Availability, use and barriers to cardiac rehabilitation in low- and middle-income countries: a systematic review

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Citation
Loheetha Ragupathi, Rajesh Vedanthan, Judy Stribling, Valentin Fuster, Mary Ann McLaughlin. Availability, use and barriers to cardiac rehabilitation in low- and middle-income countries: a systematic review. PROSPERO 2014:CRD42014010449 Available from http://www.crd.york.ac.uk/PROSPERO_REBRANDING/display_record.asp?ID=CRD42014010449

Review question(s)
To determine the availability, use, and barriers to cardiac rehabilitation (CR) in low- and middle-income countries (LMIC)

Searches
Sources searched: PubMed, EMBASE, Web of Science, Cochrane library

Records after 1980 were included.

Records of all languages will be reviewed for potential inclusion.

Link to search strategy
http://www.crd.york.ac.uk/PROSPEROFILES/10449_STRATEGY_20140527.pdf

Types of study to be included
There are no restrictions on study designs eligible for inclusion.

Condition or domain being studied
Cardiac rehabilitation is a comprehensive, multi-disciplinary program of exercise, education, and behavior modification designed to return patients to full physical, emotional, psychosocial, and vocational function. Cardiac rehabilitation is an integral component of secondary prevention of cardiovascular disease, and has repeatedly been shown to have significant mortality and other benefits. Cardiac rehabilitation is under-utilized in high-income countries. The availability and use of cardiac rehabilitation in low- and middle-income countries is not systematically known.

Participants/ population
Inclusion criteria:
- conducted in low/middle income country - as defined by World Bank as of 2013
- report on availability, use, or barriers to cardiac rehabilitation

Exclusion criteria:
- Study is not concerning all or part of cardiac rehabilitation
- Study not performed in low/middle income country
- Study does not report on at least one of availability, use, or barriers to cardiac rehabilitation

Intervention(s), exposure(s)
Cardiac rehabilitation programs in LMICs

**Comparator(s)/ control**
Not relevant

**Context**
Cardiac rehabilitation programs per guidelines from the American Association of cardiovascular and pulmonary rehabilitation included patient assessment, nutritional counseling, weight management, blood pressure management, lipid management, diabetes management, tobacco cessation, psychosocial management, physical activity counseling and exercise training. Class I indications for cardiac rehabilitation are: post MI/PCI or CABG, heart failure, valvular disease, peripheral arterial disease and post heart transplant.

**Outcome(s)**

**Primary outcomes**
- # of cardiac rehabilitation programs in a country
- % referral to cardiac rehabilitation programs
- % attendance at cardiac rehabilitation programs

**Barriers to cardiac rehabilitation attendance**

**Secondary outcomes**
- Population density of cardiac rehabilitation centers
- Personnel available at cardiac rehabilitation centers
- Characteristics of cardiac rehabilitation attendees vs. non-attendees

**Data extraction, (selection and coding)**

**Phase I:** Screening by title - 1 researcher involved

**Phase II:** Screening by title and abstract - 2 researchers involved - discrepancies resolved by discussion, if still unresolved, records were included for full text review

**Phase III:** Full text screening - 2 researchers involved

**Data to be extracted:**

**GENERAL**
- Study Title , Language, Year of study, Type of study, Countries included, LMICs included, Statistical methods, Funding, Ethical approval

**ASSESSMENT OF RISK OF BIAS**
- Self report bias? (y/n) Other types of bias?

**PARTICIPANTS**
- Who? Selection, How contacted , Year of survey, # of participants eligible, # contacted, # included

**OUTCOMES**
- # with CR available, by phase

**Type of patients accepted (from AACVPR guidelines)**
Services offered (from AACVPR guidelines)

Personnel available

Use: # patients in CR/annum, % participation by phase, Quantitative or qualitative info on the characteristics of CR Attendees, Non-attendees

Barriers: Lack of referral, Transportation issues, Patient's financial constraints, Lack of qualified personnel, Lack of economic resources, Absence of adequate floor space, Rehabilitation is not profitable enough, Does not offer any benefit to the patients

Risk of bias (quality) assessment
Yes, risk of bias will be assessed from individual studies. Due to heterogeneity of data we do not anticipate excluding studies due to bias, but rather reporting aggregate data and listing the possibilities of bias.

Strategy for data synthesis
Data will be used in aggregate when possible.

Availability and use of cardiac rehabilitation will be tabulated displayed on world maps.

We will attempt to determine cardiac rehabilitation availability per capita.

Trends in cardiac rehabilitation use, and the barriers to cardiac rehabilitation will be reported in aggregate.

We plan to undertake a descriptive synthesis of qualitative data.

Analysis of subgroups or subsets
None planned

Dissemination plans
Preliminary data - from all English language articles only - was presented at World Congress of Cardiology 2014

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Anticipated or actual start date
01 February 2013
Anticipated completion date
30 August 2014

Funding sources/sponsors
Icahn School of Medicine at Mount Sinai

Conflicts of interest
None known

Language
English

Country
United States of America

Subject index terms status
Subject indexing assigned by CRD

Subject index terms
Coronary Disease; Developing Countries; Humans; Rehabilitation

Stage of review
Ongoing

Date of registration in PROSPERO
07 July 2014

Date of publication of this revision
07 July 2014

DOI
10.15124/CRD42014010449

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