Ideal physical type and body image satisfaction of regular walkers

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ABSTRACT

The objective of the present study was to quantify the ideal physical type and to verify the body image satisfaction level of regular walkers. One hundred and eighty six individuals participated in this study as follows: 87 women (age = 28.70 ± 12.6 years, stature = 161.6 ± 6.2 cm, body mass = 58.9 ± 12.0 kg, and fat = 25.7 ± 7.8 F%), and 98 men (age = 27.9 ± 12.9 years, stature = 177.2 ± 6.9 cm, body mass = 75.0 ± 12.3 kg, and fat = 13.3 ± 6.1 F%). The individuals were asked to indicate which profile corresponded to his/her body and which profile they wanted to reach. Only 24% of women are satisfied. Profile 3 was pointed as ideal to be reached by 55% of women (profile 2 = 18%; and profile 4 = 21%). Profile 3, according to results of this study, corresponded to F% of 20.5 ± 0.9% (EPM) and to MBI of 20.0 ± 0.3 kg/m^2 (EPM). In relation to men, only 18% are satisfied. Profile 4 was pointed as ideal by 47% of men (profile 3 = 23%; and profile 5 = 19%). Profile 4 corresponds to F% of 9.8 ± 1.4% (EPM) and to BMI of 23.1 ± 0.4 kg/m^2 (EPM). There is an ideal physical type for both genders. No difference with body image satisfaction degree between genders was verified.

Key words: Body image. Body mass index. Fat percentage.

INTRODUCTION

Media, family circle and friends condition individuals to exercise themselves, to take care of their bodies, leading them to desires, habits, cares and dissatisfaction with their body visual appearance[1]. Body image is a multidimensional construction that widely describes the inner representations of body structure and physical appearance in relation to ourselves and to others[2]. The body image formation process may be influenced by gender, age and media as well as by the relations of body with cognitive processes such as beliefs, values and attitudes within a culture[1,3-5].

Some authors admit the existence of a strong cultural tendency in considering leanness as an ideal situation of social acceptance for women[6-10]. There are also strong correlations between social pressure of being thin and body dissatisfaction among young adult women[6,11]. According to the female leanness ideal tendency, Voracek and Fisher[12] presented the modifications on the anthropometrical standards of women who were photographed in the *Playboy* magazine during the last decades. Through descriptive study, a tendency of reduction on the body mass index (MBI) values and of increase on the waist/hip relation (WHI) was observed, demonstrating a body linearity tendency. On the other hand, among men, a stronger and larger body is considered as the ideal profile[13-17]. Reinforcing this statement, Cohane and Pope Jr.[9] mention the study of McCreary and Sasse (2000), performed with 96 young individuals with average age of 18 years, who wanted to be heavier and stronger in relation to their actual bodies. In both cases, men and women aimed their attitudes in relation to their bodies towards fulfilling cultural pressures of society in which they belong to[19].

The tireless search for a better physical appearance of those who practice regular physical activities is a sociocultural phenomenon many times more significant than the own economic, affective or professional satisfaction[20]. The dissatisfaction with the own body, or better, with the image one has about it, is maybe one of the main reasons people involve themselves into physical activity programs[21-24]. It is possible that the body image satisfaction degree would influence the way how young adults perceive themselves in terms of the relation between body mass, fat percentage (F%) and stature. The body dissatisfaction is strongly related to the exposition of beautiful bodies by media and this fact has determined a compulsion for searching for the ideal anatomy in the last decades[25,26].

Although there are adequate BMI and F% values for the maintenance of a good health condition, the physical type idealized by individuals is culturally determined[24,27,29], and it seems that there is an ideal physical type that individuals who practice regular physical activity search to reach. Thus, the objectives of this work were, using the set of profiles of Stunkard *et al.*[29] (figure 1), to quantify the ideal physical type and to verify the body image satisfaction level of regular walkers.

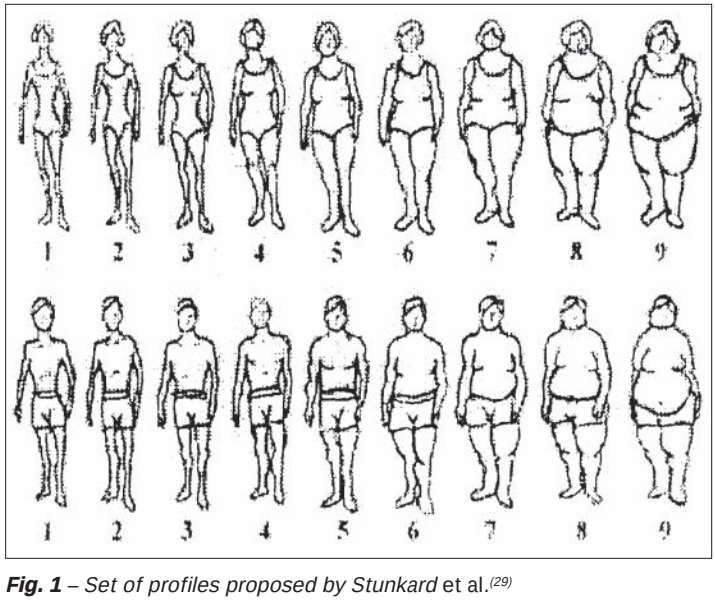

Fig. 1 *– Set of profiles proposed by Stunkard* et al.[29]

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METHOD

Subjects – The sample was composed of 186 individuals (87 women and 98 men) who practiced regular walking in the Campus of the Federal University of Juiz de Fora, whose characteristics are described in table 1. In order to perform the measurements, an evaluation room was adapted next to the area used for the physical activity practice. The individuals invited to participate in this research were informed about the objectives and signed the consent term for researches involving human beings, according to Guidelines and Regulation Norms of Researches Involving Human Beings (Resolution 196 of October 10th, 1996) of the Health National Council. The research was previously approved by the Ethics Research Committee of the Federal University of Juiz de Fora.

As way to offer return to the participants of this research, a report containing BMI and F% with interpretation and explanation of results and their relation with health risk factors was delivered to them shortly after data collection.

Anthropometrical measurements – The body mass measurement was performed, using a digital scale label *Filizola*® properly calibrated and with the Inmetro seal. Following, the stature measurement was performed by means of a stadiometer with accuracy of 1 mm fixed to the scale. The measurement of the following skinfolds were performed: thorax/pectoral; triceps, suprailliac, abdomen and thigh. A *Lange*® compass (USA) was used.

Body image measurements – In order to verify the actual and ideal body image, the scale proposed by Stunkard *et al.*[29] (figure 1) was used. The set of profiles was shown to individuals and the following questions were asked: Which profile best represents your actual physical appearance? Which profile would you like to have? In order to verify body dissatisfaction, the difference between the actual profile (AP) and the ideal profile (IP) indicated by the individual was used. The appraiser was free of opinion in the selection of profiles.

Calculations and statistic treatment – For the BMI calculation, the equation weight in kilograms divided by stature in meters, raised to the second power was used. The waist/hip relation was obtained through dividing the waist circumference by the hip circumference. The body density was estimated through the equation of Jackson and Pollock[30] and Jackson *et al.*[31], and, on conversion to F%, the equation of Siri[32] was used. The data were submitted to descriptive statistics. The BMI and F% data were grouped by AP. For the test of difference hypothesis between averages of F% and BMI between groups, the analysis of variance with one factor was performed, according to the Scheffé test ($p < 0.05$). For the study of the association between AP and the F% and BMI values, the Pearson correlation was performed. The differences between men and women dissatisfaction levels was tested with the chi-squared test ($p < 0.05$). The program *Statistica*® 6.0 for *Windows*® was used for calculation purposes.

RESULTS

Table 1 describes the average and the standard deviation of the sample's characteristics. Male BMI and F% were presented within normality range, according to classification of the World Health Organization[33] for BMI and Jackson and Pollock[30] and Jackson *et al.*[31] for F%. For women, the average values of BMI were presented within normality range and the F% was presented a little above normality range.

TABLE 1
Characteristic of the sample studied

Variable	Male		Female	
	Average	Standard deviation	Average	Standard deviation
Age (years)	27.8	12.9	28.8	12.6
Stature (cm)	177.9	6.9	162.0	6.2
Weight (kg)	75.0	12.3	58.9	12.0
Fat %	13.2	6.2	25.7	7.8
Body mass index (kg/m²)	23.9	3.5	22.5	4.4
Actual profile	4.2	1.5	4.0	1.3

Table 2 presents the average values of F% and BMI by AP. In figure 2, the histograms demonstrate the sample distribution in relation to male and female AP and IP. One observes through the tendency identified by mode, that most women selected profile 4 as the AP and most men selected profile 5. With regard to the IP, the histogram indicates the tendency of women to select profile 3 (n = 49 or 55%) and men to select profile 4 (n = 46 or 47%). Profile 3 was indicated as ideal to be reached by 55% of women (profile 2 = 18%; and 4 = 21%). Profile 3, according to results from this study, corresponds to F% of 20.5 ± 0.9% (EPM) and to BMI of 20.0 ± 0.3 kg/m² (EPM). In relation to men, only 18% are satisfied with their profiles. Profile 4 was indicated as the ideal by 47% of men (profile 3 = 23%; and 5 = 19 %). Profile 4 corresponds to F% of 9.8 ± 1.4% (EPM) to BMI of 23.1 ± 0.4 kg/m² (EPM). No difference in the dissatisfaction degree with body image between men and women was verified (χ^2; $p < 0.05$).

TABLE 2
Fat percentage and body mass index values by actual profile of both men and women (average ± standard deviation)

		Profile the individual identifies himself with							
		1	2	3	4	5	6	7	8
Female	N	1	9	17	35	13	9	3	
	F%	17.1 ± 0.0	19.6 ± 1.4	20.5 ± 1.6	25.5 ± 3.9	26.4 ± 3.1	35.6 ± 2.4	46.5 ± 2.6	
	BMI	15.8 ± 0.0	19.1 ± 1.2	20.0 ± 1.3	22.0 ± 2.9	23.3 ± 4.0	29.0 ± 4.7	34.7 ± 3.4	
Male	N	1	12	23	18	30	8	4	2
	F%	3.5 ± 0.0	9.8 ± 4.2	10.4 ± 3.1	9.8 ± 4.8	16.1 ± 5.0	17.6 ± 7.7	20.8 ± 2.1	28.1 ± 0.8
	BMI	18.7 ± 0.0	20.5 ± 1.8	21.7 ± 1.6	23.1 ± 1.6	24.7 ± 2.1	29.2 ± 3.4	29.3 ± 1.2	34.0 ± 0.6

Table 3 indicates the AP for men and women and the difference between AP and IP. One observes that the IP for male individuals who presented AP 1, 2, 3 and 5 is the profile 4, in other words, individuals who identified themselves with profiles lower than 4 wanted to climb up one or two positions in relation to the AP. Individuals who identified their profiles as higher than 5 wanted to step down one or two positions.

Women did not seem to want to climb positions in relation to the choice for the IP. Women who identified themselves with profiles 2 and 3 did not want to change profile. For those who identified themselves with profiles higher than 3, a tendency to step down two positions was observed. For example, women who identified themselves with profile 6 considered profile 4 as ideal.

Figure 3 presents the F% and AP of men and women. In relation to women, no significant differences between F% of profiles from 2 to 5 were observed. Only profiles 6 and 7 were significantly different from the other profiles in relation to F%. In relation to men, profiles 2, 3 and 4 presented no significant differences between

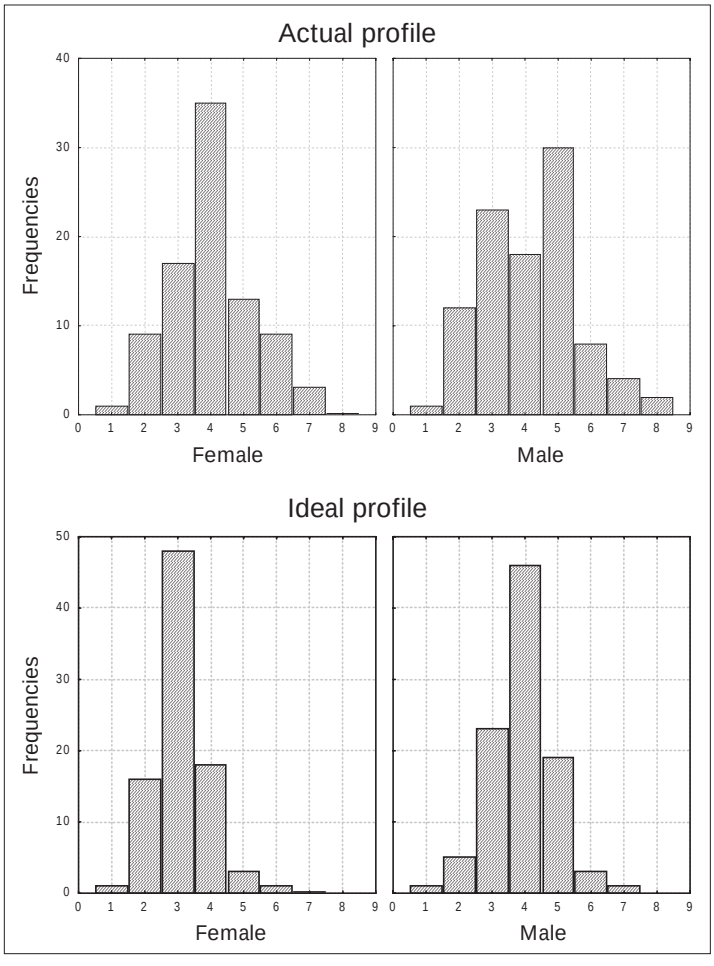

Fig. 2 *– Sample distribution in relation to the choice of actual and ideal profiles of men and women*

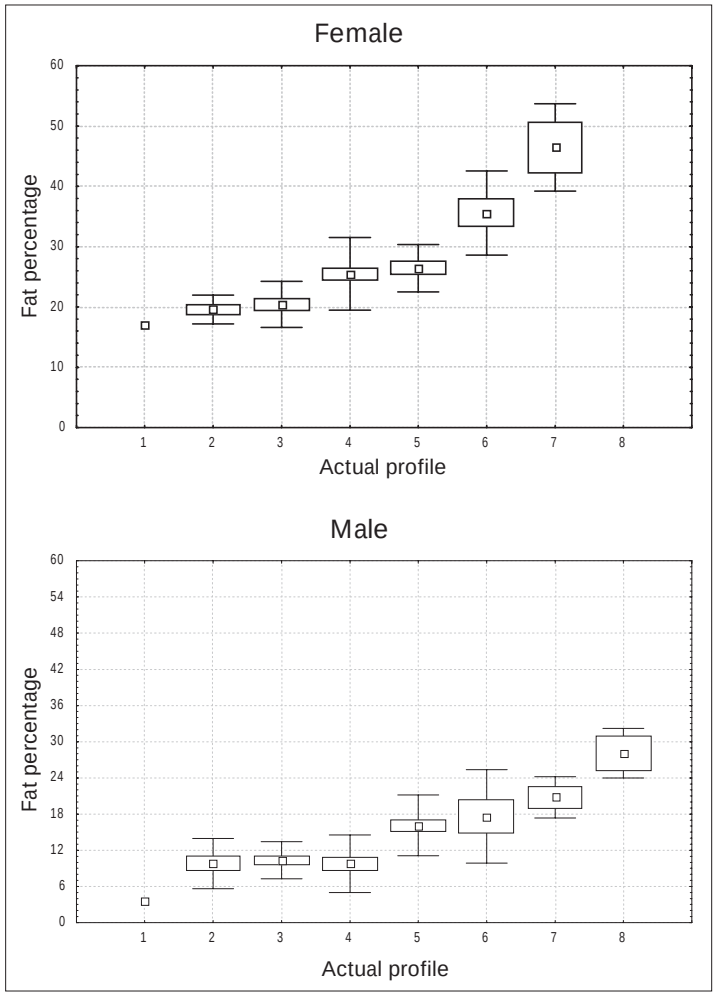

Fig. 3 *– Fat percentage by actual profile of men and women (average, standard deviation and 1.96 standard deviation)*

TABLE 3
Ideal profile and ideal-actual difference

Actual profile	Profile			
	Men		Women	
	Ideal	Ideal-Actual	Ideal	Ideal-Actual
1				
2	4.0	2.0	2.0	0.0
3	4.0	1.0	3.0	0.0
4	4.0	0.0	3.0	–1.0
5	4.0	–1.0	3.0	–2.0
6	4.5	–1.5	4.0	–2.0
7	5.5	–1.5	5.0	–2.0
8	6.0	–2.0		
All	4.0	0.0	3.0	–1.0

each other as well as profiles 5, 6, 7 and 8. Only between profiles 2, 3 and 4 and profiles 5, 6, 7 and 8, significant differences in relation to F% were observed.

In figure 4, the BMI values in relation to AP of both genders were plotted. For the female group, profiles 2, 3 and 4 were not statistically different from each other. Profile 5 is significantly different from profiles 2, 6 and 7, but not significantly different from profiles 3 and 4. Profiles 6 and 7 are significantly different from the other profiles ($p < 0.05$). For male group, profiles 2, 3 and 4 presented no significant differences between each other, and the same occurred between profiles 5, 6, 7 and 8. It seems to exist two set of profiles: upper and lower profiles. Significant differences were found between these two groups of profiles in relation to the BMI values.

BMI and F% values were plotted in relation to AP for women (figure 5) and men (figure 6). For women, significant correlations were observed for BMI and F%, $r = 0.75$ and $r = 0.70$ respectively. For men, as for women, significant correlations were observed for BMI and F%, $r = 0.79$ and $r = 0.60$ respectively.

DISCUSSION

The objective of this study was to identify the ideal physical type and dissatisfaction with body image of a group of regular walkers. It was considered that, in the morphological evaluations performed by the physical activity programs, the adoption of the BMI and F% values recommended for good health conditions (25 kg/m^2 and 15% for men and 25 kg/m^2 and 25% for women) could lead to disagreement with bodies that our culture considers as ideal. The set of profiles proposed by Stunkard *et al.*[29] was used as instrument.

In relation to the instrument used, several limitations can be mentioned: profiles are two-dimensional and therefore they do not allow the representation of the individual as a whole, the distribution of his subcutaneous fat mass and other anthropometrical aspects relevant for the body image formation[34]. Other limitation that could be pointed, especially in the AP identification, is the fact that the instrument used is subjective. Due to its simplicity, it could also neglect complex aspects such as the influence of family, friends, relatives, media and, in some cases, of some pathologies such as anorexia, bulimia and reverse anorexia, which are well-known intervenient variables in the body image formation process[1,12,35-41].

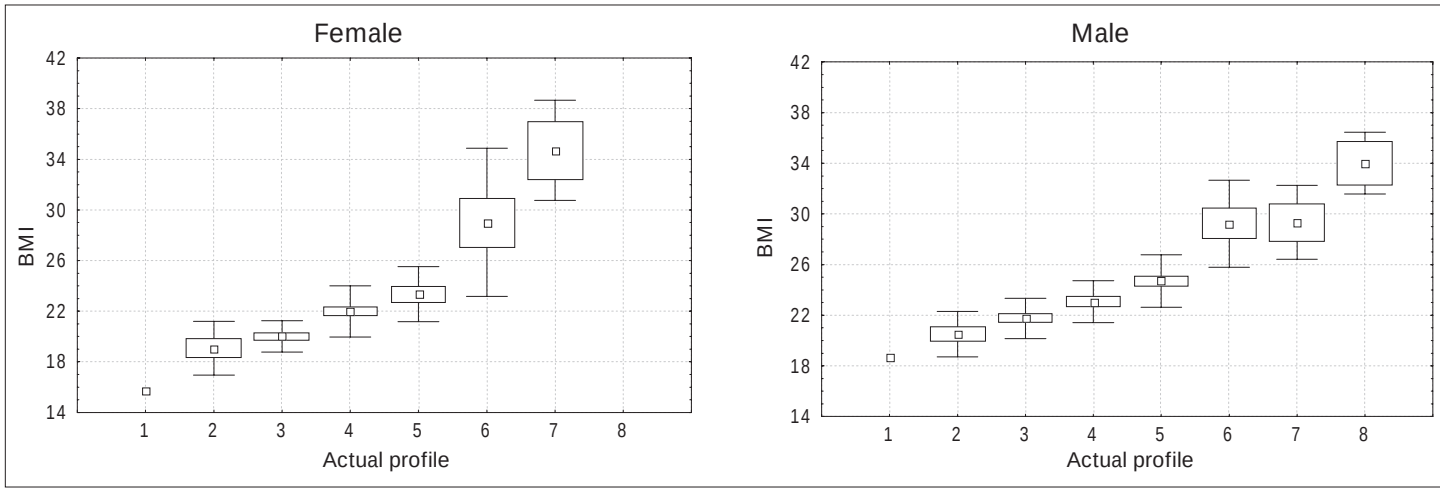

Fig. 4 *– Body mass index by actual profile of men and women (average, standard deviation and 1.96 standard deviation)*

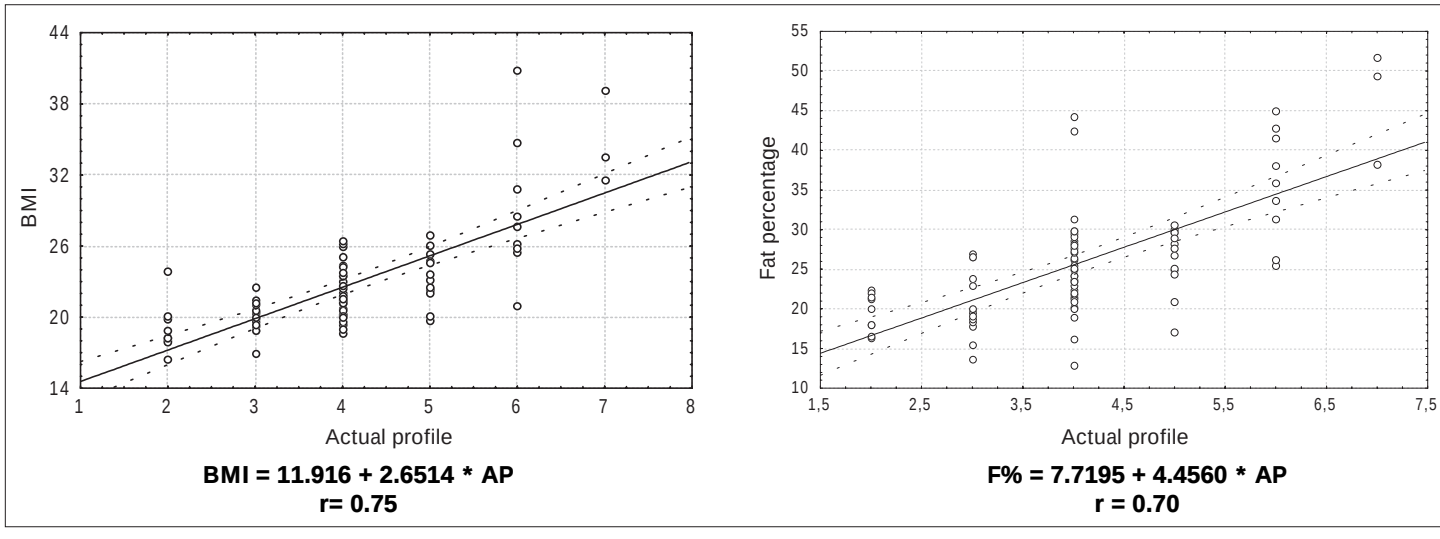

Fig. 5 *– Plotting of the body mass index and fat percentage in relation to female actual profile*

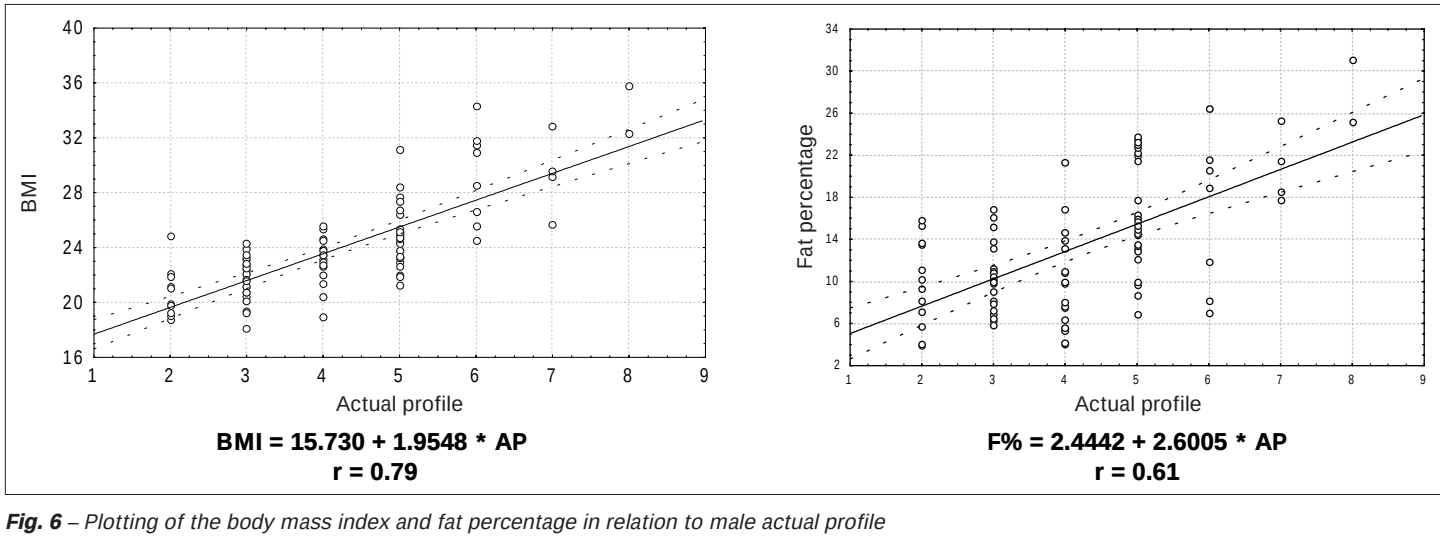

Fig. 6 *– Plotting of the body mass index and fat percentage in relation to male actual profile*

Despite the limitations presented, the strong correlations of MBI and F% with AP (r = 0.75 and r = 0.70, for women and r = 0.79 and r = 0.61 for men) demonstrate that, for the sample studied, the set of profiles was effective with regard to the AP identification. The group studied presented good perception of their body dimensions. Thus, the use of the average BMI and F% values grouped by AP is valid in the characterization of the ideal physical type.

The individuals who initiated a physical activity program, in most cases and somehow, search to modify the shape and proportions of their bodies. The amount of body fat is important factor for the health maintenance and in our culture, the low amount of body fat became a factor of undeniable aesthetic value[20,42]. This exacerbated valorization of the low body fat levels exposed by media, the comparison between individuals from the same environment be-

sides the opinion of the own family lead people to present high levels of dissatisfaction with the body appearance[1,42]. Such dissatisfaction, in extreme cases, may lead to the adoption of self-destructive behaviors, such as the abuse of diets that may end up in bulimia and anorexia nervosa[43-46].

The BMI and F% determination for male and female profiles (table 4) allowed verifying the ideal physical type desired by the sample studied. For women, the profile 3 was considered as ideal, which corresponds to values of F% and BMI of 20.5 of F% and 20.0 kg/m^2, respectively. Through values of BMI and F%, one observes that women would rather want thinner bodies with lower body volume than profiles recommended for good health conditions. Corroborating these findings, Cachelin *et al.*[47], also using the profiles of Stunkard[29], found that women tend to select smaller profiles than the actual ones. In literature, one can also find several studies reporting that the female ideal body standard or physical type is associated with low body weight and low fat percentage[6,7,9,10,12,13,48,49].

Men, in turn, adopted profile 4 as ideal, whose values of F% and BMI are 9.8 F% and 23.1 kg/m^2, respectively. One observes the male tendency of searching for a body with higher volume and lower amount of body fat. It was observed that the men who identified themselves with profile below 4 wanted to increase profile, reflecting the desire of presenting higher amount of body mass. These results corroborate findings of Pope Jr. *et al.*[15], who performed an experiment to identify the ideal physical type in relation to body fat and muscular mass of men in three different countries, Austria, the United States and France, and found a consensual desire of reducing fat percentage and increasing muscular mass. American and Austrian men considered 10.0% of fat percentage as ideal, while French men desired fat percentage around 13%. Concerning the muscular mass, the men of the three countries had a desire of increase around 14 kg.

In relation to body dissatisfaction, women presented dissatisfaction level similar to men, 76% and 82%, respectively. These findings are not in agreement with results found by Lokken *et al.*[50], Araújo and Araújo[51], Cachelin *et al.*[47] and Pingitore *et al.*[52], who verified higher body dissatisfaction level among women when compared to men. Loland[24] investigated 1,555 Norwegian males and females from different age ranges and physical fitness and verified that men are significantly more satisfied than women, regardless age and physical fitness levels.

The body image dissatisfaction leads people to search for physical activity programs[21-24,53]. Women search for the leanness ideal, and men, on the other hand, search for being stronger and larger. A well-elaborated physical activity program may reduce body weight, as desired by women, or increase muscular mass, as desired by men. In fact, the practice of physical activities may lead individuals to reach body they consider as ideal. There are studies that report association between physical activity and high levels of body satisfaction[23,53,55]. However, the practice of physical activity, in some cases, may result in negative outcomes causing women to be concerned with weight[56,57] and men to present the phenomenon known as muscle dysmorphia or reverse anorexia[58,59]. Health promotion researchers should include the concern with possible negative effects of the practice of physical activity in their reports.

CONCLUSION

One may conclude that men want to have low fat percentage, stronger and larger bodies, with values of 9.8 F% and 23.1 kg/m^2 of BMI, and women consider as ideal a leaner and thinner body, with values of 20.5 F% and 20.0 kg/m^2 of body mass index. Once only a few individuals present bodies with such dimensions, most individuals studied are dissatisfied with their body image regardless gender, but no statistical differences between genders were observed.

All the authors declared there is not any potential conflict of interests regarding this article.

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