

Comparison of Pharmacy Student Knowledge/ Confidence Pre- and Post- Neonatal Intensive Care Simulation: A Single Cohort Study

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BACKGROUND:

~58-64% of pharmacists report feeling competent in verifying pediatric medications^{1,2}

Neonatal intensive care (NICU) population medication error rate 18-71%^{3,4}

Currently a lack of literature on incorporating neonatal simulations

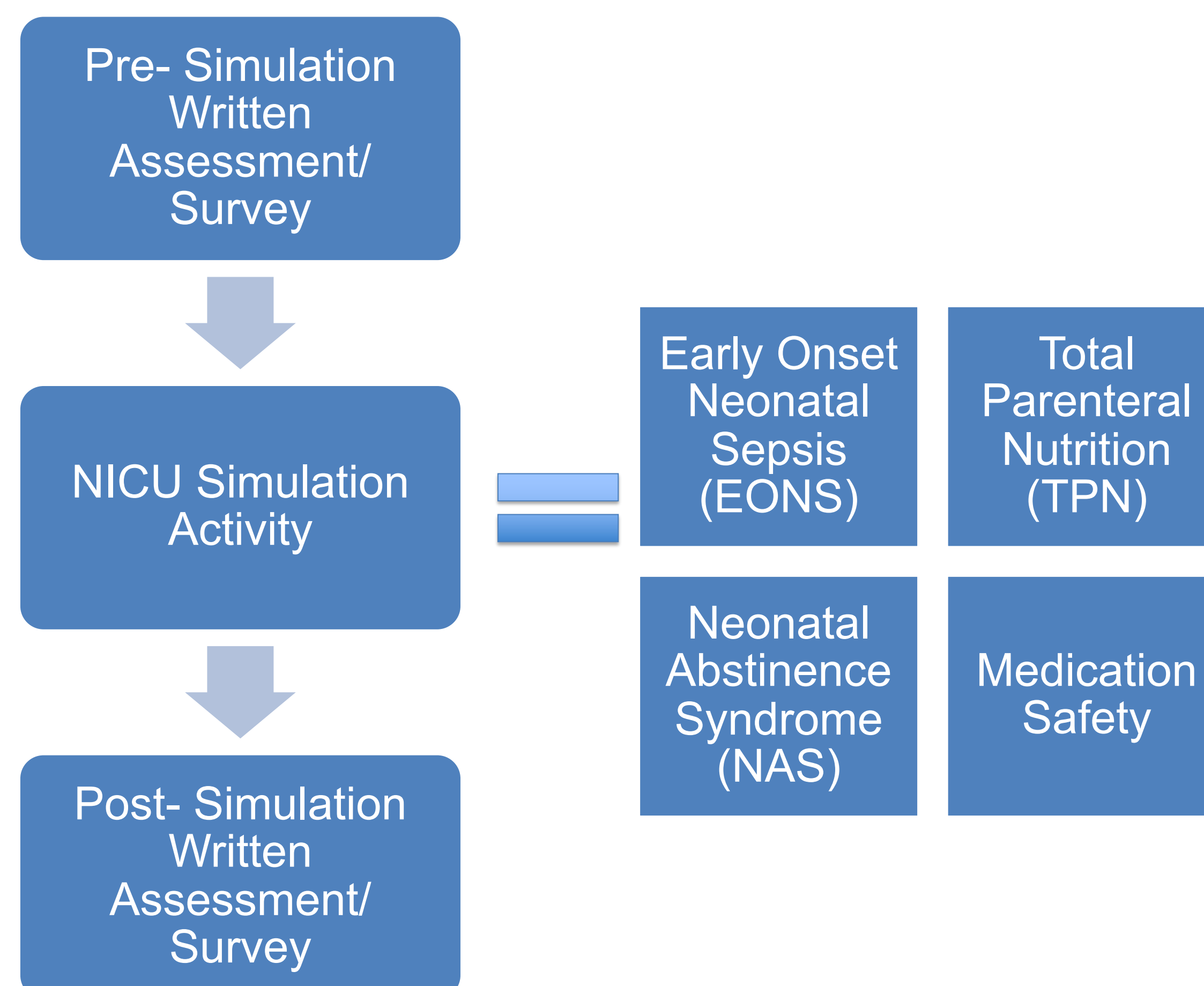
~1 in 5 PharmD students will take a pediatric APPE, therefore more pediatric/ neonatal pharmacy training is needed⁵

OBJECTIVE:

- Evaluate third-year Doctor of Pharmacy students' pre- and post simulation test scores and perceptions on a four-station NICU simulation

METHODS

- Third year pharmacy students enrolled in the pediatric pharmacotherapy elective at University of South Florida in Spring 2024



- Descriptive statistics utilized to analyze student pre- and post-simulation scores

RESULTS

Table 1: Correctly Answered Items on Simulation Pre/Post Assessment

Question	Pre (N=10)	Post (N=10)
Which of the following is the best option empiric therapy for EONS?	10 (100%)	10 (100%)
Which of the following is the correct duration of therapy for a neonate with group B streptococci bacteremia?	3 (30%)	5 (50%)
Which of the following is the dose of acyclovir for neonatal herpes simplex virus infection (assume normal renal function)?	1 (10%)	3 (30%)
Which of the following neonatal patients is prophylactic fluconazole indicated?	0 (0%)	3 (30%)
Which of the following neonatal patient populations is the hepatitis B vaccine indicated?	4 (40%)	6 (60%)
Which of the following is a nonpharmacologic option to treat NAS?	10 (100%)	10 (100%)
Which of the following is an appropriate tapering plan for weaning morphine in NAS?	10 (100%)	10 (100%)
Which of the following dosages is an appropriate discontinuation point for NAS?	8 (80%)	9 (90%)
Which of the following medications is y-site compatible with Intralipid?	4 (40%)	0 (0%)
Which of the following is a normal initial neonatal glucose infusion rate?	4 (40%)	5 (50%)

Table 2: Simulation Station Activity Scores

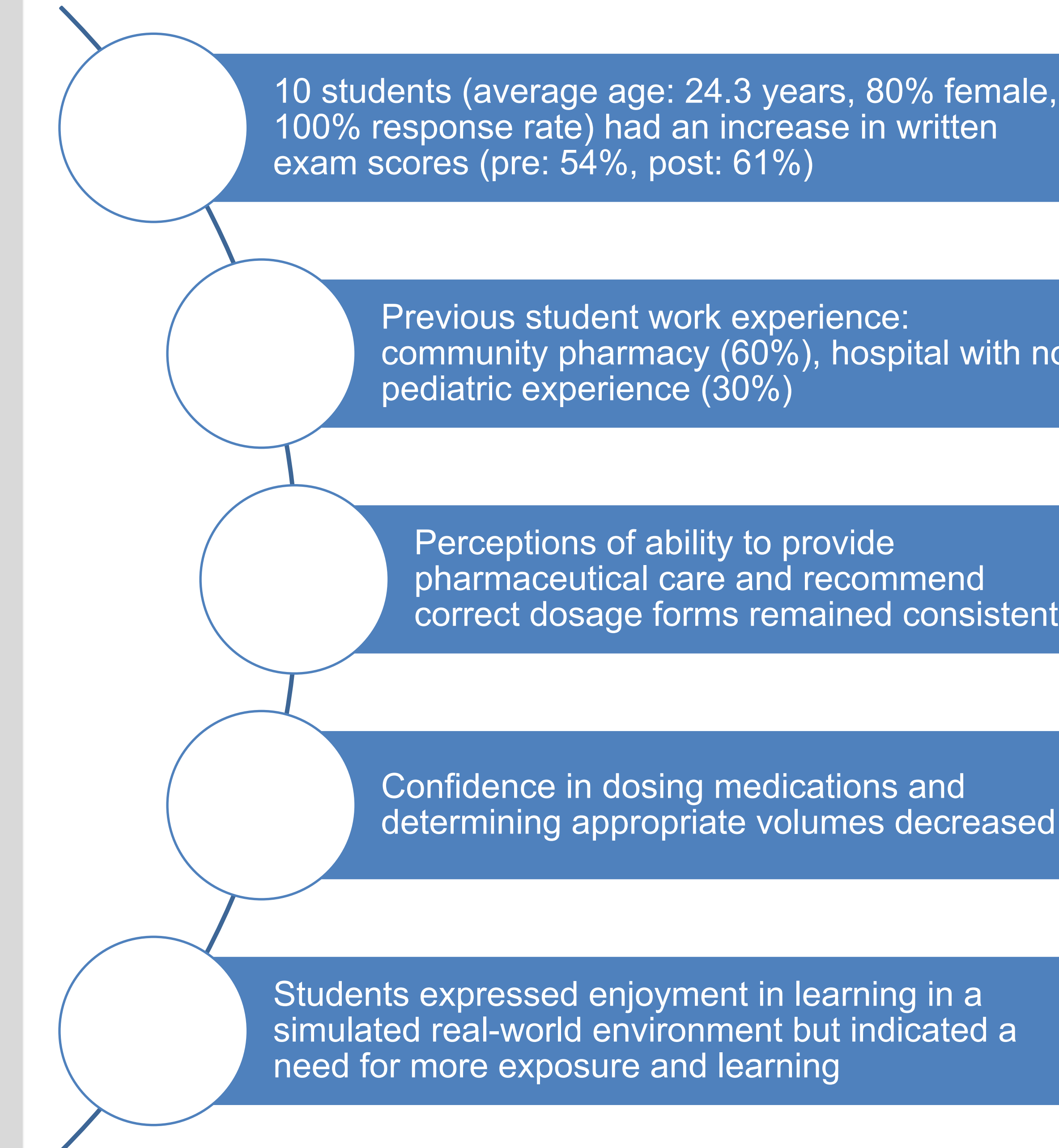
EONS	TPN	NAS	Med Safety	Total Score
Mean: 46% (range 23-77%) SD: 11.5	Mean: 55% (range 0-100%) SD: 8.8	Mean: 81% (range 60-100%) SD: 6	Mean: 100% (range 100%) SD: 0	Mean: 61% (range 45-82%) SD: 16.9

Table 3: Agreement on Items Assessing Confidence on the Pre/Post Survey⁶

Statement	Pre (N=10)	Post (N=10)
I am able to provide pharmaceutical care to the neonatal patient population.	3 (30%)	3 (30%)
I am able to determine the appropriate dose (in mg and mg/kg) of medications for a neonatal patient.	9 (90%)	5 (50%)
I am able to determine the appropriate volume (in mL) of medications for a neonatal patient.	9 (90%)	5 (56%)*
I am able to recommend the correct dosage form for a neonatal patient.	7 (70%)	7 (70%)

*1 student did not respond

CONCLUSIONS



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NICU simulation did not significantly improve knowledge or confidence in NICU pharmacotherapy.

Additional simulation practice is recommended for enhanced preparedness in this specialized patient care setting