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Jennifer J. Dilts

*Children's Mercy Hospital*

Brian R. Lee

*Children's Mercy Hospital*

Shobhit Jain

*Children's Mercy Hospital*

Ross Newman

*Children's Mercy Hospital*

Sarah Fouquet

*Children's Mercy Hospital*

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## Authors

Jennifer J. Dilts, Brian R. Lee, Shobhit Jain, Ross Newman, Sarah Fouquet, Michael Brancato, and Kadriye O. Lewis

# Teaching Pediatric Procedural Pain and Anxiety Management to Residents: Early Outcomes of a Newly Developed Curriculum

Jennifer J. Dilts, DO; Brian Lee, PhD; Shobhit Jain, MD; Sarah Fouquet, PhD; Michael Brancato; Kadriye O Lewis, EdD

Children's Mercy Kansas City, Department of Pediatrics; University of Missouri-Kansas City School of Medicine, Kansas City, MO

## Background

Poorly managed pain has negative long-term outcomes, including needle phobia, increased pain and anxiety with subsequent procedures, and healthcare avoidance. Evidence-based interventions to reduce procedural pain and anxiety are vastly underutilized.

## Objective

To measure residents' learning outcomes (knowledge, attitudes, perceived competence, and practice change) and satisfaction with a newly developed procedural pain and anxiety curriculum.

## Methods

- We developed a multi-media-based lecture with PowerPoint, utilizing results from a focus group interview with 7 pediatric residents.
- Pediatric residents were invited to complete the curriculum online during their emergency medicine rotation.
- Data was collected between July 2019 and June 2020 (pre- and post- tests and a follow-up survey 3-12 months later).

## Results

- Out of 72 residents, 28 of them participated in the intervention with pre- and post-tests (39%) and 12 of those residents completed the follow-up survey.
- Residents' knowledge increased by 24.3% ( $p < 0.0001$ ) (Figure 1).
- There was no significant change in attitudes toward pain and anxiety management.
- Positive improvements, although non-significant, were seen in perceived competence and reported change in medical practice (Figures 2 and 3).

## Results

- 75% of residents planned to utilize knowledge from the course in the next few weeks (Table).
- In the follow-up survey, the majority of residents reported that knowledge learned improved their practice and/or led to changes in their practice.

Figure 1: Pre- and Post-Test Scores

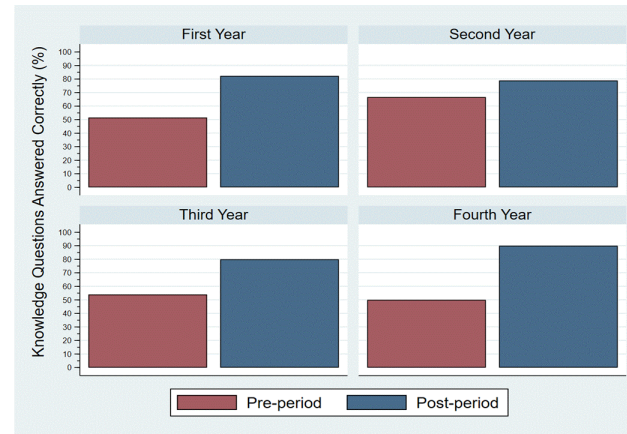


Figure 2: Perceived Competence

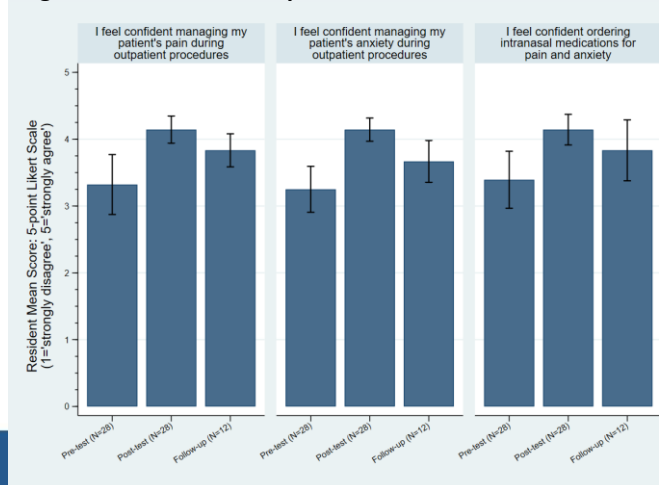


Figure 3: Reported Change in Medical Practice

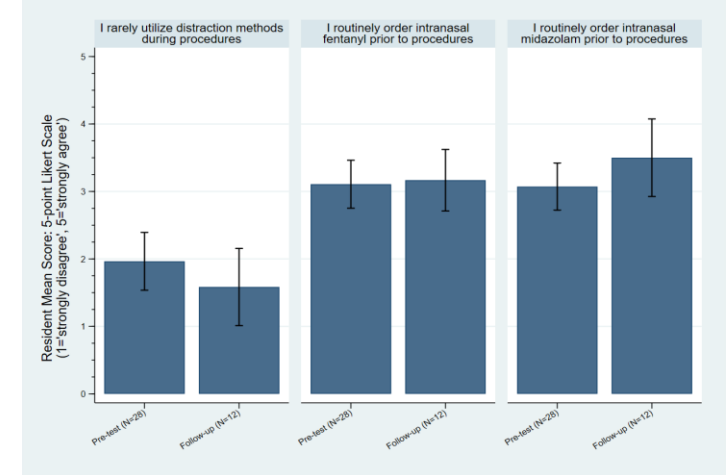


Table: Course Evaluation

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
During this course I learned new skills that I will utilize in the next 4 weeks.	0.0%	3.6%	21.4%	46.4%	28.6%
I am stimulated to learn more on this topic.	0.0%	3.6%	39.3%	39.3%	17.9%
I would recommend this course to a colleague.	0.0%	3.6%	21.4%	35.7%	39.3%
This educational activity was worth my time.	3.6%	3.6%	17.9%	53.6%	21.4%

## Conclusions

Early outcomes show significant knowledge increase. These results provide the foundation for evaluation of an online game-based version of curriculum.

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