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Introduction

E-health information search is common to four out of five Americans, and Diet and Nutrition is one of the topics of interest. Considering the spectra of functionalities available to mobile platforms, a Digital Food Guide (DFG) was designed in Brazil with the aim of promoting healthy eating practices and to facilitate the relationship between health professionals and their patients. As an unprecedented resource, it was important knowing the app user's profile for its improvement.

Objective

Identifying the profile of the DFG users.

Methods

Cross-sectional study with descriptive analysis of the profile of subjects who have purchased the DFG. With the free informed consent of those individuals, we collected data on sex, date of birth and body mass index (BMI)³. Subjects Physical activity was self-referred according to one of the following levels: low, moderate and intense⁴. Food intake was measured before exposure to the application, which was converted into the corresponding food groups following serving sizes modulated for each reference energy value.

The eleven food groups of DFG are distributed among "moderation" and "adequacy" components, each one with indication of frequency and energy level per serving; the last component is "variety". A 2000 calorie diet was proposed as a theoretical frame of reference.

Table 1. Energy values according to food components of a 2,000-calorie reference diet. Digital Food Guide, Brazil, 2012.

Food groups	Corresponding energy (kcal)
Moderation components	
Sugar and sweets: 0 - 1 serving	72
Beef and pork: 0 - 1 serving	105
Animal fat: 0 - 1 serving	40
Refined cereals: 0 - 1 serving	140
Adequacy components	
Poultry, fish and eggs: 0 - 2 servings	140
Nuts and legumes: 1 - 3 servings	
. legumes	150
. nuts	60
Whole grains: 4 - 5 servings	140
Fruits: 3 - 5 servings	100
Vegetables: 4 - 5 servings	
. dark green vegetables	10
. orange and other vegetables	40
Milk and dairy products: 2 - 3 servings	
. Milk and yogurt	120
. Cheese	80
Vegetable oil: 1,5 - 2,5 servings	72
Variety	≥ 8 groups

Results and Discussion

From the 23137 downloads since the launch of the app in may/09 until april/09, 656 free informed consent were received (2.83%) from November 2011 to May 2012; 476 (2,06%) have met criteria for selection; 34 respondents were not included because of potential unreliable data. Among the 442 subjects of the sample, the majority were women (59%), has low physical activity level, and has exceeded healthy weight; after experiencing de DFG, weight loss was the main outcome (Figure 1). Except for *whole grains*, *fruits*, and *nuts plus legumes* food groups, the median of the servings of all components have decreased after the use of the DFG (Figure 2 and 3).

Figure 1. Age, physical activity, Body Mass Index and weight change after the use of Digital Food Guide. Brazil, 2012.

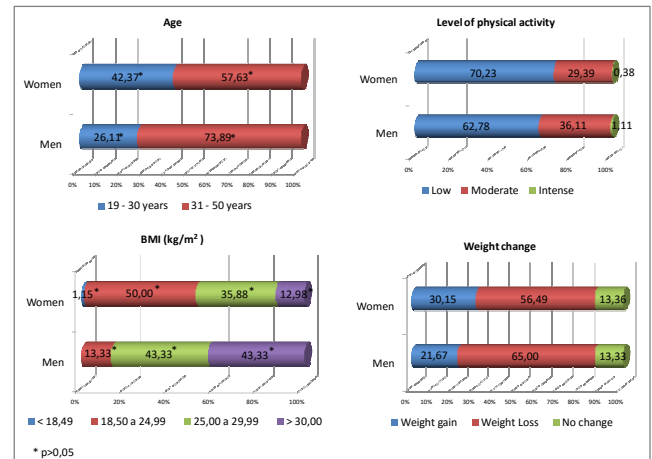


Figure 2. Number of servings before and after experiencing the Digital Food Guide: median of moderation components. Brazil, 2012.

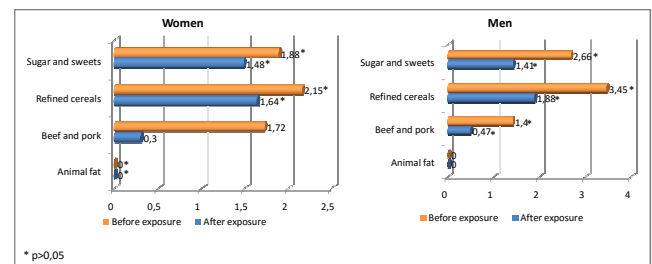
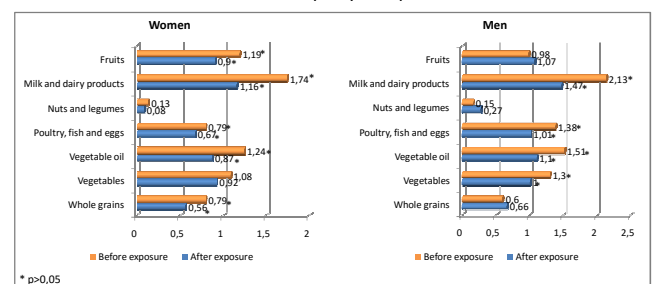


Figure 3. Number of servings before and after experiencing the Digital Food Guide: median of adequacy components. Brazil, 2012.



Conclusion

DFG user's food preferences in the beginning of app use are consistent with western pattern diet associated with rising chronic disease figures. Data on whether the use of the app lead to any benefit on food practices is under investigation.

References

- Chang Liu, Qing Zhu, Kenneth A. Holroyd, Elizabeth K. Seng. Status and trends of mobile-health applications for iOS devices: A developer's perspective. The Journal of Systems and Software. 2011; 84:2022-2033.
- Chisalm Di. Does online health information seeking act like a health behavior?: a test of the behavioral model. Telemedicine Journal and E-Health: The Official Journal Of The American Telemedicine Association 2010; 16 (2): 154-60.
- FAO. Human energy requirements. Food and Nutrition Technical Report Series. ISSN 1813-3932. Rome, 2001.
- WHO. World Health Organization. Obesity: preventing and managing the global epidemic. Geneva, 1997.