

## Ideation phase

### Literature survey

Date	17 October 2022
Team ID	PNT2022TMID23713
Project Name	Nutrition Assistant Application
Maximum Marks	4 Marks

## 1. Development of a Smartphone Application for Dietary Self-Monitoring.

### Authors:

**Jeong Sun Ahn, Dong Woo Kim, Jiae Kim, Haemin Park, Jung Eun Lee..** Department of Food and Nutrition, Seoul National University, Seoul, South Korea.

This article describes the key features of the Well-D, a mobile dietary self-monitoring application developed to assess and track dietary intake. To test the acceptability of the app, 102 adults aged 18 years or older were asked to use Well-D for 3 days or more. After using the app, they recorded their likes/dislikes and recommendations regarding ways to improve Well-

D. A mobile application for dietary assessment and monitoring may have the potential to help individuals and groups to engage in healthy behaviors.

## 2. Mobile cloud based system recognizing nutrition and freshness of food image

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As well as mobile-based applications have become ubiquitous in numerous aspects of people's lives over the past few years. Harnessing the capability of this trend for healthcare purposes has become a focal point for researchers and industry, in specific designing applications that can be utilized by patients as a major aspect of their wellness, prevention, or treatment process. Their weight, eating healthier and avoiding obesity, a system that can measure calories and nutrition in every day meals can be very useful. We propose a mobile cloud-based food calorie measurement framework. Our framework provides clients with advantageous and intelligent mechanisms that permit them to track their food intake and

monitor their calorie count. The food recognition technique in our system uses Naive Bayes training mechanism in a cloud computing environment with classifier machine learning. This system improves the accuracy of calories consumption measurement process.

### **3. Good Sports Nutrition.**

**Authors:**

**Ruyao Gong, Nan Ge, Jijie Li.** International society of sports nutrition position stand 2019, sports and energy drinks 2019, 2020/10/31.

This paper explores the sports nutrition, sports diet and respective supplements. Sports nutrition is a general term comprising everything related with products manufactured mainly for people doing sport. The main aim of such nutrition is improving the athlete's performance and increasing endurance. Sports nutrition is not doping, but a rather a complex of easily digesting and highly nutritious elements. Any diet should consist of three main elements: carbohydrates responsible for providing energy, liquid preventing body from heat collapse, proteins maintaining muscle mass, fats, vitamins and minerals. The knowledge of sports nutrition can be in need for a nurse when taking care about the athletes because it will give the better understanding of what their ration consists of and what consequences it may cause.

### **4. Personalized Nutrition Solution Based on Nutrigenomics**

**Authors:**

**Jitao Yang**

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People require various nutrients such as proteins, vitamins and minerals in diet to maintain our health. Due to the increasing unhealthy eating habits, many people are characterized as nutrition unbalance, causing dyslipidemia, obesity, diabetes or the other diseases. Therefore, from fundamental nutritional science into helpful dietary advice is nowadays one of the main challenges of nutrition health care science. Several international and national dietary guidelines provide nutrition recommendations for different kinds of food intake; however, the guidelines provide general recommendation for population rather than tailored for individuals. Nutrigenomics represents a better understanding of how genomics is connected with the development of personalized nutritional science and provides a promising approach for designing tailored nutritional solutions for individuals or population sub-groups. In this paper we design and implement a mobile professional personalized nutrition recommendation platform allowing the application of the new findings of nutrigenomics at the population sub-groups and even individual level.

## **5. Barriers and Enablers to Delegating Malnutrition Care Activities to Dietitian Assistants.**

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Delegation of malnutrition care to dietitian assistants can positively influence patient, healthcare, and workforce outcomes. However, nutrition care for hospital in patients with or at risk of malnutrition remains primarily individually delivered by dietitians-an approach that is not considered sustainable. This study aimed to identify barriers and enablers to delegating malnutrition care activities to dietitian assistants. This qualitative descriptive study was nested within a broader quality assurance activity to scale and spread systematized and interdisciplinary malnutrition models of care. Twenty-three individual semi-structured interviews were completed with nutrition and dietetic team members across seven hospitals. Inductive thematic analysis was undertaken, and barriers and enablers to delegation of malnutrition care to dietitian assistants were grouped into four themes: working with the human factors; balancing value and risk of delegation; creating competence, capability, and capacity; and recognizing contextual factors. This study highlights novel insights into barriers and enablers to delegating malnutrition care to dietitian assistants. Successful delegation to dietitian assistants requires the unique perspectives of humans as individuals and in their collective healthcare roles, moving from words to actions that value delegation; engaging in processes to improve competency, capability, and capacity of all; and being responsive to climate and contextual factors.

## **6. The use of mobile apps to improve nutrition outcomes.**

**Authors:**

**Kristen N DiFilippo , Wen-Hao Huang , Juan E Andrade , Karen M Chapman-Novakofski**

Studies that were descriptive, did not include apps, focused on app development, app

satisfaction app feasibility, text messaging, or digital photography were excluded. We evaluated article quality using the Academy of Nutrition and Dietetics Evidence Analysis Manual. Data was extracted for knowledge, behavior and weight change. Our initial search identified 12,010 titles

from PubMed, 260 from CINAHL and 4762 from Web of Science; of these, only four articles met all search criteria. Using app(s), cellular phone, iPads, mobile phone, mobile telephone, smart phone, mobile and eHealth as search terms with diet, food and nutrition as qualifiers we searched PubMed, CINAHL (January 2008- October 2013) and Web of Science (January 2008- January 2014). Positive quality ratings were given to three articles; only one reported knowledge outcomes. Behavioral changes in reviewed studies included increased adherence to diet monitoring ( $p < 0.001$ ) and decreased effort to continue diet without app ( $p = 0.024$ ). Few studies, however, have explored the use of nutrition apps as supportive educational interventions. Most apps focus on weight loss with inconsistent outcomes. We conclude that using apps for education needs additional research which includes behavior theory within the app and improved study design.