

# Wound Care Education Using Simulation: A Systematic Record Review of a Local Quality Improvement Involving Training Impacts on Clinical Knowledge, Skill Performance, and Satisfaction Among Skilled Nursing Facility Staff

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## Background

- Impaired skin integrity leading to wound formation and infection is a significant health concern, especially for long-term care residents.
  - Impaired wound healing in the elderly population due to lack of mobility, medical diagnosis, and incontinence
  - Many types of wounds in elders 75 and older including venous ulcers, neuropathic ulcers, ischemic ulcers, mixed ulcers, diabetic ulcers, punctures, and skin tears<sup>1</sup>
- Effective and competent nursing wound care is essential for the health of long-term residents in skilled nursing care settings who may have or be at risk for these types of wounds.

## Problem

- Impacts of the COVID-19 Pandemic in 2020:
  - Significant decreases in resident census for most skilled nursing facilities across the nation due to COVID-19 related resident deaths, families choosing not to send their loved ones to the skilled-nursing facility, or families withdrawing their loved ones out of the facility
- As an effort to recoup revenue and resident census losses sustained during the pandemic, one local 120-bed, skilled, nursing facility in rural North Carolina increased its admissions of residents from other facilities.
  - Monthly quality indicator review report data indicated that the increased admissions subsequently introduced a surge of residents with pre-existing and more complex wounds from other health care facilities, which in turn, increased the overall incidents of wounds and community-acquired pressure ulcers (API's) at this long-term care site.
- This local skilled nursing facility of interest admitted 31 residents in March 2022, and eight of those residents (25.1%) were admitted for complex wound management and treatment.

## Purpose & Aims

- Purpose:** to ensure safe, quality, evidence-based practice nursing care for residents at risk for impaired skin integrity and wound healing residing in a long-term, skilled nursing facility
- Primary aim:** to conduct a systematic record review to evaluate the effects of change and to inform future decisions regarding cost effective and evidenced-based practice guided education techniques like simulation-based scenarios while maintaining clinical knowledge and skill performance outcomes
- Secondary aim:** to describe the impact of integrating simulation into the facility's wound care training program on nursing staff satisfaction

## Research Questions

- RQ1:** How will the provision of evidenced-based guided education using team-focused, simulation-based techniques on wound care training affect clinical knowledge, and skills performance, of the health care staff when caring for residents at risk for impaired skin integrity and wound healing?
- RQ2:** How will the integration of simulation into the facility's wound care training program impact nursing satisfaction?

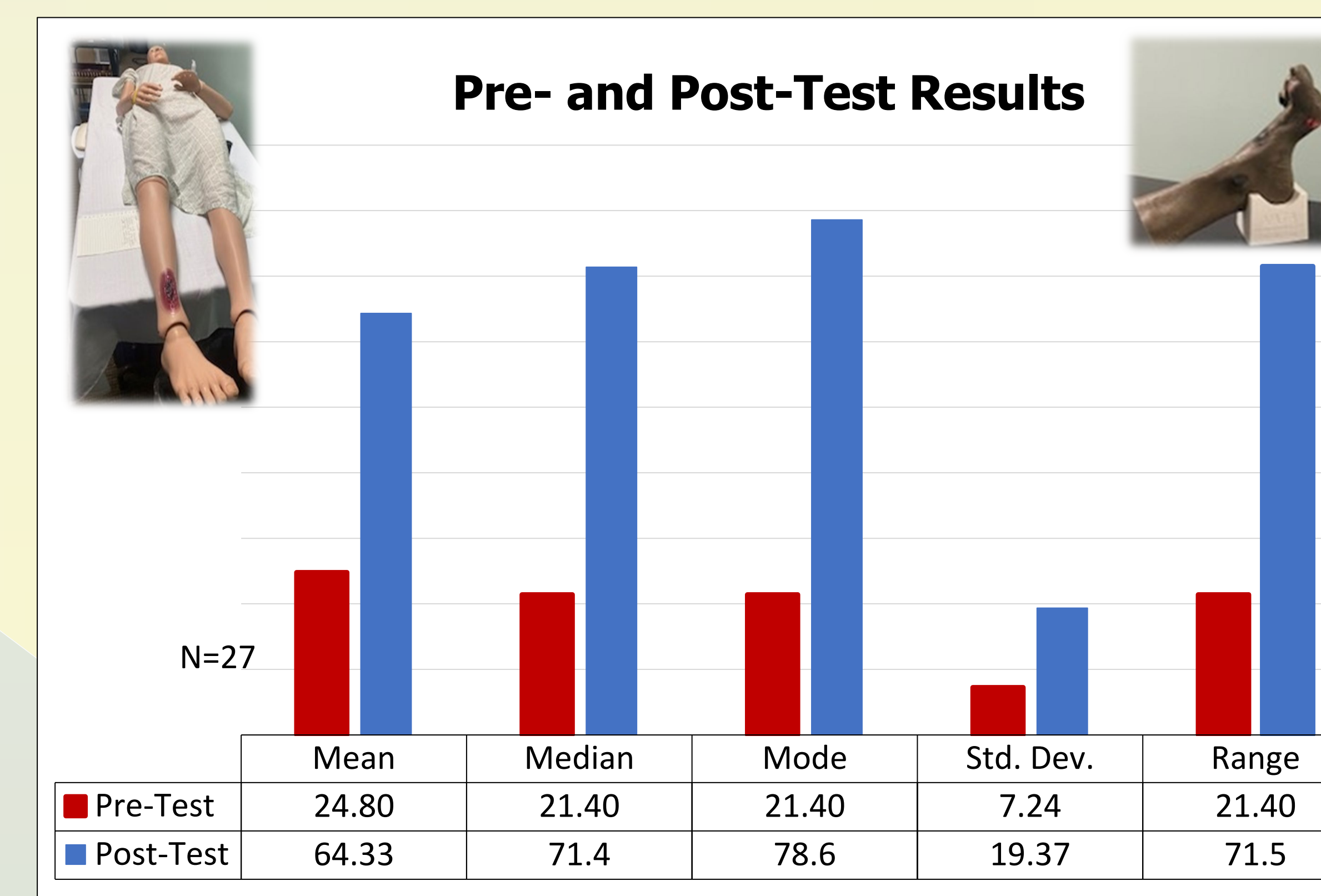
## Methods

- Plan-Do-Study-Act Quality Improvement Framework & Project Objectives**
  - 1) Plan:** Recognize an opportunity and plan the change.
    - 1) reviewed and synthesized the evidence from the literature, wound care practice guidelines, facility policies, towards the refinement of current wound care education and incorporation of using simulation-based techniques,
  - 2) Do:** Test the change. Carry out a small-scale study/project.
    - 2) developed and provided EBP-guided education on wound care using simulation-based techniques with an integrated team-based approach (e.g., nurses and patient care technicians training together),
  - 3) Check:** Review the test findings, analyze the results, identify what was learned.
    - 3a) conducted a retrospective, systematic staff training record review following recent incorporation of simulation-based techniques in the facility's wound care training program, and
    - 3b) compare pre-test and post-test outcome findings (nursing knowledge, skill performance, and satisfaction) over three months using clinical observation audits; and lastly...
  - 4) Act:** Take action, based on what was learned. If change worked, incorporate the learning and plan to sustain it. If improvements are still needed, then revise plan in PDCA step 1) Plan.
    - 4) provided project findings, identified barriers, and recommendations for sustainment and continued monitoring, using a SWOT analysis briefing and discussion format to the key stakeholders and leaders
- \*Note:** The purpose/aims/objectives of this evidence-based capstone project aligns to second phase of the overall quality improvement, using the PDSA cycle steps 3 (Study) & 4 (Act).

## Sample

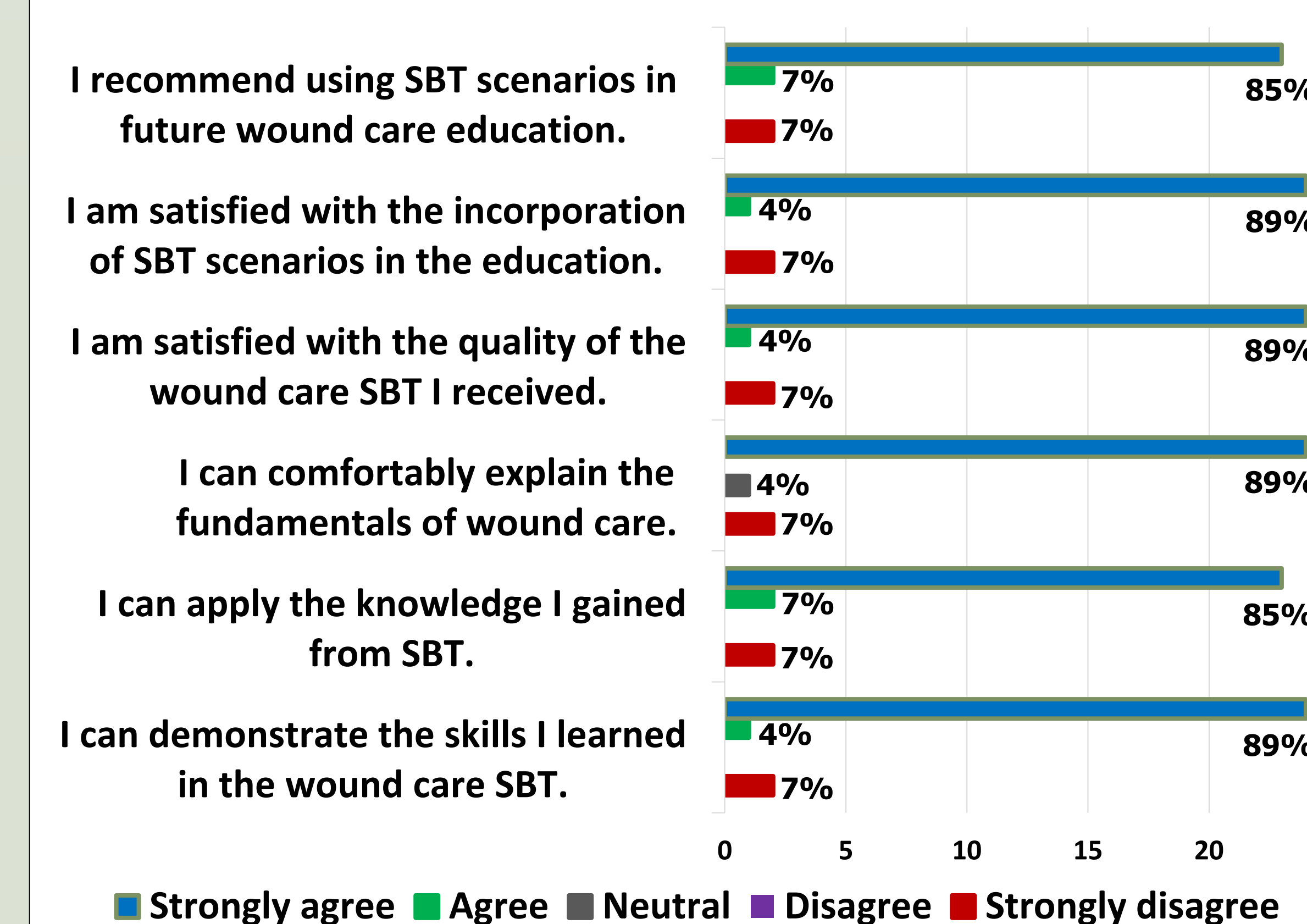
- Participants:** 27 skilled nursing staff members who provide care for short-term rehabilitation and long-term care residents in rural North Carolina
- Setting:** skilled nursing facility designated as a wound care center and at the corporate headquarters to accommodate all learners
- Protection of Human Subjects:** project was reviewed and determined to be *EXEMPT FROM IRB REVIEW* in accordance with federal regulations and the Old Dominion University Health Sciences Human Subjects Review Committee [#1980369-1] on November 11, 2022

## Results



- Results of a paired-*t*-test indicated a significant difference between Pre-test ( $M=24.9$ ,  $SD = 7.2$ ) and post-test knowledge following the implementation of simulation-based scenarios ( $M = 64.3$ ,  $SD = 19.4$ ,  $t(26) = 9.8$ ,  $p < .001$ ).

## Satisfaction Survey



## Discussion

- Findings align with evidence in the literature, suggesting the benefits of incorporating simulation-based techniques in wound care education to improve staff knowledge, skill performance, and satisfaction

## Conclusion

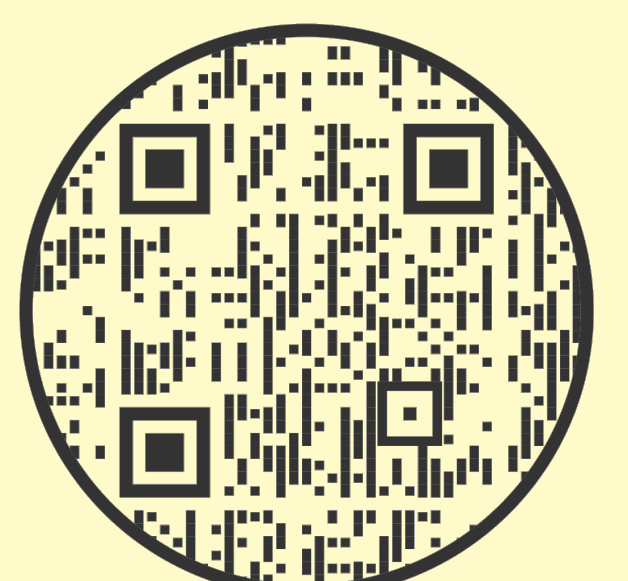
- Recommend continuing using simulation-based training related to staff positive response and increase in staff knowledge, skill performance, and satisfaction. Staff enjoyed the time during the training and building a positive atmosphere of learning
- Other areas of training could benefit from the use of simulation-based training techniques
- Continue to use of pre and post-test observational audits to assess knowledge and skill performance



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## Abstract & References



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