

Narrative Review Comparing the Benefits of and Participation in Cardiac Rehabilitation in High-, Middle- and Low-Income Countries[☆]



Karam I. Turk-Adawi, PhD^{a,b*}, Sherry L. Grace, PhD^{c,d}

^aSchool of Health Policy and Management, York University, Toronto, Ontario, Canada

^bCollege of Health Professions, Al-Quds University, Jerusalem, Palestinian Authority

^cSchool of Kinesiology and Health Science, York University, Toronto, Ontario, Canada

^dCardiovascular Rehabilitation & Prevention, University Health Network, Toronto, Ontario, Canada

Online published-ahead-of-print 29 November 2014

Background

Cardiovascular disease is a leading cause of morbidity worldwide. Cardiac rehabilitation (CR) is a comprehensive secondary prevention approach, with established benefits in reducing morbidity in high-income countries (HICs). The objectives of this review were to summarise what is known about the benefits of CR, including consideration of cost-effectiveness, in addition to rates of CR participation and adherence in high-, as well as low- and middle-income countries (LMICs).

Methods

A literature search of Medline, Excerpta Medica Database (EMBASE), and Google Scholar was conducted for published articles from database inception to October 2013. The search was first directed to identify meta-analyses and reviews reporting on the benefits of CR. Then, the search was focussed to identify articles reporting CR participation and dropout rates. Full-text versions of relevant abstracts were summarised qualitatively.

Results

Based on meta-analysis, CR significantly reduced all-cause mortality by 13%–26%, cardiac mortality by 20%–36%, myocardial re-infarction by 25%–47%, and risk factors. CR is cost-effective in HICs. In LMICs, CR is demonstrated to reduce risk factors, with no studies on mortality or cost-effectiveness. Based on available data, CR participation rates are <50% in the majority of countries, with documented dropout rates up to 56% and 82% in high- and middle-income countries, respectively.

Conclusions

CR is a beneficial intervention for heart patients in high and LMICs, but is underutilised with low participation and adherence rates worldwide. While more research is needed in LMICs, strategies shown to increase participation and program adherence should be implemented.

Keywords

Cardiac rehabilitation • Secondary prevention • Myocardial infarction • Participation • Adherence • Cost-effectiveness

[☆] CR Benefits Globally.

*Corresponding author at: School of Health Policy and Management, York University, 4700 Keele Street, Toronto, Ontario M3J 1P3, Canada.

Tel.: +647-766-7711; fax: +416 736-5774, Email: karamturk2000@yahoo.com

© 2014 Australian and New Zealand Society of Cardiac and Thoracic Surgeons (ANZSCTS) and the Cardiac Society of Australia and New Zealand (CSANZ). Published by Elsevier Inc. All rights reserved.

Introduction

Cardiovascular disease (CVD) has emerged as the leading cause of death worldwide, accounting for 30% of global deaths [1,2]. The predominant CVDs are coronary heart disease (CHD), stroke, hypertension, and heart failure [2,3]. These disorders are responsible for more than 82% of CVD mortality [3]. According to the World Health Organization (WHO), an estimation of 17.3 million people died from CVD in 2008 [2,3]. Of these, 7.3 million deaths were due to CHD [2]. Over the next few decades, CVD will continue as the leading cause of mortality worldwide [2–4]. More than 23 million individuals will die annually from CVD by 2030 [4]. Further, the burden of CVD is growing disproportionately in low and middle-income countries (LMICs) [5], where 80% of CVD deaths occur [6]. This is likely due to limited resources, lack of screening and prevention, rapid urbanisation and associated lifestyle changes [6].

In 2010, the estimated global cost of CVD was US\$863 billion [3]. Almost US\$474 billion (55%) was in direct healthcare costs, with the remaining 45% in indirect costs, including productivity loss from disability, premature death, and time lost from work [3]. This cost is estimated to increase to US \$1,044 billion in 2030 [4]. The economic loss is exacerbated in LMICs, where a high proportion of working-age adults are affected by CVD [7]. Between 2011 and 2025, the projected economic loss from CVD is \$3.76 trillion, representing >50% of the loss from non-communicable diseases in LMICs [3]. This loss could be reduced by \$377 billion, in the same period, by decreasing CVD mortality by 10% [3].

Thus, in addition to the need for primary prevention, the scale of disease and the economic impact necessitate fulsome secondary and tertiary prevention in high and LMICs. A comprehensive model, such as that offered in cardiac rehabilitation (CR), is needed. CR is a multidisciplinary secondary prevention approach designed to stabilise, slow, or even promote regression of CVD [8]. The World Health Organization (WHO) defines CR as the “sum of activities required to influence favourably the underlying cause of the disease, as well as to provide the best possible physical, mental and social conditions, so that the patients may, by their own efforts, preserve or resume when lost, as normal a place as possible in the community” [9].

While much is known about CR in high-income countries (HICs), little is known about CR in LMICs. Thus, the objectives of this narrative review were to juxtapose what is known about the: (1) benefits of CR, including consideration of cost-effectiveness, and (2) rates of CR participation and adherence in HICs, with what is known in LMICs.

Methods

A literature search of Medline, Excerpta Medica Database (EMBASE), and Google Scholar was conducted for published articles from database inception to October 2013 by an information specialist. The search strategy was created in

consultation with the study authors. Examples of the terms used in the search strategy included “cardiac rehabilitation”, “secondary prevention”, “physical medicine”, “physical therapy modalities”, “exercise therapy”, “participation”, “enrollment”, “adherence”, “compliance”, “dropout”, “utilization”, “benefits”, “mortality reduction”, “risk factors improvement/reduction” and relevant individual risk factors.

Countries were classified according to 2012 Gross National Income per capita, in accordance with World Bank methodology [5]. HICs were those with \$12,616 per capita or greater. Countries with less were classified as LMICs. Each LMIC was included as a search term and combined with the benefits and participation searches. The search strategy identified a large number of studies in HICs and 1,417 studies in LMICs. Therefore, for HICs, we restricted the search related to CR benefits to systematic reviews and meta-analyses published since the late 1980s.

Identified citations were considered for inclusion by the first author. Full-text versions of relevant abstracts were obtained for inclusion, and summarised qualitatively. Where multiple studies were identified from a specific country reporting on participation, articles for reporting were chosen based on the following considerations: a) being the only available study from a country; b) random selection of the study population; c) large cohort of the study population; and d) being the most recent study in a country. For LMICs, 19 studies were included.

Results

Benefits of Cardiac Rehabilitation

HICs

Over the past three decades, considerable evidence of the benefits of CR for patients with CHD has mounted. Documented benefits of CR are based on findings of eight meta-analyses of randomised clinical trials (Table 1), where outcomes among CR participants are compared with participants exposed only to usual care [10–17]. These have shown participation in CR reduces mortality and morbidity, promotes a healthy lifestyle, favourably modifies risk factors, and improves health-related quality of life. Further, a recent overview of six CR meta-analyses including 71 randomised clinical trials showed that exercise-based CR reduces all-cause mortality by a mean of 19%, cardiac mortality by a mean of 20%, re-infarction by a mean of 15%, and hospitalisation by a mean of 31%, and had significant positive changes in total cholesterol, triglycerides, and systolic blood pressure among patients with CHD [18].

Mortality and Morbidity

The effectiveness of CR in reducing mortality in patients with CHD has been studied widely since the late 1980s (Table 1) [10–17]. CR significantly reduced all-cause mortality by 13%–26% and cardiac mortality by 20%–36% among patients with CHD (Table 2) [10–17]. In a recent observational study

Download English Version:

<https://daneshyari.com/en/article/2917369>

Download Persian Version:

<https://daneshyari.com/article/2917369>

[Daneshyari.com](https://daneshyari.com)