Prediction of body fat loss in relation to change in nutrient intake among housewives participating in the MyBFF@ home study

ABSTRACT

Background: Diet compositions are likely to be one of the influential factors for body fat deposition. The aim of this paper was to determine the nutrient changes and its association to body fat loss among the overweight and obese housewives in the MyBFF@home study. Methods: Data of participants in the MyBFF@home study (intervention and control groups) were analysed. Participants in the intervention group received personalised dietary counselling consisted of reduced calorie diet 1200–1500 kcal/day, while the control group was assigned to receive women's health seminars. The dietary assessment was done during the intervention phase at baseline, 1 month (m), 2 m, 3 m and 6 m using a 3-day food diary. Body fat was measured using a bioelectrical impedance analyser (In-body 720) at baseline and at the end of the intervention phase. The mean differences of nutrient intake and body compositions during the intervention phase were measured with paired t-test. The changes in body fat and nutrients intake were calculated by subtracting baseline measurements from those taken at 6 months. Multiple linear regression analysis was conducted to determine the extent to which the changes in each gram of nutrients per 1000 kcal were predictive of changes in body fat mass. Results: There were significant reductions in energy, all macronutrients, dietary fibre, calcium and iron intake in both study groups after the intervention phase ($p < 0.05$). In the intervention group, body fat loss increased with the reduction of each gram of carbohydrate, protein and fat per 1000 kcal, ($p < 0.05$), and decreased with the reduction of each gram of calcium and fibre intake per 1000 kcal ($p < 0.05$). In the control group, body fat loss increased with the reduction of each gram fat per 1000 kcal ($p < 0.05$) and decreased with the reduction of each gram iron per 1000 kcal. Conclusion: Changes in the intake of various nutrients have different effects on body fat loss between the intervention and control group.

Keyword: Weight loss; Nutrient; Diet; Body fat loss; Individualised dietary intervention