Development and Validation of a Mediterranean Oriented Culture-Specific Semi-Quantitative Food Frequency Questionnaire

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Abstract: The objectives were to develop a Mediterranean oriented semi-quantitative food frequency questionnaire (FFQ) and evaluate its validity in measuring energy and nutrient intakes. For FFQ development, the main challenge was to merge food items and practices reflecting cultural Mediterranean preferences with other food choices ensuing from diet transition to more westernized dietary patterns. FFQ validity was evaluated by comparing nutrient intakes against the average of two 24-h dietary recalls for 179 pregnant women. Although the mean intake values for most nutrients and energy tended to be higher when determined by the FFQ, the Cohen’s d was below 0.3. Bland-Altman plots confirmed the agreement between the two methods. Positive significant correlations ranged from 0.35 to 0.77. The proportion of women classified correctly was between 73.2% and 92.2%, whereas gross misclassification was low. Weighted kappa values were between 0.31 and 0.78, while intraclass correlation coefficients were between 0.49 and 0.89. Our methodological approach for the development and validation of this FFQ provides reliable measurements of energy, macro- and micronutrient intakes. Overall, our culture-specific FFQ could serve as a useful assessment tool in studies aiming at monitoring dietary intakes, especially in the Mediterranean region, where countries share common cultural dietary habits.

Keywords: Mediterranean diet; culture; nutritional assessment; food frequency questionnaire; validation; nutrients; Bland-Altman; cross-classification; pregnancy