The Feasibility of Using Computrition Software for Nutrition Research

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Objectives: Computrition is a food service software utilized by dieticians in clinical settings to create recipes, design menus, and scale the menus to larger quantities, yet it is underutilized in the research setting. The objective was to determine the practicality of administering two meal plans (low sodium vs typical sodium) designed with Computrition in a double-blind, randomized pilot study in older adult residents of a congregate housing facility.

Methods: This pilot study included 19 females and 1 male aged ≥65y residing at Jack Satter House, Revere, MA. Participants were randomized to low sodium or typical sodium meals (<0.95 or >2 mg/kcal), designed with Computrition. A base 7-day meal plan (with breakfast, lunch, dinner, and two snacks) was generated. Recipes entered in Computrition were modified to reach three calorie levels (1750, 2000, 2250 kcal/d) and two sodium densities, while keeping potassium levels constant at ∼3500 mg/d. Finally, Computrition labels were generated to execute meals while maintaining blinding. To determine efficacy of these meal plans, compliance was evaluated by comparing change in urinary sodium (mmol/L) over 2-weeks between low sodium vs. typical sodium groups. These comparisons were also assessed in sub-groups by calorie intake (≤1750 kcal/d, n = 12 and ≥2000 kcal/d, n = 8).

Results: Mean age was 77 ± 6y and calorie intake was 1849 kcal (low sodium group, n = 11) and 80 ± 9y and 1785 kcal (typical sodium group, n = 9). Over 2-weeks, urinary sodium decreased by −30.6 mmol/L in the low sodium diet, compared to 2.4 mmol/L in the typical sodium diet (P = 0.003). In those consuming ≤1750 kcal/d on the low sodium diet, urinary sodium decreased non-significantly by −18.3 mmol/L, compared to −2.3 mmol/L in the typical sodium diet (P = 0.16). In those consuming ≥2000 kcal/d on the low sodium diet, urinary sodium decreased non-significantly by −22.0 mmol/L, compared to no change in the typical sodium diet (P = 0.26).

Conclusions: In this study, two sodium meal plans designed using Computrition altered urinary sodium over 2 weeks. Similar trends in reduction were seen in the sub-groups by calorie intake, although results were not significant due to small sample sizes. Future work should evaluate testing and standardization of this software for a multi-site nutrition intervention study.

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