A systematic review of the effectiveness of patient-centred care on emergency room visits, hospitalizations, unscheduled sick clinic visits, and missed school days for children with asthma

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CRD summary
This review concluded that individualised patient-centred care interventions, with education, reduced the numbers of emergency room visits, hospitalisations, unscheduled primary care provider visits, and missed school days, in children with asthma. Concerns about the synthesis, and trial quality and size, mean that the conclusions appear insufficiently cautious and may not be reliable.

Authors' objectives
To evaluate the effectiveness of patient-centred care on emergency room visits, hospitalisations, unscheduled primary care provider visits, and missed school days, in the management of children with asthma.

Searching
Eight databases, including MEDLINE and Cochrane Central Register of Controlled Trials (CENTRAL), were searched for studies, in English, up to 2011. Searches for unpublished studies were performed using several sources, and references of included studies were consulted for additional studies. Search terms were reported.

Study selection
Randomised controlled trials (RCTs) and quasi-RCTs were eligible for inclusion if they evaluated the effects of the patient-centred care model versus standard care, in the management of children diagnosed with asthma and treated as out-patients. The outcomes of interest were emergency room visit rates, hospital admission rates, unscheduled primary care provider visit rates, and the number of missed school days per year, associated with asthma symptoms. Patient-centred care was defined as care that was respectful and responsive to individual patient (and family for paediatric patients) preferences, needs, and values. Other definitions were provided. Trials that did not meet specific quality criteria were excluded.

In the included trials, the participant age ranged from two to 17 years. Asthma severity ranged from mild to severe. Most interventions involved both children and caregivers. They included a range of components, such as technology, group or individual education, and an individualised written home management plan. Some used supplemental approaches, such as home visits. A wide range of professionals was involved in delivering the interventions, which lasted between 12 weeks and 12 months. Half of the included trials were conducted in the USA, and only one was conducted in the UK.

Two reviewers independently selected the studies for inclusion. Disagreements were resolved through discussion or with a third reviewer.

Assessment of study quality
Trial quality was assessed using the Joanna Briggs Institute (JBI), Meta Analysis of Statistics Assessment and Review Instrument (MAStARI), with 10 criteria for the internal validity of trials.

Two reviewers independently assessed the quality of the trials for inclusion. Disagreements were resolved through discussion or with a third reviewer.

Data extraction
Data on the outcomes of interest were extracted, and trial authors were contacted for missing data. The number of reviewers who extracted the data was not stated.

Methods of synthesis
The trial outcomes were combined in a narrative synthesis.
**Results of the review**

Ten trials (nine RCTs and one quasi-RCT), with 1,199 participants (range 68 to 246), were included. The randomisation methods were considered appropriate in all trials; none reported allocation concealment. Baseline imbalances in participant characteristics were found in four trials, two of which adjusted for these in their analyses. Further results of the quality assessment were reported.

Two out of nine trials showed a statistically significant reduction in hospitalisations, with a patient-centred care model. Three out of eight trials found a statistically significant reduction in emergency department visits, with the intervention. One out of six trials showed a significant reduction in the number of missed school days, and one out of four trials reported a significant reduction in unscheduled primary care provider visits, with patient-centred care.

**Authors’ conclusions**

The numbers of emergency room visits, hospitalisations, unscheduled primary care provider visits, and missed school days were reduced in children with asthma, when their asthma care plans were patient-centred and individualised, with an educational component.

**CRD commentary**

The review question and selection criteria were clearly reported. Numerous sources were searched for published and unpublished trials. Attempts to minimise reviewer error and bias were made during study selection and quality assessment. It was unclear if similar steps were taken during data extraction.

Trial quality was assessed and those considered to be of poor quality were excluded, but the lack of reporting of allocation concealment in all trials is a cause for concern. The choice of synthesis methods appears justified given the heterogeneity between the trials. Only a few trials found a statistically significant effect favouring the intervention; it was unclear whether this was due to a lack of power (small trials).

This, in addition to concerns about the quality of the trials, means that the review conclusions may not be sufficiently cautious and are unlikely to be reliable.

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

**Practice:** The authors recommended that clinicians should provide paediatric asthma care that is patient-centred with a focus on education and clinical support. They stated that integration of advanced technologies may enhance the learning process, as well as the incorporation of comprehensive individualised home management plans. They recommended follow-up and outreach to increase access to health care.

**Research:** The authors stated that further research was needed to determine the most effective modality, nature, and duration of patient-centred interventions for asthmatic children to improve their outcomes.

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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.