Sari, E. P., Chodidjah, S. & Agustini, N. (2026)
Jurnal Keperawatan Soedirman – Vol 21, No 3 page 218-226
http://jos.unsoed.ac.id/index.php/jks/index

ORIGINAL ARTICLE

PARENTAL HOLDING AND THERAPEUTIC SPIKY BALL PLAY FOR POSTOPERATIVE ANXIETY IN CHILDREN: A RANDOMIZED CONTROLLED TRIAL

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Article Information
Received: 18 June 2025
Revised: 12 May 2026
Accepted: 3 November 2026

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DOI
10.20884/1.jks.2026.21.3.16840

ABSTRACT

Background: The postoperative recovery room can be an unfamiliar and distressing environment for children, often contributing to increased anxiety. However, evidence regarding the effectiveness of non-pharmacological interventions for managing postoperative anxiety and physiological responses in this population remains limited.
Objective: To compare the effects of parental holding and therapeutic spiky ball play on postoperative anxiety and physiological responses in recovering in the post-anesthesia care unit.
Methods: This pretest and post-test randomized controlled trial included 78 children (aged 4 to 12) undergoing elective surgery under general anesthesia. Participants were equally randomized (n = 26 per group) to 15 minutes of parental holding, therapeutic spiky ball play, or standard parental presence**.** Outcomes included anxiety, assessed via the Perioperative Adult and Child Behavioral Interaction Scale (PACBIS), and physiological responses (oxygen saturation, heart rate, respiratory rate, and body temperature).
Results: Anxiety decreased significantly in the parental holding group (from 1.54 to 0.65; $p < 0.001$), the therapeutic spiky ball play group (from 1.19 to 0.19; $p < 0.001$), and the control group (from 1.12 to 0.88; $p = 0.014$). Post-intervention anxiety levels differed significantly among the groups ($p < 0.001$), with the lowest score observed in the spiky ball play group. Several physiological parameters changed significantly within groups; however, no significant differences were found between groups after the intervention.
Conclusion: Parental holding and therapeutic spiky ball play were associated with reduced postoperative anxiety and may serve as supportive non-pharmacological comfort measures in pediatric recovery rooms. However, their independent effects on physiological responses remain uncertain.

Keywords: *Anxiety; parental holding; pediatric postoperative care; physiological responses; therapeutic play*

ISSN : 1907-6637 **e-ISSN : 2579-9320**

BACKGROUND

Every year, the number of children requiring surgical intervention increases (Wright et al., 2019). Globally, more than five million operations are performed on children annually. **The surgical experience of surgery** can be distressing for both children and their parents (Bizzio et al., 2020; Charana et al., 2018). During the preoperative, intraoperative, and postoperative periods, children may experience both physical and psychological distress. They often feel fear and anxiety related to the procedures, separation from their parents, unfamiliar environments, and interactions with healthcare workers (Brown et al., 2022; Pazarcikci & Efe, 2023; Vagnoli et al., 2019). Several studies indicate that **unmanaged that fear and anxiety in children significant short-and long-term effects**. Anxiety can lead to changes in vital signs, sleep disturbances, irritability, and restlessness. Moreover, anxiety may persist for several days up to a year after surgery (Mathias & Pai, 2022; Olbrecht et al., 2021).