Targeting Smart Eating Goals through Innovative Tools and Behavior Nudge

Biography

Dr. Gilly Hendrie is a Research Scientist of Health and Biosecurity at Commonwealth Scientific and Research Industrial Organisation (CSIRO), Australia. Her expertise lies in understanding dietary intake patterns and developing novel ways to improve our food choices. In particular, she has an avid interest in the assessment of diet quality and development of digital tools to capture what we eat and to initiate changes in our eating habits. Her research has resulted in the launch of the online CSIRO Healthy Diet Score Survey involving over 200,000 Australians. Dr. Hendrie has designed many technology based interventions to change, support, and monitor dietary behaviour change for health and obesity. For example, she led the development and evaluation of a smartphone application to increase vegetable intake in Australian adults. She also has a strong track record in conducting evidence-based research. Currently, she leads the scientific evolution of the CSIRO’s Total Wellbeing Diet Online which has tranformed a clinically tested dietary intervention into an evidence-based digital program.

Abstract

Utilizing the characteristics of technology can engage the population and help to shift dietary behaviour towards a healthier pattern of eating, in line with nutrition recommendations. Monitoring what a population eats is difficult under current resource constraints. Adapting traditional methods of dietary assessment to incorporate technology is one way to reduce the burden of administration, reduce the costs associated with data collection and analysis, and reduce the lag time for the dissemination of results. The CSIRO Healthy Diet Score is an online survey of short food-based questions which estimates compliance with the Australians Dietary Guidelines. The survey provides self-assessment of diet quality and brief personalised feedback, suggesting key areas for dietary improvements. Since launching in May 2015, over 230,000 Australians have completed the survey. These data provide insights into the population’s food intake and compliance with our food-based guidelines. For example, Australian women have higher diet quality than men - that is they are more compliant with guidelines. Older adults do better than younger adults, and normal weight adults do better higher than obese adults. Population surveys have rarely identified dietary patterns associated with excess energy intake in relation to risk of obesity. Data from this survey suggests individuals who have the lowest diet quality are almost three times more likely to be obese than those with the highest diet quality. The most common areas that Australians receive feedback for are discretionary foods (73.8% of people), followed dairy foods (55.5%) and healthy fats (47.0%).
Targeted and tailored information can empower people to change even the most entrenched dietary behaviours. The large dataset that this survey has provided has led to the development of evidence-based digital tools to improve diet quality. The VegEze smartphone app was built around a target behaviour of ‘having 3 different types of vegetables for dinner’, as the Diet Score survey data showed this specific behaviour was associated with higher vegetable consumption and greater likelihood of achieving dietary guideline recommendations. Smartphones have characteristics which may support the complexity of changing dietary behaviour. For example, smartphones are increasingly ubiquitous, have the ability to reach individuals at nearly any time or place, can be highly interactive, can deliver information in a way that is engaging and rewarding, and provide timely feedback. Tailored feedback can also grow with user inputs, creating a personalized experience, which may encourage extended engagement and success with an intervention. They may also serve as a cost-effective and scalable way to deliver nutrition interventions to large audiences. VegEze was launched in the Apple App Store as a 21-day challenge and over 5,000 people download the app and completed the baseline survey. During the 21-day period the app was able to shift vegetable intake and variety across the sample population, and resulted in an average increase of half a serve of vegetables per day. A pleasing result was that VegEze was appealing to those with low intake at baseline. These participants gained most out of the app, increasing their intake by almost one serving per day. We also found that higher app usage was associated with greater increases in vegetable intake. However, like with most apps, retention was difficult to maintain. Engagement with technology can drive behaviour change, but the challenge remains to harness the power of technology to build tools that are engaging and successful.