# Improving Nurses' Recognition of Delirium in Geriatric Populations

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## Introduction & Background

**Delirium.** An acute confusional state characterized by a fluctuating mental state and cognitive impairment (Tieges et al., 2017).
- Overlooked in 30-75% of hospitalized geriatric patients (Middle & Miklancie, 2015)
- Increases risks of morbidity and mortality, length of stays, and healthcare costs (Weng et al., 2019)

**Geriatric population.** Comprises 16% of the general population of the US – will increase to 23% by 2060 (U.S. Census Bureau, 2011)

**Cost of delirium incidence in hospitals.**
- >$60,516 per patient
- >$143 billion per year (Leslie et al., 2008).

**Current Training Protocols.** The project site did not have a standardized educational module to address delirium in the geriatric population.

**Review of literature.**
- Nurse educational interventions improves confidence and competence in identifying delirium symptoms (LaFever et al., 2015).
- The 4 AT cognitive assessment instrument is the most effective but often underutilized for recognizing delirium (Shenkin et al., 2018).
- An online module is an effective resource to equip nurses with the proper delirium knowledge and assessment instrument (Van de Steeg et al., 2015).
- Improved delirium recognition improves health outcomes for this hospitalized geriatric patients (Destroyer et al., 2018).

## Purpose & Aims

The purpose of this quality improvement project was to implement and evaluate a structured delirium educational program.

**Aim 1.** Enhance nurse knowledge of the early signs and symptoms of delirium, as measured by a Delirium Knowledge Questionnaire (DKQ) in pre-test and post-test phases.

**Aim 2.** Improve the utilization and frequency of the 4AT cognitive assessment instrument in hospitalized geriatric patients, measured by self-reporting data over a period of four to eight weeks.

## Methods

**Design.** Pre-Post intervention quality improvement project
**Setting.** Two inpatients 28 beds medical-surgical units at an urban academic medical center in the Mid-Atlantic
**Participants.** Nursing staff members
- Pre-test phase: N=43
- Post-test 1 phase (immediately after intervention): N=38
- Post-test 2 phase (4-8 weeks after intervention): N=20

**Measures**
- Demographic Questionnaire - 8 items
- DKQ - 13 items, yes/no answers
- The 4AT Cognitive Assessment Instrument - 4 items, yes/no answers

**Intervention.** Online delirium educational module
- 20-minute online module including instructional lectures, a case scenario

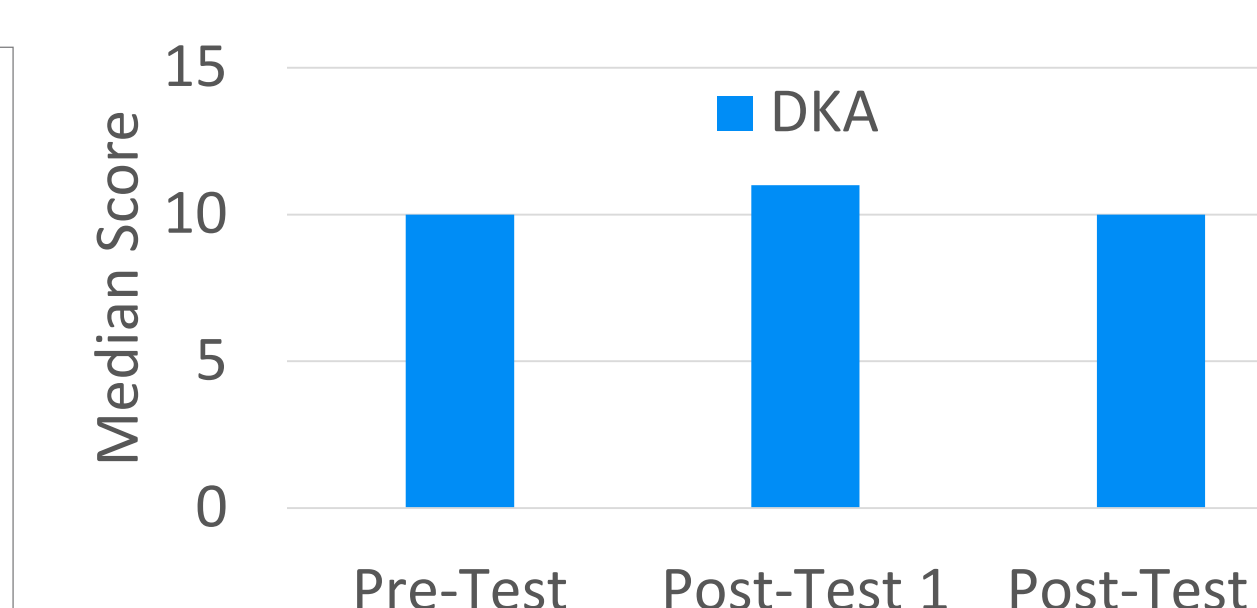| Characteristic | (N=43) | % | Characteristic | (N=43) | % |
|---|---|---|---|---|---|
| Age Range | | | Employment Status | | |
| 18-30 | 8 | 18.6 | Full time (≥36 hours per week) | 41 | 95.3 |
| 31-40 | 9 | 20.9 | Part time (<36 hours per week) | 2 | 4.7 |
| 41-50 | 10 | 23.3 | | | |
| 51-60 | 15 | 34.9 | Day shift | 28 | 65.1 |
| Sex at Birth | | | Night shift | 15 | 34.9 |
| Female | 39 | 90.7 | | | |
| Male | 4 | 9.3 | Highest Education Attainment | | |
| Licensure | | | | | |
| Certified Nursing Assistant | 9 | 20.9 | High School Diploma | 8 | 18.6 |
| Registered Nurse | 34 | 79.1 | Associate Degree | 12 | 27.9 |
| | | | Bachelor's Degree | 16 | 37.2 |
| Years of Nursing Experience | | | Master's Degree | 5 | 11.6 |
| ≤5 | 12 | 27.9 | Doctorate Degree | 2 | 4.7 |
| 6-10 | 7 | 16.3 | Delirium Education Last 5 Years | 26 | 60.5 |
| 11-15 | 6 | 14.0 | No Delirium Education Last 5 Years | 15 | 34.9 |
| 16-20 | 4 | 9.3 | | | |
| ≥21 | 13 | 30.2 | | | |

## Results

**Pre-test to Post-test 1 DKQ Summary Score**
- Median score improved by 1.0 point
- Results not statistically significantly different between median pre-test and post-test 1 summary score ($p$=0.580)

**Pre-test to Post-test 2 DKQ Summary Score**
- Median score improved by 0 point
- Results not statistically significantly different between median pre-test and post-test 2 summary score ($p$=0.761)



| | Median (IQR) | Wilcoxon Signed-Rank Test |
|---|---|---|
| Pre-test and Post-test 1 | 10.0 (3) | 11.0 (3) | p=0.580 |
| Pre-test and Post-test 2 | 10.0 (3) | 10.0 (4) | p=0.761 |

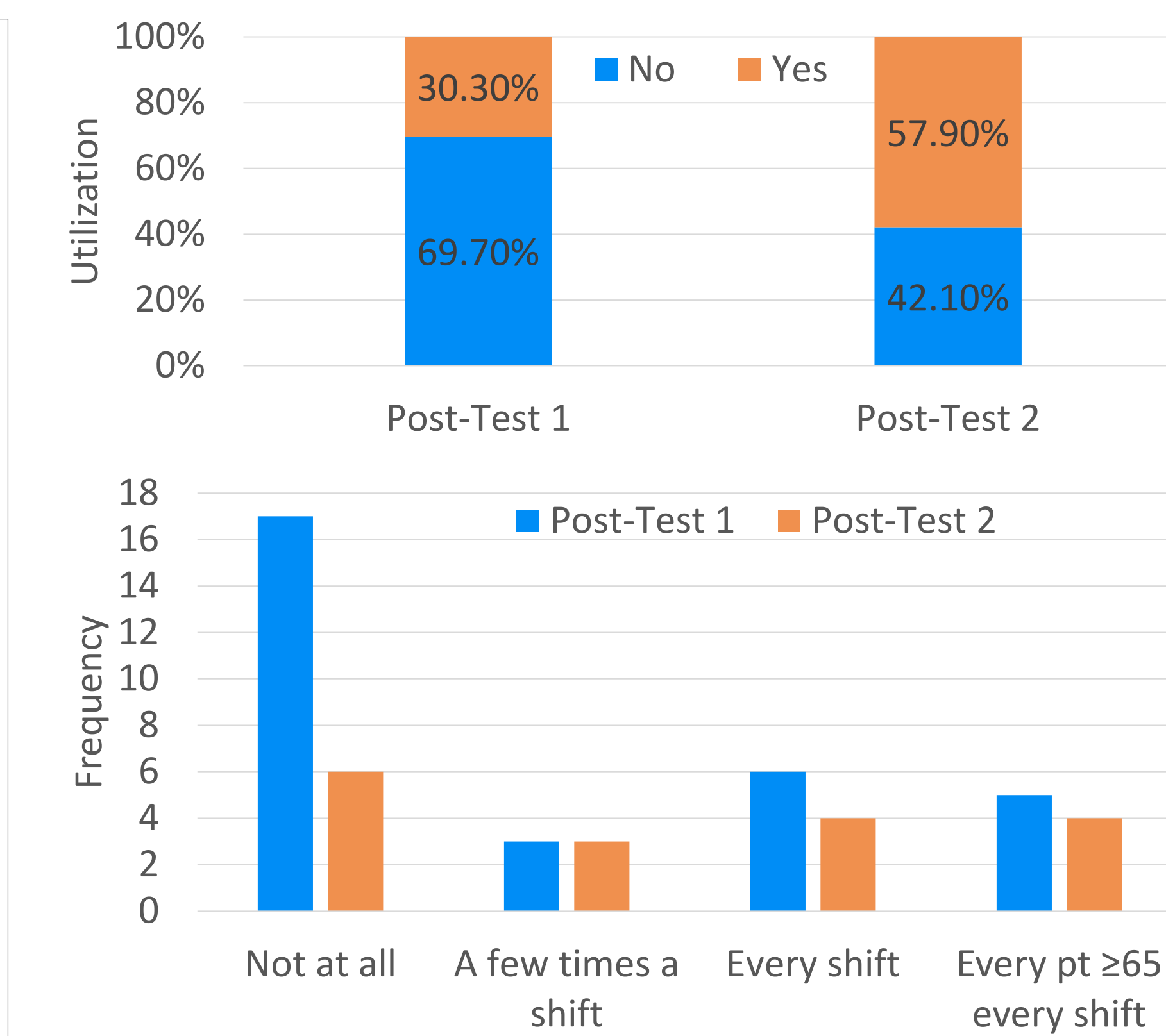**Utilization of The 4AT Cognitive Assessment Instrument**
- Results from a descriptive statistics indicate that the delirium education module clinically improved utilization and frequency of the 4AT cognitive assessment instrument among nurses in medical-surgical units.
- **The post-test 1 group**
  - 45.2% (n=14) utilized 4AT
  - 54.8% (n=17) did not utilize 4AT
- **The post-test 2 group**
  - 64.6% (n=11) utilized 4AT
  - 35.3% (n=6) did not utilize 4AT



## Conclusions

**Aim 1: Enhancing nurse knowledge of early signs and symptoms of delirium**
- No statistically significant results found, likely due to fluctuations of sample size
- Clinically-meaningful implications for nurse knowledge and recognition were noted

**Aim 2: Utilizing the 4AT instrument in hospitalized geriatric patients**
- Clinically meaningful results for the improved utilization and frequency of 4AT

**Clinically-meaningful implications**
- Increases overall quality of care for hospitalized geriatric patients
- Is associated with improved outcomes and safety including mortality rates, lengths of stays, institutionalizations, and risk of long-term morbidities
- Reduces financial burdens placed on organizations
- Sustainable for long-term implementation, since this intervention aligns with the organization's goals and is financially feasible

**Project limitations**
- Relatively small sample sizes
- General lack of nurse awareness about the importance of delirium recognition
- Lack of participation due to COVID-19 pandemic

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