Effects of Recording Food Intake Using Cell Phone Camera Pictures on Calorie Intake and Food Choice in College Students

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Introduction

Behavioral modification remains essential for the success of any weight loss therapy intervention.

A main cornerstone of a behavioral weight loss therapy is self-monitoring (Foster, Makris, & Bailer, 2005).

Dietary self-monitoring involves a reporting of food and beverages consumed using diaries (Coulston, Boushey, & Ferruzzi, 2013).

Other methods of food recording such as a combination of both, a food diary and camera photographs allow for a more accurate assessment of food intake.

The present study aimed to assess the effect of using cell phone pictures to record food intake on energy intake and food choice in college students. The effectiveness and acceptability of cell phone picture-based diet recording was also assessed.

Methods

Participants (n=76) were randomly crossed over two periods: a memory-based food recording period (3 days) and a photographic-based food recording period (3 days) (Fig 1). Diaries collected during each of these two periods were averaged.

The main outcomes were consumption of breads and cereals, fruits, vegetables, meat, milk, fat, and total energy intake.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Group 1	M	M	M	P	P	P
Group 2	P	P	P	M	M	M

Fig 1. Cross-over study design
(M: Memory-based recall, P: Photographic-based recall)

Results

Results revealed a decrease in energy intake (p=0.03) during cell phone-based recall (1334 ± 54.2 kcal/day) compared to memory-based recall alone (1446.4 ± 53 kcal/day) (see Fig.2).

More precisely, cell-phone based recall was associated with a decrease in consumption of meat (p=0.008) and vegetable (p=0.021) exchanges (see Fig.3).

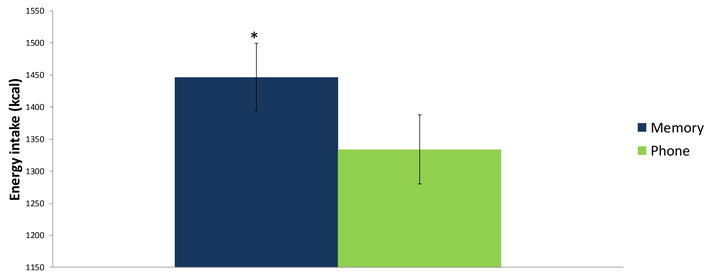

Fig 2. Caloric intake during each of the memory-based recall and the phone-based recall (p<.05).

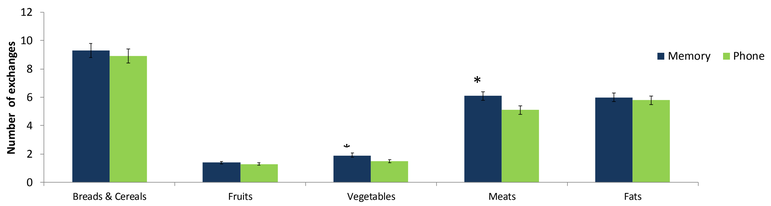

Fig 3. Amount of exchanges of breads and cereals, vegetables, fruits, meat, and fat consumed during each of the memory-based recall and the phone-based recall (p<.05).

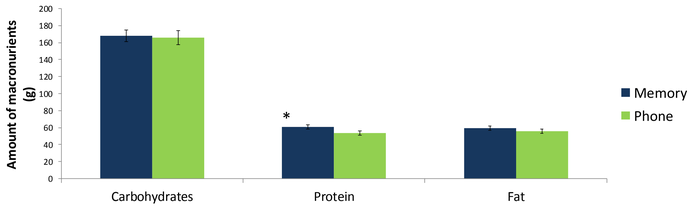

Fig 4. Amount of macronutrients consumed during each of the memory-based and photographic-based recalls (p<.05).

Discussion

Dietary self-monitoring may influence one's food consumption and increase chances of achieving to dietary goals. This could be explained by an increased consciousness towards portion sizes and quality of food consumed.

The latter may explain the decrease in caloric intake during the phone-based recall compared with the memory-based recall.

Conclusions

Cell phone pictures may be an easy, relevant, and accessible method of diet self-monitoring when aiming at dietary changes. Future trials may combine this technique with healthy eating education..

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