**NUTRITION ASSISTANCE APPLICATION**

**LITERATURE SURVEY**

1. **Smartphone Applications for Promoting Healthy Diet and Nutrition: A Literature Review**

[Jacobs J Food Nutr.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4725321/) Author, [Steven S. Coughlin](https://pubmed.ncbi.nlm.nih.gov/?term=Coughlin%20SS%5BAuthor%5D), PhD, [Mary Whitehead](https://pubmed.ncbi.nlm.nih.gov/?term=Whitehead%20M%5BAuthor%5D), MPH, CHES [Joyce Q. Sheats](https://pubmed.ncbi.nlm.nih.gov/?term=Sheats%20JQ%5BAuthor%5D), RN, MPH, [Jeff Mastromonico](https://pubmed.ncbi.nlm.nih.gov/?term=Mastromonico%20J%5BAuthor%5D), [Dale Hardy](https://pubmed.ncbi.nlm.nih.gov/?term=Hardy%20D%5BAuthor%5D), PhD, RD, LD, CDE, CHES, and [Selina A. Smith](https://pubmed.ncbi.nlm.nih.gov/?term=Smith%20SA%5BAuthor%5D), PhD, MDiv.

In qualitative studies, participants preferred applications that were quick and easy to administer, and those that increase awareness of food intake and weight management. In randomized trials, the use of smartphone apps was associated with better dietary compliance for lower calorie, low fat, and high fiber foods, and higher physical activity levels (p=0.01-0.02) which resulted in more weight loss (p=0.042-<0.0001).

# Development of a Smartphone Application for Dietary Self-Monitoring

Jeong Sun Ahn, Dong Woo Kim, Jiae Kim, Haemin Park and Jung Eun Lee

Dietary assessment and monitoring are essential steps to measure dietary intake and provide tailored advice that can improve dietary management and health. However, the dietary assessment methods currently used have inherent challenges including reliance on memory, time-consuming conceptualization of portion sizes, requirement of literacy or skilled staff, coding burden, knowledge of foods, and other time-consuming tasks. It has been suggested that data analysis integrating mobile technologies allows the improvement of accurate assessment of dietary intake and customized feedback. In recent years, several studies have explored whether mobile technologies could be used to measure dietary intake or improve the measurement of dietary intake. Although, the complete automation of diet analysis has not been achieved yet, mobile technologies have the potential to improve real-time assessment of the diets of individuals and groups by incorporating their daily dietary routines. Modification in eating habits takes a long time and great effort. Indeed, prolonged and repeated stimuli are needed to promote healthy eating. A pilot survey in Australia observed that 96% of female participants aged 15–40 years kept their smartphones on standby throughout the day, thus the easy access to mobile apps regardless of location allows app users to promptly engage in dietary tracking, which may motivate and trigger behavioral responses. The purpose of this study was to describe the features of our newly developed mobile dietary self-monitoring app named Well-D; and summarize users' feedback on likes and dislikes of the Well-D and ways to improve the Well-D app.

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4. routines to build their a better lifestyle. by following
5. a healthy lifestyle with balanced nutrition. This
6. application has a role to become a tool which can be
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13. has the opportunity to communicate directly with
14. nutrition experts with long distance based on
15. telehealth which they can use the chat feature. The
16. whole concept in this application is expected to open
17. up opportunities for anyone, especially young adults
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19. By practicing the habit using this application, has
20. a purpose to form a new habits, culture, relationships
21. between people and what they consume to their body,
22. and assisting during and after the pandemic. Design
23. Thinking method is a method with a long process
24. with repetitions in cycles to achieve the suitable
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# 3. Usage of Mobile Applications or Mobile Health Technology to Improve Diet Quality in Adults

[Alan Scarry](https://sciprofiles.com/profile/2216595), [Jennifer Rice](https://sciprofiles.com/profile/author/TzJBMDV0NTBiTGk2VDVyUG5kWXB2Yi9kSXNhVmV2ajRla1lYaWVTNjZUYz0=), [Eibhlís M. O’Connor](https://sciprofiles.com/profile/125548) and [Audrey C. Tierney](https://sciprofiles.com/profile/646743)

# In summary, the findings of this study have highlighted that it is key that mobile apps interact with individuals in a manner that works for them. Higher user functions have directly related to better user behaviours and higher success and improvement in diet quality. Some applications have merely provided dietary advice and improved the diet quality of participants; other applications monitor lapses and have the same effect on the user. Dietary applications that cause frustration to the user lead to complete disengagement, this can be in the form of draining the user’s battery, poor data transfer or the app failing to work as detailed. For the future of dietary applications, a focus on diet quality rather than goal-setting could have more significant long-term benefits. Apps that would offer less burden on the user: taking pictures of each meal, lengthy data entry and instead allowing the user better access to food databases which introduce an array of nutrients displayed, promote better user satisfaction and engagement and overall long-term better health.

# 4. Development and validation of a smartphone image-based app for dietary intake assessment among Palestinian undergraduates

[Sarah Hattab](https://www.nature.com/articles/s41598-022-19545-2#auth-Sarah-Hattab), [Manal Badrasawi](https://www.nature.com/articles/s41598-022-19545-2#auth-Manal-Badrasawi), [Ola Anabtawi](https://www.nature.com/articles/s41598-022-19545-2#auth-Ola-Anabtawi) & [Souzan Zidan](https://www.nature.com/articles/s41598-022-19545-2#auth-Souzan-Zidan)

# Accurate dietary assessment is required in a variety of research fields and clinical settings. Image-based dietary assessment using smartphones applications offer the opportunity to reduce both researcher and participant burden compared to traditional dietary assessment methods. The current study, conducted in Palestine, aimed to design an image-based dietary assessment application, to assess the relative validity of the application as a dietary assessment tool for energy and macronutrient intake using the 3-Day Food Record (3-DFR) as a reference method, and to test its usability among a sample of Palestinian university students.

# The application took 6 months to build including creation of the databases, development of the design with a software engineer, and validation of the application. The development process involved professionals from the fields of nutrition and dietetics, and information technology. A total of 368 food items were included in the application as follows: appetizers (46 items), beverages (10), breads (12), dairy products (11 items), desserts (55 items), fats (9 items), fruits (25 items), grains (9 items), legumes (11 items), main meals (83 items), meats (7 items), nuts and seeds (11 items), salads (19 items), salty snacks (9 items), vegetables (26 items), and miscellaneous (9 items), ready to eat items (e.g., chocolate, chips, candies) (16 items). Moreover, the name of each food item were typed and its' portion sizes, which was estimated using household measurements tools, were presented as photos. All comments and suggestions provided by the professionals have been properly considered.