718 - Factors associated with procedural distress in children undergoing facial laceration repair

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Presenter(s)

Michael Scribner-O'Pray
Registered Nurse
Home
Children's Minnesota
Minneapolis, Minnesota, United States

Background: Poorly managed procedural pain is a preventable harm. Pain during medical procedures is rarely documented and benchmarks for pediatric procedural distress have not been established.

Objective: 1) Quantify pain experienced by children undergoing facial laceration repair; 2) Identify factors associated with low procedural pain scores.

Design/Methods: We conducted a prospective cohort study, between 8/10/17 and 7/26/18, among a convenience sample of children ages 1–5 years undergoing facial or scalp laceration repair in the pediatric emergency department. Trained staff were randomly assigned to review video recordings of laceration repairs and ascribe pain scores at 15 second intervals using the revised face, legs, activity, cry, consolability (FLACC) scale (0–10). We measured procedure phase (irrigation/cleaning, suture placement, and finishing work), use of restraint, child life involvement, parent engagement, and pre-procedural analgesia (Acetaminophen/Ibuprofen). Predicted mean FLACC score was calculated using generalize estimating equation (GEE) models with autoregressive correlation. Each procedure phase was modeled to account for distributional differences. To evaluate practice patterns, we dichotomized FLACC into low/high scores (<4 and ≥4) and used GEE logit models with autoregressive correlation. To account for missing observations we used multiple imputation with chained equations. Estimates for missing variables were calculated using standard combining rules for 10 multiply imputed datasets.

Results: There were a total of 1,044 laceration repairs, of which 258 were included in analysis (Figure 1). Nurse Practitioners completed 98.5% of repairs; Child Life Specialists were present for 77.5%, parent engagement was present in 85.7%, and pre-procedure analgesia was used in 85.3%. Predicted mean FLACC scores remained <4 over all procedure phases (Figure 2). The maximum FLACC score across all phases was <4 in 36% of participants (Figure 3). Pre-procedural analgesia was associated with greater odds of FLACC score <4 (aOR 2.29, 95% CI 1.28–4.10) and restraint was associated with FLACC scores ≥4 (aOR 0.05, 95% CI 0.04–0.08) (Table 1).

Conclusion(s): 36% of participants had maximum FLACC scores of <4 and predicted mean FLACC scores remained <4 over all procedure phases. Pre-procedural analgesia was associated with FLACC scores <4 and restraint was associated with FLACC scores ≥4.

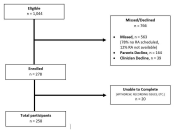

Figure 1.

Table 1. Associations between practice patterns how FLACC scores (<4)		
Practice Patterns	aOR (95% CI)	
Child Life	1.46 (0.66, 3.23)	1.17 (0.71, 1.93)
Positive parent engagement	0.50 (0.22, 1.13)	0.90 (0.41, 1.96)
Analgesia	3.10 (1.59, 5.94)	2.29 (1.28, 4.10)
Restraint	0.03 (0.01, 0.07)	0.05 (0.04, 0.08)
*Adjusted for age and consecutive cases.		

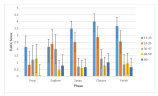

Figure 2. Predicted mean FLACC score by phase and age (months) during facial laceration repair
*Error bars that went below zero were truncated by the graph.

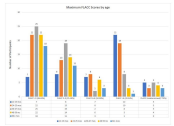

Figure 3.

Authors/Institutions: Michael Scribner-O'Pray, Children's Minnesota, Minneapolis, Minnesota, United States; **Amanda J. Nickel**, Children's Minnesota, Minneapolis, Minnesota, United States; **Ernest Krause**, Children's Minnesota, Minneapolis, Minnesota, United States; **Erin S. Taylor**, Children's Specialty Center of Minnesota, Saint Paul, Minnesota, United States; **Sydney A. Mojica**, Children's Minnesota, Lino Lakes, Minnesota, United States; **Kelly R. Bergmann**, Children's Minnesota, Minneapolis, Minnesota, United States