesis.

RESULTS

The sample was composed of 227 gym-goers, mostly men (51.1%). Characteristics related to their body mass, height and BMI are shown in Table 1; the average BMI of the sample allowed its characterization as eutrophic.²² Compared to women, men were older and had greater body mass, height and BMI. On average, the diversification included, performance of 1.9 (1.0) different types of exercises at a frequency of 4.6 (1.4) days a week, permanence of 81.7 (32.2) minutes and loyalty of 75.1 (88.6) months. All differences between sexes were statistically significant ($p < 0.05$), except for permanence. Considering participation in the gym, diversification (number of exercises) was significantly greater for women than for men, to whom frequency and loyalty values were greater. There was not any difference between sexes for permanence at the gym. (Table 1)

The correlation between BMI and CI was 0.54 for the total sample (0.35 men; 0.66 women), and that between BMI and II was 0.37 for the total sample (0.25 men; 0.26 women). Weak correlation was found between CI and age (0.09 to 0.26), as well as between II and age (0.16 to 0.25).

As regards the choice of images in the scale by women, the median of CI was 3 and that of II was 2, showing statistical difference ($p < 0.001$). The average BMI for women was 23.2 (2.9) kg/m², consistent with the choice of image 3, which corresponds to the range of $18.6 < \text{BMI} < 24.9 \text{ kg/m}^2$.

For men, the median of CI was 4 and that of II was 3, showing statistical difference ($p < 0.001$). The average BMI for men was 25.6 (2.8) kg/m², consistent with the choice of CI = 4, which corresponds to $\text{BMI} \geq 25.0 \text{ kg/m}^2$.

Considering the sample, 67.4% were unsatisfied ($\text{BD} \neq 0$), while 64.8% chose an image that was smaller than the ideal one ($\text{BD} > 0$), attesting the desire to be thinner. BD analysis relative to nutritional status for men and women is shown in Table 2

Table 1. Analysis of anthropometric and participation data according to the sex of gym-goers.

Characteristics	Average (standard deviation)			
	Total sample n=227	Men n=116	Women n=111	P
Age (years)	32.2 (11.2)	33.0 (10.0) [#]	31.4 (12.3)	0.0397
Body Mass (kg)	71.3 (14.0)	80.3 (12.0) [#]	62.0 (8.7)	< 10 ⁻¹⁵
Height (cm)	170.2 (9.4)	176.7 (7.2) [#]	163.3 (5.8)	< 10 ⁻¹⁵
BMI (kg.m ⁻²)	24.5 (3.1)	25.6 (2.8) [#]	23.2 (2.9)	< 10 ⁻¹⁰
Diversification (no. exercises)	1.9 (1.0)	1.7 (0.8) [#]	2.1 (1.1)	0.0077
Frequency (days/week)	4.6 (1.4)	4.9 (1.3) [#]	4.2 (1.4)	0.0005
Permanence (min/day)	81.7 (32.2)	85.6 (34.3)	77.7 (29.3)	0.0714
Loyalty (months)	75.1 (88.6)	91.6 (99.3) [#]	57.8 (72.3)	0.0022

[#] Statistically significant difference between sexes.

Table 2. Analysis of data related to the choice of the ideal and the current image according to nutritional status of male and female gym-goers.

	Body Mass Index (BMI: kg/m ²)						Total
	Underweight (BMI < 18.49)		Normal Weight (18.5 ≤ BMI ≤ 24.99)		Overweight (BMI > 25.00)		
	M	W	M	W	M	W	
Ideal < current (IC > 0)	0 0%	1 0.4%	22 9.7%	65 28.7%	37 16.3%	22 9.7%	147 64.8%
Ideal = current (IC = 0)	0 0%	1 0.4%	26 11.5%	21 9.2%	26 11.5%	0 0%	74 32.6%
Ideal > current (IC < 0)	0 0%	0 0%	3 1.3%	1 0.4%	2 0.9%	0 0%	6 2.6%
Total	0 0%	2 0.8%	51 22.5%	87 38.3%	65 28.7%	22 9.7%	227

Considering the relationship between nutritional status and BD for those of normal weight (eutrophic), body dissatisfaction, given by the choice of smaller images ($BD > 0$), was 9.7% for men and 28.7% for women; when the choice was for larger images ($BD < 0$) it was 1.3% for men and 0.4% for women. The percentage of athletes satisfied ($BD = 0$) with their body image, regardless of their nutritional status, was higher among men (23.0%) than among women (9.6%). (Table 2)

As more than half of the sample was unsatisfied with their body image ($BD \neq 0 = 67.4\%$), choosing especially smaller silhouettes ($BD > 0 = 64.8\%$), a contingency Table was prepared for the statistical analysis of data from these individuals, relating sex to the body mass index. (Table 3)

Table 3. Number of gym-goers showing body image dissatisfaction and classified according to nutritional status.

	Men	Women	OR (IC of 95%)	p
Normal Weight	22 (9.7%)	65 (28.7%)	0.20	10^{-6}
Overweight	37 (16.3%)	22 (9.7%)	[0.09; 0.42]	

The estimated chance for a gym practitioner, with normal weight, to be unsatisfied with his/her body image, wishing to be thinner ($BD > 0$), is 0.20-fold (OR) greater for women than for men ($p < 10^{-6}$).

DISCUSSION

The binomial between psychological factors and adherence to exercise has been a profitable source of debate due, in part, to its relevance for implications to the health and well-being of the population, Davis et al.²⁶ confirmed associations with body weight concern for the female were not associations with frequency or quantity of practiced exercises. For men, adherence to strenuous exercises like running, cycling or weightlifting is considered by this group the most efficient means to reach a thinner and muscular body, a symbol of the cultural pattern of sexual attractiveness.¹⁷

In the present study, for both women and men the choice of images was significantly smaller ($p < 0.001$), which is consistent with several studies involving physically active individuals.^{15,27} Most gym-goers show body dissatisfaction (67.4%), of which 64.8% have normal body weight (eutrophic BMI). Tessmer et al.⁴ studied 13 gyms in Pelotas (Rio Grande do Sul) and found 48.3% individuals showing body dissatisfaction. Our results revealed that eutrophic women have significantly higher dissatisfaction percentage ($BD \neq 0 = 29.1\%$) than men ($BD \neq 0 = 11.0\%$), and this dissatisfaction pattern is due to their wish to be thinner; chances are estimated at 0.20-fold greater than those for men. Fermino et al.,⁵ investigating 90 gym-goers, noted that BD was greater for women and individuals with high fat percentage and weight. Similarly, Tessmer et al.⁴ reported that women aged up to 19 years were at higher risk for BD.

Relationship with body image among athletes is highly known, especially in sports involving body mass control and/or emphasizing aesthetic elements, in which pathogenic methods are especially applied to reach these goals and include restrictive diets, vomits, fasting,

diuretics, drugs for appetite control and laxatives, making this group more vulnerable to the development of eating disorders.²⁸ However, there is increasing evidence that gym-goers are a risky public for body dissatisfaction.¹³ Alvarenga and collaborators²⁹ employed Stunkard Scale for a representative national sample and found 64.4% dissatisfaction among university women. Kakeshita and Almeida³⁰ developed a scale which indicated dissatisfaction for 87.0% university women who were overweight or eutrophic. The present results, considering the methodological differences, are consistent with the findings of national studies involving a sample of gym-goers of both sexes.

Studies have evidenced that body dissatisfaction can be considered a first-order symptom in the development of inadequate eating behaviors, which can lead to eating disorders.¹⁶ For the male population, data about the prevalence of disorders are more controversial, compared to female teenagers (approximately 15%), but are believed to be close to the 10:1 ratio, relative to women.¹⁶

In Brazil, gyms tend to emphasize the body cult or the fitness model; thus, the expectations and yearnings of practitioners need to be monitored as a preventive measure against future development of image disorders like muscle dysmorphia. Concomitant evaluation of the nutritional status, based on BMI and its relationship with BD, provides important information about its potential risk, which can lead to intervention programs applicable to either teenagers³¹ or practitioners of physical activities at gyms.

There were significant differences for the variables that describe the profile of participation in the gym (loyalty, diversification, frequency and permanence) between men and women, recommending caution as to extrapolation and comparison with studies that employ only descriptive statistics for discussing associations between supplementation patterns and sexes at the gyms; another limitation was the absence or the low number of gym-goers in the BMI categories.

CONCLUSIONS

In the studied sample of gym-goers of both sexes, the choice of the current image was adequate, relative to the body mass index; however, when compared to the ideal image, the frequency of body dissatisfaction was high. When each sex was analyzed separately, the number of unsatisfied individuals was larger for the female sex and was even greater among those of normal weight. Dissatisfaction was especially related to the desire of obtaining a smaller and/or thinner image. Considering the dissatisfaction degree present among eutrophic, especially women, a suggestion for informative campaigns for body weight maintenance should be promoted between health professionals, trainers and gym-goers, preventing the dissemination or reinforcement of stereotyped body types with low fat percentage.

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