

Nursing interventions to reduce preoperative anxiety in school-age children: an integrative review

Intervenções de Enfermagem para reduzir a ansiedade pré-operatória em crianças em idade escolar: uma revisão integrativa

Intervenciones de Enfermería para reducir la ansiedad preoperatoria en niños en edad escolar: una revisión integradora

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Abstract

Background: At school age, there is a growing feeling of independence and a growing ability to follow rules and absorb information. Taking these skills into account, the nurse should be responsible for reducing the child's anxiety.

Objective: To describe the nursing interventions which reduce preoperative anxiety in school-age children.

Methodology: This is an integrative review (2008-2013), using the B-ON (Online Knowledge Library), EBSCO (Elton Bryson Stephens Company), Portuguese Catholic University Documentation Centre and Google Scholar databases. The search was based on keywords and boolean operators. Inclusion and exclusion criteria were defined and four articles were considered relevant.

Results: During the analysis, the typology of each study was taken into account. The implementation of structured and preoperative programs adapted to children allowed to reduce anxiety, thus making adherence to care and postoperative recovery more effective.

Conclusion: Parental support and the quality of pre-admission procedures are essential to help both children and parents find ways of minimising preoperative anxiety.

Keywords: child; pediatrics; preoperative care; surgery; Nurse's role; Nursing.

Resumo

Contexto: É na idade escolar que há um crescente sentimento de independência e da capacidade de seguir regras e de absorver informação. Tendo em conta estas capacidades, o enfermeiro deve ser responsável por diminuir a ansiedade da criança.

Objetivos: Descrever as intervenções de Enfermagem que reduzem a ansiedade pré-operatória em crianças em idade escolar.

Metodologia: Revisão integrativa (2008-2013). Pesquisa efetuada nas plataformas de pesquisa B-ON (Biblioteca do Conhecimento Online), EBSCO (Elton Bryson Stephens Company), Centro de Documentação da Universidade Católica Portuguesa e Google Académico, com recurso a palavras-chave e a operadores booleanos. Foram definidos critérios de inclusão e exclusão e quatro artigos foram considerados relevantes.

Resultados: Na análise foi considerada a tipologia dos estudos. A realização de programas pré-operatórios estruturados e adaptados à criança permitem diminuir a ansiedade, tornando mais eficaz a aceitação dos cuidados e a recuperação pós-operatória.

Conclusão: O suporte parental e a qualidade da pré-admissão são essenciais para ajudar as crianças e os pais a encontrar estratégias para minimizar a ansiedade na fase pré-operatória.

Palavras-chave: criança; pediatria; cuidados pré-operatórios; cirurgia; papel do profissional de Enfermagem; Enfermagem.

Resumen

Contexto: En la edad escolar hay un creciente sentimiento de independencia y de capacidad de seguir reglas y de absorber información. Dadas estas capacidades, el enfermero debe ser responsable de disminuir la ansiedad del niño.

Objetivos: Describir las intervenciones de enfermería que reducen la ansiedad preoperatoria en niños en edad escolar.

Metodología: Revisión integradora (2008-2013); investigación realizada en las plataformas de búsqueda B-ON (Biblioteca del Conocimiento en Línea), EBSCO (Elton Bryson Stephens Company), Centro de Documentación de la Universidad Católica Portuguesa y Google Académico, utilizando palabras clave y operadores booleanos. Se definieron criterios de inclusión y exclusión, y cuatro artículos se consideraron relevantes.

Resultados: En el análisis se consideró la tipología de los estudios. La realización de programas preoperatorios estructurados y adaptados al niño permite disminuir la ansiedad, lo que hace que la aceptación de los cuidados y la recuperación posoperatoria sean más eficaces.

Conclusión: El apoyo de los padres y la calidad de la preadmisión son esenciales para ayudar a los niños y a los padres a encontrar estrategias para reducir la ansiedad en la fase preoperatoria.

Palabras clave: niño; pediatria; cuidados preoperatorios; cirugía; rol de la enfermera; Enfermería.

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Introduction

Both the disease and the hospitalisation/surgery are sources of significant stress, anxiety and suffering for the child, because they imply separation from daily routines and persons of reference, loss of control, bodily injury and pain (Marçal, 2006), which may have a negative influence on the child's harmonious growth and development.

The provision of care to the hospitalised child has changed over time. Today, care partnership is inherent to Paediatric Nursing. This means that the child, as a vulnerable human being, requires constant monitoring and that the family, as a reference to the child, is the primary responsible for promoting his/her full development. However, for each family to acquire the necessary skills to interact with the child and develop his/her full potential, it is the responsibility of the Nurse Specialist in Child Health and Paediatrics to promote, assess and screen potential changes in the child's development, with interventions targeting the family (Bellman, Lingam, & Aukett, 2003).

In case of hospitalisation, the constant monitoring by the parents/family allows reducing the psychological and emotional trauma inherent to the hospitalisation. Such trauma may have a negative influence on the child's development (Portela & Graveto, 2011).

Children adapt to the surrounding environment according to their development stage (Rodrigues & Rodrigues, 2009). School-age children are characterised by a growing feeling of independence, by being used to following rules and instructions and by having the ability to absorb all the information they receive (Opperman, 2001). Thus, taking these characteristics into account and the Clinical Nurse Specialists being the professionals who are best equipped with a body of scientific knowledge and a set of skills that allow them to be aware of possible negative changes in the children's development, these professionals are able to find appropriate strategies to assist and care for children when their integrity is threatened. Thus, specialised nursing care should go beyond the provision of physical care and the knowledge of diseases and surgical interventions; it should also consider the children's emotional and social needs, using appropriate communication and relationship techniques (Schmitz, Piccolo, & Vieira, 2003).

In conclusion, it is of extreme importance to reflect

on this issue and find scientific evidence-based strategies to improve the quality of the care provided to children in need of hospitalisation/surgery and enable the development of clinical practice.

The research question of this study was: Which interventions may be adopted to reduce preoperative anxiety in school-age children?

The objective of this study was: To describe the nursing interventions which reduce preoperative anxiety in school-age children.

Methodological procedures of integrative review

The search was conducted based on inclusion and exclusion criteria. The inclusion criteria were as follows: studies with qualitative or quantitative scientific evidence; primary studies focusing on the interventions adopted to reduce preoperative anxiety; studies in which participants were school-age children; studies published in the last five years (from January, 2008, to February, 2013); and the possibility of access to full-text articles. The following exclusion criteria were used: being a dissertation or a thesis; articles published in languages other than Portuguese, English, French or Spanish; and articles that had no defined assumptions in their inclusion criteria.

With the aim of selecting relevant studies that answered the research question, a search was performed on March 25-27, 2013, using the following descriptors: *Child*; *Pediatrics*; *Preoperative Care*; *Surgery*; *Nurse's role*; *Nurse*, which were confirmed in the MeSH/DeCS. The search platforms used were B-ON and EBSCO involving the CINAHL Plus, *Cochrane Collection* (*Cochrane Database of Systematic Reviews*, *Database of Abstracts of Reviews of Effects*) and MEDLINE. To complement the search, the databases of the Portuguese Catholic University documentation centre and Google search engine were also consulted. The Boolean operators *and* and *or* were used.

Results and interpretation

As a result of the interactions between the descriptors, a total of 843 articles were obtained, of which 795 articles were found in the B-ON search platform and

48 articles in the EBSCO. After reading the title, 650 were excluded and, after reading the abstract, 153 more articles were left out. Twenty articles were not included due to their inaccessibility, i.e., they were written in other languages other than Portuguese, English, French and Spanish, and only the abstract

was accessible, instead of the full text. Of the selected studies, eight were repeated. Twelve articles were put under consideration and, after reading the full-text, a total of four articles were found to meet the inclusion and exclusion criteria, and to be relevant to answer the research question (Figure 1).

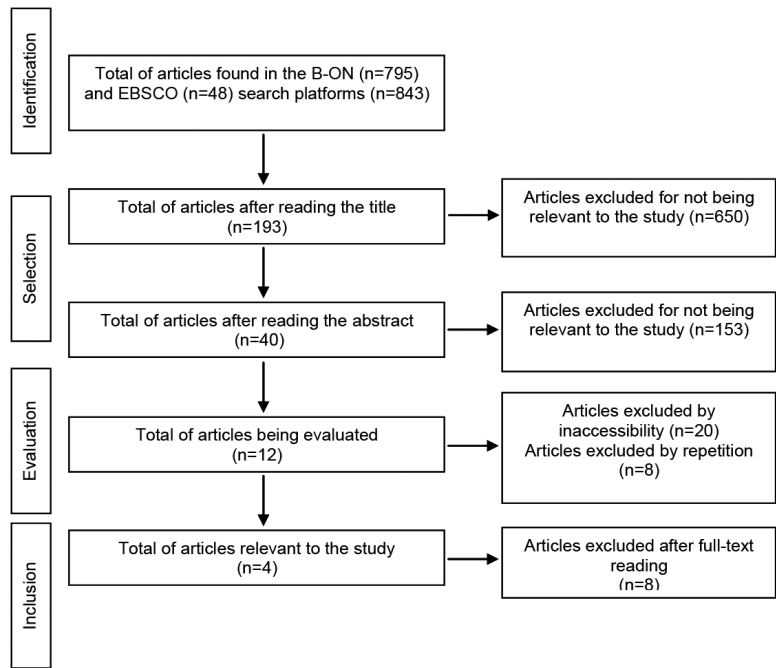


Figure 1. Flow chart of the search and selection process.

Data were summarised in the following tables according to the type of study: title, author/year/

country, participants, interventions and results.

Table 1
Qualitative Studies included in the integrative review according to title, author/year/country, participants, interventions and results

Title	Author(s), Year, Country	Type of Study	Participants	Interventions	Results
Use of perioperative dialogues with children undergoing day surgery	Wennstrom, B., Halberg, L. R. M. & Bergh, I; 2008; Sweden	Grounded Theory	20 children, of whom 15 were male and 5 were female, aged between 6 and 9 years	<ul style="list-style-type: none"> - Recorded semi-structured interview. - Participated observation. - Drawings produced by children. - Records written by professionals. 	The preoperative dialogue minimised the anguish and prepared the child for surgery, causing him/her to cooperate with health care professionals.

A experiência da criança no peri-operatório de cirurgia programada	Teixeira, E. & Figueiredo, M. C.; 2009; Portugal	Phenomenological study guided by the constructivist paradigm	30 children, aged between 6 and 12 years	<ul style="list-style-type: none"> - All children were accompanied during the perioperative period. - Two groups of 15 children each were created. - In addition to following the procedures in place at the institution, one of the groups was subjected to a preoperative nursing intervention: child reception, delivery of a brochure and its explanation, presentation of the health professionals in operating room clothing, observation of images from the operating room, material handling, explanation of procedures using a manikin. - Semi-structured interview. 	<p>Children attending the preoperative nursing programme:</p> <ul style="list-style-type: none"> - Understood the information better; - Accepted the surgery restrictions better and understood the need for the procedures better. - Fear was less evident. - Inside the operating room, they were more relaxed, able to cope with the situation and without such strong suffering.
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Table 2

Quantitative Studies included in the integrative review according to title, author/year/country, participants, interventions and results

Title	Author(s), Year, Country	Type of Study	Participants	Interventions	Results
The effect of performing preoperative preparation program on school age children's anxiety	Vaezzade, N., Douki, Z. & Hadipour, A.; 2011; Mazandaran	Randomised Controlled Trial	122 children, aged between 7 and 12 years, admitted for elective surgery in the last 15 months, accompanied by their mothers on the day of the preoperative assessment and on the day of surgery.	<ul style="list-style-type: none"> - Two groups were created, and the experimental group was subjected, not only to the usual preoperative routines, but also to the therapeutic play, one day before surgery. - Completion of both a questionnaire on the context and the Spielberger State-Trait Anxiety Inventory. 	Children subjected to the therapeutic play reported significantly lower levels of anxiety, thus the therapeutic play was effective in reducing children's anxiety, preparing them for surgery and improving their personal control.
The effectiveness of a standardized preoperative preparation in reducing child and parent anxiety: a single-blind randomized controlled trial	Fincher, W., Shaw, J. & Ramelet, A. S.; 2012; Western Australia	Randomised Controlled Trial	72 children, aged between 3 and 12 years, without surgeries in the last 12 months and residents in the metropolitan area.	<ul style="list-style-type: none"> - Two groups were created; the children in the experimental group received preoperative information and demonstration of equipment. - Scales were used to assess the level of anxiety in children and parents and the level of pain in children. - A questionnaire was administered to parents to assess the behavioural responses and regressions in development, after the hospitalisation. - A scale was applied to assess the children's temperaments. - A questionnaire was applied to assess the parents' satisfaction. 	<ul style="list-style-type: none"> - In general, children showed lower levels of anxiety after surgery. On the other hand, anxiety was also lower in those parents whose children had received preoperative information and been presented with a demonstration of the equipment. - The maximum pain felt and the anxiety level were significantly lower in children undergoing the preoperative programme.

All studies found were carried out in school-age children and used a preoperative programme as an intervention strategy to reduce anxiety in children and, consequently, their parents. In both qualitative studies, interventions were conducted on a group of children. In other words, in the study by Wennstrom, Hallerg, and Bergh (2008), a single group of 20 children underwent a set of interventions oriented towards the preoperative dialogue. The authors concluded that the use of this dialogue in clinical practice has power to minimise the anguish and prepare the child for the potential stress caused by hospital care, as is the case of surgery.

This preoperative dialogue is highlighted by all authors, but is used in different interventions.

In addition, in the study by Teixeira and Figueiredo (2009), a sample of 30 children was divided into two groups of 15 children each. All children followed the preoperative procedure in place at the institution, which was performed at the Anaesthesiology outpatient consultation. However, in addition to this consultation, a group of 15 children was also subjected to a preoperative programme, which was equally applied at the consultation. This programme focused on welcoming the child, delivering a brochure and explaining it, introducing the health professionals in operating room clothing, observing images from the operating room, handling material, and explaining the procedures using a manikin. After these interventions, a semi-structured interview was performed. Among other things, the child was asked if he/she had already undergone a surgical experience and if he/she had any questions. It was then concluded that children understood the information and the need for procedures better, and that they accepted the surgery restrictions in an easier way. In this way, feelings of anxiety, fear and suffering were less present and an aid relationship was more developed, with the child feeling more relaxed in the operating room.

Fincher, Shaw, and Ramelet (2012) conducted a preoperative programme, similar to the one previously described, although it had small variations. The programme consisted of organising a visit to the hospital for children in the experimental group, from one to ten days prior to surgery, where they would receive preoperative information through photos of the service and the multidisciplinary team, the demonstration of hospital equipment/material, visit to the surgical service, explanation of the sequence

of procedures to which they would be submitted at admission, and transmission of other relevant information.

Despite the fact that all those interventions reduced anxiety in children, it was only through the therapeutic play that a psychological preparation was obtained as well as a degree of self-control that was more favourable for surgery, with significantly lower levels of anxiety. The therapeutic play consisted of a simulator for children to handle and have contact with the operative routine (placing the identification bracelet, assessing vital signs, collecting blood samples, among others) (Vaezzade, Douki, & Hadipour, 2011).

To better assess anxiety and pain in both parents and children, Fincher et al. (2012) applied anxiety assessment scales, namely the *State Trait Anxiety Inventory* (to assess parents' anxiety) and the *Yale Preoperative Anxiety Scale* (to assess children's anxiety), as well as pain assessment scales, namely the *FLACC - Face, Legs, Activity, Cry, Consolability* (for children aged less than five years), the *Faces Pain Scale Revised* (for children aged above five years) and the *EASI Temperament Survey*, which is a scale used to assess children's temperament (emotions, activity, socialisation, and impulsivity). The authors concluded that both groups experienced increased anxiety on arrival at the post-anaesthesia care unit, followed by decreased levels of anxiety within 24 hours after surgery and after two weeks at home. However, both anxiety and postoperative pain were lower in children and parents who had been submitted to the preoperative visit.

In addition to the satisfaction questionnaire applied to parents, the *Post Hospital Behaviour Questionnaire* was also applied. This questionnaire aimed at identifying behavioural responses and regressions in the child's development after hospitalisation. It was concluded that most children experienced some negative behavioural changes two weeks after surgery. On the other hand, in a study conducted by Vaezzade, Douki, and Hadipour (2011), both a questionnaire on the context and the Spielberger scale were applied to mothers on the day of the preoperative assessment and on the day of surgery, during the admission.

According to the abovementioned authors, there are several strategies which may be adopted to reduce preoperative anxiety in children and, consequently, their parents. The implementation of a structured preoperative programme adapted to the children's

level of development allows reducing the anxiety and facilitates the children's interactions with health care professionals. Hence, children collaborate in care and their postoperative recovery is faster and more effective.

The fact that the constant monitoring of the child by his/her parents is allowed, as well as the fact that the child has prior knowledge of the multidisciplinary team, paediatric surgery service, and materials and equipment with which he/she will have contact reduce significantly the potential negative impact of hospital care.

Conclusion

Providing paediatric care means to appreciate and recognise the family as an integral part of the multidisciplinary team. Each experience of the child's hospitalisation/surgery is an individual experience that will disturb the family dynamics and that of all its members. In this way, it is the responsibility of the Clinical Nurse Specialist in Child Health and Paediatrics to acquire specific knowledge about child development in order to provide holistic and personalised care to each child, involving the family in the whole treatment and cure process.

From the analysis of the studies, it may be concluded that both the quality of the preoperative programme and the preparation and support for the hospitalisation/surgery provided by parents to their children are essential to help both the child and his/her parents find strategies to overcome the anxiety, stress and anguish caused by the situation.

Despite the strategies used by the authors to bring benefits to the child who is subjected to scheduled surgery, there are still some limitations which require attention by the Nurse Specialist in Child Health and Paediatrics so that he/she can find different low-cost strategies to continue providing preoperative information, education and preparation. It was also mentioned that some families refused an *extra trip to the hospital* to perform the preoperative preparation and that many times it was not possible to perform the preoperative preparation to all children during the period of time considered ideal for their age. In children aged between three and five years, the preoperative preparation should take place one to two days before surgery and, in children older than six

years, it should be performed five to seven days before surgery. As a strategy to overcome these limitations, it would be important to reflect on an accessible and low-cost strategy to provide the preoperative information, for example, through the Internet, on the institution's website, or through a phone call. Another aspect to consider would be scheduling the anaesthesia and nursing consultations on the same day, according to the child's age group, i.e. combining anticipatory care with opportunistic care.

Children are at the centre of the nurse's performance in paediatrics, thus it is my recommendation that future studies be developed on the area of quality of care provided to children in order to ensure their well-being and promote their full development.

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