A New Pilot Patient Empowered Home-Based Exercise Program For Children After Cardiac Surgery.

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Introduction
Medical and surgical advances increase the survival rates of children with congenital heart disease. Despite excellent surgical outcomes, parents tend to overprotect their children from performing physical activities after surgery. Inactivity and deconditioning will result in poor exercise capacity and quality of life. Post-surgical cardiac rehabilitation program may improve exercise function. A new pilot home-based exercise program was implemented in 2014 for children after cardiac surgery to enhance exercise capacity, promote physical fitness and healthy lifestyles through empowerment.

Objectives
To evaluate the effectiveness of patient empowered home-based exercise program for children after cardiac surgery.

Methodology
The home exercise program included low intensity calisthenics exercise, stretching exercise and aerobic exercise daily for 6 weeks. Patients and their parents had to chart on the perceived exertion rate, the target heart rate and monitor their sign and symptoms during exercise. Outcome measure was assessed by patient satisfaction questionnaire. It comprises 13 questions with five main domains. This include the satisfaction of the service provided, the knowledge gained, the confidence in physical and daily living activities, change of lifestyle attitude and exercise tolerance. Patients completed the questionnaire 6 weeks after six weeks of exercise.

Result
Results: In the pilot trial, 9 patients were recruited (mean age:10, range 6-16 ). All
patients agreed that the program was helpful and satisfied with the service provided. All of them gained the knowledge of monitoring during exercise and have confidence to continue their physical activities. The physical activities they preferred were 33% walking and swimming, 22% cycling and 45% swimming. Two-third of the patients and their parents agreed that it helps to promote a healthy lifestyle and increased their sense of well-being, self-esteem and emotional state. 67% and 56% of them had improvement in walking duration (\( \bar{x} = 48 \) min.) and flights of stairs (\( \bar{x} = 2 \)) respectively. Conclusion: Parents and children were highly satisfied with the service provided. The program enhanced the exercise capacity of children. Children were empowered to participate in different physical activities. They were more aware of their body's response to exercise and able to manage it with confidence. It also improved their overall health, well-being, confidence and social interaction with others. It further reinforced a healthy lifestyle.