Assessment of Perioperative Child and Adult Behaviors and Behavioral Interactions

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Background and Aims: Maladaptive behavior is a common problem in children following outpatient surgery. This clinically important and often-overlooked problem can be avoided with effective perioperative behavioral interventions. Poor compliance at induction had been shown to be associated with emergence delirium and postoperative maladaptive behavior in children. The most common predictor of postoperative behavior problem in children is a history of traumatic past perioperative experience. Non-anesthesia related factors, including childrens'anxiety and distress; and parents' and health care providers' distress promoting behaviors can unfavorably prolong discharge times and negatively affect post-discharge experience, parental satisfaction, and overall quality of perioperative outcomes and economics. A group of Yale investigators developed the first reliable preoperative behavioral scale, P-CAMPIS (1) based on the CAMPIS revised scale. Anecdotally, this group reports that use of this instrument is a very complex and time-consuming procedure to code discrete behaviors (more than 3 hours for interval coding of 10 minutes of recorded perioperative videotape), which is not clinically feasible in day-to-day clinical anesthesia practice and is validated to assessing only anesthetic induction behaviors. Currently there is no reliable, valid and practically simple instrument to evaluate the behavioral interactions among children, parents, and health care staff during the entire perioperative period. In this study we used a simple and easy to use video-based Child Adult Medical Procedure Interaction scale – Short form (CAMPIS-SF) to evaluate perioperative behaviors of children and their behavioral interactions with parents, anesthesiologists and recovery nurses. The reason for choosing the CAMPIS-SF was due to its advantage over CAMPIS-revised scale in being a clinically feasible non-time consuming updated instrument with additional visually observable behavioral codes.

Methods: Ninety-five children 3-12 years of age undergoing outpatient tonsillectomy and adenoidectomy accompanied by at least one parent were recruited in this study. Anesthetic induction and recovery room events including anesthesiologists, parental and recovery nurse interactions with the child along with child's coping and distress behaviors were continuously videotaped and perioperative behaviors were coded by trained observers. The CAMPIS-SF was used to assess perioperative behaviors of children and behavioral interactions with parents and health care staff at different distress settings (anesthetic inductions and recovery room).

Results: Weighted kappa statistics showed moderate to excellent inter-rater reliability (weighted kappa 0.46 to 1) between the two behavioral observers of the CAMPIS-SF during anesthetic induction and recovery room events (n=25). Both observers had good agreement in coding coping and distress behaviors of children and coping and distress promoting behaviors of parents/anesthesiologists and recovery nurses using the simple videotape-based scale, CAMPIS-SF.

Discussion: To facilitate monitoring children's acute procedural distress and their coping and the various parental and health care providers' behaviors that significantly influence children's coping and distress, the CAMPIS, Revised Scale and its Short Form (CAMPIS –SF) were developed and validated in children undergoing non-surgical procedures (immunization). There is no clinically practical perioperative behavior interaction scale to identify unfavorable perioperative interactions. Because of its ease of use, time efficiency and additional visual behavioral codes we chose the CAMPIS-SF to assess perioperative behaviors of children and their interactions with parents, anesthesiologists and recovery nurses. Postoperative maladaptive behaviors such as temper tantrums, waking up at night, difficulties in going to bed, crying, attention seeking and afraid to be alone are common (47%) in children. These often overlooked clinically important problems can be avoided with effective identification and modification of perioperative behavioral interventions. The simple videotape based scale, CAMPIS-SF, was successfully used to assess perioperative behaviors in children. The perioperative behavioral observers the CAMPIS-SF had good inter-rater reliability in assessing perioperative behaviors in children. In conclusion, because of its reliability and ease of use, the CAMPIS-SF is a more appropriate videotape based tool than existing videotape based instruments for assessing child–adult behavioral interaction during anesthetic induction as well as the postoperative period.

Reference: 1. Anesthesiology 2005; 103: 1130-5.