

44 - BODY IMAGE AND BODY FAT IN ATHLETES OF FOOT ORIENTEERING RACE

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INTRODUCTION

Contemporarily, low body weight is related to beauty, success and happiness as described by Killen et al. (1994). This anorexic standard of beauty is strengthened by media and, young people tries to reach it, many times, inappropriately. Dieting manipulation in function of dissatisfaction with body image (BI) is observed even in young adults athletes and not athletes. This is one of the adopted alternatives for reduction of body weight (OLIVEIRA et al., 2003; OLIVEIRA et al., 2004). Whereas for young not-athletes, inadequate dieting manipulation is already harmful, and for athletes it becomes disastrous, in view of a biggest physical consuming which them are submitted.

Vilardi et al. (2001) tell that since Olimpics Games in 776 b.C., already existed a primary idea of search between the relations of nutrition and physical performance. Athletes and trainers look for a special feeding which is able to increase income and improve performance.

Pressures of society, media and trainers, jointly with internal pressures for search of a good performance, can take athletes to develop dissatisfaction with its BI perception.

According to current literature, general BI is composed by two components: body esteem and dissatisfaction with body (TRICHES and GIUGLIANI, 2007). In turn Braggion et al. (2000) say that BI is a mental representation of own body pertinent to each individual, involving aspects related to structure (stature, dimension) and appearance (form, aspect), among several others psychological and physical components.

Distorted standard of beauty can lead to attitudes of body weight control through dieting, excessive exercise, indiscriminate use of diuretics, laxatives and drugs used against anorexia. Such significant energy restriction that leads to weight loss in a short period of time reduces the Basal Metabolic Rate. Besides, it damages muscle-skeletal, cardiovascular, endocrine and thermoregulation functions and causes a lack of attention and concentration, as Oliveira (2003) mentions.

Dissatisfaction with BI is directly related to eating disorders (ED), as anorexia nervosa and bulimia nervosa. The relation between dissatisfaction with BI and search for better physical performance makes athletes become a vulnerable group for installation of ED. Emphasis on weight control in modalities with artistic characteristics and modalities where the low weight favors the participation in a more convenient category are strong motivators of inappropriate behaviors in pursuit of a weight self-control.

From the foregoing, the present study aims to accomplish a descriptive analysis of perception of BI dissatisfaction in women athletes of foot orienteering race (FOR).

MATERIALS AND METHODS

Present analysis was developed at the Physiology Exercise Laboratory in the Escola de Educação Física e Desportos from UFRJ.

This study was submitted to and approved by the Committee of Ethics in Research Involving Human Beings of the Clementino Fraga Filho Hospital - UFRJ,. Only were assessed athletes whose responsables signed a attended consent term, when minors, and by themselves, when they were over 18 years. In this document is recorded agreement with adopted procedures and authorization for use of data for scientific analysis of results as required under the rules of Brazilian National Health Council nº 196/96.

The sample of this study was constituted by 09 women athletes of foot orienteering race ($21 \pm 4,9$ years).

Body composition was estimated by anthropometric method (International Society for Advancement in Kinanthropometry - ISAK). Were measured: cutaneous folds thickness (chest, triceps, biceps, subscapular, suprailiac, abdominal, midaxillary, thigh and leg - skinfold calipers, 0.1 mm), stature (stadiometer, 1 mm) and total body mass (electronic scale, 50g). Body density estimation was obtained by the equation of Withers et al. (1956) developed specifically for athletes, and relative body fat (%G) was estimated by the equation of Siri (1961).

The analysis of BI perception was obtained by the Body Shape Questionnaire (BSQ) (Cooper et al., 1987).

Statistical analysis was performed using Microsoft Excel 2000. Data are expressed as percentage of occurrence, mean and standard deviation. The test Pearson correlation was used to verify the relation among BI and %G in order to support the discussion.

RESULTS

The sample's physical characterization is presented in Table 1 and BSQ results in Table 2. The correlation coefficient obtained between athletes BSQ results and %G results was $p=0.38$, not presenting statistical significance.

It is emphasized the relevant frequency of evaluated athletes showing absence of BI distortion (Table 1), which did not quash the concern about the presence of results with light and moderate change.

	Age (years)	TBM (kg)	Stature (m)	Body fat (%G)	Classification (Pollock & Wilmore,1993)
Athletes n=09	21 ± 4.9	55 ± 9.9	1.72 ± 0.1	23 ± 5.7	(in average)

These results are presented as average standard deviation; n = sample; TBM=Total body mass; m = meter; kg = Kilogram.

Table 2: BSQ RESULTS

Classification	Athletes (%)
MODERATE body image distortion	11
LIGHT body image distortion	22
NO body image distortion	67

DISCUSSION

The obtained correlation between BSQ results and %G of the assessed athletes was $r=0.38$. The low correlation obtained express the lack of relation between the variables. In other words, regardless of the %G, BI is present in the group. It is observed that the athletes present classification as normal range (on average, Table 1) according to age and gender.

It is standed out that sociocultural rules conduct and impose a lean and modulated corporal standard culture, turned to a exarcebatedly aesthetic concern in detriment of health cares. This idea is ratified by Perini et al. (2009), reporting that dissatisfaction with BI is categorized as first-class symptom in changes in dietary patterns, leading athlete to inadequate eating habits in order to decrease your body mass to be fit in the current patterns.

Literature reports that sports which praise low body mass as a criterion for better performance, and adopt low-calorie dieting combined to an intense energy expenditure in training and competition, athletes are prone to develop BI alterations and, therefore ED precursory syndromes.

It is observed that 67% of the FOR athletes analyzed presented negative results for BSQ (without dissatisfaction with BI). However, the mere presence of some athletes with change in these results, express the requirement for preventive intervention.

As described by Oliveira et al. (2003) that endurance runners athletes presented precursory behaviors of bulimia nervosa despite presenting healthy %G, it was evidenced in the analyzed sample of the present study, that although the athletes have presented %G in mean patterns (Table 1), 33% of them present dissatisfaction with BI, which is an triggering of ED precursory syndromes.

The positive BSQ results, ranged from light (22%) to moderate (11%), which together represent a worrying factor (33%).

Similar result was found at Triches and Giugliani's research (2007), wherein dissatisfaction with BI was detected, despite body meet in normality standards for gender and age.

Studies from Oliveira et al. (2003) and Capdeville et al. (2009), where eating behavior and BI in athletes from several modalities had been analyzed, evidenced that found values of dissatisfaction with BI were similar to the values presented between athletes of the present analysis (33% and 36%, respectively).

A simple change in satisfaction with BI and inadequate weight manipulation are not sufficient to trigger the development of ED, but contribute to that, existing another factors like genetic, psychological and others ones that can contribute. Fact with which Gleaves et al. (1992) agree. The authors, on their analysis about BI distortion from endurance runners athletes and weight loss, conclude that findings research are led to the theory that only weight loss due to running training would conduct to problems related to eating and BI change.

CONCLUSIONS

There is no relation among the presence of dissatisfaction with BI and %G, which does not justify the presence of alteration in BSQ.

The high percentage of girls without BI distortion, does not exempt concern about the presence of results with BI change, which must be fought preventively, as much on sporting ambit as among young people in general.

REFERENCES

- ALVES, E., VASCONCELOS, F.A.G., CALVO, M.C.M., NEVES, J. Prevalência de sintomas na anorexia nervosa e insatisfação com a imagem corporal em adolescentes do sexo feminino do município de Florianópolis, Santa Catarina, Brasil, **Cad. Saúde Pública**, Rio de Janeiro, v.24, n.3, p.503-512, mar., 2008.
- BEATTY, D., FINN, S.C. Position of the American Dietetic Association and the Canadian Dietetic Association: women's health and nutrition. **J. Am. Diet. Assoc.**, v.104, n.6, p.984-1001, June, 2004.
- BENEDIKT, R., WERTHEIN, E.H., LOVE, A. Eating attitudes and weight-loss attempts in female adolescents and their mothers, **J. Youth Adolesc.**, v.27, n.1, p.43-57, 1998.
- BRAGGION, G.F., MATSUDO, S.M.M., MATSUDO, V.K.R. Consumo alimentar, atividade física e percepção da aparência corporal em adolescentes, **Rev. Bras. Ciên. e Mov.**, Brasília, v.8, n.1, p.15-21, janeiro, 2000.
- BRANCO, L. M., HILÁRIO, M. O. E., CINTRA, I. P. Percepção e satisfação corporal em adolescentes e a relação com seu estado nutricional, **Rev. Psiq. Clín.**, v.33, n.6, p. 292-296, 2006.
- BOSI, M. L.M, LUIZ, R. R., UCHIMURA, K. Y., OLIVEIRA, F.P. Comportamento alimentar e imagem corporal entre estudantes de educação física, **J. Bras. Psiq.**, v.57, n.1, p. 28-33, 2008.
- COOPER, P.J., TAYLOR, M., COOPER, Z., FAIRBUN, C.G. The development and validation of the Body Shape Questionnaire, **Int. J. Eat. Disord.**, v.6, n.4, p. 485-94, 1987.
- DAMASCENO, V.O., LIMA, J.R.P., VIANNA, J.M., VIANNA, V.R.A., NOVAES, J.S. Tipo físico ideal e satisfação com imagem corporal de praticantes de caminhada, **Rev. Bras. Med. Esporte**, v. 11, n. 3, p. 181-6, 2005.
- FERRANDO, D.B., BLANCO, M.G., MASO, J.P., GURNÉS, C.S., AVELLÍ, M.E. Eating attitudes and body satisfactions in adolescents: a prevalence study, **Actas Esp. Psiq.**, v.30, n.4, p. 207-12, jul-ago, 2002.
- INTERNATIONAL SOCIETY FOR THE ADVANCEMENT OF KINANTHROPOMETRY, ISAK. 1. ed. Australia, 2001.
- KILLEN, J.D., TAYLOR, C.B., HAYWARD, C., WILSON, D.M., HAYDEL, F., HAMMER, et al., Pursuit of thinness and onset of eating disorder symptoms in a community sample of adolescent girls, **Int. J. Eat. Disord.**, v. 16, n.3, p.227-38, 1994.
- OLIVEIRA, F.P., BOSI, M.L.M., VIGÁRIO, P.S., VIEIRA, R.S. Comportamento alimentar e imagem corporal em atletas, **Rev. Bras. Med. Esp.**, v.9, n.6, p.348-356, nov./dez.2003.

- OLIVEIRA, Fátima Palha de, BOSI, Maria Lúcia Magalhães
Comportamentos bulímicos em atletas adolescentes corredoras de fundo. **Rev Bras de Psiq.** v.26, p.32 - 34, 2004.
- SIRI, W.E. Body composition from fluid spaces and density. **Univ. Calif. Donner Lab. Med. Phys. Rep.**, march 1956.
- STEIN, S., CHAULHOB, N., HODES, M., Very early-onset bulimia nervosa: report of two cases. **Int. J. Eat. Disord.**, v. 24, n.3, p. 323-7, 1998.
- TRICHES, R.M., GIUGLIANI, E.R.J. Insatisfação corporal em dois municípios da região sul do Brasil. **Rev. Nutr.**, Campinas, v.20, n.2, p. 119-128, mar./abr.,2007.
- VILARDI, T.C.C., RIBEIRO, B. G., SOARES, E.A. Distúrbios nutricionais em atletas femininas e suas inter-relações, **Rev. Nutr.**, Campinas, v.14, n.1, p. 61-69, jan./abr.2001.
- WILLIAMS, S.R. **Nutrition and diet therapy**. 6. ed. St. Louis: Times, 1989.
- WITHERS, R.T., WHITTINGHAM, N.O., NORTON, L.K., LA FOGIA J., ELLIS, M.W, CROCKETT A., Relative body fat and anthropometric prediction of body density of female athletes. **Eur. J. Appl. Physiol.**, v.56, n.2, p. 169-80, march, 1987.

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BODY IMAGE AND BODY FAT IN ATHLETES OF FOOT ORIENTEERING RACE**ABSTRACT**

Introduction: The manipulation of diet on the basis of dissatisfaction with body image (BI) is observed both among young non-athletes and between athletes. The standard of beauty associated with thinness is one of the factors that contribute to young people try to adjust, often using methods not healthy. **Objective:** This study aimed to verify the relationship between dissatisfaction with the BI and body fat (BF) in athletes of Foot Orienteering Race. **Materials and Methods:** Nine athletes were evaluated (21 ± 4.9 years). Body composition was obtained by anthropometric method (International Society for Advancement in Kinanthropometry – ISAK), and satisfaction with body image with the Body Shape Questionnaire - BITE. The statistical analysis was performed in Excel 2000, Microsoft. **Results Discussion:** The athletes have satisfactory BF suitable for age and gender. The correlation coefficient between BI and BF was $p=0.38$, not statistically significant, indicates any relationship between the variables considered. Despite the high percentage of athletes are dissatisfied with the BI, there is the presence of athletes with changes in BSQ (33%). **Conclusions:** The results indicate no relationship between BF and BI, and the presence of dissatisfaction with the IC in 33% in the athletes of Foot Orienteering Race.

KEY WORDS: Body image, Body Fat, Foot Orienteering Race.**IMAGE COPOREL ET GRAS COPOREL DES ATHLÈTES DE LA COURSE D'ORIENTATION****RÉSUMÉ**

Introduction: La manipulation de l'alimentation sur la base de l'insatisfaction de l'image corporelle (IC) est observée parmi les jeunes non-sportifs et aussi entre les athlètes. La norme de la beauté associée à la minceur est l'un des facteurs qui contribuent à de jeunes cherchent à se ajuster, en utilisant souvent des méthodes pas sain. **Objectif:** Cette étude visait à examiner la relation entre l'insatisfaction à l'image corporelle et de graisse corporelle chez les athlètes de course de orientation. **Matériel et méthodes:** Neuf athlètes ont été évalués (21 ± 4,9 ans). La composition corporelle a été obtenue par la méthode anthropométrique (International Society for Advancement in Kinanthropometry – ISAK), et la satisfaction à l'image du corps avec le Body Shape Questionnaire - BITE. L'analyse statistique a été effectuée dans Excel 2000, Microsoft. **Résultats de la Discussion:** Les athlètes ont gras corporel appropriés pour l'âge et le sexe. Le coefficient de corrélation entre le IC et gras corporel est $p=0,38$, il n'est pas statistiquement significative et indique l'absence de relation entre les variables considérées. Malgré le pourcentage élevé d'athlètes sont mécontents de l' image corporel (66%), il ya la présence des athlètes à des changements dans BSQ (33%). **Conclusions:** Les résultats n'indiquent aucune relation entre %G et IC. La présence d'insatisfaction avec l'IC (33%) chez les athlètes est expressive.

Mots-clés: Image corporelle, la graisse corporelle, Course d'orientation.**LA IMAGEN CORPORAL Y LA GRASA CORPORAL DE LOS ATLETAS DE CARRERAS DE ORIENTACIÓN****RESUMEN**

Introducción: La manipulación de la dieta sobre la base de la insatisfacción con la imagen corporal (IC) se observa tanto entre los jóvenes no deportistas y entre los atletas. El estándar de belleza asociada con la delgadez es uno de los factores que contribuyen a los jóvenes, que tratan de adaptarse, a menudo utilizando métodos no sanos. **Objetivo:** Este estudio tuvo como objetivo examinar la relación entre la insatisfacción con el IC y la grasa corporal en los atletas de carreras de orientación. **Materiales y Métodos:** Se evaluaron nueve atletas (21 ± 4,9 años). La composición corporal se obtiene por el método antropométrico (International Society for Advancement in Kinanthropometry – ISAK) y la satisfacción con la imagen del cuerpo con el Body Shape Questionnaire - BITE. El análisis estadístico se realizó en Excel 2000, Microsoft. **Resultados y Discusión:** Los atletas han estándar de grasa corporal adecuados para la edad y el género. El coeficiente de correlación entre el IC y el grasa corporal $p=0,38$, no es estadísticamente significativo y indica que no hay relación entre las variables consideradas. A pesar del alto porcentaje de los atletas no están satisfechos (66%) con el IC, es la presencia de atletas los resultados anormales en BSQ. **Conclusiones:** Los resultados indican que no hay relación entre grasa corporal e IC, y que 33% de los atletas no está satisfecho con la IC (33%).

PALABRAS CLAVE: Imagen Corporal, Grasa Corporal, carreras de orientación.

IMAGEM CORPORAL E GORDURA CORPORAL DE ATLETAS DE CORRIDA DE ORIENTAÇÃO**RESUMO**

Introdução: A manipulação da dieta em função da insatisfação com a imagem corporal (IC) é observada tanto entre jovens não-atletas como entre desportistas. O padrão de beleza associado à magreza é um dos fatores que contribuem para que jovens tentem se ajustar, muitas vezes adotando métodos não saudáveis. Objetivo: O presente estudo teve o objetivo de analisar a relação entre a insatisfação com a IC e a gordura corporal em atletas de corrida de orientação. Materiais e Métodos: Nove atletas foram avaliadas (21 ±4,9 anos) A composição corporal foi obtida por método antropométrico, International Society for Advancement in Kinanthropometry – ISAK, e a satisfação com a imagem corporal com o Body Shape Questionnaire – BITE. A estatística dos resultados foi feita no Excel 2000, Microsoft. Resultados Discussão: As atletas apresentam padrão de %G satisfatório para idade e gênero. O coeficiente de correlação entre IC e %G de $p=0,38$, sem significância estatística, indica a ausência de relação entre as variáveis consideradas. Apesar do elevado percentual de atletas se insatisfação com a IC, observa-se à presença de atletas com alterações no BSQ. Conclusões: Os resultados apontam para ausência de relação entre %G e IC, e, para a presença de insatisfação com a IC (33%) em atletas de corrida de orientação.

PALAVRAS CHAVE: Imagem Corporal, Gordura Corporal, Corrida de Orientação.

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