Chemical composition, antioxidant capacity and content of phenolic compounds in meals collected in hospitals in Bolivia and Sweden
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Abstract
The objective of this study was to evaluate the proximal composition, as well as Total Antioxidant Capacity (TAC) and Total Phenols (TPH) in meals that represent a complex food matrix, from different hospitals in Bolivia and Sweden. Protein, fat, ash, dietary fiber and carbohydrate contents were measured in 29 samples: 20 from two Bolivian hospitals and 9 from the university hospital in Lund, Sweden. The antioxidant capacity was measured by three spectrophotometric methods: the ferric reducing antioxidant power (FRAP) method, the 2, 2'- azinobis-3-ethylbenzotiazoline-6-sulfonic acid (ABTS) method and Total Phenolic Compounds (TPH) using the Folin-Ciocalteu reagent. The results show that fat, protein, carbohydrate and dietary fiber in Bolivian and Swedish hospital meals are following internationally established recommendations. Regarding the main courses, TPH contents in both countries were in the same range. However, TAC and dietary fiber content were higher in Swedish meals than in Bolivian meals and the TAC was far lower, in both cases, in comparison with the value obtained from individual food items reported from literature. The results show that antioxidant levels can be easily overestimated by considering only individual uncooked ingredients. An interesting consideration is, the fiber content in the meals, which can be an important source of antioxidants and non-extractable phenolic compounds.

Keywords
Total antioxidant capacity, Phenolic compounds, Bolivian meal, Swedish meal.