

Recommending renal diet related mobile applications : Where do we start?

Mrs Louise Jackson^{1,2}, Mrs Jennie Dawson^{1,3}, Mrs Nicki Ruddock^{1,4}, Mrs Caroline Ritchie^{1,5}, Mrs Heather Sadler^{1,6,7}, Mrs Tina Dilloway^{1,8}, Ms Tammy Kaiwai^{1,8}, Ms Kendal Kopel⁹

¹Renal Nutrition Group of the British Dietetic Association, Birmingham, United Kingdom, ²Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, United Kingdom, ³Gloucestershire Hospitals NHS foundation Trust, Gloucester, United Kingdom, ⁴University Hospitals of Leicester NHS Trust, Leicester, United Kingdom, ⁵NHS Forth Valley, Falkirk, United Kingdom, ⁶Sentinel Healthcare Plymouth, Plymouth, United Kingdom, ⁷University Of Plymouth, Plymouth, United Kingdom, ⁸Imperial College Healthcare NHS Trust, London, United Kingdom, ⁹NHS Tayside, Dundee, United Kingdom

BACKGROUND: The provision of dietary advice is evolving with a greater emphasis on the potential benefits of digital technology. Renal diet related mobile applications (apps) have great potential for engaging patients in their nutritional needs and could assist with the monitoring of food intake, provision of dietary information or adherence to dietary changes. Health professionals need trustworthy, evidence based, good quality renal diet apps to recommend to patients with chronic kidney disease (CKD). The aim of this work was to evaluate renal diet apps using a validated scoring tool and clinical judgement in order to develop a resource directing patients with CKD to good quality apps relevant to their needs.

METHODS: Literature searches were conducted to find research related to mobile apps and technology enabled care in relation to kidney disease and diet. These articles were then evaluated using critical appraisal tools appropriate to study design. Tools designed for evaluating mobile health apps were identified through this search, including the Silberg Scale, the Mobile App Rating Scale (MARS) and The App quality (AQEL) tool. These were all reviewed for potential use, and the AQEL tool was chosen to evaluate the apps due to its relevance to dietary education and behaviour change. Apple Store and Google Play were used to search for apps during a two week period in 2019. Multiple terms relating to renal nutrition were used and exclusion criteria were applied prior to appraising the apps using the chosen tool. Both free and costed apps were appraised independently by two specialist renal dietitians. Apps were thoroughly inspected and judged on their ability to support behaviour change, knowledge acquisition, skill development as well as ease of use, age appropriateness and purpose. Scores were compared and comments made on quality and suitability of the apps for renal patients.

RESULTS: The search of both Google Play and Apple Store identified 65 apps of which 10 were excluded as inappropriate prior to evaluation; reasons for this included: apps being textbooks, not in English or not been updated for 5 or more years. Apps were classified into 'Recommended' and 'Not Recommended' based on AQEL score and clinical judgement. This is an ongoing project, but of the apps evaluated to date, 5 have the potential to be recommended after final appraisal. Reasons for not recommending include non-evidence based, misleading content and foods listed not readily available in the UK.

CONCLUSION: This is an ongoing project, and we hope to collect more information over the next few months. We will then compile a list of recommended apps and seek patient feedback on these. A resource will then be developed for CKD patients and their health care professionals indicating useful apps. Consideration will need to be made of how to keep this up-to-date in this rapidly moving field. The project may reveal the need for dietetic-led development of a renal specific dietary app to meet the needs of this patient group.