



Can urban gardens improve food security, health, well-being and financial sustainability of households?

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Anthropometric and body composition characterisation of competition Portuguese crossfit athletes

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ABSTRACT

Introduction: Anthropometric characteristics and body composition are an important element in sports performance. Skinfold and circumference measurement had been recognised as an adequate and valid tool to assess body composition through specific equations from several authors which should be validated for each sport. The aim of this work was to characterise a Portuguese sample of competition athletes in Crossfit comparing several equations based in skinfold measurement.

Materials and methods: This was an observational study conducted in a Crossfit box where 11 athletes were recruited, 7 were male and 4 female. The anthropometric assessment included the height measurement through a stadiometer (SECA123), a weigh in a digital scale with 100 g precision (ELECTRONIA) and the measurement of 7-site skinfold (bicep, tricep, subscapular, suprailiac, abdominal, thigh and calf) with a Slim Guide adipometer. Skinfold measurements were conducted according to ISAK protocol. All the results were treated with SPSS statistics 17.0 software.

Results: The sample included 11 athletes where 4 were female (36%). Participants were 25–39 (31.6 ± 4.4) years old. The average body fat in male and female athletes was $13.7\% \pm 3.98$ and $28.4\% \pm 5.6$, respectively. These results were compared through a paired-sample *t*-test. In men, Durnnin & Womersley gave the highest body fat percentage while in female this and Jackson & Pollock where the highest, the lowest values were obtained through Evans formula in both genders. There were significant differences between all the formulas used for men ($p < .05$) but in women results only the formulas Durnnin & Womersley and Jackson & Pollock had shown significant differences ($p < .05$).

Discussion and Conclusions: The sample of Crossfit athletes had shown values of body fat within the normal range. In spite of these, there were found some differences between several formulas which reinforces the need to use more than one formula in body fat assessment in nutrition clinical setting. Because this study was done in a convenience sample, the size and the heterogenous distribution of gender can be considered as study limitations.

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Can urban gardens improve food security, health, well-being and financial sustainability of households?

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ABSTRACT

Introduction: An increased consumption of fresh fruit and vegetables is associated with health benefits [1,2]. Including them in the daily diet can reduce the risk of noncommunicable diseases [2]. Urban gardens (UG) can improve communities around them by allowing a supply of such products [3,4], by contributing to conscious decisions about eating [4] and lessening the health costs of its populations [2–4], by improving their participants self-esteem, and by helping in the development of competencies [4]. This preliminary study aimed to understand the parameters that could be evaluated on a greater scale future study, to assess the role of urban gardens in their participants health, nutrition knowledge and family budget.

Materials and methods: An UG in Setúbal, Portugal, was selected for this study. All data was collected in October, 2018 and included: demographic data from the gardeners ($n = 133$), a “Food and Nutrition Knowledge” validated questionnaire [5] with 20 true and false questions ($n = 6$), and semi-structured interviews ($n = 6$). All interviewed gardeners understood the purpose and signed the informed consent.

Results: The UG had 138 plots with 133 in use. Most of the gardeners were men (59.9%) and under 65 years of age (74.4%). 30.5% had an income under ($n = 133$) 11,999€/per year.

Discussion and conclusions: Our results meet those of recent studies that enhance the importance of UG in feeding populations, especially those with diminished food security and low access to fresh quality products [6–8]. Increased level of activity, higher fruit and vegetable consumption, along with savings in the family budget were referred by gardeners supporting the need for a more in-depth study. The UG is eligible for an observational study using the methods already stated. In addition, collection of anthropometric data and nutritional and cognitive screening tests would allow for a better view of the gardeners health.

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Effect of different cooking methods on the content of total vitamin C, ascorbic acid and dehydroascorbic acid of the galega kale

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ABSTRACT

Introduction: Adequate daily intake of vitamin C is essential to maintain numerous physiological processes in the human body. Humans cannot produce endogenous vitamin C and therefore are dependent on dietary intake [1]. Galega kale is grown and consumed across the world and is a rich source of antioxidants such as vitamin C [2]. However, little is known about how domestic cooking methods affect the nutritional composition and bioavailability of nutrients in fresh vegetables. The aim of this study was to investigate the effect of four different domestic cooking methods (boiling, braising, sautéing and a typical Portuguese soup, caldo-verde) on the content of total vitamin C, ascorbic acid and dehydroascorbic acid of the galega kale.

Materials and methods: Samples of galega kale were obtained from the University Garden of Instituto Universitário Egas Moniz. Samples were washed and the inedible parts were discarded. The final samples consisted of 16 g of kale with a ratio of leaves to stems of 75/25. Samples were submitted to four domestic cooking methods: boiling, sautéing, braising and a traditional Portuguese soup, caldo-verde and raw Galega Kale was used as a control. Determination of total vitamin C, acid ascorbic (AA) and acid dehydroascorbic (DHA) was done using high-performance liquid chromatography (HPLC) according to the method described by Valente et al. [3].