

Effectiveness of community-based cardiac rehabilitation for primary, secondary cardiovascular prevention

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With a growing incidence of cardiovascular disease in Asia, lifestyle modification such as weight loss and routine exercise plays an important role in early primary cardiovascular disease prevention. While it is widely known that patients with cardiovascular conditions will benefit from participating in a structured cardiac rehabilitation programme, particularly in a convenient and affordable community-based setting, there is no published data that showed the effectiveness of such a programme in the Asian population to date.

With the idea of health promotion in mind, researchers at the National University of Singapore (NUS) collaborated with the Singapore Heart Foundation in a [cardiac rehabilitation](#) study to assess the overall wellness improvement of more than 200 local patients with or without [cardiovascular conditions](#). It was found that patients who had completed the one-year community based programme had experienced a reduction in [body fat percentage](#), increased stamina and improved total [cholesterol levels](#). Their findings illustrated the potential of the programme in delaying disease progression and preventing further complications.

This study was led by Assistant Professor Joanne Yeh Chang of the Department of Pharmacy at the NUS Faculty of Science, together with recent NUS Pharmacy graduates Mr Kwan Yu Heng and Mr Ong Kheng Yong, in conjunction with Mr Tay Hung Yong of the Singapore Heart Foundation. This is the first study done in Asia on a community-based

cardiac rehabilitation programme aimed at reducing cardiovascular risk.

Effectiveness of community-based rehabilitation programme for cardiovascular prevention

In the study, a total of 207 local patients participated in the Heart Wellness Programme for a period of 12 months, from 2010 to 2011, at the Singapore Heart Foundation. The patients included those with certain [cardiac risk factors](#) and those who had an underlying [cardiac disease](#) but were deemed as stable by the patients' physicians. These patients went through an individualised series of exercise programmes, nutritional reviews, smoking cessation programmes and psycho-social counselling. Core components such as baseline vitals (i.e. heart rate and blood pressure), body weight, body fat, and exercise tolerance were measured.

At the end of the programme, these patients were found to have an overall reduction of 0.8% in body fat, 12% of "bad" cholesterol reduction, and 4.6% improvement in total cholesterol levels. Patients also showed overall improvement in exercise tolerance and stamina with the ability to walk 10.7m longer than their baseline.

These positive results highlighted the programme's potential in improving health and delaying disease progression, which lends support to the need to expand such community-based programmes for early cardiovascular intervention.

Further studies to validate effectiveness

The information from this study provided the team with a preliminary understanding of the effectiveness of a cardiac rehabilitation programme in a community setting. They are now expanding their study to conduct a controlled trial, targeting 1,000 patients over a period of five years.

The team hopes that the findings can serve as a reference for healthcare professionals and administrators in Singapore, to further support and expand similar programmes. At the same time, they hope to influence other Asian countries to initiate affordable early cardiovascular disease intervention programmes to promote health awareness.

Provided by National University of Singapore

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