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Differences in muscular strength acquisition between gender schema typological groups
Diferenças na aquisição de força muscular entre grupos tipológicos de esquemas de gênero

G.F. Melo, A. Giavoni (in memorian), M.R.M. Custodio

ABSTRACT
The objective of this study was to evaluate whether gender schema typological groups differ in their muscular resistance and level of satisfaction while training. The sample was composed by 52 sedentary women classified into typological groups (Masculine Heteroschematic MH, Feminine Heteroschematic FH and Isoschematic ISO) prescribed by the Interactive Model. 1RM and RM tests were applied to evaluate strength and one item was elaborated to evaluate satisfaction level with training. The results demonstrated that the MH and ISO gained greater muscular resistance when compared to FH, but there were no differences among groups regarding satisfaction. The sport modality features associated with the predominant gender schema elicited distinct motivational responses in relation to the modality, resulting in different levels of sporting achievement.

Keywords: cognitive schemas, strength, physical performance, psychological profile, interactive model

RESUMO
O objetivo deste estudo foi investigar como os grupos tipológicos de gênero diferem na resistência muscular e no nível de satisfação com este treinamento. A amostra foi composta por 52 mulheres sedentárias classificadas em grupos tipológicos (heteroesquemático masculino - HM, heteroesquemático feminino - HF e isoesquemático - ISO) prescrito pelo Modelo Interativo. Testes de 1RM , RM foram aplicados para avaliar a força e um outro para avaliar o nível de satisfação com o treinamento. Os resultados demonstraram que as HM e ISO obtiveram ganho de força maior comparado com as HF, mas não houve diferenças entre os grupos em relação ao nível de satisfação. As características da modalidade esportiva associadas à predominância do esquema de gênero demonstram distintas respostas motivacionais em relação a esta modalidade, resultando em diferentes níveis de realização desportiva.

Palavras-chave: esquemas cognitivos, força, performance física, perfil psicológico, modelo interativo

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Conceived as a cognitive, multidimensional, multifaceted and adaptable structure composed of a collection of self-representations, the self-concept associates, organizes and coordinates a variety of images, schemas, theories, concepts, goals and ideas we possess regarding ourselves (Bracken, 1996; Markus & Kunda, 1986; Markus & Nurius, 1986; Markus & Wurf, 1987).

This structure is formed from perceptions and conjectures that the individual believes they are exerting over others, the judgment that significant others make regarding the individual, combined with a species of self-sentiment (pride or shame) resulting from this social interaction (Epstein, 1973; Harter, 1996).

Certain authors emphasize that this multifaceted structure is formed by a central nucleus composed of important concepts related to identity, denominated schemas (Markus & Kunda, 1986; Markus & Nurius, 1986). Among these, gender schemas are found, related to social constructs of masculinity and femininity. These schemas are complex cognitive structures composed of a series of images, symbols, features, values, norms, roles and experiences acquired throughout life and that are used to understand and evaluate any stimulus related to gender (Bem, 1981, 1982, 1984; Markus, 1977; Mills, 1983).

Thus, the living experiences of features, values, norms and roles pertaining to masculinity form a masculine schema, similarly a feminine schema is formed from living experiences of attributes, roles, values and norms pertaining to femininity. These schemas function as filters that permit the individual to perceive, organize and comprehend similar stimuli to its structure and reject all stimuli not similar to the same. Markus (1977) demonstrated that individuals differed in relation to gender schemas, with individuals presenting: a) a masculine schema, b) a feminine schema, c) both schemas and d) aschematic. Posterior studies revealed that these individuals differed in relation to: a) word memorization, with masculine schematics tending to memorize more words related to masculinity than to femininity, with the inverse occurring for feminine schematics (Bem, 1981; Mills, 1983; Markus, Krane, Bernstein, & Siladi, 1982); b) word attribution, i.e. masculine schematics more rapidly attribute to themselves characteristics consistent with the masculine schema than in relation to the feminine schema, again with the inverse occurring for feminine schematics (Bem, 1981; Markus et al., 1982); c) individuals engage in behaviors consistent with the dominant schema and avoid activities considered inappropriate to the same (Frable, 1989; Lobel & Menashri, 1993); and d) the perception of other or event is consistent with the dominant schema (Lippa, 1983, 1997).

For individuals who present both schemas proportionally and for the aschematics, Markus et al. (1982) observed that these presented no significant differences regarding endorsement, memorization and latency when judging masculine and feminine items. These groups were as fast at endorsing and memorizing masculine items as masculine schematics and as fast at endorsing and memorizing feminine items as feminine schematics and are distinguished only by the reliability of their responses, with more consistent responses given by the former than by the latter.

Based on the Self-schema theory (Markus, 1977), Giavoni e Tamayo (2010) postulated the Interactive Model. This model was designed to mathematically express the psychological synthesis resulting from the relation or interaction that is established between opposing constructs and it was initially applied in masculine and feminine gender schemas. In the model, masculine schema and feminine schema are two independent dimensions that are represented by the vectors EM and EF. Three variables resulting from the model, which are: a) Angle variable: defines proportionality between masculine and feminine schemas, b) Distance variable: which evaluates the schema development or magnitude and c) Synthesis variable: resulting from the inter-
section of the angle and distance variables, that measures the synthesis process of the opposing pairs. This intersection produces a series of fields in the vectorial plane, which define different typological groups with different pattern of cognition, affections and behavior, as well as, synthesis level.

In this study, it was only used the angle variable, which defines three main groups that determines proportionality between these schemas. The Isoschematic (ISO): composed of individuals who present proportionality between EM and EF. These schemas will tend to influence an individual’s perceptions, both of themselves and others, resulting in differentiated feelings, judgments and decisions. The Masculine Heteroschematics (MH) composed of individuals who present a predominance of EM over EF. These individuals will tend to filter information according to the cognitive network that forms the masculine schema, with their feelings, affections, judgments and decisions ruled by the content of this schema; and the Feminine Heteroschematics (FH): composed of individuals who present a predominance of the EF over EM. These individuals will tend to filter information according to the cognitive network that forms the feminine schema, with their feelings, affections, judgments and decisions ruled by the content of this schema.

In this context, this study aimed to compare differences in resistance acquisition in sedentary women, classified as Masculine Heteroschematics (MH), Feminine Heteroschematics (FH) and Isoschematics (ISO). In addition, evaluation as to whether these groups differed regarding their levels of satisfaction during the execution of resistance strength training was realized.

The hypotheses of this study were based on the fact that the majority of sports are considered to be composed of masculine traits (Lantz & Schroeder, 1999; Schmalz & Davison, 2006) and, in this context, weight training is a modality that involves many masculine traits (muscular hypertrophy, pain tolerance, vigor, persistence, etc.), with the main trait being strength itself.

This signifies that individuals presenting a developed masculine schema (MH and ISO) will tend to assimilate and accept the masculine stimuli inherent to this modality more easily than the FH. Moreover, in virtue of the masculine traits present in the masculine schema, these individuals will tend to engage in this activity without presenting the psychic resistance of being introduced to an activity inconsistent with the dominant schema (Frable, 1989; Lobel & Menashri, 1993). The similarity between sport modality features associated with the predominant gender schema result in greater motivation and, therefore, greater perseverance and resistance against adverse stimuli, such as fatigue (Gomes, Sotero, Melo, & Giavoni, in press) and pain (Leite, 2009) present in resistance strength training programs.

Equally, it is expected that the Feminine Heteroschematic will present lower levels of achievement and lower levels of satisfaction in the execution of resistance strength training programs, since they present traits that are inconsistent with the weight training modality.

In the literature, studies exist reporting that men and women athletes are: a) perceived as more masculine (Lantz & Schroeder, 1999; Killeya-Jones, 2005; Martin & Martin, 1995), b) present personality traits related to masculinity, such as self-discipline, self-confidence, dominance, aggressiveness, assertiveness, strength, competitiveness, objectivity, mental capacity to resist strain, fatigue and pain, low tension, less anxiety, extrovert behavior, independence, the need for personal realization and greater effort in the realization of daily or specific tasks compared to non-athletes. (Bara Filho, Ribeiro, & Garcia, 2005; Koivula & Hassmén, 1998; Martin & Martin, 1995; Weinberg & Gould, 1995;), c) female athletes express greater concern about physical training with weight lifting than males (Duff, Hong & Royce, 1999), d) related to gender roles, female sex-typed lived more role conflict
in sports practice than masculine sex-typed and androgynous (Desertrain & Weiss, 1988) and e) sex-typed females when compared with androgynous and masculine sex-typed reported less commitment to masculine sports (Matteo, 1986). However, no studies were found that evaluate the relation between gender schemas and physical performance, using the gender schemas typological groups.

METHODS

Participants

This was a convenient sample composed of 52 women who had not practiced regular exercise for at least a year, with a mean age of 26.33 (SD = 4.8) years-old and mean weight of 59.85 (SD = 7.81) Kg. Initially the sample was treated as a single group (n = 52) and classification of the individuals into gender schemas typological groups (GSTG) only occurred after the conclusion of data collection, giving the study a double-blind character.

Prior to the onset of the research the participants were invited to sign a term of free, informed consent and the study was approved by the Ethics in Research Committee of the Catholic University of Brasilia under protocol number 03 CEP/UCB/2007.

Measures

Psychological Instruments

To classify the individuals into gender schemas typological groups (HM, FM and ISO), the Feminine Inventory of the Self-Concept’s Gender Schemas (IFEGA) was used (Giavoni & Tamayo, 2005).

It was used Fatorial Analysis and Cronbach’s Alpha to validate this instrument and it is composed of 75 items that evaluate three aspects of the masculine schema (Audacity, \( \alpha = .87 \); Egocentrism, \( \alpha = .83 \) and Negligence, \( \alpha = .73 \) factors) and three aspects of the feminine schema (Sensuality, \( \alpha = .92 \); Inferiority, \( \alpha = .82 \) and Social Adjustment, \( \alpha = .77 \) factors). The items of each factor are answered using a five-point scale, in which 0 indicates that the item does not apply to the respondent up to 4, indicating that the item totally applies to the respondent.

To assess the level of satisfaction in relation to the resistance training it was elaborated one item which varied from 0 to 4, where the greater the value assigned, the greater the satisfaction with the training.

Evaluation of maximum strength 1RM test

To predict the training load for resistance strength, one maximum repetition (1RM) tests were performed. For the execution of the initial 1RM tests, familiarization with the equipment and body warm-up were realized. For the first test, the maximum load was estimated based on body weight. After estimating the maximum load, the individual tried to perform 2 to 3 repetitions using good technique. If they managed to perform more than 3, the load was increased 5 to 10% for upper limbs and 10 to 20% for lower limbs and when they were unable to perform any repetitions, the load was reduced in the same proportions.

Procedures

Data collection occurred in two distinct stages, defined as adaptation and muscular resistance training.

Adaptation training: This stage lasted 15 days, during which the individual underwent adaptation to the weight training equipment (Bench Press (BP), Biceps Machine (BM), Seated Row Machine (SRM), Extensor Bench (EB), Leg Flexion Bench (LFB) and Leg Press (LP)). The exercises alternated between upper and lower limbs, which consisted of 3 series of 15 repetitions, with 2 minute rest intervals between series and equipment changes.

For estimation of the initial loads a subjective scale of individual strength was used, varying from 0 to 10, in which indices between 4 and 6 were defined as the ideal load for the onset of the adaptation.

Muscular resistance training: After the adaptation, 1RM tests were performed to determine the initial loads for resistance training. For the RM test, the individual aimed to perform the
maximum number of repetitions on the machine using a load that was 60% of the maximum obtained in the 1RM test. These loads obtained from the RM tests were used in the training (pretest 1).

Upper and lower limb exercises were performed alternately (Dantas, 2003; Fleck & Kramer, 1999). Training sessions consisted of three series of 25 repetitions, with 2 minute intervals between series and equipment changes. After four weeks training, the participants performed a new battery of 1RM and 60% of the maximum obtained in the 1RM test in each machine was used to readjust the loads (posttest 1). After readjustment, training continued for four weeks when a new battery of 1RM and RM (60% of 1RM) tests were performed again (post-test 2) and also they responded the item assessing the degree of satisfaction felt when realizing muscular resistance training.

Data Analysis

It was used paired sample t test to define the Isosquematic group. One Way Analysis of Variance to describe differences in age and body mass among typological groups and Analysis of Covariance (Ancova) with mixed design using pretest as covariate, typological groups (MH, ISO, FH) and training period (post-test 1 and post-test 2) as independent variable and the resistance of the upper (Bench Press, Biceps Machine and Seated Row Machine) and lower limbs (Extensor Bench, Leg Flexion Bench and Leg Press) as dependent variables to evaluate differences among groups and training periods. The significant level was stipulated in 5%.

RESULTS

Classification into gender schemas typological groups

To classify the individuals into gender schemas typological groups it was used the IFEGA. Two vectors can be obtained by this instrument, denominated – Masculine Votor (MV) and Feminine Votor (FV). The masculine votor (MV) can be obtained by the equation:

\[
\text{Masculine Votor} = \sqrt{\sum (Audacity)^2 + (Egoctrism)^2 + (Negligence)^2}
\]

and the feminine votor (FV) by the equation:

\[
\text{Feminine Votor} = \sqrt{\sum (Sensuality)^2 + (Inferiority)^2 + (Social Adjustment)^2}
\]

The scores obtained by these vectors (MV; FV) insert the individual in the vetorial plane. The dislocation between the individual in the vetorial plane (MV; FV) and the bisector (that divides the plane in two areas – masculine area and feminine area) is determined by angle \(a\) (where \(a = 45 – \arctg e\) and \(Tg e = MV/FV\)). This angle permits classify the individual in typological groups, because this angle represents the proportionality that exists between MV and FV. Thus, the smaller the dislocation of the ordered pair (MV; FV) in relation to the bisector, the more isometric the schemas will be; inversely, the greater the dislocation of the ordered pair (MV; FV) in relation to the bisector, the more heterometric the schemas will be. Figure 1 shows the fields and groups disposition formed by angle variable.

The Isosquematic group (ISO) is the first group defined by the vetorial plane. To define this group, it is necessary to find a field where there is no difference between MV and FV, evaluated by paired sample t test. From this analysis, the Isoschematic group (ISO) (field with deviations between \(-3.82^\circ < a < +3.82^\circ\)) was composed of 22 individuals with a mean age of 27.27 (SD = 4.83) years-old and mean body mass of 58.41 (SD = 7.99) kg.

The Masculine Heteroschematic group (MH) (field with a \(< -3.82^\circ\)) was composed of 15 women, with a mean age of 26.40 (SD = 4.09) and mean body mass of 58.20 (SD = 8.09) kg and the Feminine Heteroschematic group (FH) (field with a \(> +3.82^\circ\)) was composed of 15 women, with a mean age of 24.87 (SD = 4.09) and mean body mass of 63.60 (SD = 6.30) kg.
Due to the size of the groups, exploratory analyses of the data were realized according to typological groups, in order to evaluate missing cases and deviations from normality (Kolmogorov-Smirnov test) in the dependent variables. Missing cases did not occur and the variables Press Bench, Biceps Machine, Seated Row Machine and Flexion Bench presented deviations from normality, with the outliers adjusted for extreme values of plus or minus one unit for upper and lower outliers, respectively (Tabachnick & Fidell, 1996).

After the exploratory analysis, there were no differences between groups in age $F(2.49) = .46, p = .63$ and body mass $F(2.49) = 2.05, p = .14$.

Table 1 shows the means and standard deviations obtained for the covariance analysis with mixed designs. The significant level obtained for the covariant effects are also presented in this table [covariates ($p$)]. As can be seen, in the Leg Flexion Bench and Leg Press, the groups presented differences in pretest, adjusted by the analysis.

An interaction effect between Typological groups × Training period was found in the Bench Press $F(2.48) = 6.74, p = .003$, Seated Row Machine $F(2.48) = 4.37, p = .02$, Extensor Bench $F(2.48) = 6.19, p = .004$ and Leg Press $F(2.48) = 5.29, p = .008$ exercises. In the Bench Press, observation revealed that in post-test 1, FH differed from the ISO and MH groups and in post-test 2, all the groups showed significant differences between each other.

In the Seated Row Machine and Extensor Bench, post-test 1 showed that all groups differed between each other and in post-test 2 only the MH differed from the other groups. In the Leg Press, MH differed from ISO and FH in

![Figure 1. Fields and typological groups formed by angle variable](image-url)
Table 1.
Mean (SD) and the Covariates Effects obtained by the Groups in the Resistance Training (Number of Maximum Repetitions)

<table>
<thead>
<tr>
<th>Groups</th>
<th>TP</th>
<th>BP</th>
<th>BM</th>
<th>SRM</th>
<th>EB</th>
<th>LFB</th>
<th>LP</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post 1</td>
<td>36.11</td>
<td>32.74</td>
<td>41.16</td>
<td>46.61</td>
<td>33.58</td>
<td>46.87</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.31)</td>
<td>(.21)</td>
<td>(.24)</td>
<td>(.50)</td>
<td>(1.23)</td>
<td>(.24)</td>
<td></td>
</tr>
<tr>
<td>Post 2</td>
<td>42.54</td>
<td>37.80</td>
<td>49.75</td>
<td>61.83</td>
<td>43.32</td>
<td>60.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.41)</td>
<td>(.27)</td>
<td>(.41)</td>
<td>(.50)</td>
<td>(.72)</td>
<td>(.34)</td>
<td></td>
</tr>
<tr>
<td>MH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post 1</td>
<td>37.24</td>
<td>33.17</td>
<td>43.14</td>
<td>48.99</td>
<td>37.13</td>
<td>45.92</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.59)</td>
<td>(.36)</td>
<td>(.32)</td>
<td>(.72)</td>
<td>(1.75)</td>
<td>(.32)</td>
<td></td>
</tr>
<tr>
<td>Post 2</td>
<td>45.28</td>
<td>38.89</td>
<td>50.64</td>
<td>63.16</td>
<td>44.62</td>
<td>60.72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.78)</td>
<td>(.46)</td>
<td>(.54)</td>
<td>(.72)</td>
<td>(1.03)</td>
<td>(.46)</td>
<td></td>
</tr>
<tr>
<td>FH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post 1</td>
<td>34.69</td>
<td>32.10</td>
<td>38.31</td>
<td>43.22</td>
<td>37.82</td>
<td>47.04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.46)</td>
<td>(.34)</td>
<td>(.33)</td>
<td>(.71)</td>
<td>(1.85)</td>
<td>(.32)</td>
<td></td>
</tr>
<tr>
<td>Post 2</td>
<td>39.84</td>
<td>36.67</td>
<td>48.10</td>
<td>59.70</td>
<td>45.19</td>
<td>60.48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.61)</td>
<td>(.44)</td>
<td>(.56)</td>
<td>(.71)</td>
<td>(1.09)</td>
<td>(.46)</td>
<td></td>
</tr>
</tbody>
</table>

| Covariate (p) | .54  | .51  | .47  | .06  | .05  | .005 |
| η²              | .22  | .26  | .15  | .21  | .24  | .18  |

Note: Dependent Variables: Bench Press (BP), Biceps Machine (BM), Seated Row Machine (SRM), Extensor Bench (EB), Leg Flexion Bench (LFB), Leg Press (LP). TP = Training period, PE = Principal Effect. Covariate (p) = Significant level obtained for the covariates.

post-test 1 and there were no differences in post-test 2.

Although all the groups showed improvement in resistance, at the end of muscular resistance training, MH presented a greater number of repetitions when compared to the other groups. Only in the Leg Press, the result not showed the same pattern.
For the Biceps Machine there were principal effects in Training period $F(1,48) = 16.77$, $p = .001$, where all groups showed improvement in muscular resistance between post-test 1 ($M = 32.67; SD = .15$) and post-test 2 ($M = 37.78; SD = .20$) and in the Typological groups $F(2,48) = 3.80$, $p = .03$, where MH ($M = 36.03; SD = .38$) showed greater resistance when compared to FH ($M = 34.38; SD = .37$).

The same result could be seen in the Leg Flexion Bench $F(1.48) = 15.14$, $p = .001$, where all groups showed improvement in muscular resistance between post-test 1 ($M = 36.18; SD = .89$) and post-test 2 ($M = 44.37; SD = .52$).

With respect to the degree of satisfaction felt when realizing the resistance training, the result showed no differences between the groups ($F(2.49) = 1.70$, $p = .19$).

A final analysis was realized that evaluated whether the groups differed in relation to the number of training absences; however, no significant differences were found regarding absences during resistance training ($F(2.49) = .68$, $p = .51$).

**DISCUSSION**

Although all the groups achieved marked improvement, both regarding resistance and maximum strength throughout the training programs, the results verified that the performance of the MH and ISO groups was superior to the other group analyzed. Moreover, the analysis showed that the groups started at a different level of strength in only four variables, but in the same way, after training, the MH and ISO continues to differentiate itself, presenting improved achievements.

It is likely that this high efficiency in the MH and ISO groups is due to the dominating masculine schema, which possesses traits that are indispensable to good performance in this sporting modality; for example, perseverance, resistance to fatigue (Gomes, Sotero, Melo, & Giavoni, in press), pain tolerance (Leite, 2009), aggressiveness and greater competitiveness (Melo, 2008) when seeking better results. Some of these traits like aggressiveness, competitiveness, rationality and perseverance are evaluated by IFEGA and these traits are inherent to the masculine scale of this instrument, linked to the Audacity and Egocentrism factors.

Thus, observation revealed that the groups that possesses these predominant traits does not see weight training as an activity that is inconsistent to its schema and nor with its gender, resulting in greater commitment and motivation while performing this modality. This can be verified by the differences between the groups concerning the degree of satisfaction felt when realizing resistance and maximum strength training, in which the MH presented greater satisfaction precisely in the training that required the greatest perseverance and tolerance to pain and fatigue.

These results corroborate the basic studies by Markus et al. (1982); Bem (1981); Levy and Carter (1989); Liben and Signorella (1993) in relation to the tendency that masculine schematics possess of quickly attributing to themselves characteristics similar to the dominant schema, as well as committing to activities consistent with the predominant schema (Frable, 1989; Helmreich, Spence, & Holahan, 1979; Lobel & Menashri, 1993). Equally, these individuals tend to perceive the other and events according to the predominant schema (Andersen & Bem, 1981; Lippa, 1997, 1983) and, in this case, verification shows that the MH group perceived weight training to be composed of attributes similar to those that constitute the masculine schema.

Indirectly, the results also complement those obtained by Bara Filho et al. (2005), Martin and Martin (1995), Koivula and Hassmén (1998) when relating personality traits with sporting achievement, in that athletes present a predominance of traits pertaining to masculinity, such as self-discipline, self-confidence, dominance, aggressiveness, assertiveness, seeking realization, objectivity, competitiveness, mental capacity to resist strain, independence, the need for personal realization...
and greater effort in the realization of daily or specific tasks compared to nonathletes.

In the present study observation showed the similarity between the personality traits and the nature of the sporting modality imprint greater motivation on the individuals that present a predominance of the masculine schema over the feminine schema.

Another way of proving the influence of the masculine schema regarding the efficiency of the activity analyzed lies in the ISO group, which presented intermediary performance between the MH and FH groups. This group presents equilibrium in the development of the masculine and feminine schemas and, therefore, despite recognizing in themselves the attributes of masculinity capable of resulting in definitive improvement in weight training, they also possess, in equal measure, elements of femininity that balance the dominance of the masculine schema with traits of lightness, delicacy, smoothness, emotiveness, etc. It is very probable that this equilibrium leads these individuals to assume different attitudes in relation to practicing sports, since while they dedicate themselves to the modality without considering it inconsistent with their personality traits, their self-demands in relation to performance are diminished, leading to a reduction in stress and frustration, or better management of the same, and, consequently, with aggression.

Finally, observation revealed that the FH group, despite the improvement in both muscular resistance and maximum strength after training, did not achieve the performance of the groups that presented a more developed masculine schema. Given that the sporting modality possessed strong masculine traits, this group tended to perceive weight training as being inconsistent, both in relation to their predominant schema and in relation to their gender (Andersen & Bem, 1981; Frable, 1989; Helmreich et al., 1979; Lippa, 1997, 1983; Lobel & Menashri, 1993). This resistance in executing activities presenting a predominance of masculine traits is proven by the low levels of satisfaction that the group presented when realizing maximum strength training.

It is important to emphasize that the groups did not presented significant differences in age and body mass. The first tendency in this type of results is link the differences between groups with body composition, and affirms that MH and ISO presented high levels of muscular mass than the other group. Although, the body composition was not evaluated in this study, the ancova analysis guarantees that the initial strength was the same in all groups.

Of some interest are the results in resistance training, in the Leg Press variable, in which the groups presented no significant difference in the post test 2. This is probably due to social desirability in Brazilian culture, since the muscular group trained using the Leg Press machine, the thighs, falls within the feminine stereotype of beauty and is therefore one of the symbols that configure sexual attractiveness.

Furthermore, the results obtained by the FH corroborate the research of Bowker, Gadbois, and Cornock (2003), Desertrain & Weiss (1988) in which female-oriented women perceived sports as highly masculine and, therefore, counter to the social desirability stipulated for their gender. These types of women reject competitive sports and prefer recreative oriented sporting modalities.

These results permit the conclusion that differences exist in sporting achievements among individuals of the same gender and that care should be taken not to make simplistic generalizations regarding female athletes; for example, that they all present similar personality traits because they are women and athletes. It is highly likely that FH athletes present better achievements in sports possessing a predominance of feminine characteristics than athletes pertaining to the other gender schema typological groups.

This can be consider a relevant contribution of the present study, although we are aware that numerous variables require measurements
in such a manner that they explain these initial results more precisely; i.e., the relation and influence of gender schemas with regard to sporting achievements. Moreover, the present study opens the way for new perspectives when considering that such differences are not found at the sex level, but rather at the gender level. At the psychological level, it can be affirmed that these two dimensions (masculine and feminine schemas) act on individual subjectivity as opposing pairs, resulting in differentiated perceptions, cognitions, affections and behaviors, presented in typological groups.

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Conflicts of Interest:
Nothing to declare.

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Nothing to declare.

REFERÊNCIAS


