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## Patients' preference for exercise setting and its influence on the health benefits gained from exercise-based cardiac rehabilitation☆☆☆

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## ABSTRACT

**Objective:** To assess patient preference for exercise setting and examine if choice of setting influences the long-term health benefit of exercise-based cardiac rehabilitation.

**Methods:** Patients participating in a randomised controlled trial following either heart valve surgery, or radiofrequency ablation for atrial fibrillation were given the choice to perform a 12-week exercise programme in either a supervised centre-based, or a self-management home-based setting. Exercise capacity and physical and mental health outcomes were assessed for up to 24 months after hospital discharge. Outcomes between settings were compared using a time  $\times$  setting interaction using a mixed effects regression model.

**Results:** Across the 158 included patients, an equivalent proportion preferred to undertake exercise rehabilitation in a centre-based setting (55%, 95% CI: 45% to 63%) compared to a home-based setting (45%, 95% CI: 37% to 53%,  $p = 0.233$ ). At baseline, those who preferred a home-based setting reported better physical health (mean difference in physical component score: 5.0, 95% CI 2.3 to 7.4;  $p = 0.001$ ) and higher exercise capacity (mean between group difference 15.9 watts, 95% CI 3.7 to 28.1;  $p = 0.011$ ). With the exception of the depression score in the Hospital Anxiety and Depression Score (F(3.65),  $p = 0.004$ ), there was no evidence of a significant difference in outcomes between settings.

**Conclusion:** The preference of patients to participate in home-based and centre-based exercise programmes appears to be equivalent and provides similar health benefits. Whilst these findings support that patients should be given the choice between exercise-settings when initiating cardiac rehabilitation, further confirmatory evidence is needed.

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## 1. Introduction

Over recent years, cardiac rehabilitation (CR) has expanded from simple, single centre programmes into large comprehensive programmes offering centre based and "home-based" delivery options

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[1–3]. Home-based programmes are widely ranging from self-management programmes without any supervision to tele-monitored supervised programmes. These can be delivered either in the patients' home, or in a local non-hospital location [4,5]. Common to the expansions of alternative CR settings is an attempt to tailor CR towards the preferences of a broader group of patients [1,2,4] and, by doing so, tackle the very low uptake and adherence rate that globally is reported in CR [6–9].

Patient preference is known to determine whether patients participate in a trial and hypothesised to have positive impact on adherence to interventions and outcomes [10,11]. Evidence from one CR trial showed that half of all patients will choose a home-based rehabilitation programme, when given the choice [12], which is perhaps surprising

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given that most CR programmes are delivered in traditional centre-based settings [6]. Qualitative studies report that home-based programmes are preferred by some patients as they align with their everyday life and their employment commitments [13,14]. In contrast, patients preferring social events and the possibility for specific exercise intensity monitoring are more likely to prefer a centre-based setting [13]. These findings emphasise that it is unlikely that a single standardised CR model will fit all patients.

Physical exercise is a key element in CR [15] and its benefits are well documented [16–19]. Based on a systematic review of the studies investigating exercise-based CR, Taylor and colleagues found similar health benefits between centre-based and home-based interventions, at similar costs [20]. Hence, the authors concluded that choice of setting should reflect preference of the individual patient [10,11]. However, this

conclusion was based on study designs that randomised patients to either home or centre-based CR and failed to take into account the preference of patients [20]. To our knowledge, only the study by Dalal et al. [12] has offered cardiac patients a choice between centre-based rehabilitation classes over eight to ten weeks, or a home-based self-help package of six weeks duration. The results showed no difference in patient outcomes. More evidence is, therefore, needed in order to validate the benefits and consequence of allowing patients a choice between settings for CR.

The CopenHeart trials were designed to investigate the effect of a similar comprehensive CR programme across cardiac diagnoses, including atrial fibrillation and valve disease. Patients were randomised to either usual care or a programme consisting of physical exercise training and psycho-education. Once allocated to the intervention groups,

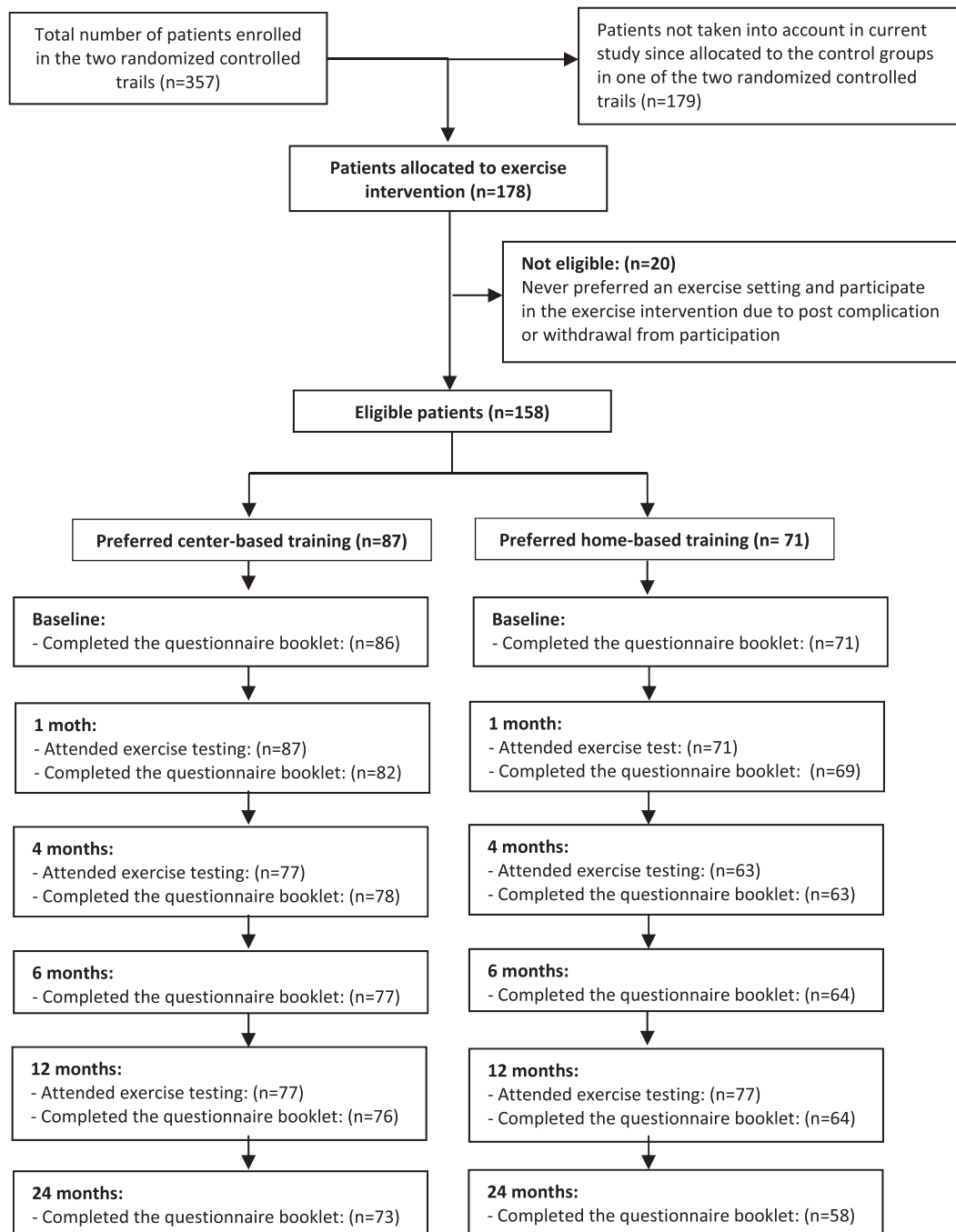


Fig. 1. The exact numbers of patients that attended exercise testing and answered the questionnaire booklet throughout the study period.

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