Improving uptake and adherence in cardiac rehabilitation: literature review


CRD summary
This review assessed interventions to improve uptake, adherence and professional compliance in cardiac rehabilitation. The authors concluded that little reliable research has been undertaken in this area and further research is required. Overall, this was a relatively well-conducted review that adequately described the limitations of the primary studies; the authors’ conclusions are likely to be reliable.

Authors’ objectives
To assess interventions to improve uptake, adherence and professional compliance in cardiac rehabilitation.

Searching
MEDLINE, EMBASE, the Cochrane Library (Issue 2, 2001), CINAHL, PsycINFO, ISI Web of Science and ISI Proceedings, EconLit, British Library Inside, SIGLE, HMIC, COPAC and the National Research Register were searched from inception to June 2001. Additional sources searched included conference abstracts and society newsletters of 10 named journals and societies. The reference lists of relevant studies and reviews were checked and experts were contacted. No language restrictions were applied.

Study selection
Study designs of evaluations included in the review
Inclusion criteria for the study design were not defined. Randomised controlled trials (RCTs) and non-randomised studies were included in the review.

Specific interventions included in the review
Studies of interventions to improve uptake, patient adherence or professional compliance in cardiac rehabilitation were eligible for inclusion. In the included studies, themes identified in the interventions were: health care professional-led interventions at patient level, trained lay volunteers, coordination of referral and post discharge care at the service level, and motivational communication to improve uptake; formal patient commitment, spouse or family involvement, strategies to aid-self-management, education and psychological interventions to aid patient adherence; and improvements in referral process, coordination of post discharge care and physician endorsement for interventions aimed at professional compliance.

Participants included in the review
Studies of patients with myocardial infarction, coronary artery bypass graft (CABG), percutaneous transluminal coronary angioplasty (PTCA), heart failure or coronary heart disease were eligible for inclusion.

Outcomes assessed in the review
Studies that assessed outcomes relevant to the review question, particularly the number of patients attending or adherence rates for cardiac rehabilitation or its components (exercise, education and lifestyle), were eligible for inclusion.

How were decisions on the relevance of primary studies made?
At least one reviewer examined titles and abstracts and excluded irrelevant studies. Two reviewers then independently selected studies from potentially eligible papers. Any disagreements were resolved with the help of a third reviewer.

Assessment of study quality
The studies were assessed on the basis of the methods used to allocate treatments, sample size, baseline comparability of the treatment groups, and simultaneous service changes independent of the intervention. Two reviewers
independently assessed study quality.

**Data extraction**
Two reviewers independently extracted the data, including the percentage of participants with the desired outcome in each treatment group and the associated level of statistical significance for treatment effects.

**Methods of synthesis**

**How were the studies combined?**
The studies were grouped by the focus of the intervention (uptake, adherence or professional compliance) and combined in a narrative. The results were discussed under each identified theme of the included interventions.

**How were differences between studies investigated?**
Differences between the studies were discussed with respect to quality, with additional differences presented in the tables.

**Results of the review**
Twenty-one studies (n greater than 3,048) were included: 11 RCTs (n=1,570) and 10 non-randomised trials (n greater than 1,478).

Uptake (3 RCTs and 3 non-randomised studies).

Two RCTs reported randomisation methods and blinding of the outcome assessment, and all 3 RCTs reported baseline comparability of the treatment groups. One of the non-randomised studies used a comparable district as the control, while the other 2 studies were before-and-after studies.

All of the RCTs and two of the non-randomised studies found significant increases in uptake with the interventions compared with controls. Intervention themes found to be successful in at least one trial included health care professional-led interventions at patient level, trained lay volunteers, coordination of referral and post discharge care at the service level, and motivational communication.

Patient adherence (7 RCTs and 5 non-randomised studies).

Two RCTs reported the method of randomisation, one RCT reported blinded outcome assessment, and 4 RCTs either described baseline comparability of the treatment groups or controlled for prognostic factors. Two non-randomised studies used alternate allocation, one used a mix of randomisation and non-randomisation, and two were before-and-after studies. None of the non-randomised studies reported blinded outcome assessment.

Four RCTs reported significant increases in adherence with the interventions compared with controls for at least one outcome; one of these studies also found a statistically non-significant result. Four of the non-randomised studies reported a significant effect of the intervention for at least one outcome; two of these studies also reported a statistically non-significant result. Intervention themes found to be successful for at least one outcome in at least one trial included formal patient commitment, spouse or family involvement, strategies to aid-self-management, education and psychological interventions.

Professional compliance (2 RCTs and 3 non-randomised studies).

One RCT described the method of randomisation, blinded outcome assessment and had low losses to follow-up. All 3 non-randomised controlled trials were before-and-after studies that did not report baseline characteristics.

One RCT and two of the non-randomised studies found a significant benefit with the intervention compared with controls. Intervention themes found to be successful for at least one outcome in at least one trial included improvements in the referral process and coordination of post-discharge care.
Cost information
The authors stated that none of the studies reported costs.

Authors' conclusions
Little good-quality research has been undertaken to evaluate interventions aimed at improving uptake, adherence and professional compliance in cardiac rehabilitation; further research is required.

CRD commentary
The review addressed a clear question that was defined in terms of the participants, intervention and outcomes; inclusion criteria were not defined for the study design. The strategy undertaken to identify trials was extensive, no language restrictions were applied, and attempts were made to locate unpublished studies; this limits the potential for publication and language bias. Two reviewers independently selected studies from potentially relevant papers, assessed validity and extracted the data, thus reducing the potential for bias and errors. Validity was assessed using specified criteria, the results of the assessment were reported, and adequate information about the primary studies was provided.

The narrative synthesis was appropriate given the diverse nature of the studies. Although details of the individual studies were grouped by study design in the tables, some discussion of the results in relation to study quality would have been helpful in highlighting the better quality evidence. Overall, this was a well-conducted review that adequately described the limitations of the primary studies; the authors' conclusions are likely to be reliable.

Implications of the review for practice and research
Practice: The authors stated that motivational and self-management strategies, and the use of lay volunteers, show some promise in improving rehabilitation uptake and lifestyle change.

Research: The authors stated that well-designed studies are needed to test a range of interventions that have been suggested in the literature.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.