Get A Move On: Using intelligent personal systems to promote behaviour change within the home setting – A process evaluation

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Abstract

Approximately one quarter of children living in Northern Ireland are overweight or obese. Intelligent personal systems (IPS) such as Amazon Echo and Google Home have become increasingly integrated into the home setting and therefore, may facilitate behaviour change via novel interactions or as an adjunct to conventional interventions. However, little is currently known about their potential role in this context; therefore, the aim of this feasibility study is to assess the effect of a home-based technology intervention (delivered using Amazon Echo) on physical activity (PA) and dietary habits in families attending the Safe Wellbeing Eating & Exercise Together (SWEET) project, a community-based health promotion programme. Recruitment to the study is ongoing with the aim of recruiting up to 16 families. Families are randomly assigned to receive an IPS (n = 8) or assigned to control (n = 8) i.e. attend the SWEET project as usual, for 12 weeks. Individualised prompts and reminders, aligned with the content of the SWEET project, are regularly delivered to families via the IPS and normal interaction with the device is also encouraged. The primary outcome measure is PA, which will be objectively measured using an Actigraph accelerometer, and secondary outcome measures include body mass index (BMI) and family eating and activity habits. Process evaluation data from focus groups and device interaction will be used to determine the feasibility of using IPS to promote healthy behaviours within the home setting. To date, 11 families have been recruited (11 adults, 90.9% F; 16 children, 56.3% F), mean age 40.4 ± 5.5 years and BMI 34.9 ± 6.7 kg/m^2 for adults and 8.9 ± 2.1 years and BMI z-score 2.61 ± 1.23 for children. Average moderate-to-vigorous intensity physical activity (MVPA) was dichotomised to determine the percentage of adults and children meeting the UK (2011) PA guidelines for health. In total, 62.5% of adults reached the recommended level of 150 minutes MVPA per week before the intervention (n = 8; 191.50 ± 81.10 minutes), with 40% of children reaching the recommended level of 60 minutes MVPA each day of the week (n = 10; M = 52.83 ± 31.07 minutes). Follow-up measurements will be taken at the end of the intervention and acceptability and usability of such devices within the context of promoting healthy behaviours will be assessed. The findings from this feasibility study will demonstrate whether the use of IPS can increase PA in adults and children, as well as provide novel insights into the feasibility of using these devices to facilitate behaviour change.

Conflict of Interest

There is no conflict of interest.

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