

LEVEL OF PSYCHOLOGICAL COMMITMENT TO EXERCISE AND COMPARISON OF BODY DISSATISFACTION OF ATHLETES PARTICIPATING IN THE PAN-AMERICAN SCHOOL GAMES



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ABSTRACT

Introduction: Performance sports seem to be a booster for the onset of psychopathological disorders and therefore it becomes relevant to assess the level of psychological commitment to exercise and aspects of body image in adolescent elite athletes, since these variables are risk factors for triggering of eating disorders. **Objective:** To compare body dissatisfaction among different sports and check its influence on the level of psychological commitment to exercise performance in competitive adolescent athletes. **Methods:** The study sample consisted of 65 teenage athletes from many sports of both sexes. To assess body dissatisfaction, the Body Shape Questionnaire (BSQ) was applied and the level of psychological commitment to the habit of exercising was assessed by the Scale of Dedication to Exercise (SDE). **Results:** The dissatisfaction with self-image was seen in 21.5% of participants with difference between modalities ($p < 0.05$), which did not occur with the SDE ($p > 0.05$). Moreover, dissatisfaction influenced 12% in modulating the level of psychological commitment to exercise ($p < 0.05$). **Conclusion:** Therefore, it can be concluded that for this sample, the rate of body satisfaction was high and little related to the level of commitment to exercise.

Keywords: body image, adolescents, athletes.

INTRODUCTION

The number of adolescents who engage in systematized physical training programs has increased over the last years¹. In the distinct sports modalities, there is demand for the ideal morphology with the purpose to reach good sportive performance, which can lead to risk of developing harmful behavior to health such as psychopathological disturbs derived from deep self-dissatisfaction with the body². Performance sports seem to be a boosting agent to the onset of these disturbs³, being hence relevant to evaluate the level of psychological commitment to exercise and self-image aspects such as subjective general dissatisfaction in elite adolescent athletes.

Body image is a multifaceted and dynamic phenomenon which suffers influence of physiological, emotional libido and social aspects⁴. Body dissatisfaction is one of the components of body image, and it relates to depreciation of physical appearance⁵; thus, it can be understood as the negative evaluation of body appearance.

Many adolescents who engage in physical training are unsatisfied with their bodies⁶ and search for the systematized sports training practice with the hope to alter their body composition. Moreover, there are also athletes who are excessively committed to exercise, regardless of their anthropometric profile, with the goal to improve their athletic performance or simply lose weight.

Studies on body image and its relationship with the level of psychological commitment to exercise in competitive adolescent

athletes have not been found in the literature. Therefore, the aim of the present study was to compare body dissatisfaction in different sport modalities and verify its influence on the level of psychological commitment to exercise in competitive adolescent athletes.

METHODS

Sample characterization

This study had transversal, comparative and association characteristics, having as objective to explore the relationship between body dissatisfaction and the level of psychological commitment to exercise (LPCE). The population of this study was composed of Brazilian adolescent athletes aged between 14 and 17 years, from both sexes, participants in the 1st Panamerican School Games held in the city of Juiz de Fora, MG, in 2010, including the soccer, handball, basketball, volleyball, track and field, and swimming modalities. Only the athletes who accepted participating in the study and presented the Free and Clarified Consent Form signed by the legal responsible one, in that case, the coach, were recruited for the sample. Thus, the study sample was composed of 65 athletes, 17 female and 48 male (table 1).

Measurement instruments

In order to evaluate the body dissatisfaction the body shape questionnaire (BSQ) was applied⁷. This questionnaire is a self-completion test with 34 questions which try to evaluate the concern the subject presents with his/her weight and physical appearance.

Table 1. Age and gender frequency mean and standard deviation by sports modality.

Gender	Modality	Absolute frequency	Frequency (%)	Age
Male	Track and Field	5	10.4	16.60 ± 0.89
	Basketball	10	20.8	16.00 ± 0.66
	Volleyball	10	20.8	16.60 ± 0.51
	Handball	10	20.8	16.10 ± 0.87
	Soccer	13	27.1	16.38 ± 0.65
Female	Track and Field	2	11.8	15.50 ± 0.70
	Basketball	9	52.9	15.67 ± 0.70
	Volleyball	5	29.4	16.00 ± 1.22
	Handball	1	5.9	16.00 ± 0.00

The version used was validated for Brazilian adolescents⁷ and its internal consistency analysis revealed a α of 0.96 for both sexes and a significant correlation coefficient between test-retest scores, ranging between 0.89 and 0.91 for girls and boys, respectively. The score is given by the sum of the items, which classifies levels of dissatisfaction about the body, namely: < 80 points free from body dissatisfaction; between 80 and 110 light dissatisfaction; between 110 and 140, moderate dissatisfaction; and above 140, severe body dissatisfaction, that is to say, the higher the score, the higher the body dissatisfaction⁷.

In order to determine the level of psychological commitment an individual may have with the exercising habit, the scale to dedication to exercise (SDE) developed by Davis et al. was applied⁸. The instrument was translated and adapted to Portuguese by Assunção et al.⁹ and it evaluates the level the wellness sensations are modulated by exercise, the maintenance of the exercise in adverse conditions and the level of interference the physical activity has in social events of the individual. It is a visual analog scale composed of eight questions which range from 0 to 155mm and therefore, with maximal punctuation of 1.240mm.

Data collection procedures

The event organization made two suitable for application of the instruments rooms available to our research group and data collection was conducted during the technical congress. Each room was prepared for the filling of only one questionnaire. The athletes of the teams whose coach had already authorized participation were approached by a member of our group and were invited to participate in our study.

The questionnaires were handed to the participants who received the same verbal guidance. Written guidelines about the suitable procedures were also present in the questionnaires themselves. The occasional doubts were clarified by the ones in charge for the application of the BSQ and SDE, and the subjects did not communicate with each other. The instruments were distributed at the moment the athletes entered the room and its completion was voluntary. There was no time limit for the questionnaires' completion.

Statistical analysis

The age and punctuation of the BSQ and SDE were described with the use of central tendency measures with mean and standard deviation. The Kolmogorov-Smirnov test was applied to check the normality of the distribution of the punctuations of the BSQ and SDE of the total sample ($n = 65$), and the Shapiro-Wilk test to identify whether the data by modality were parametric or not. Since the data normality was not corrupted in any of the tests, the parametric statistics was chosen. One-way ANOVA test was applied for comparison of the BSQ and SDE results in the sports modalities, the Scheffé post hoc test for identification of differences in the BSQ and SDE punctuation, bivariate linear regression for observation of the influence of the body dissatisfaction on the LPCE and the Student's t test for comparison of the SDE punctuation between athletes satisfied and dissatisfied with their bodies. All the dissatisfaction categories of the BSQ had to be grouped as 'dissatisfied' for this analysis. All the analyses were carried out in the SPSS 17.0 for Windows software with significance level of 5%.

The study followed the guidelines for performance of research in humans of the National Health Board, Resolution 196/96, from 10/10/1996 and the research Project was approved by the Ethics in Research Committee Involving Humans of the Federal University of Juiz de Fora under law number 342/2009.

RESULTS

Regarding body dissatisfaction, 51 (78.5%) of the participants were classified as free from dissatisfaction; nine (13.8%) as slightly dissatisfied; four (6.2%) as moderately dissatisfied and only one (1.5%) as severely dissatisfied, according to table 2.

Table 3 presents the comparisons between mean punctuation of the BSQ and SDE in the sports modalities. Body dissatisfaction difference was identified in the different modalities, where the basketball athletes presented higher indices of dissatisfaction compared to the handball ones ($p < 0.05$). Differences in the SDE have not been found.

Table 4 presents the LPCE variance explained by body dissatisfaction. The dissatisfaction influenced 12% in the LPCE modulation ($p < 0.05$).

Figure 1 presents the comparison of the SDE punctuations between satisfied and dissatisfied athletes. Difference between groups has not been identified.

Table 2. Description of the absolute frequency of athletes by sex and modalities in the BSQ classifications.

	Track and field		Basketball		Volleyball		Handball		Soccer	Total
	M	F	M	F	M	F	M	F	M	
Body dissatisfaction										
Absence of dissatisfaction	5	1	9	3	9	3	10	1	10	51
Light dissatisfaction	0	1	0	3	0	2	0	0	3	9
Moderate dissatisfaction	0	0	1	3	0	0	0	0	0	4
Severe dissatisfaction	0	0	0	0	1	0	0	0	0	1
Total	5	2	10	9	10	5	10	1	13	65

Table 3. Comparison (mean and standard deviation) of the punctuation of the BSQ and SDE in the sports modalities.

Variable / Modality	Track and field	Basketball	Volleyball	Handball	Soccer
BSQ	59.29 ± 21.30	74.68 ± 34.06*	63.73 ± 29.30	41.64 ± 8.18*	55.85 ± 23.73
SDE	593.43 ± 144.10	672.16 ± 219.70	599.40 ± 161.43	553.27 ± 371.29	562.81 ± 188.27

Significant difference between the basketball and handball modalities ($p < 0.05$).

Table 4. Influence of body dissatisfaction on the level of psychological commitment to exercise of adolescent athletes.

Pearson r	R ²	R ² adjusted	p value
0.34	0.12	0.9	0.02

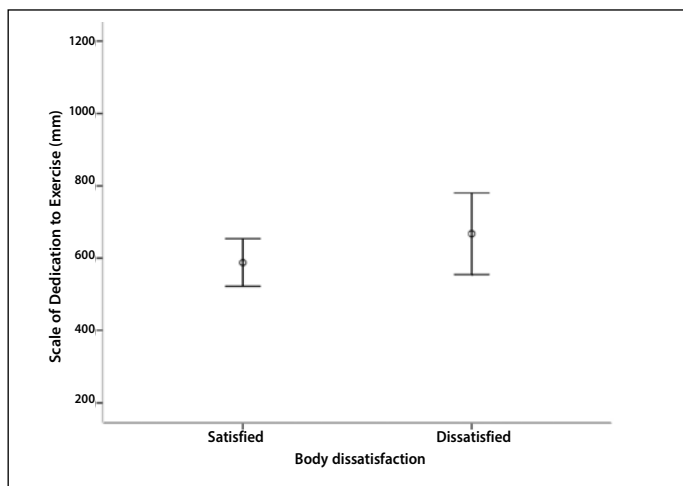


Figure 1. Comparison of the SDE punctuation between satisfied and dissatisfied.

DISCUSSION

The aim of this study was to compare body dissatisfaction between different sports modalities and verify its influence on the level of psychological commitment to exercise in competitive adolescent athletes. The results evidenced high prevalence of body satisfaction and relatively high punctuation in the scale of dedication to exercise in all modalities, besides variance of 12% in the level of psychological commitment to exercise, influenced by the body dissatisfaction.

The results related to the BSQ application corroborate with other national studies carried out with adolescent athletes^{3,10-13}, and demonstrate higher prevalence of individuals satisfied with their bodies compared to the general adolescent population^{14,15}.

This low prevalence of body dissatisfaction among athletes, regardless of the modality, may be associated with the fact these subjects present in their day-by-day the systematized practice of physical training, which may be a positive factor in body image. Additionally, body satisfaction for this public seems to be more linked to sports performance than morphological characteristics, since some studies demonstrate satisfaction with their bodies regardless of the BMI² and fat percentage³.

Denoma et al.¹⁶ compared body dissatisfaction among elite athletes, school athletes, independent exercise practitioners and

non-athletes and identified that the higher the competitive level, the higher the body dissatisfaction; that is to say, elite athletes are more dissatisfied with their bodies. Furthermore, in this same study, the non-athlete individuals were more satisfied with their bodies than the rest of the athletes, especially when compared to the elite ones. The findings of the present study clash with the results found by the authors mentioned above, leading us to the hypothesis that there is still a big information gap to be explored in the athletic population.

The comparison of the body dissatisfaction in the modalities presented difference only in the handball and basketball athletes, driving us to the idea that the basketball players are more dissatisfied with their bodies than the handball athletes. A meta-analysis study¹ comparing the body image of athletes of different sports modalities showed that athletes from esthetic categories sports (synchronized swimming, rhythmic gymnastics), endurance (marathons) and games with a ball (basketball, handball, soccer, volleyball) present less problems concerning body image when compared to those from sports with characteristics of weight dependence (judo, karate, tae kwon do) and power (track and field, swimming).

Although they present positive body image compared to the non-athletes, Hausenblas and Donws¹ identified that athletes are more susceptible to negative behavior, such as excessive dieting and exercise. In our study, we detected mean of 672 (± 219) in the SDE in the basketball group, which can become an addition to the development of psychopathological disorders to these elite athletes. Nevertheless, no difference has been found in the LPCE in the modalities.

Teixeira et al.¹⁷ define as 'compulsive individuals who practice exercise even when they are not feeling well or when choose to miss social events. Baum¹⁸ states that training aimed at performance may be seen as a negative impact to the genesis of inadequate exercise practice in athletes. In the present study, no difference has been identified in the SDE punctuation between satisfied and dissatisfied athletes, although a tendency for dissatisfied athletes to commit more to exercise than the satisfied ones (figure 1).

The main limitation of the present study was to use a scale (SDE) which has only been translated and adapted to Portuguese language, but not validated and hence its psychometric qualities have not been tested in the Brazilian adolescent population. In addition to that, the reduced number of participants can also be considered another limitation of the present study.

CONCLUSIONS

The discussions and findings of the present study let us conclude that the great majority of these athletes was satisfied with their bodies, and therefore, presents low risk of developing psychopathological disorders. Basketball athletes are more dissatisfied than the handball ones ($p < 0.05$) and there was not difference in the level of psychological commitment in the sports modalities. Moreover, body dissatisfaction responded for only 12% of the GCPE variation. Further studies with this competitive adolescent athletes' population checking if sports performance interferes in the body satisfaction are suggested to better clarify the relationship these subjects have with their bodies.

REFERENCES

1. Hausenblas HA, Downs DS. Comparison of body image between athletes and nonathletes – a meta-analytic review. *J Appl Sports Psychol/Journal Applied Sports Psychology* 2001;13:323-39.
2. Vieira JLL, Oliveira LP, Vieira LF, Vissoci JRN, Hoshino EF, Fernandes SL. Distúrbios de atitudes alimentares e sua relação com a distorção da auto-imagem corporal em atletas de judô do estado do Paraná. *Rev Educa Fis Rev da Educação Física/UEM* 2006;17:177-84.
3. Perini TA, Vieira RS, Vigário PS, Oliveira GL, Ornellas JS, Oliveira FP. Transtorno do comportamento alimentar em atletas de elite de nado sincronizado. *Rev Bras Med Esporte* 2009;15:54-7.
4. Slade PD. Body image in anorexia nervosa. *Br J Psychiatr Br J Psychiatry Suppl* 1988;2:20-2.
5. Ricciardelli LA, McCabe MP, Banfield S. Sociocultural influences on body image and body changes methods. *J Adolesc Health* 2000;26:3-4.
6. Assunção SSM, Cordás TA, Araújo LASB. Atividade Física e Transtornos Alimentares. *Rev Psiquiatr Clin Revista de Psiquiatria Clínica* 2002;29:4-13.
7. Conti MA, Cordás TA, Latorre MRDO. Estudo de validade e confiabilidade da versão brasileira do body shape questionnaire (bsq) para adolescentes. *Rev Bras Saúde Matern Infant Revista Brasileira de Saúde Materna e Infantil* 2009;9:331-8.
8. Davis C, Brewer H, Ratusny G. Behavioral frequency and psychological commitment: Necessary concepts in the study of excessive exercising. *J Behav Med* 1993;16:611-28.
9. Assunção SSM, Cordás TA, Araújo LASB. Atividade física e transtornos alimentares. *Rev Psiquiatr Clin Revista de Psiquiatria Clínica* 2002;29:4-13.
10. Vieira JLL, Amorim HZ, Vieira LF, Amorim AD, Rocha PGM. Distúrbios de atitudes alimentares e distorção da imagem corporal no contexto competitivo da ginástica rítmica. *Rev Bras Med Esporte* 2009;15:410-4.
11. Oliveira FP, Bosi MLM, Vigário PS, Vieira RS. Comportamento alimentar e imagem corporal em atletas. *Rev Bras Med Esporte* 2003;9:348-56.
12. Vieira JLL, Oliveira LP, Vieira LF, Vissoci JRN, Hoshino EF, Fernandes SL. Distúrbios de atitudes alimentares e sua relação com a distorção da auto-imagem corporal em atletas de judô do estado do Paraná. *Rev Educa Fis Rev da Educação Física/UEM*. 2006;17:177-84.
13. Fortes LS, Ferreira MEC. Comparação da insatisfação corporal e do comportamento alimentar inadequado em atletas adolescentes de diferentes modalidades esportivas. *Rev Bras Educ Fis Esporte* 2011; 25(4): 707-716.
14. Scherer FC, Martins CB, Pelegrini A, Matheus SC, Petroski EL. Imagem corporal em adolescentes: associação com a maturação sexual e sintomas de transtornos alimentares. *Rev Bras Psiquiatr Revista Brasileira de Psiquiatria* 2010;59:198-202.
15. Pelegrini A, Petroski EL. Inatividade física e sua associação com estado nutricional, insatisfação com a imagem corporal e comportamentos sedentários em adolescentes de escolas públicas. *Rev Paul Pediatr Revista Paulista de Pediatria* 2009;27:366-73.
16. Denoma JMH, Scaringi V, Gordon KH, Orden KAV, Joiner TE. Eating Disorder Symptoms among Undergraduate Varsity Athletes. Club Athletes, Independent Exercisers and Nonexercisers. *Int J Eat Disord* 2009;12:47-53.
17. Teixeira PC, Costa RF, Matsudo SMM, Cordás TA. A prática de exercícios físicos em pacientes com transtornos alimentares. *Rev Psiq Clin* 2009;36:145-52.
18. Baum A. Eating disorders in the male athletes. *Sports Med* 2006;36:1-6.