The utility of the mYPAS (modified Yale Preoperative Anxiety Scale) as a screening tool for pediatric patients undergoing MRI without sedation following simulation based training.

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Introduction
- MRI is a common modality for diagnostic imaging. 
- Sedation and general anesthesia is often required to complete MRI examinations in pediatric patients. 
- Practice MRI reduce the need for sedation in some patients. 
- Reliable screening tools indicating which patients would benefit from such training is lacking. 
- The primary objective was to determine if patient anxiety improved after MRI simulation practice. The secondary objective was to determine which patients were likely to require sedation despite completing MRI simulation.

Methods
- IRB approval was obtained. 
- Enrolled subjects were patients 5 to 11 years who were scheduled for MRI “with sedation/anesthesia” from 2015-2016 whose parents agreed to participate in same day or weekend MRI simulation in an effort to avoid the use of sedation/anesthesia. 
- mYPAS (modified Yale Preoperative Anxiety Scale) assessments were performed by trained child life specialists prior to and following practice MRI. 
- Patient demographics, type of MRI scan, duration of scan and whether the MRI was completed successfully without sedation were recorded. 
- Change in mYPAS after sedation was assessed using paired t-test. 
- Predictive value of pre-simulation mYPAS for sedation requirement was assessed using logistic regression with receiver characteristics operating (ROC) curve analysis.

Results
- Seventy-nine patients (42/37 boys/girls, age 8.4 ±3.0 years) were enrolled in the study. 
- Eleven (14%) required sedation to complete the MRI exam despite participating in the simulation. 
- After simulation, mYPAS scores improved significantly in the overall cohort from 31 ±11 to 27 ±9 (p<0.001, paired t-test). 
- Pre-simulation mYPAS was higher in patients who could not complete the exam without sedation (44 ±14 vs. 29 ±9, p<0.001, unpaired t-test). 
- In ROC curve analysis (area under the curve=0.81), a mYPAS score ≥33.3 before simulation predicted failure to complete the MRI exam without sedation with 82% sensitivity and 79% specificity.

Conclusion
- Most patients referred for simulation training completed MRI without the need for sedation. 
- mYPAS decreased after simulation training in the overall cohort, but not among patients who ultimately needed sedation. 
- The mYPAS is a useful screening tool to designate which pediatric patients would and would not require sedation for MRI studies, with good predictive value when assessed prior to simulation training.

References