

Year Two Progress Report

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Background

Preoperative exercise therapy was viewed very much as a sure-fire preemptive strike, relevant to a multifaceted approach to the prehabilitation and pre-optimisation of the older surgical patient. The initial accepted outline proposal for the project was considerably improved by attention to the committee's recommendations. As a result, the objectives were targeted towards an understanding of the barriers and facilitators to prehabilitative exercise as an intervention modality, rather than the future optimism for the ability of any exercise program to alter cardiopulmonary reserve *per se* and influence surgical outcomes.

Year One Summary

The initial research phase aimed to understand the relevance of a preoperative exercise program to older patients before surgery and their understanding, attitudes and beliefs about exercise and fitness before surgery. We developed a six-week, hospital-based exercise program to serve as a feasibility study to examine views and attitudes to hospital-based prehabilitative exercise. Recruitment to the study was limited to 20% of eligible patients with a mean age of 68 years. The study was prematurely stopped due to failure to recruit sufficient numbers to time leading to a forced loss in physiotherapy (training) input. 80% of the reasons given for non-recruitment were attributed to travel and access issues (55%), commitments to relatives and other hospital commitments and fitness worries.

The qualitative results indeed questioned our professional clinical belief that an improvement in physical fitness before surgery was high on the preoperative patient agenda – it was clearly at odds with older patients views, at least for this benign surgical cohort. However, recruited patients represent a polar opposite to those non-recruited patients in terms of engagement with exercise therapy. Patients that did engage and that underwent exercise therapy demonstrated an informed understanding of the relevance of physical fitness before surgery and believed that taking part in a pre-operative exercise programme would indeed reduce their own surgical risk – important psychological concepts that have been taken forward into the second year. Once committed to the program, the compliance rates of recruited patients were high, with the entire group completing 80% of the total number of visits. Thus, ensuring adherence and recruitment to an exercise program, may be far more important to the success or failure of the program than the exercise modality itself. Indeed what we are initially trying to achieve in an exercise program may be far too prescriptive for surgical patient requirements.

Year Two progress:

In an attempt to reduce the practical issues of travel time for hospital visits and limited car parking, we decided to further investigate attitudes and views to exercise therapy through a community-based exercise program in older people. We have used community-based facilities to develop out-of-hospital exercise therapy for older volunteers and a study was prepared to investigate the acceptability of exercise therapy in the community. This is an

interventional study to test whether a short period (6 weeks) of targeted, community-based exercise therapy, will improve cardiovascular fitness and the physical activity levels of older, inactive volunteers.

In summary, the primary objective was to establish whether community-based, structured exercise therapy, delivered in two formats, would consistently improve cardiorespiratory fitness in older people, providing information to enable the design of an interventional, feasibility study in pre-surgical patients.

The secondary objectives were to

- explore group attitudes, barriers and facilitators towards improving fitness through exercise programs, especially in the pre-surgical context.
- explore how participation in a structured exercise program may change/allow levels of physical activity in-between structured exercise sessions.
- explore the acceptability of two different formats of community-based exercise interventions for older people

The study was set to recruit 42 volunteers into 3 (n=14) exercise groups. These groups were community-based and included a high-intensity exercise program and an activity-based program. Integrated into this program were focus groups, led by a Senior psychologist, to further investigate older peoples' attitudes to exercise both pre and post-exercise and a brief self-efficacy intervention before one group's therapy.

Study Progress:

Initially recruitment was slow but an amendment to the advertising program for the study produced an over subscription of volunteers. The study has now completed recruitment and is in the data gathering and analysis stage. It is hoped that this will provide rich data both qualitative and quantitative to inform a third, and more definitive pilot study of an exercise intervention in surgical patients in the last two years of the fellowship.

Other Fellowship Progress:

In relation to the other component aims of the RCOA fellowship, we have been developing other strands of a preoperative interventional approach to the surgical patient that will have benefits to outcome. Newcastle upon Tyne has a long pedigree in research into alcohol consumption and attempts to prevent usage. Through collaborative links, I have developed a strong team that have been successful in an application to the NIHR HTA program (£680k) to investigate the role of a brief intervention to reduce or cessate alcohol intake in risky drinkers before elective orthopaedic surgery. This is an important step forward in establishing our perioperative research infrastructure. The study has been set up to commence early in the New Year (2016). We see this as an important move towards establishing Perioperative research into the wider NHS research agenda.