

# Ideation Phase

## Literature Survey

**TEAM ID: PNT2022TMID05143.**

**PROJECT NAME : NUTRITION ASSISTANT APPLICATION .**

❖ **Mobile cloud based system recognizing nutrition and freshness of food image:**

AUTHOR'S NAME: Diptee Kumbhar.

ARTICLE NAME: "Mobile cloud based system recognizing nutrition and freshness of food image."

- ✓ 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.

## ❖ Personalized Nutrition Solution Based on Nutrigenomics:

AUTHOR'S NAME: Jitao Yang.

ARTICLE NAME:" Personalized Nutrition Solution Based on Nutrigenomics."

- ✓ 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 healthcare 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.

## ❖ The use of mobile apps to improve nutrition outcomes.

AUTHOR'S NAME: Ktenris N DiFilippo.

ARTICLE NAME:" The use of mobile apps to improve nutrition outcomes."

- ✓ 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 mHealth 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.

## ❖ Good Sports Nutrition.

AUTHOR'S NAME: Nan Ge.

ARTICLE NAME:" Good Sports Nutrition".

- ✓ 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.

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

AUTHOR'S NAME: Jeong Sun Ahn.

ARTICLE NAME:" Development of a Smartphone Application for Dietary Self-Monitoring."

- ✓ 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.

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

AUTHOR'S NAME: Judith Bauer.

ARTICLE NAME: "Barriers and Enablers to Delegating Malnutrition Care Activities to Dietitian Assistants."

Delegation of malnutrition care to dietitian assistants can positively influence patient, healthcare, and workforce outcomes.

- ✓ However, nutrition care for hospital inpatients 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 systematised 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.

## ❖ Co-designing nutrition interventions with consumers: a scoping review.

AUTHOR'S NAME: **Alita Rushton.**

ARTICLE NAME: "Co-designing nutrition interventions with consumers: a scoping review."

- ✓ There is little known about nutrition intervention research involving consumer co-design. The aim of this scoping review was to identify and synthesise the existing evidence on the current use and extent of consumer co-design in nutrition interventions.
  - ✓ This scoping review is in line with the methodological framework developed by Arksey and O'Malley and refined by the Joanna Briggs Institute using an adapted 2weekSR approach. We searched Medline, EMBASE, PsycInfo, CINAHL and Cochrane. Only studies that included consumers in the co-design and met the 'Collaborate' or 'Empower' levels of the IAP2 Public Participation Spectrum were included. Studies were synthesised according to two main concepts: (1) co-design for (2) nutrition interventions.
  - ✓ The initial search yielded 8157 articles from which 19 studies were included (comprising of 29 articles). The studies represented a range of intervention types and participants from seven countries. Sixteen of the studies were published in the past five years. Co-design was most often used for the intervention development and only two studies reported a partnership with consumers across all stages of the research. Overall, consumer involvement was not well documented. There was no preferred co-design framework or approach reported across the various studies.
  - ✓ Consumer co-design for nutrition interventions has become more frequent in recent years but genuine partnerships with consumers across all stages of nutrition intervention research remain uncommon. There is an opportunity to improve the reporting of consumer involvement in co-design and enable equal partnerships with consumers in nutrition research.
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## ❖ The delivery of patient centred dietetic care in subacute rehabilitation units: A scoping review .

AUTHOR'S NAME: Hannah T Olufson.

ARTICLE NAME:" The delivery of patient centred dietetic care in subacute rehabilitation units: A scoping review"

- ✓ Patient centered care (PCC) positively influences individual and organizational outcomes. It is important that dietitians working in rehabilitation units are supported to deliver PCC because effective rehabilitation is a collaborative and patient centered process. The objective of this scoping review was to explore the literature available regarding the delivery of dietetic PCC, with patients undergoing rehabilitation in subacute inpatient units.
- ✓ PubMed, MEDLINE, CINAHL, Embase and Scopus were searched for relevant published literature. Searches for grey and unpublished literature were also completed. Studies were eligible for inclusion and data extraction if they demonstrated the delivery of PCC by qualified dietitians, through individual consultations with adult patients undertaking subacute rehabilitation.
- ✓ Overall, 675 studies were identified and six were included in the review. From the literature available, documentation was lacking regarding conceptualization and delivery of patient centered nutrition care, with only one study providing quality indicators for patient centered dietetic services. Elements of PCC cited were mostly limited to phrases such as, 'individualized care', 'tailored advice', 'follow-up' and 'team collaboration'.
- ✓ This scoping review identified a considerable gap in the literature regarding the delivery of dietetic PCC in subacute rehabilitation units. Contemporary descriptions of PCC show that the delivery of care which is truly patient centered is far more comprehensive than individualizing interventions or organizing ongoing services. This raises the question: is the delivery of nutrition care in subacute rehabilitation unit's patient centered?

## ❖ Characteristics of Smartphone Applications for Nutrition Improvement in Community Settings: A Scoping Review.

AUTHOR'S NAME: Thomas Philip Wycherley.

ARTICLE NAME: "Characteristics of Smartphone Applications for Nutrition Improvement in Community Settings: A Scoping Review."

- ✓ Smartphone applications are increasingly being used to support nutrition improvement in community settings.
- ✓ However, there is a scarcity of practical literature to support researchers and practitioners in choosing or developing health applications.
- ✓ This work maps the features, key content, theoretical approaches, and methods of consumer testing of applications intended for nutrition improvement in community settings.
- ✓ A systematic, scoping review methodology was used to map published, peer-reviewed literature reporting on applications with a specific nutrition-improvement focus intended for use in the community setting.
- ✓ After screening, articles were grouped into 4 categories: dietary self-monitoring trials, nutrition improvement trials, application description articles, and qualitative application development studies.
- ✓ For mapping, studies were also grouped into categories based on the target population and aim of the application or program.
- ✓ Of the 4818 titles identified from the database search, 64 articles were included. The broad categories of features found to be included in applications generally corresponded to different behavior change support strategies common to many classic behavioral change models.
- ✓ Key content of applications generally focused on food composition, with tailored feedback most commonly used to deliver educational content.
- ✓ Consumer testing before application deployment was reported in just over half of the studies. Collaboration between practitioners and application



developers promotes an appropriate balance of evidence-based content and functionality.

- ✓ This work provides a unique resource for program development teams and practitioners seeking to use an application for nutrition improvement in community settings.