

Deliberate Repetitive Practice for Nursing Students

A small-scale study of examining the effectiveness of deliberate repetitive practice on increasing nursing students' confidence in peripheral intravenous catheter insertion.

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INTRODUCTION

Objective: To evaluate the impact of a DRP scenario on nursing students’ confidence in intravenous catheter placement.

Findings: The study measured confidence scores and found that DRP training enhances assurance in performing skills safely and correctly.

Implications: Simulation-based DRP training prepares students to become competent registered nurses (Alrashidi et al., 2023).

Conclusion: This study highlights the benefits of DRP in nursing education through a small-scale research project conducted in a school of nursing.

BACKGROUND

The Problem

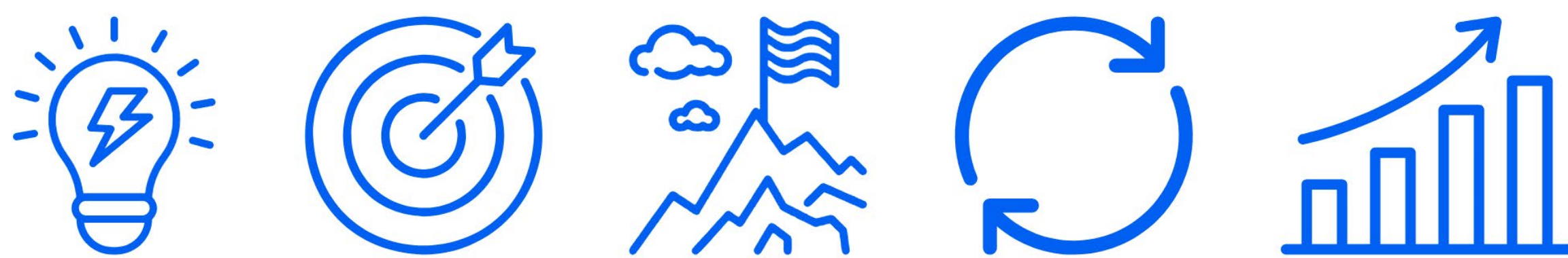
Many nursing students lack confidence in IV catheter insertion (Keleekai et al., 2016).

Peripheral IV catheter (PIVC) failure rates range from **35% to 50%** due to insufficient knowledge and skill.

This leads to delays in care, increased costs, patient discomfort, and complications.

What is Deliberate Repetitive Practice (DRP)?

A structured method to improve skills through repetition that is:



Intentional • Goal-oriented • Challenging but Achievable
Consistent & Repetitive • Proven to Improve Performance

[Inspired by Ericsson’s research on expert musicians and the other ‘10,000-hour rule’. (Hambrick et al., 2020)]

Why Confidence Matters in IV Insertion

Knowledgeable nursing students have higher confidence and skill levels (Simeone et al., 2023).

Self-confidence improves academic success (Ramezanzade et al., 2024).

A supportive learning environment fosters professional confidence (Makarem, 2019).

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METHOD

Study Design: Quantitative pre/post survey approach

Data Collection:
Researcher-designed electronic survey
Likert scale questions measuring confidence and preparedness
Open-ended section for qualitative feedback

Data Analysis: Descriptive statistics

Intervention Design: Based on Deliberate Repetitive Practice (DRP) theory

Ethical Approval: Reviewed & approved as an exempt study by the IRB

SAMPLE

Participants: Nursing students in a prelicensure baccalaureate program

Level: Junior and senior college students

Recruitment: Email and campus posters

Participation: Voluntary

Total Eligible Participants: 52

Pre-Intervention Survey: 22 students completed

Intervention Scenario: 8 students completed

Post-Intervention Survey: 7 students completed

INTERVENTION

Prior Training: All students had prior PIVC insertion training in the skills lab.

Intervention: Students participated in a deliberate repetitive practice (DRP) scenario for PIVC insertion.

- Scenario Components:**
- Verbal instructions introducing the PIVC scenario
 - Hands-on practice inserting PIVC on a simulated patient
 - Faculty observation during 15-30 minutes of practice

Feedback: Faculty provided formative feedback based on a skills checklist.

Additional Practice: Students had the opportunity to practice again.

- 2 out of 8 students chose to do so.

DATA COLLECTION & SURVEY QUESTIONS

Qualtrics was used to gather pre- and post-survey data.

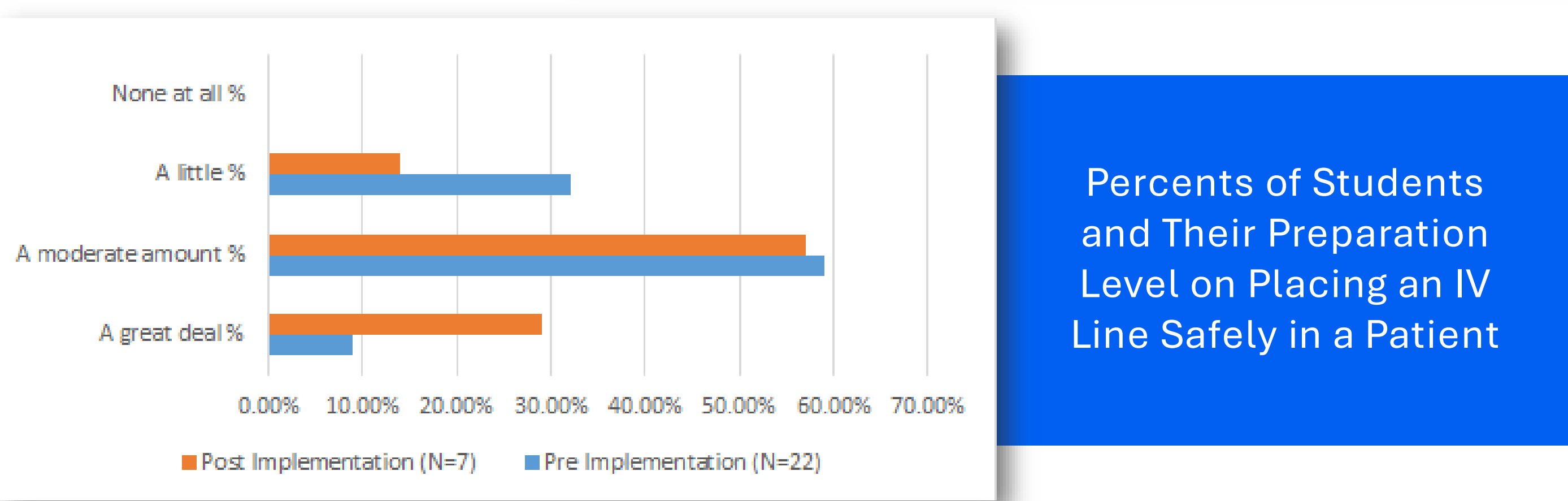
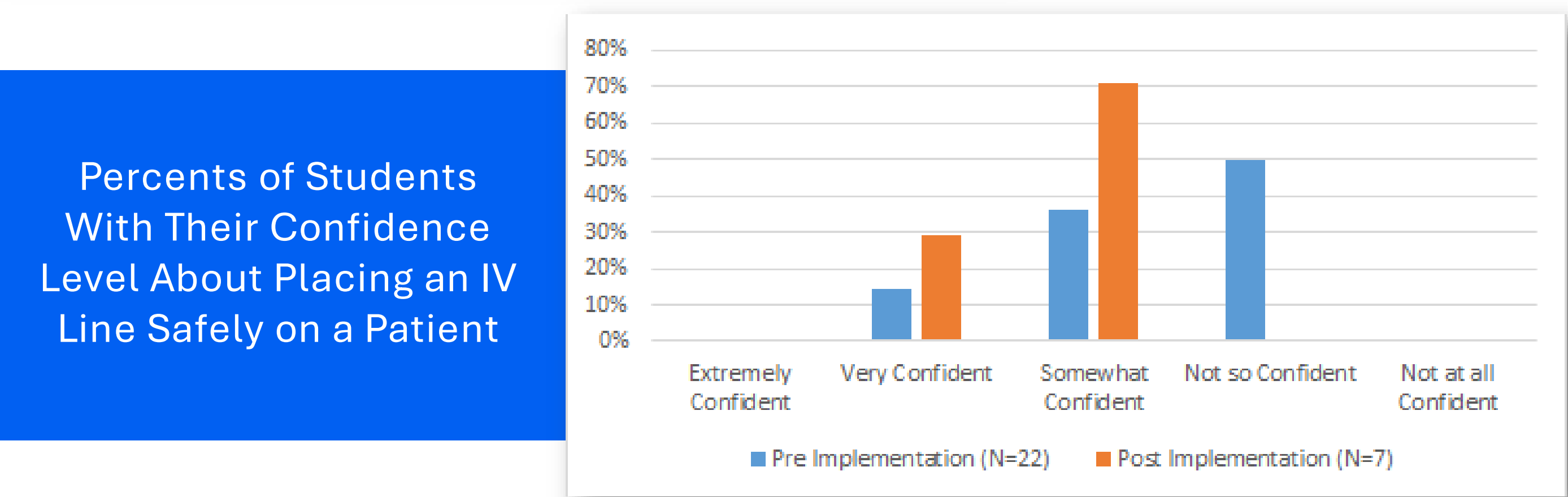
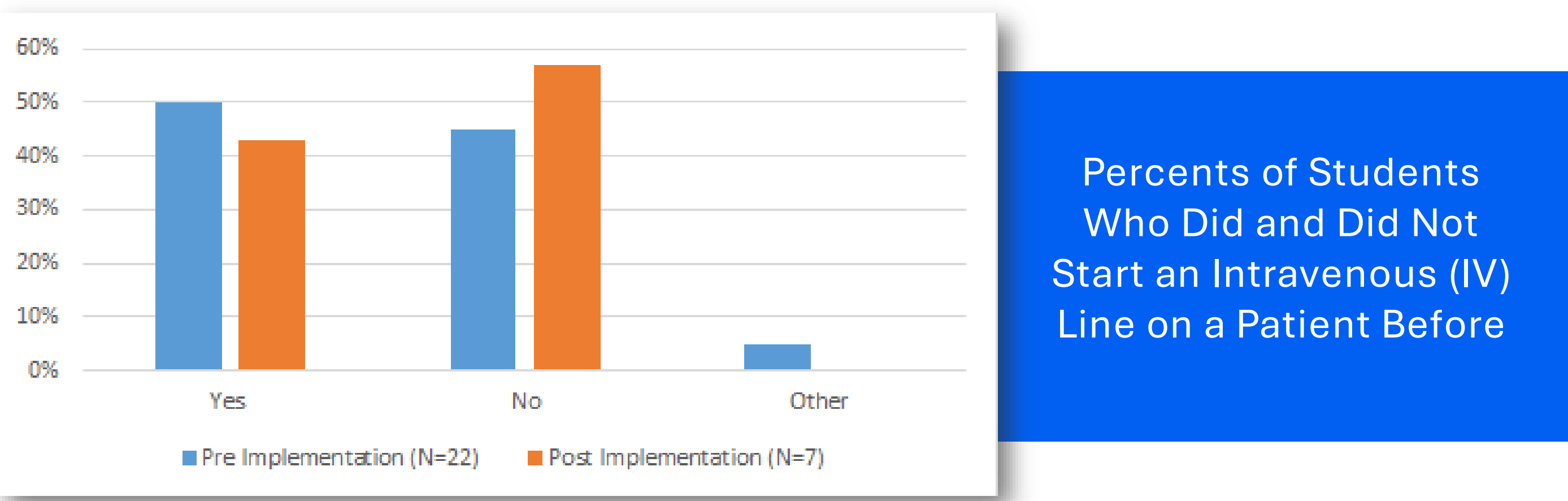
- Survey Questions:**
- Have you ever started an Intravenous (IV) line on a patient before?
 - How confident do you feel about placing a PIVC line safely in a patient?
 - How prepared do you feel with placing a PIVC line safely in a patient?

ANALYSIS

Method: Group means were compared between pre- and post-surveys to determine if there was a statistically significant difference in overall confidence levels.

Frequency Comparison: Pre and post survey response distributions were analyzed to examine changes in confidence levels.

RESULTS



RESEARCH STRENGTHS & LIMITATIONS

- Strengths:**
- Ample time to complete the research
 - Weekly schedule allowed for online student sign-up
 - Necessary resources for implementation were available
 - Scenario designed using the deliberate repetitive practice theory

- Limitations:**
- Few participants
 - Limited to one type of clinical skill
 - Only one DRP session scheduled, reducing opportunities for repetitive practice
 - Student self-scheduling was challenging due to other obligations

CONCLUSION

Using deliberate repetitive practice (DRP) in nursing skill training can be beneficial. Frequency and percentage change trends suggest an improvement in students' confidence and perceived preparedness. Further testing of the DRP intervention with additional skills is needed. Integrating DRP into the curriculum as a simulation strategy may enhance student confidence and clinical readiness.

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