Effects of education of paediatric patients undergoing elective surgical procedures on their anxiety: a systematic review

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CRD summary
The authors concluded that education of paediatric patients who underwent elective surgical procedures reduced anxiety, especially if the children were aged four to six years or older. Parents of children in the education groups also experienced lower anxiety. The authors’ conclusions reflect the evidence presented but methodological limitations mean their reliability is uncertain.

Authors’ objectives
To assess the implementation of education programmes for paediatric patients aged two to 12 years undergoing elective surgical procedures and assess programme effects on children’s anxiety and other negative emotions.

Searching
MEDLINE, PsycINFO, The Cochrane Library and CINAHL were searched to February 2011 for articles in English. Search terms were reported.

Study selection
Randomised controlled trials (RCTs) and quasi-experimental studies that evaluated the effects of education compared with standard preparation for children aged two to 12 years old undergoing elective surgeries were eligible for inclusion. Outcomes of interest were effects on anxiety, emotional distress, arousal and fear.

Most of the studies were conducted in USA; one study was conducted in each of Austria, Sweden, China, Japan and UK. Studies were published between 1975 and 2009. Interventions included therapeutic play, preview and play with hospital equipment, formal preparation, provision of specific information, education booklets, videotapes, educational tours and role play. Children underwent elective surgical procedures such as tonsillectomy, adenoidectomy, herniorrhaphy, appendectomy, otolaryngology surgery, dental surgery under general anaesthesia, orthopaedic and plastic surgical procedures. Some studies included parents. Instruments for outcome assessment varied widely between studies.

The authors did not report how many reviewers selected studies for inclusion.

Assessment of study quality
Study quality was assessed but only blinding was mentioned explicitly. It appeared that two reviewers assessed quality.

Data extraction
It appeared that two reviewers extracted data.

Methods of synthesis
Data were combined in a narrative synthesis using content analysis to obtain answers to the research questions.

Results of the review
Sixteen RCTs (2,168 participants) were included in the review. Four studies reported blinding for assessment of outcomes.

Twelve of 16 RCTs reported statistically significantly lower anxiety scores compared to control groups and two RCTs reported no significant difference between groups. Education programmes were more effective for children aged between four and six years (one RCT) and older than six years (one RCT) than for younger patients. Parents in education groups reported lower anxiety (eight RCTs), particularly prior to surgery (three of eight RCTs). One RCT reported greater satisfaction for parents in the education group compared to the control group. One study found no significant differences between groups for parental anxiety.
Paediatric patients participating in educational programmes also reported fewer negative emotions and fewer negative emotional behaviours (one RCT), less emotional distress (two RCTs), less preoperative arousal (one RCT) and greater alleviation of fear, especially among children who were younger than five years old (one RCT).

**Authors’ conclusions**

Education of paediatric patients undergoing elective surgical procedures reduced their anxiety, especially if the children were aged four to six years or older. Parents of children in the education groups also experienced lower anxiety.

**CRD commentary**

The review question was clear and inclusion criteria were defined. Several relevant sources were searched. The limitation to articles in English risked language bias. No attempts were made to locate unpublished studies so there was a risk of publication bias. The authors stated they assessed study quality but only the results for blinding of assessment outcomes were reported so it was difficult to assess the reliability of the evidence. It appeared that two reviewers conducted data extraction and assessment of study quality to reduce potential for reviewer error and bias; it was unclear whether this was also the case for study selection.

A narrative synthesis was appropriate given the differences in interventions, timing of studies and instruments used for assessing anxiety and other outcomes. But the lack of reported statistical data made the statistical significance of the findings unclear. The authors acknowledged that some studies were quite old and methods will have changed over time, which reduced the applicability of the findings.

The authors’ conclusions reflect the evidence presented but the lack of reporting of quality assessment and variation in the studies means the reliability of the conclusions is uncertain.

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

**Practice:** The authors stated that education can be incorporated into care provided to children aged four to six years or older who undergo elective surgical procedures, according to their individual needs. Nurses can play an important role within the framework of holistic, patient-centred and individualised health care.

**Research:** The authors stated a need for further research to assess the effects of children’s individual coping style and of their education needs on anxiety, autonomy, sense of control, self-efficacy and empowerment. Further research was needed into methods and timing of providing education and parental involvement in their children’s care.

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