

A New Dietary Self-Monitoring App to Improve Adherence to the 2019 Canada's Food Guide: Protocol for a Feasibility Study

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Objectives: This study aims to describe the acceptability, usability, and feasibility testing of the iCANPlate smartphone application, an innovative app that resembles the 2019 Canada's Food Guide (CFG), at the University of British Columbia in Vancouver, British Columbia.

Methods: In Part 1, the acceptability and usability of iCANPlate will be explored using a mixed-method approach. Included participants will be healthy adults (n = 10) from all over Canada with lower levels of health literacy and with the intention of changing their eating behaviours. The eligible participants will be using the app for three weeks and will be surveyed using Technology Acceptance Model-3 (TAM-3), System Usability Scale (SUS), and semi-structured interviews. In part 2, a 6-week feasibility trial will be conducted using iCANPlate versus a standard traditional dietary self-monitoring app (Cronometer Software Inc. Canada) to establish feasibility markers

in data collection. Participants (n = 80) will be randomized to the intervention (*iCANPlate group*) and the control group (*Cronometer group*) in a 1:1 ratio. Participants will be included based on the same inclusion criteria in Part 1 and will be asked to record their food and beverages intakes for 6 weeks. We will also compare the efficacy of using the iCANPlate and Cronometer using the following measures: User version Mobile Application Rating Scale; SUS; TAM-3; Healthy Eating Food Index (HEFI)-2019; Healthy Eating and Weight Self-Efficacy. Quantitative data will be analysed using descriptive statistics and paired t-test and qualitative data will be analysed using thematic analysis with a deductive approach.

Results: N/A

Conclusions: This study will develop and test the iCANPlate aimed to improve adherence to dietary self-monitoring in healthy adults. The results of Part 1 of the study will be used to further refine the iCANPlate before it is launched in the second part. This study will allow us to determine the iCANPlate's usefulness, feasibility, and acceptability for dietary self-monitoring in adults with lower levels of health literacy.

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