10-23-2025

Staff Education on Oral Health to Night Shift Staff

Uzoamaka Mbionwu
Walden University

<u>Walden University</u>

College of Nursing

This is to certify that the doctoral study by

Uzoamaka Mbionwu

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Jonas Nguh, Committee Chairperson, Nursing Faculty
Dr. Diane Whitehead, Committee Member, Nursing Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2025

Executive Summary: Staff Education Project

Staff Education on Oral Health to Night Shift Staff

by

Uzoamaka Mbionwu

Executive Summary Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

November 2025

Summary

This doctoral project is a staff education initiative focused on enhancing oral care practices among night shift staff in a medical-surgical unit to reduce hospital-acquired pneumonia (HAP) in nonventilated adult patients. The identified practice problem is the inconsistent and inadequate oral hygiene delivered by night shift staff, often due to knowledge deficits and time constraints. As HAP remains the most common hospital-acquired infection in the United States, addressing oral care gaps is critical for improving patient outcomes. In summary, the practice-focused question asked whether staff education improves oral care quality, specifically brushing time in adult med-surg patients. Through this doctoral project, I aimed to translate evidence-based oral care practices into routine nursing behaviors through targeted education. The analytical strategies included pre- and postintervention surveys, an oral care return demonstration checklist, and a commitment pledge, with data analyzed using descriptive statistics to evaluate knowledge gains and skill proficiency. The intervention aimed to improve oral care quality among night shift staff by promoting consistent toothbrushing practices of at least 2 minutes, aligning care with evidence-based standards to reduce the risk of HAP. Postintervention outcomes exceeded project goals and confirmed the intervention's effectiveness. The project concluded that targeted education significantly improved staff knowledge. It is recommended that oral care training be integrated into onboarding and annual competencies, and that documentation practices be standardized to sustain improvements. The project's implications for nursing practice include improved staff competency, consistent delivery of evidence-based care, and potential for hospital-wide protocol adoption to reduce healthcare costs and preventable harm.

Background

A gap in practice was identified in the quality of oral care provided by night shift nursing staff on a medical-surgical unit. Direct observations and informal staff feedback revealed that oral hygiene practices were inconsistent and often overlooked during night shifts. Specifically, patients were not routinely receiving oral care for the recommended 2 full minutes, and many staff lacked awareness of the link between poor oral hygiene and HAP. This is concerning, as HAP accounts for approximately 26% of all hospital-acquired infections in the United States, with 65% occurring in nonventilated patients—the exact population the unit serves (Giuliano et al., 2021). In response to this gap, the doctoral project aimed to determine whether targeted staff education on the importance of high-quality oral care could improve oral hygiene practices—specifically, the time spent brushing patients' teeth—compared to usual care without such training. The practice-focused question guiding this project was the following: In adult patients on a medical-surgical unit, will staff education on the importance of good quality oral care in preventing HAP, compared to usual oral care without targeted education, improve the quality of oral care, specifically the time spent brushing patients' teeth? Through targeted education, this project aimed to improve oral care practices among night shift nursing staff. The intervention aimed to increase staff knowledge, skill proficiency, and consistency in delivering evidence-based oral hygiene care, ultimately reducing the risk of HAP. The Johns Hopkins Evidence-Based Practice (JHNEBP) model served as the guiding framework for this project. This model was chosen for its structured, three-phase approach—practice question, evidence, and translation (PET)—which aligns with the project's focus on identifying a clinical problem, synthesizing current evidence, and translating findings into improved bedside care through staff education. There is strong supporting evidence in the literature highlighting the effectiveness of oral care in preventing HAP. Randomized controlled trials and quasi-experimental studies (Level I and Level II evidence) demonstrate that high-quality, consistent oral hygiene significantly reduces bacterial colonization in the oropharynx, decreasing the risk of aspiration pneumonia in hospitalized adults (Funahara et al., 2023; Singh et al., 2022). Additional qualitative studies identify knowledge gaps and competing priorities—especially among night shift staff—as key barriers to consistent oral care delivery (Koike et al., 2022; Oda et al., 2021). These findings support the need for educational interventions focused on clinical relevance, technique, and integration into daily workflows.

Staff Education Project Development

The staff education project was developed to address gaps in oral care practices among night shift nursing staff on a medical-surgical unit. The focus was to reduce the risk of HAP through improved knowledge and consistent implementation of evidence-based oral hygiene practices.

Participants

The project involved 14-night shift staff, including registered nurses (RNs), licensed practical nurses (LPNs), and nursing assistants. These participants were selected based on their regular assignments during the night shift in the acute care unit, where oral care is frequently missed or abbreviated due to time constraints and limited awareness of its clinical importance.

Procedures

Project development began with stakeholder engagement and organizational approval in early May 2025 and was designated as a quality improvement effort per site-specific ethical guidelines.

Educational materials were created based on current evidence, including a PowerPoint presentation, a "Did You Know?" pamphlet, a skills demonstration checklist, and a pre/post knowledge and confidence survey (see appendices for educational materials). Training sessions were scheduled during shift overlaps and were designed to be brief, interactive, and accessible to accommodate the demanding night shift workflow.

The training emphasized the following:

- The importance of oral care in preventing HAP
- Brushing for a full 2 minutes using proper tools
- Practical demonstrations and hands-on practice

Staff also signed a commitment pledge to reinforce accountability and long-term behavioral intent.

Collection and Analysis of Evidence

Evidence was collected through the following:

- Pre- and posttraining quizzes (5-item knowledge check)
- Likert-scale confidence ratings (3 questions)
- Return demonstration checklists to assess skill proficiency
- Open-ended survey questions to gather qualitative feedback on barriers and improvement ideas

Data were analyzed using the percentage increase method to evaluate improvements in knowledge and confidence. Open-ended responses were reviewed for recurring themes such as time limitations and supply availability.

Evaluation Process

The project's effectiveness was evaluated based on the following:

- Knowledge gain and confidence improvement (goal: ≥ 30% improvement)
- Skill proficiency (goal: ≥ 85% passing on return demonstration)
- Behavioral intent (goal: ≥ 90% pledge completion).
- Knowledge and confidence were assessed using pre-/postsurveys, skill proficiency was assessed via a return demonstration checklist, and behavioral intent was assessed using a paper form handed to the participants at the end of the training. As detailed in the results section, all predefined goals were met and exceeded. These outcomes reflect strong engagement, effective knowledge transfer, and behavior change among staff. Qualitative feedback from open-ended survey questions revealed time constraints and supply availability as recurring barriers to consistent oral care.

Findings were shared with stakeholders through a final report and debrief presentation. Staff expressed high satisfaction with the training, and unit leadership committed to ongoing education and supply support.

Results

This project aimed to improve oral care practices among night shift staff through targeted education. Pre/post surveys showed an 80.7% increase in knowledge, a 41.4% gain in confidence, a 125% increase in skill proficiency, and a 100% staff commitment pledge. The intervention met all project goals and demonstrated improved practice consistency and positive staff engagement. A total of 14 participants were in the training. Training outcomes were measured across four areas: knowledge, confidence, skill proficiency, and behavioral intent (pledge completion). As shown in Table 1, all measured areas demonstrated substantial improvement after the training, while Figure 1 illustrates the significant increase in knowledge scores following the oral care education intervention.

Postimplementation Results and Organizational Impact

Implementing the oral care education project for night shift staff resulted in improved knowledge, confidence, and oral care practices.

Postimplementation Results

Knowledge Gain

Before training, 14 participants scored 36 out of 70 on the knowledge assessment, averaging 51.4%. After training, the group scored 65 out of 70, achieving an average of 92.9%, reflecting a percentage increase of 80.7%, far exceeding the project goal of a ≥ 30% improvement.

Confidence Improvement

Pretraining confidence scores totaled 29 out of 42 (69%), while posttraining scores rose to 41 out of 42 (97.6%). Score increased from 69% to 97.6%, demonstrating a 41.4% improvement, surpassing the target improvement of 30%.

Skill Proficiency

Skill proficiency was assessed using a 15-point return demonstration checklist, completed by each of the 14 participants during the training. This resulted in a total of 210 possible points (14 participants × 15 checklist items).

Pretraining score: 84/210 = 40.0%, posttraining score: 189/210 = 90.0%

This reflects a 125% improvement in skill performance, well above the project goal of ≥ 85% proficiency. Ninety percent of staff successfully passed the return demonstration, meeting the goal of ≥ 85% proficiency.

Behavioral Intent

One hundred percent of participants completed the training, and all signed the commitment pledge, achieving the ≥ 90% pledge completion target.

Staff reported increased comfort in the following:

- performing oral care procedures,
- identifying patients needing oral care, and
- recognizing oral care's role in pneumonia prevention

As part of the training intervention, all participating staff were asked to sign a commitment pledge affirming their intent to consistently provide evidence-based oral care, specifically brushing for 2 full minutes during each shift. The pledge was a tool to reinforce personal accountability, professional responsibility, and behavioral intent—key factors in sustaining practice change beyond the training session. The 100% completion rate reflects staff engagement and willingness to adopt and maintain improved oral hygiene standards in daily patient care.

Table 1

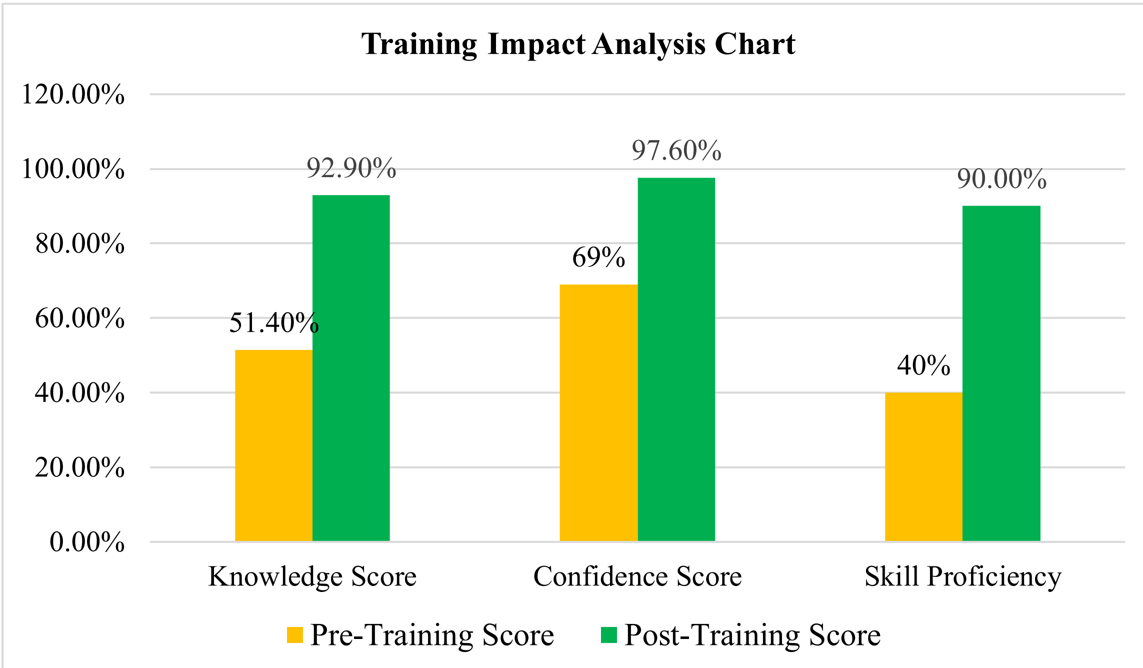
Pre- and Posttraining Knowledge and Confidence Scores

Measure	Pretraining score	Posttraining score	% increase
Knowledge score	51.4% (36/70)	92.9% (65/70)	+80.7%
Confidence score	69.0% (29/42)	97.6% (41/42)	+41.4%
Skill proficiency	40.0% (84/210)	90.0% (189/210)	+125%
Pledge completion	N/A	100.0%	N/A

Note. Skill proficiency was measured using a 15-item checklist. Pledge completion reflects behavioral intent and staff engagement.

Figure 1

Bar Chart Showing Pre- and Posttraining Knowledge Scores



Note. Scores reflect a group average based on a 70-point assessment. Posttraining performance showed an 80.7% increase in knowledge following the intervention.

Organizational Impact

This project positively impacted the organization by strengthening the quality of nursing care during a traditionally understaffed and overlooked time—the night shift. The training led to more consistent oral hygiene practices, better patient monitoring, and increased staff engagement in infection prevention. Unit leadership reported fewer missed oral care entries in documentation and observed increased peer accountability. These outcomes align with organizational goals for patient safety, reduced hospital-acquired infections, and improved clinical outcomes.

Project Limitations

Several limitations were noted:

- Small sample size (*n* = 14) limited the ability to generalize results across departments.
- Short implementation period (less than 3 months) limited long-term tracking of clinical outcomes.
- Self-reported data on confidence and barriers may include bias, as staff may report what they believe is expected.
- Training during off-hours posed scheduling challenges and may have affected staff attention or participation levels.

Despite these limitations, the project still met or exceeded its primary objectives, showing that focused, well-supported education can yield measurable improvements even with modest resources.

Broader Significance Beyond the Local Site

While this initiative was implemented on a single unit, the findings have broader implications for healthcare systems aiming to reduce preventable harm, particularly among nonventilated patients. Night shift staff are often excluded from educational interventions due to logistical challenges. This project demonstrates that critical quality improvement education can be effectively delivered during off-hours with thoughtful planning and leadership support.

Moreover, HAP is a leading cause of preventable in-hospital morbidity and mortality, and oral care remains a simple yet often overlooked intervention. This model can be scaled across other units and institutions, supporting equity, patient safety, and cost-effective care goals. It also reinforces the importance of including night shift staff in infection prevention strategies and professional development opportunities.

Conclusions

Impact on the Organization

Implementing the night shift oral care education project had a meaningful impact on the organization. It improved the consistency and quality of oral hygiene provided to patients, leading to greater staff confidence, better adherence to evidence-based practices, and increased engagement in infection prevention. By addressing a critical yet often overlooked component of patient care, the project aligned with the organization's priorities of improving patient outcomes, reducing HAP, and enhancing care quality during all shifts. Leadership noted stronger teamwork and a greater sense of accountability among staff. The project's success also demonstrated the feasibility and effectiveness of delivering structured education to night shift personnel—a group often excluded from traditional in-shift provider briefing due to scheduling barriers.

Further Recommendations to Be Considered

To sustain and expand on these improvements, the following actions are recommended:

- Create brief educational material for patients on oral care benefits in preventing HAP.
- Provide routine training sessions for nursing staff on the importance of oral care in preventing pneumonia and proper techniques for delivering oral care.
- Ensure that oral care supplies (toothbrushes, swabs, rinse solutions) are readily available on units.

- Monitor staff compliance with steps, supply usage, and oral care documentation.
- Monitor oral care performance and pneumonia rates regularly.
- Integrate oral care training into staff onboarding and annual competencies.
- Standardize documentation to support accountability.
- Provide protected time or workflow adjustments to prioritize oral care delivery.

Implications for Nursing Practice

This project highlights how frontline nursing education can influence patient safety and care quality. Oral care, while basic, plays a decisive role in preventing complications like HAP. Empowering nurses with the knowledge, tools, and support to perform these tasks effectively reinforces the value of nursing judgment and bedside care. It also encourages a proactive, evidence-based culture among night shift teams, often facing unique workflow and visibility challenges.

Implications for Positive Social Change, Diversity, Equity, and Inclusion

By prioritizing night shift education and engagement, this project promotes equity in professional development, recognizing the contributions and needs of a workforce segment often excluded from quality improvement efforts. Ensuring that all staff—regardless of shift—have access to training, resources, and leadership support enhances workplace inclusivity and reinforces a culture of shared responsibility. In doing so, the project supports diverse learning needs, promotes fair access to clinical knowledge, and contributes to health equity by improving care for hospitalized patients who are often vulnerable or unable to advocate for themselves.

References

Funahara, M., Yamaguchi, R., Honda, H., Matsuo, M., Fujii, W., & Nakamichi, A. (2023). Factors affecting the number of bacteria in saliva and oral care methods for the recovery of bacteria in contaminated saliva after brushing: A randomized controlled trial. *BMC Oral Health*, *23*(1), Article 917. https://doi.org/10.1186/s12903-023-03676-7

Giuliano, K. K., Penoyer, D., Middleton, A., & Baker, D. (2021). Original research: Oral care as prevention for nonventilator hospital-acquired pneumonia: A four-unit cluster randomized study. *The American Journal of Nursing*, *121*(6), 24–33. https://doi.org/10.1097/01.NAJ.0000753468.99321.93

Khadka, S., Khan, S., King, A., Goldberg, L. R., Crocombe, L., & Bettiol, S. (2021). Poor oral hygiene, oral microorganisms, and aspiration pneumonia risk in older people in residential aged care: A systematic review. *Age and Ageing*, *50*(1), 81–87. https://doi.org/10.1093/ageing/afaa102

Koike, T., Ohta, R., Matsuda, Y., Sano, C., & Kanno, T. (2022). Oral care awareness and factors related to the burden of nurses at a community hospital in Japan. *Healthcare,* 10(6), Article 1073. https://doi.org/10.3390/healthcare10061073

Munro, C. L., Savel, R. H., & Deem, S. (2021). Evidence-based oral care and hospital-acquired pneumonia prevention in the ICU: It is time to take it seriously. *Chest,* *159*(1), 302–309. https://doi.org/10.1016/j.chest.2020.09.256

Oda, K., Montayre, J., Parsons, J., & Boyd, M. (2021). Oral care in hospital settings:

Breaking the vicious circle of older adult deconditioning. *Journal of Gerontological Nursing*, *47*(6), 7–12. https://doi.org/10.3928/00989134-20210507-01

Singh, P., Arshad, Z., Srivastava, V. K., Singh, G. P., & Gangwar, R. S. (2022). Efficacy of oral care protocols in preventing ventilator-associated pneumonia in mechanically ventilated patients. *Cureus, 14*(4). https://doi.org/10.7759/cureus.23750

Appendix A: Fact Sheet

Did You Know?

 Quality brushing reduces oral bacterial buildup

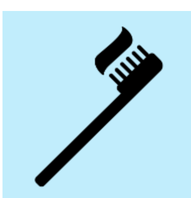
Consistent, effective brushing helps prevent infections such as pneumonia.

Brush for at least 2 minutes

This is the evidence-based standard for effective oral care.

Brush twice a day (every 12-hour shift)

Best practice is brushing during both day and night shifts.

Use a toothbrush and toothpaste to clean:

- Teeth
- Gums
- Tongue
- Palate

Don’t forget to document

Always chart oral care in the patient’s record. See the adult patient care policy for full guidelines.

Appendix B: PowerPoint Presentation

Click here to view the PowerPoint presentation provided to staff.

Appendix C: Oral Care Commitment Form

Name: _______________________

Role: _______________________

Date: _______________________

I understand the importance of proper oral care in promoting health and preventing complications such as pneumonia.

By signing below, I commit to:

- Following correct oral care techniques
- Practicing proper hygiene and safety
- Reporting any concerns or abnormalities
- Asking for help when unsure

Signature: ______________________

Note:

This signed commitment form will be securely stored in the unit's quality improvement records and reviewed periodically by nursing leadership to monitor adherence and support continued accountability in oral care practices.

Appendix D: Night Shift Staff Survey: Oral Care & Pneumonia Prevention

(Pre/Post Training)

Part 1: Knowledge Check (Circle the correct answer)

1. Why is oral care critical during the night shift?

A. Patients are more active at night

B. It helps prevent bacterial buildup when patients are sleeping

C. Patients eat more overnight

D. It's mostly for comfort, not health

2. How often should oral care be done for patients during your shift?

A. Only if they ask

B. Once per shift

C. Every 4–6 hours or per protocol

D. Not needed unless ordered

3. What are the best tools for oral care in your unit?

A. Toothbrush and toothpaste

B. Oral swabs and mouth rinse

C. Both A and B

D. Just lip balm

4. What is a primary cause of hospital-acquired pneumonia in non-ventilated patients?

A. Poor nutrition

B. Poor oral hygiene

C. Lack of exercise

D. Sleep deprivation

5. True or False: NPO patients (not eating by mouth) still need regular oral care.

___ True

___ False

Part 2: Confidence & Practice (1 = Not at all, 5 = Very confident)

6. How confident do you perform oral patient care during your night shift?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

7. How confident are you in identifying patients who need extra oral care attention?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

8. Do you feel oral care is a valuable part of pneumonia prevention in your unit?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Part 3: Open Feedback

9. What barriers do you face when providing oral care during the night shift?

10. What could help make oral care easier or more consistent on nights?

(The next section is for the interviewer.)

Survey Part	**Purpose Measurement**	Measurement Type	**Type Comment**
Part 1 (Q1–Q5)	Knowledge gain	Quantitative	
Part 2 (Q6–Q8)	Confidence & practice readiness	Quantitative	
Part 3 (Q9–Q10)	Barriers & improvement suggestions	Qualitative	

Appendix E: Oral Care Return Demonstration Checklist

Participant Name: ___________________________

Evaluator Name: ___________________________

Date: _______________

Skill/Step using a mannequin	Performed Correctly	Comments
1. Preparation		
Washed hands before procedure	☐	
Gathered all needed supplies (toothbrush, toothpaste, gloves, water, basin, towel, etc.)	☐	
Explained procedure to patient	☐	
Positioned patient properly (sitting up or side-lying if unconscious)	☐	
Put on gloves	☐	
2. Oral Care Procedure		
Protected clothing and bed with a towel or barrier	☐	
Moistened the toothbrush and applied toothpaste	☐	

Skill/Step using a mannequin	Performed Correctly	Comments
Brushed teeth gently and thoroughly (front, back, chewing surfaces)	☐	
Brushed tongue and roof of mouth	☐	
Allowed patient to rinse and spit or suctioned if needed	☐	
Wiped mouth and removed towel	☐	
Checked for sores, bleeding, loose teeth, or bad odor	☐	
3. Aftercare		
Rinsed and stored supplies properly	☐	
Removed gloves and washed hands	☐	
Documented care and any abnormal findings	☐	

Overall Competence:

☐ Pass ☐ Needs Improvement ☐ Fail

Evaluator Notes: