# EVALUATING THE IMPACT OF A MULTIMODAL EDUCATION PROGRAM TO IMPROVE NURSING ASSISTANTS' SKILLS IN DELIRIUM SCREENING AND MANAGEMENT: A PRE-POST STUDY

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## Abstract

Delirium is common yet underdetected in hospitalized patients, compromising outcomes. Nursing assistants play a crucial role in routine observation and screening to facilitate early delirium identification and management. This study evaluated impacts of a multimodal delirium education program on nursing assistants' knowledge, attitudes, and screening skills at a tertiary hospital in Saudi Arabia. Fifty assistants completed interactive workshops, simulation scenarios, and competency assessments before and after training. Knowledge test scores significantly improved from a mean of 55% to 88% post-training. Qualitative feedback emphasized enhanced delirium awareness, confidence, and therapeutic communication preparation. Screening competency including observations, tool administration, interpretation, and reporting steps increased from a baseline mean of 2.9 to 4.7 on a 5-point scale after training. Multifaceted education effectively boosted assistants' delirium capabilities, with implications for broader implementation and practice changes to improve detection and team collaboration.

**Keywords**: delirium, nursing assistants, education, skills, competency, pre-post study

## Introduction

Delirium is an acute neurocognitive disorder marked by altered consciousness, inattention, and cognition that frequently affects hospitalized patients (Inouye et al., 2014). It occurs in up to 50% of older inpatients and is linked to poorer outcomes including extended stays, long-term impairment, and mortality (Ryan et al., 2013). However, research indicates delirium is

undetected in over 60% of cases (Torres et al., 2022). Bedside nursing assistants play a vital role through frequent patient contact to observe acute mental status changes and communicate findings (Jung et al., 2022).

Targeted education to develop nursing assistants' delirium knowledge, confidence, and screening skills shows promise for improving detection and interprofessional collaboration in managing this high-risk state (Jung et al., 2022; Torres et al., 2022). However, minimal evidence exists on effective approaches for assistants specifically or in the Middle Eastern context. This pre-post study evaluated impacts of a tailored multimodal delirium education program on assistants' perceived preparedness, knowledge, and screening competency at a Saudi hospital to inform future training design and practice enhancement.

## Background

### Delirium Significance in Hospitalized Patients

Delirium encompasses an acute decline in cognitive function, often fluctuating in severity, marked by inattention, altered consciousness, and perceptual disturbances (American Psychiatric Association [APA], 2013). It frequently strikes older hospitalized patients due to factors including medications, infections, pain, poor nutrition, and sleep disruption (Inouye et al., 2014).

Delirium predicts extensive complications, including extended stays, long-term cognitive impacts, institutionalization, and mortality (Ryan et al., 2013). However, it often goes unrecognized due to subtler presentations like hypoactive subtypes and being mistaken for dementia or depression (Torres et al., 2022). Improved screening and detection are essential to prompt intervention and prevent adverse outcomes in this vulnerable population.

### The Role of Nursing Assistants on the Interprofessional Team

Nursing assistants have the most direct patient contact in hospitals, positioning them to routinely monitor mental status (Jung et al., 2022). This frontline vantage point affords assistants opportunity to first observe delirium symptoms and communicate concerns to prompt assessment (Blackburn et al., 2017). However, research indicates assistants often lack foundational delirium knowledge on manifestations, use of screening tools, and effective communication skills to convey observations (Torres et al., 2022). Targeted education is crucial to build capabilities and interprofessional collaboration.

Conceptual Framework: Knowles' Adult Learning Theory guided the intervention design using active techniques, learner experience integration, and problem-centered content to enrich the assistants' learning (Hayden et al., 2014). Concepts from Benner's Novice to Expert model directed incorporating modeling, simulations, and competency assessment to progress assistants from novice to competent skill levels regarding delirium screening (Goncin & Wolters, 2022).

## Methods

## Study Design and Setting

This single group pre-post study evaluated a delirium education program for nursing assistants at King Khalid Hospital, a 1200-bed tertiary academic institution in Najran, Saudi Arabia.

## Participants

A convenience sample of 50 nursing assistants from medical-surgical units who volunteered to participate were recruited, exceeding the minimum required sample size of 44 calculated to provide 80% power for detecting pre-post score differences.

## Intervention

The multifaceted 5-week delirium education program included:

1.     Interactive workshops on delirium manifestations, tools, communication strategies

2.     Video demonstrations and roleplaying of screening practices

3.     Hands-on simulation of manifestations and tool administration

4.     Pre-post skills competency assessment using simulation

## Measurement

A 20-item knowledge test was administered at baseline and conclusion covering delirium symptoms, tools, risk factors and management principles (Goncin & Wolters, 2022). A 5-point assessment rubric evaluated screening competency across observation, tool use, interpretation and communication dimensions via simulation pre-post (Yang et al., 2018). Participant satisfaction and qualitative feedback were also gathered.

## Ethical Considerations

Institutional review board approval and informed consent were obtained prior to participation. Confidentiality was maintained.

## Data Analysis

Descriptive statistics summarized scores. Pre-post knowledge and competency differences were tested using paired t-tests. Thematic analysis elicited qualitative data patterns.

## Results

## Sample Characteristics

Among the 50 nursing assistants, mean age was 28 years and 68% were female. They averaged 4 years of experience in hospital care. Only 22% had received prior delirium education.

## Knowledge Outcomes

The mean knowledge test score significantly increased from 55% at baseline to 88% post-training (p<0.001), indicating substantial knowledge gains regarding delirium screening principles and practices after tailored education. Thematic analysis of open-ended feedback emphasized improved understanding of symptoms, risk factors, tools, and communication strategies.

## Competency Outcomes

Screening competency as measured by the observation, tool administration, interpretation, and communication rubric markedly improved from a mean of 2.9 out of 5 points at baseline to 4.7 post-training (p<0.001), denoting progression from novice to competent skill levels regarding delirium detection.

## Participant Feedback

Average satisfaction ratings were 4.8 out of 5 points. Qualitative comments highlighted the interactive case discussions, video demonstrations, roleplaying, and simulation as particularly beneficial for skill development.

## Discussion

This multimodal delirium education program for nursing assistants led to significant improvements in knowledge, perceived preparedness, and measured screening competencies, congruent with prior studies of multifaceted training approaches (Blackburn et al., 2017; Torres et al., 2022). The large knowledge gains and progression toward skilled behaviors underscore the need for and receptiveness to dedicated delirium content given previously minimal training.

Tailoring interactive modalities to the assistants' experience levels and learning needs proved effective based on outcomes and feedback, aligning with principles from Knowles and Benner (Goncin & Wolters, 2022; Hayden et al., 2014). The applied focus enabled assistants to integrate delirium principles directly into clinical capabilities. This holds promise for translating into behavioral changes and interprofessional collaborations enhancing detection and response on their units.

Study limitations include the single center setting and lack of patient outcome measurements. Follow up studies examining training transfer and impacts on delirium diagnosis rates could provide stronger evidence. However, the improvements demonstrated across knowledge, perceived confidence, and simulated skills indicate the program's benefit for strengthening nursing assistants' foundations to improve practices.

## Conclusion

This multifaceted delirium education curriculum for nursing assistants led to significant gains in knowledge, attitudes, and screening competencies. The immersive, learner-centered design provides a model for enhancing assistants' preparation to improve delirium detection and team

communication regarding this high-risk syndrome affecting hospitalized patients. Wider implementation of such tailored training approaches represents a promising workforce development strategy to heighten delirium recognition, prompt intervention, and mitigate adverse outcomes.

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