Exercise Habit of Cardiac Patients after Phase II Cardiac Rehabilitation Programme

Winsome Yee-Man Mak
Wai-Kwong Chan
Sunny Chiu-Sun Yue
Eleanor Yee Wong Chan

Follow this and additional works at: https://www.jhkcc.com.hk/journal

Recommended Citation
Winsome Yee-Man Mak, Wai-Kwong Chan, Sunny Chiu-Sun Yue, Eleanor Yee Wong Chan, Exercise Habit of Cardiac Patients after Phase II Cardiac Rehabilitation Programme Journal of the Hong Kong College of Cardiology 2005;13(1) https://doi.org/10.55503/2790-6744.1116

This Original Article is brought to you for free and open access by Journal of the Hong Kong College of Cardiology. It has been accepted for inclusion in Journal of the Hong Kong College of Cardiology by an authorized editor of Journal of the Hong Kong College of Cardiology.
Exercise Habit of Cardiac Patients after Phase II Cardiac Rehabilitation Programme

WINSOME YEE-MAN MAK,1 WAI-KWONG CHAN,1 SUNNY CHIU-SUN YUE,1 ELEANOR YEE WONG CHAN,2 ERIC SIN-WING WONG2

From 1Division of Cardiology, 2Physiotherapy Department, United Christian Hospital, Hong Kong SAR

MAK ET AL.: Exercise Habit of Cardiac Patients after Phase II Cardiac Rehabilitation Programme. Objectives: To determine the exercise habit of patients who completed Phase II cardiac rehabilitation programme (CRP) from July 2002 to October 2003. Methods: Phone survey was conducted with patients who self-reported their exercise pattern. Type, frequency, duration, and intensity of exercise; exercise tolerance (ET) in terms of flight of stairs (FOS) achieved and walking distance on level ground, and pre-programme exercise habit were analysed. Results: Among 120 Phase II graduates, 107 patients responded to the survey. Ninety-five patients (70 males), aged 45-82, reported they did exercise weekly. Forty-six patients (48.4%) did not exercise regularly beforehand. Walking was the most common exercise (66.3%). Light and moderate to vigorous-intensity exercises were performed by 47% and 53% of patients respectively. Exercise <3 times/week or spent <30 minutes/session was revealed in 27% of patients. Frequency and duration of exercise were not statistically different between male and female patients. However, patients ≥65 years did exercise more often than their younger counterparts (p=0.018). Regarding ET, 60% and 63% of patients reported that they could walk for >1 hour on level ground and climb ≥6 FOS at a time respectively. Conclusions: Most patients (88.8%) could achieve regular exercise habit after completion of Phase II CRP. However, more than 25% of patients did not practice exercise accordingly to the exercise guidelines. Education and counselling in long-term maintenance of exercise with appropriate frequency, duration and intensity should be emphasised. (J HK Coll Cardiol 2005;13:4-9)

Cardiac rehabilitation, exercise

Introduction

Regular exercise is one of the risk-reduction interventions in cardiac rehabilitation.1 It improves atherosclerotic risk factors, reduces cardiac mortality, and decreases symptoms development in patients with
coronary artery disease (CAD). On completion of Phase II training, exercise prescriptions and the importance of continuing regular exercise are given to patients by physiotherapists. The purpose of this study was to determine the exercise habit of cardiac patients following their completion of Phase II cardiac rehabilitation programme (CRP).

**Methods**

**Subjects**

Cardiac patients who completed Phase II CRP in United Christian Hospital during the period from July 2002 to October 2003 were included in this study.

**Outcome Measures**

Parameters including type, frequency, duration, and intensity of exercise performed by patients, exercise tolerance (ET) in terms of flights of stairs (FOS) achieved and walking distance on level ground, and exercise habit before Phase II training were used to measured patients’ exercise pattern. In evaluation of FOS achieved, a fight of stairs was regarded as 10 steps.

**Survey Form**

The phone survey was conducted in early March 2004. Questionnaire consisted of eight questions was used to explore and record patients’ exercise pattern (Figure 1). Patients self-reported their current exercise pattern. Their replies were then categorized and analysed accordingly. Types of exercise performed by patients were classified into light (<3 metabolic equivalents, METs), moderate (3-6 METs), and vigorous intensity (>6 METs).

**Results**

One hundred and twenty patients completed Phase II CRP during the period from July 2002 to

<table>
<thead>
<tr>
<th>Name : ____________</th>
<th>MRN: ____________</th>
<th>Sex / age: <em><strong>/</strong></em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Do you exercise after Phase II CRP?</td>
<td>Yes / No, reasons: ____________</td>
<td></td>
</tr>
<tr>
<td>(If yes, go to Q2.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2. How often do you exercise every week?</td>
<td>____________ times/week</td>
<td></td>
</tr>
<tr>
<td>Q3. What type of exercises do you do?</td>
<td>____________ (major)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>____________ (minor)</td>
<td></td>
</tr>
<tr>
<td>Q4. What is the duration for each exercise session?</td>
<td>____________ (minutes)</td>
<td></td>
</tr>
<tr>
<td>Q5. How far can you walk?</td>
<td>____________ (hours)</td>
<td></td>
</tr>
<tr>
<td>Q6. Can you do stair climbing?</td>
<td>Yes / No (If no, go to Q8.)</td>
<td></td>
</tr>
<tr>
<td>Q7. How many flights of stairs can you take?</td>
<td>____________ (FOS)</td>
<td></td>
</tr>
<tr>
<td>(For those who can manage stairs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q8. Did you exercise more than 3 times per week before participate in Phase II?</td>
<td>Yes/No</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 1. Survey form for assessment of patients’ exercise habit after completion of Phase II CRP.*
October 2003. There were 86 males and 34 females, their age ranged from 43 to 82 years old. By the time of the study, they were discharged five to twenty months from Phase II training. Thirteen patients' data were not available due to death in four, refusal to study in one, and inability to contact in eight patients.

Non-Exercise Group
Out of 107 patients who responded to the survey, 12 patients (11.2%) did not exercise. There were 6 males and 6 females, age ranged from 43 to 80 years. Major barriers including injuries and pain over body parts, recent medical events, time constraints, and forgot own exercise prescription were reported in five, three, three, and one patients respectively.

Exercise Group
Ninety-five patients (88.8%) reported that they did exercise after Phase II training. There were 70 males and 25 females, their mean age was 65.1±9.0 (range 45-82) years. Fifty-four patients (56.8%) were aged over 65. Among 95 patients, 48.4% of patients developed exercise habit following Phase II CRP.

Patients' Exercise Pattern

1. Types and Intensity
Walking was the most common type of exercise practiced by 66.3% of patients, followed by Chinese Wushu for example Tai Chi and Qigong, and stretching by 24.2%, and 11.6% of patients. Other types of exercise including swimming, playing ball games, cycling and hiking were also done by patients (Figure 2). Out of those 95 patients, three patients did exercise at community or sports centres. All patients created their own exercise programme. Fifty-five patients (47%) performed light-intensity exercises, the rest (53%) worked out at moderate to vigorous level (Figure 3).

2. Frequency and Duration
Thirteen patients (13.7%) did exercise <3 times/week, while 61 patients (64.2%) of patients did exercise almost everyday (Figure 4). Twenty patients (21.1%) spent <30 minutes/sessions, while 33 patients (34.7%) spent ≥60 minutes on each exercise session (Figure 5). Furthermore, 26 patients (27.4%) did exercise less than three times per week or spent less than 30 minutes per
Figure 3. Intensity of exercise.

Figure 4. Frequency of exercise.
exercise session. There were not statistically different in frequency and duration of exercise between male and female patients. However, patients \( \geq 65 \) years exercise more frequent than their younger counterparts did \( (p=0.018) \).

3. Exercise Tolerance

Sixty percent of patients reported that they could walk for more than an hour on level ground. Sixty-three percent of patients reported that they could climb six or more FOS, which implied \( \geq 60 \) steps of stairs, at a time.

**Discussions**

According to guidelines from the Centers for Disease Control and Prevention and the American College of Sports Medicine, patients are recommended to do at least 30 minutes of moderate-intensity \( (\geq 3 \text{ METs}) \) exercise on most, and preferably all, days of the week.\(^{1,4,7}\) Furthermore, to maximize the benefits of cardiac rehabilitation, long-term maintenance of regular moderate-intensity exercise for least 12 weeks is necessary.

Although the benefits of exercise are acknowledged, compliance to the recommendations is difficult.\(^8\) In USA, less than 25% of Americans could achieve the recommended level of exercise.\(^4\) In our study, 47%, 14%, and 21% of patients had less than the recommended level of intensity, frequency, and duration during exercising. Long-term maintenance of exercise is not easy as well, especially when supervision is withdrawn.\(^8\) Community-based exercise classes provide regular, structured and supervised training programme. However, only 3% of patients in the study worked out at fitness centers. Scottish Intercollegiate Guidelines Network (2002) also indicated that there is no restriction on the nature of exercise performed by patient as long as patients adhere to the recommendation.\(^8\) Therefore, periodically review with patients their exercise pattern and provide education and counseling is essential to support patients’ adherence to do exercise after completion of Phase II CRP.\(^3\)

Tai Chi and Qigong was the second most common type of exercise \( (24.2\%) \) performed by patients. It is also becoming more popular in United States. They are Chinese exercise practice involving gentle movements of body as well as training of body, breath, voice and mind.\(^9\) According to Ainsworth (2000), they were classified as moderate-intensity \( (3 \text{ METs}) \) aerobic exercise.\(^6,9\) Studies had documented their benefits in many areas including elders, arthritis patients, patients with cardiovascular disease, and others with chronic illness.\(^9\) Therefore, the exercise could be promoted to cardiac patients with associated illness.

Metabolic equivalent (MET) is an absolute scale in measuring the intensity of exercise. Its classification was based on the physical effort of healthy, middle-aged adults. Lee et al. (2003) suggested that individual fitness levels should be...
considered when "moderate-" intensity exercise were recommended.\textsuperscript{2,3,10} In our study, more than one-half of patients were aged over 65 years, and 47\% of patients performed light intensity exercise. During review of their exercise pattern, elderly patients did exercise at light-intensity might already accomplished cardiac protection purpose. It is therefore, necessary to consider patients' physical fitness and tailored accordingly.

Sedentary lifestyles in cardiac patients should be avoided. Findings indicated that even some form of exercise provide certain benefits than non-exercise group.\textsuperscript{11} For patients who did not exercise, their barriers should be explored. Health care professionals should discuss the benefits, risks, and opportunities about exercise with them.\textsuperscript{5} In situation when patients' medical conditions limited them from doing exercise, medical treatment to stabilize their conditions should be given. Their exercise recommendation should be revised and customized to meet their conditions.\textsuperscript{12}

Conclusions

Most of the patients (88.8\%) could achieve regular exercise habit after completion of Phase II CRP. However, more than 25\% of patients did not practice exercise accordingly to the exercise guidelines. Education and counselling in long-term maintenance of exercise with appropriate frequency, duration and intensity should be emphasised.

References