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Effectiveness Of Nurse Led Strategies to Prevent Delirium Among Critically Ill Patients Admitted in Intensive Care Unit

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ABSTRACT

Introduction: Delirium, characterized by sudden impairment in consciousness and cognition, is prevalent among critically ill patients, especially in ICU settings, with rates up to 80%. It significantly impacts patient outcomes, including increased mortality, extended hospital stays, and higher healthcare costs. Despite its severity, delirium often goes unrecognized and untreated due to inadequate screening. This study aims to evaluate the effectiveness of nurse-led interventions in reducing delirium in ICU patients and to explore the relationship between delirium and various background variables.

Methods: A quantitative research approach was employed using a quasi-experimental design with a non- randomized pretest-posttest control group. The sample consisted of 80 critically ill patients selected through non-probability sampling. These patients were divided into study and control groups of 40 each. The Confusion Assessment Method for the ICU (CAM-ICU), developed by Wesley Ely in 2001, was used to measure delirium. Initial data collection occurred on the first day, including a pretest to assess background variables and delirium levels. The study group received nurse-led interventions—four sessions of 45 minutes each over four days—alongside routine care. Post-tests were conducted on Days 1, 2, 3, and 4 following the intervention.

Results: In the study involving 80 critically ill patients, the study group (n=40) and control group (n=40) both showed no delirium at baseline. By Posttest 1, 5% of the study group had mild to moderate

delirium versus 22.5% in the control group (p=0.02). By Posttest 2, 7.5% of the study group had mild delirium compared to 32.5% in the control group (p=0.001). At Posttest 3, the study group had only 2.5% with mild delirium and no severe cases, whereas 52.5% of the control group experienced mild delirium and 5% had severe delirium (p<0.001). Statistical analyses confirmed significant reductions in delirium scores in the study group compared to the control group over time.

Conclusion: The study revealed that nurse-led interventions effectively reduced delirium scores among critically ill ICU patients, with the study group showing a consistent decline in delirium, reaching median scores of zero, whereas the control group experienced a worsening of delirium severity over time. These results highlight the critical role of targeted interventions in managing delirium and enhancing patient outcomes in intensive care.

Keywords: *Critical Care Unit, Delirium, Nurse-Led Strategies, Intensive Care Unit, AND CAM-ICU Scale.*

1. INTRODUCTION

Delirium is characterized by a sudden and fluctuating impairment in consciousness and cognitive function. It disrupts the patient's ability to receive, process, store, and recall information. Delirium is one of the top six preventable conditions in patients over 65 and often resolves slowly, with less than 50% returning to their pre-illness level of function. It is associated with higher mortality rates, longer hospital stays, more complications, increased hospital costs, long-term cognitive impairment, and a greater need for long-term care.[1]

Delirium is an abrupt change in mental status often caused by acute illness, surgery, injuries, or medication side effects. It is particularly common among older patients, with a prevalence of 23% in general medical settings, and is even more frequent in critical care, palliative care, and residential aged care settings compared to the general community.[2] Delirium is likely the most prevalent acute disorder in general hospitals, affecting 10-20% of all hospitalized adults. Its prevalence rises to 30-40% among hospitalized elderly and up to 80% in the ICU. For those needing critical care, delirium significantly increases the risk of death within the following year.[3]

Delirium prevalence at hospital admission ranges from 14% to 24%, while the incidence of delirium developing during hospitalization varies between 6% and 56%. In the ICU, delirium is a common mental health issue, affecting nearly 80% of patients who were previously comatose or on mechanical ventilation. It also occurs in 61% of ICU patients under 65 years of age.[4] The variability in delirium epidemiology is due to differences in study populations, diagnostic criteria, and research methods. Despite this, delirium is linked to severe negative outcomes, including high mortality, increased morbidity (such as functional loss, pressure ulcers, and incontinence), longer institutional stays, higher healthcare costs, and a greater burden on caregivers.[5]

In India, the prevalence of delirium in various ICU settings ranges from 26.2% to 68.2%, with incidence rates between 9.27% and 59.6%.[6] Research indicates that delirium often begins around two days after ICU admission.[6] One study reported a 36.8% incidence rate of delirium in a surgical ICU, noting that patients with delirium had significantly longer ICU and hospital stays.[7] Early detection is often inadequate without proper screening, leading to many cases being overlooked. A study in the UK found that higher screening rates were associated with a five-fold increase in recognition, with delirium being less frequently identified in very frail patients.[8]

Delirium in critically ill patients significantly worsens prognosis, yet screening and treatment often do not align with current guidelines. Evidence suggests that about one-third of delirium cases could be prevented with multi-component interventions. Given its prevalence and negative outcomes, preventing delirium in the ICU is crucial for improving care quality. Delirium often results from single, preventable risk factors, and recognizing and addressing these factors can help reduce its occurrence, especially in patients with multiple vulnerabilities facing significant insults.

Delirium can cause long-term cognitive changes and may not always be transient or reversible. Its impact on permanent cognitive impairment, such as mild cognitive impairment or dementia, and potential neurological injury remains unclear. A study found that 49.5% of ICU patients developed delirium, with prevalence rates varying widely, from 20% to 80% depending on illness severity. Delirium significantly burdens patients, increasing risks of death, prolonged hospital stays, falls, higher dependency care, and dementia.

Given the background, the study aimed to evaluate delirium among critically ill ICU patients, assess the effectiveness of nurse-led strategies in preventing it, and examine the association between delirium and various background variables in these patients.

Objectives of the study:

1. Evaluate the presence of delirium in critically ill ICU patients,
2. Determine the effectiveness of nurse-led strategies in preventing delirium,
3. Explore the relationship between delirium and selected background variables in these patients.

2. METHODOLOGY

Research Approach

The study employed a quantitative research approach.

Research Design

The design used was a quasi-experimental, non-randomized control trial group design.

Study setting:

A tertiary care centre in Porur, Chennai is a multi-specialty hospital with 578 beds, offering preventive, promotive, curative,

and palliative care. The study took place in the C4 - ICU multi- specialty critical care unit, located on the fourth floor of the same hospital in Porur, Chennai. C4 - ICU has 26 beds, while the B4 Step-Down unit has 6 beds, serving patients with critical conditions through both invasive and non-invasive procedures. Patients admitted include those with conditions such as stroke, respiratory failure, cardiac arrest, poisoning, crush injuries, major trauma, metabolic disorders, multiple organ dysfunction syndrome, and advanced renal cancer. The facility also provides specialized services in hematology, urology, gynecology, nephrology, plastic surgery, and orthopedics.

Study population:

The target population for this study comprised critically ill patients admitted to the intensive care unit (ICU) which is the C4 - ICU at tertiary care Centre, Porur, Chennai.

Ethical approval:

Ethical approval was secured from the Chairman of the Institutional Ethical Committee for Students at Sri Ramachandra Institute of Higher Education and Research (DU). Participants were thoroughly informed about the study's purpose and provided written consent before participation. Participation was voluntary, with the option to withdraw at any time without penalty. Confidentiality was upheld throughout the study.

Sampling Process and Technique

The study sample who met the inclusion criteria, consented to participate, and were available during the data collection period. Patients fulfilling the criteria were assigned to either the study or control group using a non-probability sampling technique (non-randomized trial).

Sample Size

The study aimed to include 80 critically ill patients, with 40 allocated to the study group and 40 to the control group. This sample size was determined based on research by Contreras et al. (2021)[7] and was calculated using a proportion estimation formula. With a 95% confidence level and 80% power, the estimated sample size was 76 to 94 participants in total, accounting for a 10% dropout rate. Thus, 40 patients were included in each group.

Criteria for Sample Selection Inclusion Criteria:

- Patients admitted to the ICU for more than 24 hours.
- Patients receiving non-invasive mechanical ventilation support and monitoring.
- Patients with a CAM-ICU score ranging from 0 to 2.

Exclusion Criteria:

- Patients with a history of mental illness or cognitive impairment.
- Patients with a history of substance abuse, such as alcohol.
- Patients with a previous history of ICU admissions.
- Patients with deafness, blindness, neurological disorders, or head injuries.
- Patients on mechanical ventilation.

Data tool:

The study utilized two main instruments:

Section A: Demographic Variables:

This section, developed by the researcher, aimed to gather background information about the critically ill patients. The Tamil version of the demographic tool was used, which collected data on variables such as age, gender, domicile, marital status, educational status, occupation, use of complementary therapy, family history of delirium, and analgesia.

Section B: Confusion Assessment Method for the ICU (CAM-ICU):

The CAM-ICU, developed by Wesley Ely in 2001, is a tool designed to assess delirium in ICU patients. It evaluates four primary features:

1. **Acute Onset or Fluctuating Course**: Scored 0 for absent, 1 for present, with a total possible score of 1.
2. **Inattention**: Scored 0 for correct answers >8, 1 for correct answers between 4-7, and 2 for severe inattention (correct answers 0-3), with a total possible score of 2.

3. **Altered Level of Consciousness**: Scored 0 for absent (RASS 0), 1 for altered (RASS 1 to -1), and 2 for severe alterations (RASS >1 or < -1), with a total possible score of 2.
4. **Disorganized Thinking**: Scored 0 for correct answers >4, 1 for disorganized thinking (correct answers 2-3), and 2 for severe disorganized thinking (correct answers 0-1), with a total possible score of 2.

Score Interpretation

The CAM-ICU scores range from 0 to 7, with the interpretation as follows: A score of 0 to 2 indicates no delirium, suggesting that the patient is not experiencing delirium. Scores between 3 and 5 denote mild to moderate delirium, reflecting varying degrees of impaired

mental status. A score of 6 to 7 indicates severe delirium, representing significant disturbances in cognition and awareness. This scoring system helps in evaluating the severity of delirium in critically ill patients. A pilot study had been done to validate the questionnaire and found no modification needed for further study.

Variables:

Nurse led strategies are the independent variable and delirium is the dependent variable.

Manipulation for study group (nurse led strategies)

- On the first day, the researcher conducted a pretest to assess background variables and delirium levels (using the CAM-ICU scale) among critically ill ICU patients. The study group then received nurse-led strategies aimed at preventing delirium, including four 45-minute sessions over four days in the morning, alongside routine care. These sessions included:
    - **Cognitive Stimulation (15 minutes):** Engaged patients in conversations about current and past events, guided them on time, place, and person, and involved activities like memorizing lists, word searches, and puzzles to maintain cognitive function.
    - **Sensory Stimulation (Visual and Auditory) (10 minutes):** Included direct visual and auditory contact, used of vision and hearing aids as needed, and involved sensory activities such as looking at personal items, family photos, and listening to natural sounds and favorite music.
    - **Range of Motion Exercises for Early Mobility (15 minutes):** Encouraged daily active and passive exercises, such as flexion and extension, performed slowly and smoothly to decrease discomfort over time.
    - **Family Engagement (5 minutes):** Introduced family members into the care

process, fostering open communication and involving them in patient reorientation to enhance the patient's security and confidence.

- The researcher conducted posttests using the CAM-ICU scale for four consecutive days after the intervention in the study group.

Manipulation for control Group

- On the first day, the control group also underwent a pretest to assess background variables and delirium levels (CAM-ICU scale). They received routine care, including vital monitoring, medication administration, personal hygiene, and comfort positioning, but did not receive the nurse-led strategies. Posttests were conducted on days 1, 2, 3 and 4 following the intervention period.

Data collection:

Approval was obtained from the Chairman, Institutional Ethical Committee for Students to conduct the study. Data collection lasted four weeks. Participants, selected through non-probability purposive sampling, were informed about the study, and consent was obtained. On the first day, the researcher administered a pretest to assess background variables and delirium levels using the CAM-ICU scale. The study group received nurse-led strategies for delirium prevention over four days (four sessions per day lasted 30 minutes each), while the control group received only routine care. The study subjects were reassessed with CAM-ICU scale at end of each day for 4 days.

Data analysis:

Data analysis was conducted using SPSS version 22.0. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to evaluate demographic variables and delirium levels among critically ill patients. Inferential statistics employed Wilcoxon signed-rank tests to assess the impact of nurse-led strategies on delirium prevention,

and Mann-Whitney U tests to compare median delirium scores and interquartile ranges at different time points. ANOVA and

Friedman tests were used to identify variations in delirium scores across different time points.

Results:

In our study, total of 80 samples were studied, of which 40 belong to study group and 40 belongs to control group.

Table 1: Frequency and Percentage Description of Background Variables of Critically ill Patients in the Study and Control Groups (N = 80).

Background variables	Study group (n=40)		Control group (n=40)		chi-square value	p value
	n	%	n	%		
Age in years						
31-40 years	4	10	3	7.5	1.57	0.81
41-50 year	8	20	11	27.5		
>50 years	28	70	26	65		
Gender						
Male	20	50	11	27.5	3.13	0.15
Female	20	50	29	72.5		
Domicile						
Rural	23	57.5	37	92.7	2.39	0.17
Urban	17	42.5	3	7.5		
Educational qualification						
Professional degree	9	22.5	8	20		
Graduate	12	30.5	14	35		

Intermediate	3	7.5	0	0	11.03	0.35
High school	11	27.5	18	45		
Middle school	2	5	0	0		
No formal education	3	7.5	0	0		
Marital status						
Married	32	80	35	87.5	0.02	0.74
Unmarried	8	20	5	12.5		
Undergone complementary therapy						
Yes	24	60	15	37.5	0.44	0.36
No	16	40	25	62.5		
If yes which type of therapy						
Yoga	13	32.5	14	35	6.63	0.35
Meditation	4	10	0	0		
Acupuncture	7	17.5	1	2.5		
No complementary therapy	16	40	25	62.5		
Family history of delirium						
Yes	2	5	6	15	0.37	0.71

No	38	95	24	85		
Occupation						
Professional	9	22.5	17	42.5	5.61	0.77
Semi-professional	1	2.5	1	2.5		
Semi-skilled worker	14	35	17	42.5		
unemployed	16	40	5	12.5		
Analgesia						
Opiods	36	90	37	92.5	1.96	0.27
Non opioids	4	10	3	7.5		

The data from Table 1 indicates that most participants were over 50 years old (70% in the study group, 65% in the control group) and female (50% in the study group, 72.5% in the control group). A majority resided in rural areas (57.5% in the study group, 92.7% in the control group) and were married (80% in the study group, 87.5% in the control group). Most had a graduation- level education, were semi-skilled workers, and were under opioid analgesia. The baseline characteristics between the study and control groups were statistically similar ($p>0.05$).

Table 2: Comparison of Delirium Scores at Different time points among Critically Ill Patients between the Study and Control group (N=80).

Time-points	Delirium score (CAM-ICU scale)	Study group (n=40)		Control group (n=40)	
		n	%	n	%
At pretest Baseline)	No delirium	40	100	40	100
	Mild to moderate delirium	0	0	0	0
	Severe delirium	0	0	0	0

Post test 1	No delirium	38	95	31	77.5
	Mild to moderate delirium	2	5	9	22.5
	Severe delirium	0	0	0	0
Post test 2	No delirium	37	92.5	27	67.5
	Mild to moderate delirium	3	7.5	13	32.5
	Severe delirium	0	0	0	0
Post test 3	No delirium	39	97.5	17	42.5
	Mild to moderate delirium	1	2.5	21	52.5
	Severe delirium	0	0	2	5

The table 2 shows the delirium scores of two groups (study and control) over time using the CAM-ICU scale. At baseline, neither group showed any signs of delirium. In subsequent

posttests, the study group consistently had a lower incidence of mild to moderate delirium compared to the control group, with 7.5% experiencing mild delirium by Posttest 2, and only 2.5% by Posttest 3. In contrast, the control group exhibited a progressive increase in delirium, with 52.5% experiencing mild delirium and 5% severe delirium by Posttest 3. This suggests that the intervention in the study group may have been effective in reducing the severity and incidence of delirium.

Table 3: Pairwise Comparison of Median and Inter quartile ranges delirium scores at different time points among Critically ill Patients in the study and control groups (N=80).

Groups	Time points of study	Delirium score		Wilcoxon signed rank test (Z)	p value
		Median	IQR (Q3, Q1)		
	Pretest	1	2 (0,2)	3.61	0.001
	Post-test 1	0	0 (0,0)		
	Pretest	1	2 (0,2)	2.91	0.004

Study	Post-test 2	0	0 (0,0)		
	Pretest	1	2 (0,2)	3.43	0.001
	Post-test 3	0	0 (0,0)		
Control	Pretest	1	0 (1,1)	1.62	0.1
	Post-test 1	2	2 (0,2)		
	Pretest	1	0 (1,1)	3.64	0.001
	Post-test 2	2	2 (1,3)		
	Pretest	1	0 (1,1)	4.28	0.001
	Post-test 3	3	1 (2,3)		

The table 3 illustrates the pairwise comparison of delirium scores using the Wilcoxon signed- rank test. In the study group, there was a significant decrease in delirium scores from pretest to all posttest time points ($p<0.05$), with median scores dropping to 0.00, indicating the effectiveness of the intervention. Conversely, in the control group, delirium scores significantly increased from pretest to posttest, with the median rising from 1.00 to 3.00 by Posttest 3 ($p<0.001$). The Wilcoxon signed-rank test results suggest that the study group's intervention was effective in reducing delirium, while the control group's condition worsened over time.

Table 4: Comparison of Pretest and Posttests delirium Scores at Different Time Points among Critically ill Patients Between the Study Group and Control Group (N=80).

Delirium scores at time-points	Median	Study group (n=40)	Median	Control group (n=40)	Mann Whitney U test	P value
		IQR (Q3, Q1)		IQR (Q3, Q1)		
Pretest	1	2 (0,2)	1	0 (1,1)	0.001	1
Post-test 1	0	0 (0,0)	2	2 (0,2)	2.25	0.02

Post-test 2	0	0 (0,0)	2	2 (1,3)	5.38	0.00 1
Post-test 3	0	0 (0,0)	3	1 (2,3)	5.9	0.00 1

The table 4 compares delirium scores between the study and control groups at different time points using the Mann-Whitney U test. Initially, at the pretest, there was no significant difference between the two groups, both having a median delirium score of 1.00 (p=1.00). However, by Posttest 1, the study group's median score dropped to 0.00, while the control group's median increased to 2.00, showing a significant difference (p=0.02). This trend continued and became more pronounced in Posttest 2 and Posttest 3, where the study group maintained a median of 0.00, while the control group's median rose to 2.00 and 3.00, respectively, with highly significant differences (p=0.001). These findings suggest that the intervention in the study group was effective in reducing delirium scores, leading to progressively greater disparities between the groups over time.

Table 5: Friedman ANOVA on Median and Interquartile Ranges of Delirium Score at different time Points among Critically ill Patients Between the Study and Control Groups

(N=80).

Delirium scores at time-points	Median	Study group (n=40)	Median	Control group (n=40)	Friedman (F) -value	P value
		IQR (Q3, Q1)		IQR (Q3, Q1)		
Pretest	1	2 (0,2)	1	0 (1,1)	13.31	0.004
Post-test 1	0	0 (0,0)	2	2 (0,2)		
Post-test 2	0	0 (0,0)	2	2 (1,3)		
Post-test 3	0	0 (0,0)	3	1 (2,3)		

The Friedman ANOVA results (table 5) show significant differences in delirium scores over time between the study and control groups. Initially, both groups had similar median delirium scores of 1.00 at the pretest. However, after the intervention, the study group's median delirium scores consistently dropped to 0.00 across all posttests, with no variation (IQR 0.00, 0.00). In contrast, the control group's median scores increased progressively from 2.00 in Posttest 1 to

3.00 in Posttest 3, with corresponding increases in IQR. The significant Friedman ANOVA result (f=13.31, p<0.004) highlights that the intervention in the study group led to a substantial reduction in delirium scores, while the control group's condition worsened over time.

3. DISCUSSION

The current study found that nurse-led strategies significantly reduced delirium scores in critically ill patients compared to routine care. The study group consistently showed lower delirium incidence and severity across all posttest time points, while the control group experienced a progressive increase in delirium, including mild to severe cases. Statistical analyses confirmed the effectiveness of the intervention, with significant differences observed between the groups over time. These results highlight the potential impact of structured, nurse- led interventions in preventing and managing delirium in ICU settings.

Both our study and the study by Alhalaiqa et al. focus on improving delirium management in ICU settings through targeted interventions.[9] Alhalaiqa et al.'s research showed that a 12-hour educational program for ICU nurses significantly enhanced their knowledge, practice, attitudes, self-efficacy, and ability to detect delirium, with 28% of delirium cases detected post-intervention compared to 6.5% in the control group ($p < 0.001$).[9] Similarly, our study

demonstrated the effectiveness of a specific intervention in reducing delirium severity among patients, with the study group showing a significant decrease in delirium scores compared to the control group, which experienced a rise to 52.5% mild and 5% severe delirium by Posttest

3. While both studies highlight the positive impact of educational interventions on delirium management, Alhalaiqa et al.'s study emphasizes nurse training outcomes, whereas our research focuses on patient delirium outcomes over time.

The current study and the Malaysian study done by Ramoo et al., in 2018, both highlight the effectiveness of educational interventions in improving delirium management among ICU nurses.[10] In the Malaysian study, a pretest-posttest design showed that educational sessions, including hands-on training with the Confusion Assessment Method-ICU, significantly improved nurses' knowledge of delirium assessment, despite barriers like physician non- engagement and challenges in assessing intubated patients.[10] Similarly, our study demonstrated a significant reduction in delirium severity in patients within the study group, indicating the intervention's success. While both studies emphasize the value of education, the current study focuses more on patient outcomes, whereas the Malaysian study emphasizes nurse knowledge enhancement and identifies systemic barriers to effective delirium assessment.

Both our study and the study done by Aldawood et al., in 2023, in Saudia Arabia, on ICU nurses' knowledge of delirium emphasize the critical role of education in improving delirium management.[11] In that study which was a quasi-experimental design showed a significant increase in nurses' knowledge of ICU delirium after an educational program, with median scores rising from 38.1% to 76.2% ($p<0.001$).[11] Similarly, our study revealed that the intervention led to a significant reduction in delirium severity and incidence among patients in the study group, highlighting the effectiveness of targeted education. Both studies underscore the importance of continuous education to enhance delirium recognition and patient care in critical care settings.

The study by Lieow et al. on an advanced practice nurse-led delirium education program highlights a similar theme to our research, focusing on the impact of educational interventions on delirium management in ICU settings.[12] The study utilized a pretest-post-test design with 245 ICU nurses and found significant improvements in knowledge and competency regarding delirium screening following the education program.[12] However, while initial compliance with delirium screening documentation was poor, it improved over time with additional emphasis. This reflects a parallel to our findings, where the education led to a significant reduction in delirium severity and incidence in the study group, demonstrating the effectiveness of targeted education. Both studies underscore the critical need for ongoing training and reinforcement to ensure long-term adherence to best practices in delirium care.

A study (CogChamps study) conducted by Travers et al. in 2018 in Australia focused on older patients over 65 years old, involving 181 participants.[13] Both studies aimed to improve care for patients with cognitive impairment, particularly delirium, but used different approaches and yielded distinct outcomes. Our study showed a clear and consistent reduction in delirium scores among critically ill patients after an intervention, with significant improvements sustained over time. Conversely, the CogChamps (Cognition Champions—trained nurses for cognitive assessment) study observed an initial increase in cognitive assessments and analgesia administration post-intervention, but only the improvement in cognitive assessments was maintained at follow-up. The CogChamps study emphasizes the importance of clearly defined tasks and assigned responsibilities for sustaining practice changes, while our study highlights the effectiveness of a specific intervention in reducing delirium severity. Both studies suggest that targeted interventions can enhance patient care, but the long-term impact may depend on the intervention's design and implementation.

One more study done by Travers et al. in 2018, involved 34 experienced nurses across six wards who became Cognition Champions (CogChamps) and led a five-month collective social

education process, resulting in significant improvements in delirium screening rates, with most ward nurses becoming certified in the Confusion Assessment Method.[14] In contrast, our study directly assessed the impact of specific interventions on delirium scores in critically ill patients, showing that 7.5% of the study group experienced mild delirium by Posttest 2,

dropping to 2.5% by Posttest 3, while the control group saw a rise to 52.5% mild and 5% severe delirium by Posttest 3. Both studies demonstrate the importance of nurse-led interventions in improving delirium care, with Travers' approach focusing on sustained educational impact and our study on immediate clinical outcomes..

4. LIMITATIONS OF THE STUDY

The study's limitations include its quasi-experimental, non-randomized design, which may introduce selection bias and limit generalizability. The small sample size of 80 participants reduces statistical power, particularly for subgroup analyses. Conducting the research in a single ICU setting at a specific tertiary care center in Chennai further restricts the applicability of the findings to other settings. Additionally, the lack of control for potential confounders, such as illness severity and variations in routine care, may influence outcomes. Lastly, the short four-day follow-up period limits the assessment of long-term effects of the nurse-led strategies on delirium prevention.

5. CONCLUSION

The study demonstrated that nurse-led strategies were effective in significantly reducing delirium scores among critically ill patients in the ICU. Patients in the study group showed a consistent decrease in delirium, with median scores dropping to zero, while the control group experienced a progressive increase in delirium severity over time. These findings underscore the importance of targeted interventions in mitigating delirium and improving patient outcomes in critical care settings.

Recommendations:

It is recommended that ICU settings incorporate nurse-led strategies, including cognitive and sensory stimulation, range of motion exercises, and family engagement, as part of routine care to prevent delirium. Further research with larger, randomized controlled trials across multiple centers is suggested to validate these findings and explore the long-term benefits of such interventions. Additionally, training programs for ICU nurses should emphasize the importance of early delirium detection and intervention.

REFERENCES

[1] Kiely DK, Jones RN, Bergmann MA, Murphy KM, Orav EJ, Marcantonio ER. Association between delirium resolution and functional recovery among newly admitted postacute facility patients. J Gerontol A Biol Sci Med Sci. 2006 Feb;61(2):204–8.

[2] McNeil J, Denis AM, Michel U, Concert CM. Effectiveness of non-pharmacological for managing delirium in hospitalized postoperative adults: an umbrella review protocol. JBI Database System Rev Implement Rep. 2018 Mar;16(3):594–602.

[3] Rieck KM, Pagali S, Miller DM. Delirium in hospitalized older adults. Hosp Pract (1995). 2020 Mar;48(sup1):3–16.

[4] O'Hanlon S, Inouye SK. Delirium: a missing piece in the COVID-19 pandemic puzzle. Age Ageing. 2020 Jul 1;49(4):497–8.

[5] Cole MG. Delirium in elderly patients. Am J Geriatr Psychiatry. 2004;12(1):7–21.

[6] Goyal S, Shrivastva A, Singh G, Goyal SK, Kamra D, Kaur S, et al. Incidence, Prevalence, Risk Factors and Outcome of Delirium in the Intensive Care Unit of a Tertiary Care Hospital. Journal of Mental Health and Human Behaviour [Internet]. 2020 Dec [cited 2024 Aug24];25(2):113.Availablefrom:https://journals.lww.com/mhhb/fulltext/2020/25020/incidence,_prevalence,_risk_factors_ and_outcome_of.5.aspx

[7] Contreras CCT, Páez-Esteban AN, Rincon-Romero MK, Carvajal RR, Herrera MM, Castillo AHDD. Nursing intervention to prevent delirium in critically ill adults. Rev Esc Enferm USP. 2021;55:e03685.

[8] MacLullich AM, Shenkin SD, Goodacre S, Godfrey M, Hanley J, Stíobhairt A, et al. The 4 'A's test for detecting delirium in acute medical patients: a diagnostic accuracy study.Health Technol Assess [Internet]. 2019 Aug [cited 2024 Aug 24];23(40):1–194. Available from: https://www.journalslibrary.nihr.ac.uk/hta/hta23400

[9] Alhalaiqa F, Masa'Deh R, Al Omari O, Shawashreh A, Khalifeh AH, Gray R. The Impact of an Educational Programme on Jordanian Intensive Care Nurses' Knowledge, Attitudes, and Practice Regarding Delirium and their Levels of Self-Efficacy: A Quasi-Experimental Design. Iran J Nurs Midwifery Res. 2023;28(3):312–9.

[10] Ramoo V, Abu H, Rai V, Surat Singh SK, Baharudin AA, Danaee M, et al. Educational intervention on delirium assessment using confusion assessment method-ICU (CAM-ICU) in a general intensive care unit. J Clin Nurs. 2018 Nov;27(21–22):4028–39.

[11] Aldawood ZS, Alameri RA, Elghoneimy Y, Swyan AHA, Almulla H, Hammad SS, et al. Impact of Educational

Program on Critical Care Nurses' Knowledge of ICU Delirium: A Quasi-Experimental Study. Med Arch. 2023 Feb;77(1):56–63.

[12] Lieow JLM, Chen FSM, Song G, Tang PS, Kowitlawakul Y, Mukhopadhyay A. Effectiveness of an advanced practice nurse-led delirium education and training programme. Int Nurs Rev. 2019 Dec;66(4):506–13.

[13] Travers C, Henderson A, Graham F, Beattie E. CogChamps: impact of a project to educate nurses about delirium and improve the quality of care for hospitalized patients with cognitive impairment. BMC Health Serv Res [Internet]. 2018 Jul 9 [cited 2024 Aug 28]; 18:534. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6038243/

[14] Travers C, Henderson A, Graham F, Beattie E. Turning education into action: Impact of a collective social education approach to improve nurses' ability to recognize and accurately assess delirium in hospitalized older patients. Nurse Educ Today. 2018 Mar; 62:91–7.