

## Problem & PURPOSE

- Lack of sleep in the post-operative period may lead to post-op delirium after cardiac surgery (Bajracharya et al., 2023).
- Delirium post-operatively is a common problem and may lead to other complications such as increased length of stay, increased risk for dementia, and increased mortality (Bajracharya et al., 2023).
- The purpose of this project was to implement sleep measures in post-operative cardiac surgical patients to improve patient sleep satisfaction and help reduce post-op delirium. The outcomes that were measured were patient satisfaction with their sleep and post-op delirium

## Available Knowledge & Rationale

- Nursing staff present challenges to quality sleep for post-op patients because of disruptions due to nursing interventions. Nursing interventions include medication administration and nursing assessments. These commonly wake patients up from the already poor sleep cycle they are having in the hospital (Armstrong et al., 2022).
- post-op patients who experience poor sleep are more at risk for developing depression and anxiety (Hassanabad et al., 2021). A survey conducted by Bakry et al. (2021), showed that about 50% of patients suffer from sleep disorders post-cardiac surgery and for up to 6 months after. Post-op cardiac patients are more likely to suffer from poor sleep long term even after discharging due to pain, discomfort, and other post-op related complications (Wang et al., 2020).
- Non-modifiable risk factors contributing to post-op delirium include age >60 years, history of dementia/Alzheimer's, and polypharmacy. Other risk factors associated with post-op delirium include length of surgery and intraoperative complications (Bajracharya et al., 2023). It is important that staff be aware of who is at high risk for developing post-op delirium due to these risk factors.
- Tools such as the NuDesc provide information on the early detection of delirium (Krupa et al., 2021). This may be helpful in identifying and implementing interventions early to shorten the delirious phase for the post-op inpatient (Krupa et al., 2021).
- Another tool available to assist in the recognition of post-delirium is the Confusion Assessment Method for the Intensive Care Unit (CAM ICU) (Miranda et al., 2023).
- Nurse-led sleep promotion bundles are shown to decrease the incidence of delirium in the ICU setting (Gorecki & Parson, 2024).

## Methods

- **Context**
  - Urban hospital in the Midwest.
  - The facility is a 423-bed hospital
    - General surgery, orthopedics, ICU, cardiothoracic surgery, neurosurgery, vascular, and more.
  - Cardiac surgical unit.
  - The universal bed concept
  - The patient population on the unit is primarily cardiothoracic surgical patients with a wide range of acuity.
- **Intervention**
  - Integration of a sleep bundle for the post-operative cardiac surgical patient.
  - Daytime wakefulness management guidelines.
  - Nighttime interventions to promote sleep.
- **Study of Intervention**
  - Nursing compliance checklist
  - Patient questionnaire
  - NuDesc Scores
- **Measure**
  - The Richards-Campbell Sleep Questionnaire (Gorecki & Parson, 2024).
  - Patient responses from the questionnaire were transferred to an Excel spreadsheet for analysis.
  - Nursing staff assessed the NuDesc score on each patient each shift and if there was a change in mental status.
  - The score from each section was added together for a total score in the evaluation of delirium.
  - The data was transferred to an Excel spreadsheet for analysis of overall completion rate.

## Data Analysis

- Inferential statistical analysis of quantitative data was done in Microsoft Excel for the measurement of NuDesc scores.
- Independent-sample *t*-test was run to compare the pre- and post-intervention groups.
- Descriptive statistics were used to analyze the results of patient questionnaire.
- The nurse compliance checklist was analyzed using descriptive statistics. The percentage of compliance was measured for each shift.

## Results

- Eight patient questionnaires were completed during implementation of the intervention.
  - ( $M = 48$ ).
- 29 post-op patient charts reviewed for the pre-intervention group. Three patients were excluded from the sample due to mortality and one patient was excluded due to being transferred out of the facility.
  - Total number of patients included in the pre-intervention group was 25.
  - The age of the patients in the pre-intervention group ranged from 33 to 83 ( $M = 67$ ).
  - All patients in the pre-intervention group scored a zero resulting in no positive NuDesc scores.
- 29 post-op patient charts reviewed for the intervention group. One patient was excluded due to mortality.
  - The total number of patients in the intervention group was 28.
  - The age of the participants in the intervention group ranged from 40 to 81 ( $M = 66$ ).
  - In the intervention group, two patients had a score of two resulting in two positive NuDesc scores. Therefore, there were two positive NuDesc scores in the intervention group.
- Results of the NuDesc scores showed a 7% increase of positive (value of two or greater)
- A total of 92 nurse compliance checklists were completed.
- 62 of the 92 checklists were completed for day shift and 30 completed for night shift.
  - Day shift attained an overall compliance rate of 82% with 51 out of the 62 checklists completed as designed by the tool.
  - Nightshift attained an overall compliance rate of 47% with 14 out of the 30 checklists fully completed in.



## Discussion

- Conclusions drawn from patient satisfaction are limited.
- Results did not show statistical significance, but clinical relevance for post-op delirium.
- The results of the project failed to show effectiveness of the nurse-driven sleep bundle given the 7% increase in NuDesc scores in the intervention group compared to the pre-intervention group.
- The assumption of the project increasing staffs' awareness of accurately documenting the NuDesc scores poses a question of whether the results from the project were clinically accurate.
- The evaluation of nursing knowledge on charting NuDesc scores pre-intervention would have been helpful for ensuring the charting is being done correctly.
- For future research, length of stay should be considered as a measurable outcome.
- Another suggestion for future research and project implementation would be to have patient specific information on nursing checklists to correlate interventions for specific patients.
- Lastly, a recommendation for future study should include in person education for nursing staff. This would include a more interactive approach on the education for staff.



## Conclusion

- Although the project did not show effectiveness of the implementation of the sleep bundle on reducing post-op delirium, the study offers valuable insight and awareness on the importance of assessing and recognizing early post-op delirium.

## References

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