Implementing eHealth-based behaviour change support within a nutrition intervention trial improves adherence to study-related behaviours in healthy young adults

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Nutrition intervention trials play a key role in informing clinical and dietary guidelines. Within these trials, we need participants to change their behaviours; however, researchers seldom systematically consider how to support participants with these changes, contributing to poor adherence. Here we evaluate how using a behaviour change framework to develop support within a dietary intervention impacts young adults' adherence to required trial behaviours. In the Protein Diet Satisfaction (PREDITION) trial, 80 young adults were randomised to a flexitarian or vegetarian diet for 10-weeks to investigate the psychological and cardiometabolic effects of moderate lean red meat consumption as part of a balanced diet[1]. To understand these outcomes, it was key that participants within the trial (i) ate a healthy, basal vegetarian diet (excluding meat, poultry, and fish not provided by research team) and (ii) reported their dietary intake daily on a smartphone application (required to evaluate intervention compliance). To enhance adherence to these behaviours the Nine Principles framework was used to develop behaviour change support (BCS)[2]. Key components of the BCS included access to a dietitian-led Facebook group, text reminders, and food delivery. Effectiveness was measured using the following analyses of the 78 participants who completed the study: pre-post change in targeted dietary habits over time using a subscore of the Healthy Diet Habits Index, adherence score to reporting over 10-weeks, Facebook group engagement, and impact evaluation. Analysis included linear imputation modelling, t-tests, and chi-square analysis. The total Healthy Diet Habits Index subscore out of 16 significantly increased from baseline to week 10 (10.6 ± 2.6 to 11.2 ± 2.6, $p = 0.011$), demonstrating maintenance of a healthy diet. Overall adherence to reporting was high across the 10 weeks, with the total population mean reporting score 90.4 ± 14.6 out of a possible 100. This strengthens study validity, allowing us to confidently report if participants complied with study requirements of consuming the intervention protein (red meat or plant-based meat alternatives) on top of a basal vegetarian diet. Although relatively low active Facebook engagement was observed (on average <1 'react' per post), most participants agreed the text messages and Facebook groups supported them to adhere to recording (63%) and eating healthily (60%), respectively. This is the first study to provide an example of how a framework can be used to systematically develop, implement, and assess BCS within a nutrition trial. This appears to be a promising way to enhance adherence to study-related behaviours, including the burdensome task of reporting dietary intake. We believe this has great potential to improve research validity and decrease resource waste, not only for the PREDITION trial but in future dietary intervention trials.

Keywords: behaviour change techniques; adherence; eHealth; health behaviour

Ethics Declaration

Yes

Financial Support

References

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