

NUTRITION ASSISTANT APPLICATION

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

Diptee Kumbhar , Sarita Patil ” **Mobile cloud based system recognizing nutrition and freshness of food image,**” 2017 International Conference on Energy, Communication, Data Analytics and Soft Computing (ICECDS),2017,pp.709-714, DOI:10.1109/ICECDS.2017.8389528

- 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.

2.Personalized Nutrition Solution Based on Nutrigenomics

Jitao Yang, “**Personalized Nutrition Solution Based on Nutrigenomics**”, 2019 19th International Conference on Computational Science and Its Applications (ICCSA),2019, pp. 73-103 ,DOI: 10.1109/ICCSA.2019.00006

- 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.

3.The use of mobile apps to improve nutrition outcomes.

Ktenris N DiFilippo,Wen-Hao Huang,Karen M. Chapman-Novakofski," **The use of mobile apps to improve nutrition outcomes**", 2015 jul:21, pp-243-53,DOI: 10.1177/1357633X15572203

- 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 2008October 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.

4. Good Sports Nutrition.

Ruyao Gong, Nan Ge, Jijie Li, " **Good Sports Nutrition**". International society of sports nutrition position stand 2019, sports and energy drinks 2019, 2020/10/31, pp-2017;14:121, DOI: 10.3390/nu13113771

- 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.

5. Development of a Smartphone Application for Dietary Self-Monitoring.

Jeong Sun Ahn, Dong Woo Kim, Jiae Kim, Haemin Park, Jung Eun Lee. " **Development of a Smartphone Application for Dietary Self-Monitoring**". Department of Food and Nutrition, Seoul National University, Seoul, South Korea, pp-2019 Sep 23;6:149, DOI: 10.3389/fnut.2019.00149.

- 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.

6.Barriers and Enablers to Delegating Malnutrition Care Activities to Dietitian Assistants.

Alita Rushton , Judith Bauer , Adrienne Young , Heather Keller , Jack Bell. **"Barriers and Enablers to Delegating Malnutrition Care Activities to Dietitian Assistants"**, pp-2022 Feb 28;14(5):1037, DOI: 10.3390/nu14051037.

- 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 dietitiansan 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.

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

Alita Rushton , Judith Bauer , Adrienne Young , Heather Keller , Jack Bell.”Codesigning nutrition interventions with consumers: a scoping review”.

Department of Nutrition and Dietetics, The Prince Charles Hospital, Chermside, QLD 4032, Australia.pp-2022 Feb 28;14(5):1037, DOI: 10.3390/nu1405103

- 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. This article is protected by copyright. All rights reserved.
- 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.
- After screening, articles were grouped into 4 categories: dietary self-monitoring trials, nutrition improvement trials, application description articles, and qualitative application development studies. 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.

8.The delivery of patient centred dietetic care in subacute rehabilitation units: A scoping review.

Hannah T Olufson , Adrienne M Young , Theresa L Green. **"The delivery of patient centred dietetic care in subacute rehabilitation units: A scoping review"**. Faculty of Health & Behavioural Sciences, School of Nursing, Midwifery & Social Work, University of Queensland, Brisbane, QLD, Australia.pp- 2022 Feb;35(1):134144. DOI: 10.1111/jhn.12940. Epub 2021 Sep 9.

- Patient centred care (PCC) positively influences individual and organisational outcomes. It is important that dietitians working in rehabilitation units are supported to deliver PCC because effective rehabilitation is a collaborative and patient centred 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.
Overall, 675 studies were identified and six were included in the review. From the literature available, documentation was lacking regarding conceptualisation and delivery of patient centred nutrition care, with only one study providing quality indicators for patient centred dietetic services. Elements of PCC cited were mostly limited to phrases such as, 'individualised 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 centred is far more comprehensive than individualising interventions or organising ongoing services. This raises the question: is the delivery of nutrition care in subacute rehabilitation unit's patient centred?

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

Emma Tonkin , Julie Brimblecombe , Thomas Philip Wycherley. **"Characteristics of Smartphone Applications for Nutrition Improvement in Community Settings: A Scoping Review"**. Centre for Population Health Research, School of Health Sciences, University of South Australia, Adelaide, South Australia, Australia; and emma.tonkin@menzies.edu.au.pp- 2017 Mar 15;8(2):308-322, DOI: 10.3945/an.116.013748.

- 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.
- 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 behaviour change support strategies common to many classic behavioural change models.
Key content of applications generally focused on food composition, with tailored feedback most commonly used to deliver educational content.
- This work provides a unique resource for program development teams and practitioners seeking to use an application for nutrition improvement in community settings.

