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

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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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Icahn School of Medicine at Mount Sinai

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None known

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United States of America

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Subject indexing assigned by CRD

**Subject index terms**  
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**Stage of review at time of this submission**

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