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RESEARCH ARTICLE (ORIGINAL)

Effectiveness of an educational video in reducing anxiety and fear in school-aged children undergoing surgery

Efetividade de um filme na ansiedade e medo de crianças em idade escolar submetidas a cirurgia

Eficacia de una película sobre la ansiedad y el miedo en escolares sometidos a cirugía

Isabel Maria Ruiva dos Santos [1]
https://orcid.org/0009-0003-5609-7550

Luís Manuel da Cunha Batalha [2]
https://orcid.org/0000-0002-5328-1470

Marília Costa Flora [2]
https://orcid.org/0000-0002-9934-9143

[1] Figueira da Foz District Hospital, EPE, Pediatrics Department, Figueira da Foz, Portugal

[2] Health Sciences Research Unit: Nursing (UICISA: E), Nursing School of Coimbra (ESEnfC), Coimbra, Portugal

Author Contributions
Isabel Maria Ruiva dos Santos
E-mail: isabel.s@sapo.pt

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Abstract
Background: Children often perceive hospitalization and surgery as threatening events that can lead to feelings of anxiety and fear. These feelings may affect their behaviors.
Objective: To evaluate the effectiveness of an educational video in reducing anxiety and fear before outpatient surgery.
Methodology: A randomized controlled study was conducted with 60 children (6 - 14 years old) undergoing outpatient surgery. The intervention group watched an educational video during the preoperative period, while the control group received standard preoperative care. The effectiveness of the video was measured using the Children's Anxiety Meter-State scale, and fear was measured using the Children's Fear Scale.
Results: No significant differences ($p > 0.05$) were found between the intervention group that watched the video and the control group that received standard preoperative care.
Conclusion: An accurate assessment of whether the costs of this intervention outweigh the benefits is essential. Further research is recommended, particularly in adapting other programs that have proven more effective in this context.

Keywords: child, hospitalized; instructional film and video; nursing; anxiety; fear; preoperative period

Resumo
Enquadramento: A hospitalização e a cirurgia são consideradas pela criança como eventos ameaçadores e com repercussões no seu comportamento, nomeadamente ansiedade e medo.
Objetivo: Avaliar a efetividade de um filme preparatório para procedimentos a realizar antes de uma cirurgia de ambulatório visando a redução da ansiedade e medo.
Metodologia: Estudo randomizado, controlado, envolvendo 60 crianças (6-14 anos), submetidas a cirurgia de ambulatório. O grupo de intervenção visualizou um filme no período pré-operatório e o grupo de controlo recebeu os cuidados habituais. A efetividade do filme foi medida através da escala de ansiedade Children's Anxiety Meter-State e o medo pela escala Children's Fear Scale.
Resultados: Não se observaram diferenças significativas ($p > 0,05$) entre o grupo de intervenção que visualizou o filme e o grupo de controlo que seguiu os cuidados pré-operatórios habituais.
Conclusão: Importa avaliar de forma precisa se os custos envolvidos nesta intervenção compensam os benefícios. Sugere-se mais investigação nesta área, ajustando outros programas que se revelem mais efetivos neste contexto.

Palavras-chave: criança hospitalizada; filme e vídeo educativo; enfermagem; ansiedade; medo; período pré-operatório

Resumen
Marco contextual: La hospitalización y la intervención quirúrgica son percibidas por el niño como acontecimientos amenazantes que repercuten en su comportamiento, concretamente en la ansiedad y el miedo.
Objetivo: Evaluar la eficacia de una película preparatoria para los procedimientos que deben realizarse antes de la cirugía ambulatoria con el fin de reducir la ansiedad y el miedo.
Metodología: Estudio aleatorizado y controlado en el que participaron 60 niños (de 6 a 14 años) sometidos a cirugía ambulatoria. El grupo de intervención vio una película en el periodo preoperatorio y el grupo de control recibió los cuidados habituales. La eficacia de la película se midió con la escala Children's Anxiety Meter-State y el miedo con la Children's Fear Scale.
Resultados: No hubo diferencias significativas (p > 0,05) entre el grupo de intervención que vio la película y el grupo de control que siguió los cuidados preoperatorios habituales.
Conclusión: Es importante evaluar con precisión si los costes de esta intervención compensan los beneficios. Se sugiere seguir investigando en este ámbito, ajustando otros programas que resulten más eficaces en este contexto.

Palabras clave: niño hospitalizado; película y vídeo educativos; enfermería; ansiedad; miedo; periodo preoperatorio

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Introduction

Hospitalization and illness can have a negative impact on children's lives, regardless of their age. These experiences are considered threatening and can affect children's behaviors (Mula-Fuentes et al., 2018).

Although preparation for surgery or hospitalization is a common practice, our study found no recommended programs for children in a preoperative situation in the literature reviewed. Health professionals have developed strategies and programs to minimize the impact of hospitalization and surgery on children, but questions remain about the effectiveness of these strategies, their content, duration, when they should be implemented, recommended ages, and even the extent to which caregivers should be involved.

Nurses have a crucial role in preparing children for surgery and subsequent hospitalization. Their objective is to prevent or alleviate fear and anxiety associated with these events. This is an autonomous nursing intervention integrated into a multi-professional action, in which nurses are responsible for prescribing the preoperative patient preparation and its implementation in order to minimize fear and anxiety (Ordem dos Enfermeiros, 2011).

Nurses' clinical practice has demonstrated that children who are prepared and informed adapt better to a new situation, reducing the potentially traumatic effects of surgical intervention or hospitalization and minimizing the risk of associated emotional stress.

Baghele et al. (2019) analyzed the effect of an educational video on anesthetic techniques on the preoperative anxiety of children undergoing outpatient surgery. They found that verbal information combined with watching the video contributed to reducing the children's preoperative anxiety. Härter et al. (2021) reached the same conclusion when they used an educational video followed by an explanation on the day of surgery. However, Baghele et al. (2019) and Härter et al. (2021) concluded that further studies are necessary to determine the effects of audiovisual interventions and improve their effectiveness.

Thus, well-designed and methodologically consistent studies are needed to better understand the effectiveness of technology-based preoperative preparation interventions (Kim et al.; 2019). Moreover, we believe that the development and implementation of a preoperative preparation intervention protocol for children, involving their caregivers, can empower them to act and minimize the fear and anxiety associated with surgery and/or hospitalization. Therefore, our study aims to evaluate the effectiveness of using an educational video to reduce anxiety and fear in children (ages 6 - 14) undergoing outpatient surgery.

Background

To minimize the potential negative effects of surgery or hospitalization, it is essential to provide individualized care for children and their caregivers. Anxiety and fear are commonly perceived as negative emotions (Ordem dos Enfermeiros, 2011).

The International Council of Nurses [ICN] (2019) defines 'anxiety' as a "Negative emotion: [characterized by] feelings of threat, danger or distress" (p. 7) and 'fear' as a "Negative emotion: [described as] feeling threatened, endangered or distressed due to known or unknown causes, and sometimes accompanied by physiologic fight or flight response" (ICN, 2019, p. 85).

It is standard practice, as well as legally obligatory and ethical, to prepare the child and family in order to prevent these emotions and feelings. Preoperative preparation interventions have their specificities and use different strategies, such as pre-visits, puppet shows and games with miniature hospital equipment, the use of books and videos, or brief descriptions of the steps of the hospitalization process (Ramos & Figueiredo, 2020).

Broering et al. (2018) conducted a study to evaluate the impact of three types of preoperative preparation interventions on the anxiety and stress levels of children undergoing outpatient surgery. The study distributed the children into four groups: Group One received standard preoperative care, Group Two received only verbal information, Group Three worked with a preoperative preparation kit, and Group Four watched an educational video. The results indicated that using an educational video is a cost-effective alternative for reducing stress and anxiety. Hatipoglu et al. (2018) also reached a similar conclusion in their study in which they analyzed the impact of audio and audiovisual presentations on preoperative anxiety and postoperative maladaptive behavioral changes in children undergoing outpatient surgery. The children were randomly assigned to one of three groups: audiovisual, audio, and control. The results indicated that audiovisual presentations were more effective in reducing children's anxiety compared to audio presentations. Yaz and Yilmaz (2022) also found that an educational animated video, in which surgical procedures are described and explained to children in the preoperative period, is an effective method in reducing preoperative anxiety and postoperative pain.

Research question

What is the effectiveness of preparation videos in reducing anxiety and fear among children aged 6 - 14 undergoing outpatient surgery?

Methodology

A randomized controlled study was conducted with children aged 6 - 14 who required scheduled surgery in the fields of otorhinolaryngology (ear, nose, and throat - ENT), surgery, urology, ophthalmology, and orthopedics. The study was conducted in the nursing consultation room of a district hospital. Children who were hospitalized for more than 24 hours and those who were unable to self-assess or understand Portuguese were excluded.

The participants were randomly assigned to either the intervention group (IG) or the control group (CG) using the GraphPad Software Inc. program (http://www.

graphpad.com). The sample size was calculated using the G*Power 3.1 software program (Faul et al., 2007) based on a clinically relevant difference of 2.5 ± 0.5 points on the Children's Anxiety Meter-State scale, and assuming a power of the test of 56% to detect differences at a significance level of 5%. To meet these requirements, 30 participants were needed per group.

In the CG, standard care was delivered by the health service to children about to undergo surgery and their caregivers. It included an initial assessment interview, information about the service's rules and procedures, and the delivery of a welcome booklet. Additionally, a guided tour of the service was provided.

At the IG, children and their caregivers received standard care and watched an educational video entitled *Os Super Herois no Hospital* (Superheroes in the Hospital). The video was created by nurses and pediatricians from a pediatrics service for children aged 4 - 18, following the guidelines for good practice in Child and Pediatric Health Nursing from the Portuguese Nursing Regulator (Ordem dos Enfermeiros, 2011). The educational video starring Spiderman has a duration of 15 minutes and was validated by health professionals, including doctors and nurses from the hospital where our study was conducted. A member of our research team was part of the team that designed the video, which describes the procedures to be performed before and after surgery, based on a dramatization in which the actors are children playing the role of health professionals. The video provides information to children and caregivers about the stages of surgical procedures (what is going to be done), possible sensations that may arise (what they may feel), the circuit from the ward to the operating room (OR), the roles of the nurse, operating assistant, and doctor, the uniforms of the surgical team (uniform, mask, cap, and gloves), and the materials and equipment in the OR. The video also describes the application of local anesthetic cream for pain relief during venipuncture; the assessment of vital signs; the need for preoperative fasting; the presence of caregivers during the procedures (transportation to the OR and hospitalization); and the description of where the children will wake up, what their body will look like when they wake up, and the type of hospital equipment/materials that they may be using (catheters, dressings, electrodes, and oximetry sensor). The video was presented in the welcoming area to the group of children who were scheduled for surgical interventions that day. Following the viewing, the children provided feedback while the attending nurse addressed any questions posed by the children and their caregivers.

The data were collected at two different moments by the attending nurses. The first moment was one week before the surgery, during the nursing consultation. The second moment was in the welcoming area on the day of surgery. To ensure blind data collection, the nurses who participated in the first moment did not participate in the second moment, even though the data was self-assessed. The study employed the Children's Anxiety Meter-State scale (CAM-S; Ersig et al., 2013) to evaluate anxiety levels. CAM-S is a self-assessment tool that resembles a thermometer with horizontal lines 10 centimeters long and a light bulb at the bottom. The child marks a line on the thermometer to indicate their current level of worry or nervousness.

Additionally, the Children's Fear Scale (CFS) (McMurtry et al., 2011) was used to measure fear. The CFS consists of five faces, ranging from a face showing no fear to a face showing intense fear. It is a self-report scale where the child responds by indicating which of the five faces, numbered from 0 to 4, corresponds to their level of fear at that moment.

Our study was conducted following the recommendations of the Declaration of Helsinki of the World Medical Association and was approved by the hospital's Board of Directors and Ethics Committee (opinion 23/9/2020). Participation was preceded by the obtaining of free and informed consent from the children (over 8 years of age) and their legal guardians.

Statistical analysis was conducted using the IBM SPSS Statistics software program, version 23.0 for Windows. The normality of the distributions was assessed using the Shapiro-Wilk test and histogram analysis. As the assumption of normality was not met, a non-parametric approach was employed. Categorical variables were described using the absolute and relative frequencies, while continuous variables were described using the median and interquartile range. In some cases, the mean and standard deviation scores were used to aid interpretation. The U-Mann Whitney test was used to compare independent samples, while the Wilcoxon test was used for paired samples. Categorical variables were analyzed using the Chi-square test (X^2). A significance level of $p \leq 0.05$ was used for all tests.

Results

Our study included a sample of 60 children divided into the IG and the CG. The participants in the IG had a slightly higher median age (10.5 years vs. 9 years) than those in the CG. The gender distribution showed that most participants were male in both groups (n = 18; 60.0%). The IG had a higher school year level than the CG (5th year vs. 4th year; see Table 1).

Table 1

Sociodemographic description of the children by group

	Group		
Variables	Control	Intervention	*p*
Age, Med. (IQR)	9 (5.25)	10.5 (6)	NS*
Male gender, *n* (%)	18 (60%)	18 (60%)	NS**
School Year (IQR)	4 (4.25)	5 (5.25)	NS*

*Note. Med. = Median; IQR = Interquartile Range; n = number; %= Percentage p = significance, NS = Not Significant. *Mann-Whitney test; ** Chi-square test.*

Regarding the surgical specialty, most participants underwent ENT surgery, specifically 20 participants in the IG (66.7%) vs. 18 participants in the CG (60%). Most participants in the IG (*n* = 20; 66.7%) had experienced a previous hospitalization compared to 13 participants (43.3%) in the CG. For the majority of participants in the IG, hospitalization lasted ≤ 5 days (*n* =16; 80%), compared to eight participants in the CG (61.5%). Nineteen participants in the IG had no previous surgical experience (63.3%), compared to 21 participants in the CG (70%; see Table 2).

Table 2

Clinical description of the children by group

	Group		
Variables	Control	Intervention	*p*
Type of Surgery			
ENT, *n* (%)	18 (60%)	20 (66.7%)	NS*
Other, *n* (%)	12 (40%)	10 (33.3%)	
With previous hospitalizations, *n* (%)	13 (43.3%)	20 (66.7%)	NS*
Hospitalization days ≤ 5 days, *n* (%)	8 (61.5%)	16 (80.0%)	NS*
No previous surgical experience, *n* (%)	21(70.0%)	19 (63.3%)	NS*

*Note. p = significance, NS = Not significant; n = Number; % = Percentage; ENT = ear, nose, and throat (otorhinolaryngology). *Chi-Square test.*

Although the differences were not statistically significant, there was a decrease in the intensity of anxiety (29.73 vs. 29.15) and fear (30.52 vs. 29.55) from the first to the second assessment moment in the IG. Conversely, the CG showed an increase in the intensity of anxiety (31.27 vs. 31.85) and fear (30.48 vs. 31.45) from the first to the second assessment moment (see Table 3).

Table 3

Anxiety and fear in the first and second moments according to the groups

	Control Group		Intervention Group		
Variables	1st moment	2nd moment	1st moment	2nd moment	*p*
Anxiety, Med. $\overline{X}$	31.27 (3.67)	31.85 (3.33)	29.73 (3.43)	29.15 (3)	NS*
Fear, Med. $\overline{X}$	30.48 (1.27)	31.45 (1)	30.52 (1.30)	29.55 (0.9)	NS*

Note. Med. = Median; $\overline{X}$ = Mean;; *p = significance,* NS = not significant.
* Mann-Whitney test.

Discussion

Undergoing surgery can be a stressful, fearful, and anxiety-inducing event for children. Thus, preparing them for surgery should be a crucial focus for health professionals, particularly for nurses.

Nurses intervene to provide adaptive mechanisms that give children greater control over events, helping them

to navigate a potentially traumatic experience in the most positive way possible. In our view, it is crucial to empower the child and their caregivers to implement measures to cope with fear and anxiety for the success of surgical interventions. The focus of care should not be exclusively on the child, but also on their caregivers and the relationship established between them and the health professionals, which contributes to humanizing the surgical process (Molina et al., 2023). Additionally, it not only prepares the child and their caregivers for the unknown but also empowers them to act in times of adversity, which is critical to mitigating the negative effects of fear and anxiety. Providing children with preoperative information can decrease their imaginary expectations, maladjusted beliefs, and worries related to hospitalization and surgery. Junior et al. (2019) conducted a literature review on the consequences of providing information on the behaviors of children undergoing outpatient surgery. They concluded that children and caregivers who are more adjusted to the hospital environment are less anxious about surgery.

The impact of verbally transmitted preparatory information on children's memory is relatively limited even if it is provided one day before the surgery. Salmon (2006) argues that visual information, such as videos and photographs, can significantly boost memory during preoperative preparation. Our study supports this claim, as the group that watched the video experienced a reduction in fear and anxiety intensity, although not significant. These results suggest that audiovisual interventions may be an appropriate means of conveying information to children of this age. Hatipoglu et al. (2018) report that audiovisual presentations are not only interesting but also memorable. They propose that visualizing the procedures and preoperative circuits can help children overcome fear and clarify doubts on the day of surgery. However, it remains to be proven whether the results obtained justify the resources required even though the benefits for children and health professionals, both in terms of easier physical recovery and general well-being, are ethically undeniable.

The children in the IG and the CG had equivalent sociodemographic and clinical descriptions, which lends consistency to the external validity of our results. In both groups, the children exhibited anxiety and fear, which is to be expected in this context. Providing prior information about the entire surgical process resulted in greater understanding, acceptance, and recognition of the surgical procedures. Having advanced information about painful or threatening procedures encourages children to express their fears and doubts, thus reducing anxiety (Ordem dos Enfermeiros, 2011).

Our study has limitations. One limitation relates to its small sample size, which requires careful consideration before generalizing the results. Another limitation is the video itself, whose content, duration, and form should have been supported by previous research done with children in this age group. Also, the video could benefit from more technical information about the surgery (the language of information), and it would be helpful to include information about pain assessment and strategies to reduce anxiety and fear in both children and caregivers. The content of the video includes information about applying local anesthetic cream to relieve pain during venipuncture but does not include information about pain assessment or strategies to reduce anxiety and fear in both children and caregivers. Considering that pain can result from anxiety and fear, explaining the pain scale in the video could help reduce such feelings. Previous studies have demonstrated that preoperative education effectively reduces postoperative pain (Harvey & Kovalesky, 2018). Thus, one way to improve the video would be to introduce strategies for reducing anxiety and fear. According to some authors, distracting children with fun activities, games, videos, music, or doctor clowns can reduce anxiety and worries about surgery, as well as decrease the time taken for procedures and hospitalization (Liguori et al., 2016; Mello & Junior, 2020). In a study conducted with children aged 6 - 12, El-Moazen et al. (2018) found that preoperative games were effective in reducing the fear of surgery.

Conclusion

Watching the educational video did not result in significant differences between the IG and the CG in terms of the reduction of anxiety and fear among children undergoing outpatient surgery. Although the video described the procedures and provided some surgery-specific information, it did not mention ways and/ or strategies for dealing with fear and anxiety, which may have compromised its effectiveness. Nevertheless, it was still useful in contributing to minimizing fear and anxiety. Considering the balance between resources used and benefits gained, the effectiveness of this audiovisual intervention as a strategy for reducing fear and anxiety in school-aged children undergoing scheduled surgery remains uncertain. Thus, the possibility of implementing other strategies to reduce fear and anxiety should not be ruled out. These strategies can include caregiver preoperative preparation programs that teach coping strategies for caregiver fear and anxiety, considering that caregivers' attitudes are a determining factor in their children's responses, as well as the implementation of preoperative preparation programs for all age groups. Additionally, we recommend that programs include distraction strategies such as games and music to reduce anxiety and fear.

Author contributions

Conceptualization: Santos, I. M., Batalha, L. M., Flora, M. C.
Data Curation: Santos, I. M., Batalha, L. M., Flora, M. C.
Formal analysis: Santos, I. M., Batalha, L. M., Flora, M. C.
Investigation: Santos, I. M., Batalha, L. M., Flora, M. C.
Methodology: Santos, I. M., Batalha, L. M., Flora, M. C.
Project administration: Santos, I. M., Batalha, L. M., Flora, M. C.
Supervision: Batalha, L. M., Flora, M. C.
Validation: Santos, I. M., Batalha, L. M., Flora, M. C.
Visualization: Flora, M. C.

Writing – Original Draft: Santos, I. M., Batalha, L. M., Flora, M. C.
Writing – Review & Editing: Santos, I. M., Batalha, L. M., Flora, M. C.

References

Baghele, A., Dave, N., Dias, R., & Shah, H. (2019). Effect of preoperative education on anxiety in children undergoing day-care surgery. *Indian Journal of Anaesthesia*, *63*(7), 565–570. https://doi.org/10.4103/ija.IJA_37_19

Broering, C. V., Souza, C. D., Kaszubowski, F., & Crepaldi, M. A. (2018). Efeitos de preparações psicológicas sobre o estresse e a ansiedade de meninos e meninas. *Acta Colombiana de Psicologia*, *21*(1), 239-248. https://doi.org/10.14718/ACP.2018.21.1.10

El-Moazen, A. A., Mohamed, S. A., & Kereem, M. A. (2018). Effect of selected play activities on preoperative anxiety level and fear among children undergoing abdominal surgeries. *Egyptian Nursing Journal*, *15*(3), 205-216. https://doi.org.10.4103/ENJ.ENJ_2_18

Ersig, A. L., Kleiber, C., McCarthy, A. M., & Hanrahan, K. (2013). Validation of a clinically useful measure of children's state anxiety before medical procedures. *Revista para Especialistas em Enfermagem Pediátrica, 18*(4), 311-319. https://doi.org/10.1111/jspn.12042

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior research methods*, *39*(2), 175–191. https://doi.org/10.3758/bf03193146

Härter, V., Barkmann, C., Wiessner, C., Rupprecht, M., Reinshagen, K., & Trah, J. (2021). Effects of educational video on pre-operative anxiety in children: A randomized controlled trial. *Frontiers in Pediatrics*, *9*. https://doi.org/10.3389/fped.2021.640236

Harvey, K. A., & Kovalesky, A. (2018). Post-operative pain and comfort in children after heart surgery: A comparison of nurses and families pre-operative expectations. *Journal of Pediatric Nursing*, *43,* 9–15. https://doi.org/10.1016/j.pedn.2018.07.014

Hatipoglu, Z., Gulec, E., Lafli, D., & Ozcengiz, D. (2018). Effects of auditory and audiovisual presentations on anxiety and behavioral changes in children undergoing elective surgery. *Nigerian Journal of Clinical Practice*, *21*(6), 788–794. https://doi.org/10.4103/njcp.njcp_227_17

International Council of Nurses. (2019). *Classificação Internacional para a Prática de Enfermagem: CIPE® versão 2*. https://www.ordemenfermeiros.pt/media/27837/ordem-enfermeiros-cipe.pdf

Junior, A. L., Mello, S., & Moraes, L. U. (2019). Crianças e procedimentos cirúrgicos: Efeitos da informação. *Revista Psicologia e Saúde*, *11*(3), 97–109. https://doi.org/10.20435/pssa.v11i3.701

Kim, J., Chiesa, N., Raazi, M., & Wright, K. D. (2019). A systematic review of technology-based preoperative preparation interventions for child and parent anxiety. *Canadian Journal of Anesthesia, 66*, 966–986. https://doi.org/10.1007/s12630-019-01387-8

Liguori, S., Stacchini, M., Ciofi, D., Olivini, N., Bisogni, S., & Festini, F. (2016). Effectiveness of an app for reducing preoperative anxiety in children: A randomized clinical trial. *JAMA Pediatrics*, *170*(8), 1-6. https://doi.org/10.1001/jamapediatrics.2016.0533

McMurtry, C. M., Noel, M., Chambers, C. T., & McGrath, P. J. (2011). Medo das crianças durante a dor processual: Investigação preliminar da escala de medo das crianças. *Health Psychology, 30*(6), 780-788. https://doi.org/10.1037/a0024817

Mello, S. T., & Costa, J. Á. (2020). Intervenções não farmacológicas em crianças no pré-operatório: Uma revisão da literatura. *Revista da Sociedade Brasileira de Psicologia Hospitalar*, *23*(1), 124-133. http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1516-08582020000100011

Molina, C. J., Valls, L. L., Villegas, V. F., & Ruiz, S. S. (2023). Avaliação de enfermagem da ansiedade pré-operatória pediátrica: Um estudo qualitativo? *Revista Latino-Americana de Enfermagem*, *31*, e3738. https://doi.org/10.1590/1518-8345.6230.3738

Mula-Fuentes, B., Quintana, M., Rimbau, J., Martínez-Mejías, A., Úriz, M. S., Rivera-Pérez, C., & Garolera, M. (2018). Anxiety, hospital fears and conduct and behavioral alterations during pediatric hospitalization. *Actas Espanolas de Psiquiatria*, *46*(2), 42–50. https://pubmed.ncbi.nlm.nih.gov/29616712/

Ordem dos Enfermeiros & Comissão de Especialidade de Enfermagem em Saúde Infantil e Pediátrica. (2011). Diminuir o medo da cirurgia. In A. M. Marques & F. J. Mendes (Coords.), *Guias orientadores de boa prática em enfermagem de saúde infantil e pediátrica* (Vol. II, pp. 23-82). https://www.ordemenfermeiros.pt/media/8906/cadernosoe_guiasorientadoresboapraticaceesip_volii.pdf

Ramos, A. L., & Figueiredo, M. C. (2020). *Enfermagem em saúde da criança e do jovem*. Lidel.

Salmon, K. (2006). Commentary: Preparing young children for medical procedures: Taking account of memory. *Journal of Pediatric Psychology, 31*(8) 859-861. https://doi.org/10.1093/jpepsy/ jsj072

Yaz, B. Ş., & Yilmaz, B. H. (2022). The effects of designing an educational animation movie in virtual reality on preoperative fear and postoperative pain in pediatric patients: A randomized controlled trial. *Journal of Perianesthesia Nursing, 37*(3), 357–364. https://doi.org/10.1016/j.jopan.2021.04.015