

Effectiveness of preoperative tour in simulation operating theater in reducing preoperative anxiety in children and their parents: A pragmatic, single-blinded, randomized controlled trial/ King Fahad Medical City



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Abstract

Introduction: The role of the pharmacologic and non-pharmacologic preparation on reducing the POA has been proven in the literature; some of them were used in our anesthesia department at King Fahad Medical City/ Riyadh, as Midazolam prescription before anesthesia induction, and presence of the parents during induction. Recently, the simulation operating theater was introduced in the preoperative clinic as one of the preoperative strategies which may contribute effectively in decreasing the POA in children and their parents.

Objectives: This study aims to explore the impact of Pre-operative visit to simulation operating theater accompanied by expert anesthesia technologist on the POA of school-age patients undergoing general anesthesia and their parents before and at the time of anesthesia induction.

Methods: In this interventional single-blinded randomized control trial, a sample of 120 ASA- I, II pediatric patients (age range 4 to 14 years) who have been scheduled for elective day case procedures under general anesthesia were recruited and randomly assigned to control group (CG) (n=60) and intervention group (IG) (n=60). Patients in CG have received the routine preoperative preparation. Patients and their parents in IG were taken in a tour to a simulation operating room, where they received education and orientation about what they are going to experience at the operating room, and they were encouraged to apply vital signs monitor, and to simulate providing mask anesthesia induction to a child manikin. Children's anxiety level had been measured twice on the day of surgery using the tool of modified-Yale Pre-Operative Anxiety Scale (m-YPAS), firstly at holding area (T0) and secondly inside operating theater before anesthesia induction (T1), in addition, somatic signs of anxiety including children's heart rate (HR) and systolic blood pressure (SBP) were recorded at T0 and T1. Parent's anxiety level was assessed using the selfquestionnaire of the Beck Anxiety Inventory Scale (BAIS) on the day of surgery.



Results: A total of 120 patients were recruited, 4 children were excluded later on as they were given sedatives in the preoperative period. A total of 116 children were taken up in the study and distributed in control group n=59 with a mean age of 6.9 (SD 2.6) years, and intervention group n=57 with a mean age of 7.9 (SD 2.7) years. There was no significant difference among the groups on age, gender, parental status, previous history of anesthesia, type of procedure, and parent's presence during anesthesia induction. In CG, 64.4% of the children were anxious at T0 and 93.2% at T1 comparing to the IG, the proportions of anxious children were 17.5 % at T0 and 43.9% at T1, independent sample t-test of m-YPAS scores showed significant differences, with p-value <0.001 for both times. Furthermore, comparing the means of variations between T1 & T0 of SBP, and HR yielded significant differences between the study groups, the patients in IG have a less increase in SBP & HR than CG, with p values of 0.002, & <0.001 respectively. BAIS classification showed that parents who had no anxiety formed 55.9% of the CG comparing to 89.5% of the IG. Independent sample t-test utilization of BAIS scores for Parents between the study groups showed a significant difference in their anxiety level with p-value <0.001.

Conclusion: The preponderance of pre-operatively anxious children and parents shown in this study exceeded the world wide estimations; however, the visit to the simulation operating room before the day of the procedure, was a very useful method to reduce children's and parent's fears.

Keywords: pediatric, parents, preoperative, anxiety, simulation, anesthesia

Biography

Hussein A Battah is a general nurse specialist with extensive experience in Anesthesia & quality management in health care, he has started his career with a diploma of anesthesia from the Balqa'a Applied University of Jordan in 2004. He had worked at Jordan hospital/ Amman as an anesthesia technologist from 2004 to 2014, during that time he gained a B.Sc. in nursing science from the Zaytoonah Private University of Jordan in 2011, and then he gained the MSN from the Hashemite University of Jordan in 2014. He has joined the anesthesiology and perioperative medicine administration at King Fahad Medical City/ Riyadh, as a "departmental quality improvement coordinator" from 2014 until the present.

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