ASSESSING THE USABILITY AND ADHERENCE TO WEARABLE TECHNOLOGY AND THE RADAR-BASE PLATFORM IN ONLINE HOME-BASED EXERCISE (PILOT STUDY)

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INTRODUCTION

Recent statistics from the WHO (2020) show that 28% of adults worldwide do not conduct sufficient levels of physical activity. Within rural communities there are increased barriers to conducting physical activity (Gilbert et al., 2019). One method to overcoming these barriers may be home-based exercise. Previous literature has focused on home-based exercise for individuals living with health conditions, however, there appears to be a lack focusing on increasing physical activity levels especially in older, sedentary adults. Moreover, few studies have explored the qualitative experiences of participants following online home-based exercise programmes. In addition to home-based exercise the use of wearable technology is another method to increasing an individual's level of physical activity. However, wearables are still in their infancy in measuring adherence to online exercise programmes (Argent et al., 2018). The findings from the current study will be used to provide rationale for a future study into the effects of online home-based exercise cardiac rehabilitation.

MATERIALS AND METHODS

This section will outline the methodology which is to be conducted later this year. The pilot study will be a mixed methods, wait-list control design. The study aims to recruit 20 participants (>50 years old, currently conducting low-to-moderate levels of physical activity) who will be randomised into one of two groups (experimental/control). Participants in the experimental group will take part in 6-weeks of online home-based exercise, the control group will be instructed to continue their habitual levels of exercise. Both groups will be provided with Fitbit activity trackers and a smartphone application (RADAR-base).

Prior to the beginning of the intervention participants in both groups will complete a number of physical and psychological outcome measures. Participants will complete the IPAQ-SF, WHO(QOL)-BREF (Bonomi et al., 2000) and the Rosenberg self-esteem scale (Rosenberg, 1965). They will also complete a sit-to-stand test, six-minute walk test, as well as measures of resting heart rate and blood pressure.

During the intervention experimental group participants will complete two, 1 hour exercise classes per week. Blood pressure will be measured once a week and enjoyment and future intention to exercise will be measured at weeks (1,3,6) for both groups.

Post intervention, both groups will complete the same measures that were conducted before the intervention. Further, individuals in both groups will complete the System Usability Scale (Brooke, 1996) to assess the participants' overall perception of usability. Participants in the experimental group will also complete a developed questionnaire around the experience and enjoyment of the online exercise classes. Both groups will then be invited to complete a focus group to discuss their experience of the wearable technology (Fitbits), smartphone application and the online exercise classes. The exercise class instructor will also complete a semi-structured interview following the 6-week intervention.

AIMS AND OBJECTIVES

•Evaluate the feasibility, acceptability and uptake of online exercise classes delivered in a home setting for older adults with low activity levels.

•Assess the feasibility/ usability of deploying wearable activity trackers and a locally hosted digital platform.

•This pilot data will enable further design, development, and implementation of connected health exercise programmes.

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