

FARIAS, Silvia Cristina. Assessing the impact of an intervention to encourage consumption of fruits and vegetables by students and teachers in public schools. 2011. 177 pp. Master's Thesis (Master's Program in Food, Nutrition and Health) – Institute of Nutrition, State University of Rio de Janeiro, Rio de Janeiro, 2011. *Advisor:* Inês Rugani Ribeiro de Castro. *Co-advisor:* Virgínia Martins da Matta.

Abstract

Consumption of fruits and vegetables (F&V) has been encouraged in many countries as a means of preventing non-communicable chronic diseases, especially at school, which is the most suitable environment to promote such consumption. This study aimed to assess the impact of an intervention made to promote F&V consumption by students and teachers of public schools in the municipality of Rio de Janeiro. A pre-post assessment was made with classes of the first cycle of basic education in eight municipal schools located in areas covered by the Family Health Strategy. The pre-intervention assessment recorded the activities developed in order to encourage healthy Food in schools and the teachers' usual F&V intake. Observations were also made of the school environment and the students' consumption of the F&V offered by the School Feeding Program. The intervention included a training course for teachers and cooks on promoting healthy eating, with emphasis on the encouragement of F&V consumption, distribution of educational materials and organization of mobilization events. The post-intervention assessment included questions about the intervention strategies. Indicators were created to measure the following aspects: outreach of the activities and intensity of

exposure to the intervention; summary of the level of implementation of the intervention; adherence to school feeding program; students' F&V acceptance and consumption; teachers' F&V consumption; level of acceptance (students) and consumption (students and teachers) of F&V. The observed variations were tested statistically with the paired Student's t-test (for means) or McNemar's chi-square test (for proportions). The possible influence of the level of implementation of the intervention on the change in consumption and acceptance of F&V was examined using linear regression models or logistic regression, depending on the outcome. The pre-intervention assessment revealed high rates of F&V acceptance among students and F&V consumption among students and teachers. The intervention reached 52.7% of implementation and was evaluated positively by the teachers. After the intervention, no statistically significant variation was observed as regards F&V acceptance and consumption. Statistically significant results were observed only for the positive association between the level of exposure to the intervention and acceptance of vegetables by students. The proposed intervention achieved an intermediate level of implementation and the results were modest in terms of variation of F&V consumption by students and teachers.

D'OLIVEIRA, Giselle Louise Cerqueira. *Body composition of individuals with cervical spinal cord injury: influence of physical exercise and comparison of methods*. 2011. 62 pp. Master's Thesis (Master's Program in Food, Nutrition and Health) – Institute of Nutrition, State University of Rio de Janeiro, Rio de Janeiro, 2011. *Advisor*: Josely Correa Koury. *Coorientadora Co-advisor*: Flavia Fioruci Bezerra.

Abstract

Objective: To compare total and regional body composition and fat distribution in physically active and inactive men with cervical spinal cord injury (SCI), and their relationship with the concentration of high-sensitivity C-reactive protein (hs-CRP). Another objective was to identify a protocol for bioelectrical impedance analysis (BIA) whose results for percentage of total fat mass (FM) can be consistent with those obtained by the reference method, i.e. dual-energy X-ray absorptiometry (DXA). **Methods:** SCI levels ranged between C5 and C7 for the subjects, who were classified as active (n = 15) and inactive (n = 10). Subjects were considered to be active when they had been practicing physical activity for at least three months, three times a week or more, totaling a minimum time for physical activity of 150 minutes a week. Total and regional body composition (arms, legs and trunk) was determined by means of DXA. hs-CRP was measured by immunoturbidimetry. The following BIA protocols were tested: a) for subjects with SCI (KOCINA & HEYWARD, 1997); b) for groups including the elderly (GRAY et al., 1989); c)

protocol validated for Brazilian elderly people (DEY et al., 2003). The statistical analysis included ANCOVA to compare total body mass, body composition and hs-CRP between groups, as well as partial correlation with correction for time since injury (TSI) to identify the association of exercise with FM, and hs-CRP with physical exercise and trunk fat mass. The percentages of fat obtained by DXA and each of the BIA protocols were compared by one-way ANOVA and Dunnett's post test. The Bland-Altman analysis was performed to verify the consistency between the methods tested. **Conclusion:** Regular and controlled physical activity is important to maintain lower levels of FM and prevent accumulation of fat in the trunk. The optimal body composition and the body fat distribution observed in the active group possibly resulted in lower concentrations of hs-CRP levels. Together, these changes probably helped to reduce the risk of developing cardiometabolic diseases. The similarity in the change in body composition between the elderly and subjects with SCI suggests that BIA protocols proposed for the elderly may be suitable to assess body composition in subjects with cervical spinal cord injury.

BORSATTO, Juliana Esteves. *Antioxidant capacity and physical activity in people with cervical spinal cord injury*. 2011. 75 pp. Master's Thesis (Master's Program in Food, Nutrition and Health) – Institute of Nutrition, State University of Rio de Janeiro, Rio de Janeiro, 2011. *Advisor*: Josely Correa Koury.

Abstract

Spinal cord injury is associated with a series of biochemical changes and alterations in body composition. The increase in body fat and abdominal fat accumulation combined with abdominal infectious processes resulting from spinal cord injury can result in an increase in plasma concentration of C-reactive protein (CRP). Both body fat and high concentration of CRP stimulate the production of reactive oxygen species, favor oxidative imbalance and may trigger diseases as well.

Regular physical activity may be beneficial by better distributing body fat and adapting antioxidant systems in people with SCI. Given the relevance of this issue and the small number of studies about it, this research aimed to compare, in people with cervical spinal cord injury, body composition and biochemical indicators of antioxidant status of physically active and inactive people. Subjects were 24 quadriplegic males (32 ± 10 years of age and 10 ± 8 years of time since injury). They were divided into two groups: physically active ($n=15$, who had been practicing physical activity for at least 3 months, 3 times/week or more, with a total minimum time of 150 minutes/week) and physically inactive ($n=9$). Body composition was determined by dual-energy X-ray absorptiometry. Blood samples were collected after 12-hour fasting to determine biochemical indicators: antioxidant capacity, uric acid, bilirubin,

albumin, alpha-tocopherol, malondialdehyde and CRP in the plasma and activity of uperoxide dismutase in erythrocytes. The inactive group had higher BMI ($p=0.003$), total fat (%) and trunk fat (%) ($p<0.001$) than the physically active group. A significant relationship was found between CRP and the percentage of total fat ($r=0.72$, $p<0.001$), trunk fat ($r=0.70$, $p<0.001$), total fat mass ($r=0.73$, $p<0.001$) and trunk fat ($r=0.67$, $p=0.001$). There was no significant difference between biochemical indicators of antioxidant status, except for CRP concentration, which was higher in the inactive group ($p=0.034$). Considering all the individuals, 50% had alpha-tocopherol deficiency (plasma concentration $<11.6 \mu\text{mol/L}$). A negative relationship was observed between plasma concentration of alpha-tocopherol and CRP ($r=-0.18$, $p=0.038$). In the active group, there was positive correlation between ratio time of physical activity:time since injury and plasma concentration of malondialdehyde ($r=0.38$, $p=0.014$). When analyzed together, the results of this study suggest that continuous practice of physical activity after injury helps to improve body composition and, possibly, reduce plasma concentration of CRP. An inadequate nutritional status of alpha-tocopherol may compromise antioxidant capacity, requiring nutritional support measures to adjust the intake of alpha-tocopherol by people with SCI.

PASSOS, Michelle Delboni dos. *Body image and its social representations: a study with adolescents in the city of Rio de Janeiro*. 2011. 131 pp. Master's Thesis (Master's Program in Food, Nutrition and Health) – Institute of Nutrition, State University of Rio de Janeiro, Rio de Janeiro, 2011. *Advisor*: Sílvia Ângela Gugelmin.

Abstract

Nowadays, western society values physical appearance highly by associating it with health, happiness, success and power. However, not everyone can fit into a single standard; hence, people often deem their own body image as inappropriate. As a result of such dissatisfaction, people follow calorie restriction diets and engage in physical activity and harmful practices (self-induced vomiting; use of laxatives, weight-loss drugs or slimming teas) in order to fit into the expected socially-built standard. The objective of this study was to unveil and explore the social representations (SR) of the human body by elementary school ninth graders from Rio de Janeiro. Seven focus groups and twelve semi-structured interviews were conducted with teenage students from public municipal schools and private schools located in neighborhoods with higher and lower Social Development Index. At the end of each focus group, a questionnaire was administered to collect information about the socioeconomic context of students' area of residence as well as some of their daily practices as regards Food and body care. The analysis of students' social representations was based on the Structural Approach, and their discourse practices were analyzed with software eVOC. The teenagers associated the several body parts (legs, belly, arms) with beauty, health, wisdom, sensuality

and success in getting a job. The aesthetic standard considered attractive by the female students is a slim but sinuous body (slim waist, turned legs, buttocks and big breasts). In most focus groups, slimness as a beauty standard opposed the scrawny stereotype of fashion models, which was associated with eating disorders. For the male students, the social representation of an attractive body is a muscular body. As regards the opposite sex, males value particular parts of the female body highly (buttocks and breasts). The female students' social representation of an attractive male included a muscular body and some traits related to hygiene, personality (kindness, friendliness) and clothing style. Regardless of the students' socioeconomic status, their social representations of the body encompass the aesthetic standard reported in the media, whereby having a "slim" body enjoys great prestige. Although there is a multitude of body types, such multitude was not envisaged in the context of this study because there is a prevalent dictatorship of beauty which discriminates against those that do not fit into its standards. This may have led some young people to use slimming teas and laxatives or self-induce vomit in order to lose weight. The point addressed in this study is not the mere existence of a sole standard but rather how young people deal with such pressure and the fact that they ultimately prioritize beauty as symbolic capital.