CRD summary
This review concluded that education of cardiovascular patients and family in the hospital setting had a significant effect on an individual's knowledge and psychosocial, behavioural, clinical and healthcare utilisation outcomes, but in varying degrees. These conclusions may not be sufficiently cautious and the review had some methodological limitations.

Authors' objectives
To evaluate the characteristics and outcomes of cardiovascular health education interventions for hospitalised patients with cardiovascular conditions

Searching
PubMed and CINAHL databases were searched for publications in English between January 2000 and June 2010. Search terms were presented. Reference lists of studies retrieved were also examined.

Study selection
To be eligible, studies needed to have an experimental or quasi-experimental design. Studies needed to include a sample of adults (18 years of age or older) with or at risk of cardiovascular disease. They needed to evaluate an educational intervention provided or initiated during hospitalisation.

Patient populations included adults with a range of cardiovascular conditions and/or awaiting a range of procedures. Most trials did not involve caregivers and family members in the intervention. Both individualised and standardised approaches to patient education were adopted by the studies. The number of intervention sessions ranged from one to 13 across the studies with most including one educational session. Sessions ranged from seven minutes to 2.5 hours in length where reported. There was a wide range of modes of delivery and most interventions were delivered entirely during hospitalisation. Five studies out of 25 reported the theoretical framework underpinning the intervention. Four were conducted in the UK.

The authors did not state how many reviewers performed the study selection.

Assessment of study quality
The authors did not report that they assessed study quality.

Data extraction
The authors extracted data on the key outcomes: knowledge, psychosocial, behavioural, clinical and healthcare utilisation. They did not state how many reviewers performed the data extraction.

Methods of synthesis
A narrative synthesis was performed.

Results of the review
Twenty-five studies were included in the review (6,561 participants). Of these, 20 were randomised controlled trials (RCTs) and five were quasi-experimental studies. Follow-up was from one month to two years where reported.

All except three studies reported statistically significant effects on at least one of the study outcomes. The educational interventions had a positive effect on knowledge in nine of 10 studies; the psychosocial aspects in seven of 11, behaviour in seven of 12 studies, clinical outcomes in four of seven studies and healthcare utilisation in five of eight studies.

Authors' conclusions
Education of cardiovascular patients and family in the hospital setting had a significant effect on an individual's...
knowledge and psychosocial, behavioural, clinical and healthcare utilisation outcomes, but in varying degrees.

**CRD commentary**

This review had defined inclusion criteria and was based on a search of the most common databases and reference checking. The review was restricted to studies published in English which meant that relevant studies may have been missed. A fairly large number of trials were included of which most were randomised. However, the authors did not assess quality so the reliability of the evidence was unclear. They did not state any methods for avoiding bias in the processes of study selection and data extraction. A narrative synthesis appeared appropriate given the diversity of the studies.

In addition to methodological limitations, the conclusions of the review may not be sufficiently cautious given that many studies did not have statistically significant results particularly for behaviour and clinical outcomes.

**Implications of the review for practice and research**

**Practice:** The authors stated that a multilevel, interdisciplinary approach was needed to improve patient education for hospitalised cardiovascular patients and their families. Evaluation methods for teaching must move beyond a simple statement that teaching was provided and include the approach, mode and dose of delivery as well as feedback from patients on the effectiveness of teaching.

**Research:** The authors stated that additional research was needed to determine the most effective patient education strategies for hospitalised cardiovascular patients.

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