

# Perceptions of strength training practitioners on nutritional aspects Strength Training and Nutrition

## Abstract

This study aims to identify the knowledge that strength training practitioners have about nutritional aspects. This research presents a qualitative approach to the data, despite the possibility of providing quantitative information, aiming to discover the reality of the dietary conduct adopted by the subjects participating in the sample. The sample consisted of 20 resistance training practitioners, of both sexes, aged between 16 and 45. We used two questionnaires in data collection. The findings show that 85% of the subjects participants never obtained recommendations nutritionally supported by nutritionists, and 67% supplement without monitoring. The participants expressed knowledge of moderate nutritional status—the results point for a probable correlation between the level of knowledge and education.

**Keywords:** nutrition, physical education, professional practice, health, supplement

Volume 14 Issue 5 - 2021

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**Received:** January 11, 2020 | **Published:** October 11, 2021

## Introduction

The demand for physical activity continues to grow, as people are increasingly aware of how crucial it is for health and quality of life. However, the desire for the aesthetic results that such activities provide is why it has most elevated the demand for gyms or leisure and gym centers.<sup>1</sup>

Most strength training practitioners want a healthy and aesthetically beautiful body.<sup>2</sup> To obtain such a result, many practitioners end up acquiring a certain compulsion for the exacerbated practice of resistance training.<sup>3</sup> The muscular functioning under effort or not, depends on typical conditions and needs adapting the food to the individual's energy expenditure.<sup>4</sup>

Since strength training, as physical activity, promotes a marked increase in lean mass<sup>5</sup> in the same way, the management of the energy balance is of fundamental relevance, as the exercise itself increases energy expenditure/calorie and, consequently, the need for compensation through nutrients, and thus supply the energy expenditure affected by training.<sup>6</sup>

The energy balance is the association between intake and calorie deficit, elements that corroborate the increase or decrease in energy reserves. The wrong energetic oscillation can lead to loss of muscle mass, bone mass, and possible hormonal disorders, compromising physical capacity and making it possible to put the individual's health at risk.<sup>7-9</sup>

A balanced diet is indispensable to ensure that practitioners of physical activity reach their goals, be they in physical, aesthetic, or quality of life.<sup>10</sup> With the premise that training strategies fundamentally depend on their practitioners' dietary habits, understanding how nutrients work in the body becomes essential and a valuable aid to exercise programs developed in gyms.<sup>11</sup> The current condition of society has inflicted on individuals an agitated way of life, making their subsistence precarious, and their dietary routines weakened. In this situation, some individuals practice strength training, often engage in most of their time with work or studies and often find it challenging to adapt their training to a food intake that sufficiently favors them achieving satisfactory results.<sup>7</sup>

However, there is a lack of understanding of what would be appropriate to consume, how and when to consume it, due to the lack of reliable information and adequate nutritional guidance.<sup>10</sup> Also, many feel the influence of friends, physical educators, and others who are not qualified for nutritional guidance and, finally, start developing eating habits and adherence to unconventional diets.<sup>12</sup> Not least, the desire to achieve their goals in a short period has led many strength training practitioners to use dietary supplements indiscriminately, as many advertisements are promising short-term profits.<sup>7,10</sup>

This research objective was to analyze the nutritional knowledge of strength training practitioners who perform activities in a gym on the west side of the city of Rio de Janeiro.

## Material and methods

Because this is a descriptive study, it presents descriptions of a specific audience's characteristics, raising opinions, and individual behaviors regarding their beliefs. Besides, the type of design of this research takes the form of a field study, taking into account the procedures adopted.<sup>13</sup> The instruments used in this research were two closed questionnaires, to allow the subject/informant to express his ideas or opinions because the questions are predefined, in addition to collecting information in a relatively short time interval, in order to obtain information from the study population.<sup>14</sup>

The first questionnaire contained information that allowed the sample's profile to be traced, such as age, education, information on the nutritional orientation of respondents, use of diets, and nutritional supplements. For the assessment of nutritional knowledge, we used the questionnaire proposed by Bassit and Malverdi,<sup>15</sup> containing nine objective questions about essential nutrition. According to the methodological procedure, this research presents a qualitative approach to the data, despite the possibility of providing quantitative information, aiming to discover the reality of the nutritional conduct adopted by the subjects participating in the sample. The sample consisted of 20 resistance training practitioners, of both sexes, aged between 16 and 45.

As an attribute of inclusion in the sample, all components should have been practicing strength training for at least one year regularly.

All participants became aware of the ethical aspects of the research and signed the Informed Consent Form. The participants, selected at random, answered the questions before practicing physical activity, and the objective of the research was clarified. Before answering the questionnaire, the participants signed the Free and Informed Consent Form. The data received statistical treatment. To the questionnaire data, we assign the value of 1 (one) point to each question answered correctly, with 9 points. Below 5 points, it indicates low nutritional knowledge below 5 to 6.9 indicates moderate nutritional knowledge and between 7 to 9 points, indicates high nutritional knowledge. The results received a percentage frequency obtained by descriptive statistics, with a comparison of means and standard deviation.

## Results

Of the 20 respondents, 60% are men (n=12) and 40% women (n=8), the average age is  $27.05 \pm 9.37$ , with an average age for women of  $29.62 \pm 7.39$  and  $25.33 \pm 10.19$  for men. The level of education of the participants was 60% (n=12) with high school, 35% (n=7) with higher education and 5% (n=1) with only elementary school. We observed that 57% of women and 43% of men had higher education (undergraduate). Regarding the average level of education, 67% are men, and 37% are women. The research analyzed whether the respondents had already obtained nutritional guidance, 60% (n=12) obtained some nutritional guidance, while 40% (n=8) did not obtain any form of nutritional guidance. The data indicate that the proportion is 50% for men and women who have already had some nutritional guidance. We also checked the educational profile of respondents with a high school level of education, 58% had no guidance, while 42% had already received guidance. Regarding those with higher education (undergraduate), 100% of those surveyed stated that they received guidance. Of the respondents who had nutritional guidelines, the research points out that only 25% (n=3) were guided by nutritionists, while 50% (n=6) guided by physical educators and doctors guided the remaining 25% (n=3). In addition, 40% (n=8) have already followed a diet, with 37% (n=3) being prescribed by nutritionists, 25% (n=3) were guided by nutritionists, while 50% (n=6) were guided by physical educators, and the remaining 25% (n=3) were guided by doctors. In addition, 40% (n=8) have already followed a diet, 37% (n=3) being prescribed by nutritionists, 25% (n=2) by doctors and 38% (n=3) by unconventional means. Only 13% (n=1) continue to follow a diet, legally, by a nutritionist. When asked if they had already used nutritional supplements, 90% (n=18) of the respondents answered yes, of which 61% (n=11) had already followed some nutritional instruction, and 55% (n=9) continue to use food supplements. Furthermore, 39% (n=7) surveyed who have never received guidance on nutritional issues, of which 36% (n=4) continue to use supplements.

The main reasons for the consumption of nutritional supplements were 67% (n=12) for weight gain, 17% to compensate for possible nutritional deficiencies, 11% for weight gain, and 5% (n=1) physical performance. Of the respondents who used supplements, 33% (n=6) used them on their own, 28% (n=5) attributed the use to physical educators, 22% (n=4) to someone they knew and only 17% (n=3) to the nutritionist. More than half 60% (n=12) of those surveyed think it is possible to meet the nutritional needs demanded by exercise without using dietary supplements. But 30% (n=6) think it is unlikely, 5% (n=1) said no and 5% (n=1) did not know how to answer. Also, 95% (n=19) think that the use of food supplements without proper guidance can be harmful to health, and 5% (n=1) did not know how to answer. About the basic nutrition questionnaire, we observed that 35%

(n=7) had low nutritional knowledge, 35% (n=7) moderate nutritional knowledge, and 30% (n=6) high nutritional knowledge. We found that the sample's total mean was  $5.25 \pm 1.94$ , presenting a moderate nutritional knowledge level. Regarding the level of education, the average for those surveyed with high school education was  $4.6 \pm 1.87$  (low nutritional knowledge) and the average for those surveyed with higher education training at  $6 \pm 1.77$  (moderate nutritional knowledge). Regarding gender, showing that the mean for men was  $5.08 \pm 1.60$ , and for women, it was  $5.5 \pm 2.23$ .

## Discussion

There was a subtle male predominance in the practice of strength training. The results of this study are similar to the studies made by Buechler and Rossi<sup>16</sup> and Schmitz and Campagnolo.<sup>17</sup> This research corroborates the socio-political study by Costa,<sup>18</sup> who observed that the supremacy of strength training practitioners is male, aged between 16 and 24, especially young people from high school and higher. Regarding the sample's education level, there was a more significant number of practitioners with secondary education, reaching 25% more than those with higher education. Considering that the respondents are living in a neighborhood located in the west zone of the municipality of Rio de Janeiro, the result found matches the data presented by Silva and Gamarski,<sup>19</sup> who describe the region as having the lowest average level of schooling in the world. Municipality of Rio de Janeiro, around 5%, while the average for the municipality of Rio de Janeiro is 18.2%.

Also, reinforcing the result indicated in the study by Reis, Mello, and Confortin,<sup>20</sup> the information obtained indicates that the education of women is higher than that of men. Most of the participants who obtained nutritional indication received from physical educators, followed by indication from friends or acquaintances, and the others sought information on their own. The findings are similar to those of the research by Ramos and Navarro,<sup>21</sup> in which they concluded that nutritionists never recommended any guidance to 85% of those surveyed; this result points to a probable lack of nutritional instruction, and something very similar is in the study by Silveira et al.<sup>22</sup>

Considering that the Physical Education professional studies nutrition just enough to give basic instruction, he must advise on each professional's attributions and, in this case, the nutritionist's indication. When the Physical Education professional exercises the function of instructing on nutrition to the point of prescribing food, it violates professional ethics. The Law No. 9,696 / 98 regulates the profession; it says in its article 3: "Physical education can: coordinate, plan, program, supervise, optimize, direct, organize, evaluate and execute works, programs, plans, and projects, in addition to providing services audit, consultancy, and advisory services, conduct specialized training, participate in multidisciplinary and interdisciplinary teams and prepare technical-scientific and pedagogical reports, all in the areas of physical activities and sport".

At no time does anything related to food, diet, or supplementation be mentioned. Article 4 of Law 8234/91, which regulates the profession of nutritionists, states: "The following activities are also attributed to nutritionists, as long as they are related to human food and nutrition: [...] VII - prescription of nutritional supplements, necessary to supplement the diet".

As for the nutritional guidance provided by doctors, given that it was registered in the present research, it will not always be a satisfactory possibility, as the study by Boog<sup>23</sup> reports that there is some difficulty encountered by them, regarding the correlation between theory and practice.

The criteria used by doctors are offered when there is already a clinical problem, such as hypertension, diabetes, or others. In a way, a nutritional intervention will not always respect biological needs and individualities. Scientific research<sup>20,24</sup> have highlighted the frequent increase in the use of nutritional supplements, a fact also found in this study, with the finding that only 10% of the sample never used nutritional supplements and the significant portion of 90% (n=18) of the sample used nutritional supplements. More than half 67% (n=12), still use it without any legal recommendation from nutritionists. The high consumption of supplements without the proper professional indication of a nutritionist is a health risk.<sup>21,25-27</sup> The same portion of those surveyed who still use supplements, responded to be aware that the use of nutritional supplements without proper guidance can be ineffective, as it is harmful to health.

The participants' behavior in this study is similar to the findings of the study by Goston.<sup>24</sup> The reason why the search for qualified nutritional guidance is quite insignificant can be explained by the disparity between the purposes of practitioners and nutritionists. The nutritionists' primary objective is to promote quality of life, diverging from the main objectives of many strength training practitioners, which are aesthetics and physical performance. This statement by Felix<sup>28</sup> contradicts the result found in the present research, being the biggest reason for the use of the nutritional supplement for 67% of those surveyed in this study: the increase in muscle mass. Concerning the levels of nutritional knowledge of the respondents, there was a percentage distributed among the three levels of classification of nutritional knowledge, used as evaluation criteria, with 35% (n=7) presenting low nutritional knowledge, 35% (n=7) moderate nutritional knowledge and 30% (n=6) high nutritional knowledge. In general, the participants had moderate nutritional knowledge, since the total average was around 5.25 points (a score leveled to the range of moderate nutritional knowledge in the present study).

Regarding gender, there were no significant differences. However, as for the level of education, it was found that the participants who had a higher level had a higher average, around 6 points, compared to the participants who had a high level of education, who had an average of 4.6 points. Similar results are in others researchs,<sup>16,29,30</sup> where it is possible to observe a correlation between the level of nutritional knowledge and level of education since respondents with higher levels of schooling showed better aspects regarding nutritional knowledge. This peculiarity is properly associated with the fact that a person's educational training period influences their perception of nutritional knowledge.<sup>16</sup>

## Conclusion

It was possible to observe through the data that there is some concern about the respondents' part regarding their eating habits. However, there is an indiscriminate consumption of nutritional supplements, with the most consumed supplements being protein powders, which proves to be the typical artifice of those who prioritize aesthetic aspects. It is a worrying situation, considering that such an application should happen only when the individual's usual diet does not meet his nutritional needs. What the name of the product suggests together with the fact that the supplement is only a modified composition food, that is, it is a natural compound that is intended to provide nutrients in order to complement them in a balanced diet.

However, nutritional needs need clinical tests, such as biochemical screening, to be identified, reinforcing the idea of legal support to ascertain the real needs. We can also conclude that the interviewees

have a moderate level of nutritional knowledge. More significant investment is needed in proposals that can intervene and influence the public's nutritional education in question. It is essential to include a nutritionist, especially a sports nutritionist, in addition to physical activity and food programs. Thus, personalized actions are recommended, such as the nutritionist's demand within sports establishments or even referral to such professionals, affirming their work together with the physical educator and public health actions regarding nutrition linked to physical activity. It is convenient to reach the specific public with actions aimed at improving the quality of information and actions that discuss theoretically and in practice, the role of the physical education professional in undergraduate courses.

## Acknowledgments

The authors are thankful to the Universidade Salgado de Oliveira, Department of Physical Activity Sciences and Augusto Motta University Center for providing financial assistance to carry out this study.

## Conflicts of interest

There is no conflicts of interest.

## Funding

None.

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