Effects of interventions to promote recovery in coronary artery bypass surgical patients

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Authors' objectives
To assess interventions to promote recovery following coronary artery bypass surgery (CABG).

Searching
MEDLINE, CINAHL and PsycLIT were searched from 1980 to 1996 for publications in the English language.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) and non-randomised trials that included two or more comparison groups to promote recovery following CABG.

Specific interventions included in the review
Most of the interventions were educational in nature and dealt with pre-operative or discharge instructions or counselling provided to patients. Pre-operative interventions to affect in-hospital recovery included: preparatory information about cognitive dysfunction following surgery; preparatory information and counselling about physical and psychologic recovery; and psychiatric counselling. Two studies compared the effectiveness of pre- versus postadmission preparatory instructions, whilst another study compared the effects of music, relaxation, and structured rest on hospital recovery outcomes. One study tested the effect of in-hospital range-of-motion (ROM) exercises on arm ROM at discharge.

Participants included in the review
The participants were mostly white, college-educated individuals living in or near urban areas. The mean age in most of the studies was approximately 60 years, and with a few exceptions, at least 75% of the participants in each study were male. Most of the participants had undergone three-vessel coronary bypass surgery and had a mean hospital length of stay ranging from 7 to 12 days.

Outcomes assessed in the review
The outcomes assessed were: mood states; physical function; knowledge of coronary artery disease and expected home recovery experiences; postsurgical physiologic measures such as heart rate, blood-pressure and ROM; compliance or adherence; post-operative analgesic use and postcardiotomy psychosis or delirium; family functioning; quality of life; return to work; angina; and complications.

How were decisions on the relevance of primary studies made?
The author does not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
The following independent and dependent variables were considered in the validity assessment: method for sample selection; size and characteristics of the sample; study setting and design; data collection strategies; types of statistical analyses; and conclusions. A single author assessed the papers for validity.

Data extraction
The author does not state how the data were extracted for the review, or how many of the reviewers performed the data extraction.
Methods of synthesis
How were the studies combined?
The studies were combined by a narrative review.

How were differences between studies investigated?
The author does not state how differences between the studies were investigated.

Results of the review
Nineteen studies with a cumulative total of more than 1,348 participants were included.

Pre-operative preparatory information was found to be effective in increasing the patients’ comfort and control when experiencing post-operative delirium, but it did not reduce anxiety during in-hospital recovery.

Discharge preparatory information was ineffective in 3 of the 4 studies evaluating mood states during home recovery, but significantly increased activity resumption at home in 2 out of 3 trials. Discharge preparatory information aimed at families was not effective in improving family functioning.

Preadmission preparatory information about activity resumption during hospital recovery was effective in one of the 2 studies.

There were too few studies that reviewed the use of preparatory information on physiologic outcomes, ROM exercises, music and visual imaging to enhance CABG recovery.

Three of the 4 studies evaluating information interventions designed to increase the individuals’ knowledge about managing recovery experiences during the first home recovery month, and about coronary artery disease risk factor, modification found statistically-significant effects. Similarly structured information was more effective than unstructured information in increasing knowledge.

Education to enhance compliance with medical regimes and risk factor modifications was found to be effective for some risk modification behaviours, but not for others.

Authors’ conclusions
The most frequently tested CABG recovery intervention (preparatory information) effectively increased knowledge, and enhanced resumption of activities during recovery. However, its effect on mood states during recovery remains unclear. There was clear evidence that information interventions designed to increase the individuals’ knowledge about expected recovery experiences and coronary artery disease were effective.

CRD commentary
This was a good review and the inclusion of a section that addressed the methodological quality of the included studies was very helpful; this aided an assessment of both the validity and generalisability of the review’s findings.

The search was well described although the key search terms were not given. The three main databases searched have a bias for publications from the USA and, with the exclusion of non-English language studies, it seems likely that some relevant studies may have been missed.

The heterogeneous nature of the studies prevented the data from being formally combined in a meta-analysis. Analysis by a narrative review was therefore an appropriate and valuable way of combining the studies.

In conclusion, the review was well-performed, but the validity and generalisability of its findings were weakened by the quality of the primary studies.

Implications of the review for practice and research
The author stated 'an important area needing development and testing of interventions is secondary prevention of cardiac risk factors'.

Bibliographic details

PubMedID
9315962

Indexing Status
Subject indexing assigned by NLM

MeSH
Aftercare /methods; Coronary Artery Bypass /nursing /rehabilitation; Female; Humans; Male; Middle Aged; Patient Education as Topic /methods; Rehabilitation /methods; Treatment Outcome

AccessionNumber
11997005328

Date bibliographic record published
30/04/1999

Date abstract record published
30/04/1999

Record Status
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.