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Promoting Sleep to Decrease Delirium

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Contents

Acknowledgement

To my parents who have loved and supported me through life, words will never be able to explain how grateful I am for you both. Thank you to Ashley for all that you have done and continue to do. To the graduate professors at UT Tyler, thank you for your guidance, support, and understanding. Lastly, thank you to my 6E work family who have been by my side from the very beginning.

Executive Summary

Delirium is potent risk factor for complications, an increase length of stay, and mortality. Hospital acquired delirium is a prevalent and serious health condition that can occur in patients, especially the older adult population, when admitted to the hospital. It has the ability to be prevented if properly addressed and interventions are set in place to help reduce the occurrence of hospital acquired delirium. Many factors can contribute to the development of delirium, including a disruption of one's circadian rhythm. Sleep is not always a high priority in the hospital, therefore there are little interventions and goals aimed at improving sleep within the hospitalized patient. A majority of patients within the hospital may be prescribed a as needed sleep aide, however, there are several nonpharmacological interventions that are overlooked that can be implemented by the staff and the patients themselves aimed at improving sleep during their hospital stay.

It has been identified that there is a knowledge deficit of delirium in staff, patients, and their family members. Currently there is no policy or practice in place at Houston Methodist Willowbrook related to delirium and sleep hygiene. Therefore, it is in the best interest of the patients and staff that a delirium prevention program focused on nonpharmacological sleep interventions be implemented.

Rationale for the Project

Delirium is a common complication that is often overlooked and under treated in hospitalized patients. The older adult population is at an increased risk for developing delirium. This project aims to decrease the prevalence of hospital acquired delirium by utilizing nonpharmacological sleep interventions. The majority of the research related to this topic that has been done has taken place in the intensive care unit. The goal of this benchmark study is to bring awareness to the benefit of non-pharmacological intervention that can aide in sleep promotion and decrease delirium in the hospitalized older adults on a medical/surgical unit. The following PICOT question guided the literature review that provided the foundation for this evidence-based project: In older adult patients in the acute care setting (P), does the utilization of sleep hygiene interventions (I) compared to no sleep hygiene interventions (C) decrease the number of positive delirium scores (O) over 12 weeks (T)?

Background and Significance

Hospital acquired delirium can lead to several negative consequences including a decline in cognitive function, morbidity, and mortality. Delirium occurs in approximately 50-70% of hospitalized older patient and can be attributed to an increase length of stay. In addition, approximately $164 billion a year is spent in the US to combat the effects of delirium (Mulkey et al., 2019). Hospital acquired delirium is often a disorder that will go undiagnosed because its presenting signs and symptoms are similar to other disorders, including dementia and depression (Volland et al., 2020). Poor sleep hygiene during hospitalization can be attributed to modifiable risk factors including medication, noise and light interference, medical care interruptions, and circadian rhythm disruption (Stewart & Arora, 2018).

Literature Synthesis

Non-pharmacological methods for sleep promotion are recognized as important in the reducing the risk of delirium, especially when used with an environmental noise and light reduction program (Burton et al., 2021, Patel, 2014). The utilization of eye masks and/or earplugs can be a feasible intervention to improve sleep. Evidence has supported that the reduction of sound during the night using earplugs can be beneficial in the prevention of early onset of delirium (Locihova et al., 2017 &Van Rompaey et al., 2012). Another option to aide in reducing delirium can incorporate the use of non-pharmacological bundles and programs. This can include promoting sleep with earplugs, eye mask, lavender essential oils, adjustment of light and noise, limiting visitor and reducing clinical staff disruptions. Bundling these interventions can result in significant reduction in the incidence of delirium and the duration of time spent in delirium (Bryczkowski et al., 2014, Gode et a., 2020, Patel et al., 2014 & Tonna et al., 2021). Another important factor in reducing delirium is the utilization of daytime wakefulness. This can includes turning on lights, openings blinds, providing glasses and hearing aids, and encouragement of physical activity. Implementing these strategies can help improve sleep patterns in the hospital and reduce the prevalence of delirium (Tonna et al., 2021).

Project Stakeholders

Keeping patients at the center of our practice is imperative. Therefore, when implementing something new or developing change, it is important to acknowledge the role of patient preference into any project. The stakeholders for this project would include the unit staff, manager, director, higher leadership, management, and the patient and their family.

The aim of the project is to reduce the risk of developing delirium. However, if achieved this can also help decrease hospital length of stay, mortality, and morbidity. The leadership

stakeholders would want to focus on decreasing length of stay since that can be associated with cost. They would also look at how this project can decrease falls or other healthcare associated complications. Lastly, the stakeholders would stress on how this can help patient and family satisfaction.

Patients and their families will benefit from implementing this change and are also key stakeholders. The utilization of non-pharmacological sleep interventions such as eye masks, ear plugs, adjustment of noise and interruptions, and prioritizing daytime wakefulness will be explored to help reduce the number of positive delirium scores. Patients and their family will be provided information on hospital acquired delirium and they ultimately will have the option to engage in any of the interventions or not.

Implementation Plan

To initiate the planned implementation, approval of the project from the manager and executive leadership will be the first step. After gaining approval, the project leader will then start to collect pre-data on medical surgical patients of the designed unit. The pre-data will simply consist of documenting the number of positive delirium scores that occur over a 2-week period. After collection of the pre-data, the project leader will meet with the unit staff during the monthly staff meeting and reiterate at both day and night huddles to explain the project goal. An educational poster board will also be created to provide a reference to the staff members.

The goal of the project will be to assess if sleep hygiene interventions, specifically non-pharmacological interventions can decrease positive delirium scores. The registered nurses (RN) will be responsible for conducting the delirium assessment of patients that are 70 years or older or at risk for developing delirium. The RN and patient care assistant (PCA) can help implement and provide the sleep hygiene intervention bundle. This can include providing eye masks and

earplugs at night, providing aromatherapy patches, playing music if the patient wishes, and assisting with daytime awakeness to help restore and maintain a normal circadian rhythm. The RN and PCA can also work together to help cluster care as much as possible through the night to provide more uninterrupted periods. These interventions will all explained to the staff. To help maximize benefit and promote time management, a sleep care package will be made to include the sleep hygiene interventions (eye mask, ear plugs, aromatherapy) and placed in each patient's room. Along with an educational place card regarding delirium and sleep.

The implementation of the intervention will occur over a minimum of a 2-week time period. After successfully integrating the intervention on the unit, post data collection can occur. Similar to pre-data collection, the project leader will document the number of positive delirium scores that occur on the medical surgical unit where the intervention was implemented. The results of both pre data and post data will be inputted into an excel worksheet. Evaluation of the results will then be done by the project leader by comparing pre and post data results.

Timetable/Flowchart

During the previous semesters, the developing of a PICO question was initiated. Over the past few semesters, careful research and time has molded the PICO question into what it is today. After several discussion and collaboration with peers and leaders, it was decided a benchmark study would be conducted. At this time, the current unit where the intervention will be piloted has several other projects they are focusing right now. In order to avoid staff overload and focus on sustainability, we decided to aim to initiation of the evidence-based practice project at the beginning of 2023. The target timeline for the project will consist of 2 to 4 weeks of pre data collection, 2 weeks of staff and patient education and implementation of the interventions,

followed by 2 to 4 weeks of post data collection. After all data has been gathered, evaluation will begin.

Data Collection Methods

To evaluate change, the goal for this benchmark study will be to conduct a pretest and posttest design study. The goal will be to compare the mean positive delirium scores that occurred on the designed pilot unit. The current hospital that I am projected to roll out this project on uses the Delirium Screen (4AT) which consists of 4 questions to get an overall result of either positive delirium or negative delirium. There would be no control group in the study, just a group of patients that are evaluated pre intervention and post intervention. The raw data of positive delirium scores obtained prior and after intervention will be placed in an excel spreadsheet and statistical analysis will occur to determine if there is any correlation. If there is no improvement, I will make recommendations and changes based on feedback obtained during the process. If improvement and benefit is observed, the goal will be to roll out this project hospital wide and work on sustainability.

It would also be beneficial to assess how the staff perceived the launch of the intervention, provide opportunities of feedback, and suggestions for moving forward to make this a successful and valuable change. Therefore, an anonymous survey will be sent out to the staff via email during pre-data collection period and post data collection period.

Cost/Benefits

The benefit of this project out weight any associated cost. The use of eye masks and earplugs as a low-cost intervention methods of noise reduction and light control can be superior to other interventions (Karimi et al., 2021). At the current facility where this project is planned to be implemented, eye masks, ear plugs, and aromatherapy patches are already something the hospital

has in their supply room. There is also an Amazon Alexa Echo in every room for the patient to utilize as they wish Therefore, this part of the intervention would not add any additional cost since patient's already have the ability to utilize these items.

Another important benefit of this study that can aide reducing associated healthcare cost is prevention and early identification of delirium. Delirium may be preventable in 30%-40% of cases. If not able to prevent delirium, early identification may shorten duration or severity and reduce cognitive and functional decline, mortality, and hospital length of stay (Rohatgi et al., 2019). Hospital administrators evaluate patients estimated length of stay daily. This project has the ability to shorten patients' length of stay and consequentiality reducing costs related to length of stay. Additional, sleep is a factor that is used to evaluate and measure patient satisfaction. By implementing interventions aimed at improving sleep, this could positively impact patient satisfaction and improve associated patient survey scores.

Discussion of Evaluation

At this time, there has not been an official evaluation of this benchmark study. However, there has been several discussion, feedback, and positive movement towards implementing this project on a designated unit. The ultimate goal for this project will be to successfully implement on one unit first and then work towards implementing hospital wide.

Conclusion/Recommendations

Evidence shows that the utilization of nonpharmacological interventions can promote sleep and decrease delirium within hospitalized patients. Older adults are at an increased risk for developing complications such as delirium while staying in the hospital. Prior studies have been conducted in intensive care unit on the correlation between sleep and delirium. Implementing nonpharmacological sleep interventions for older adult patients in the acute care setting would be

an effective and affordable project. There is no current practice focused on reducing delirium through nonpharmacological interventions. Sleep is also not something that is frequently assessed during a patients' hospital stay. Therefore, it is in the best interest of the patient and facility to continue moving towards with plans for implementing this project.

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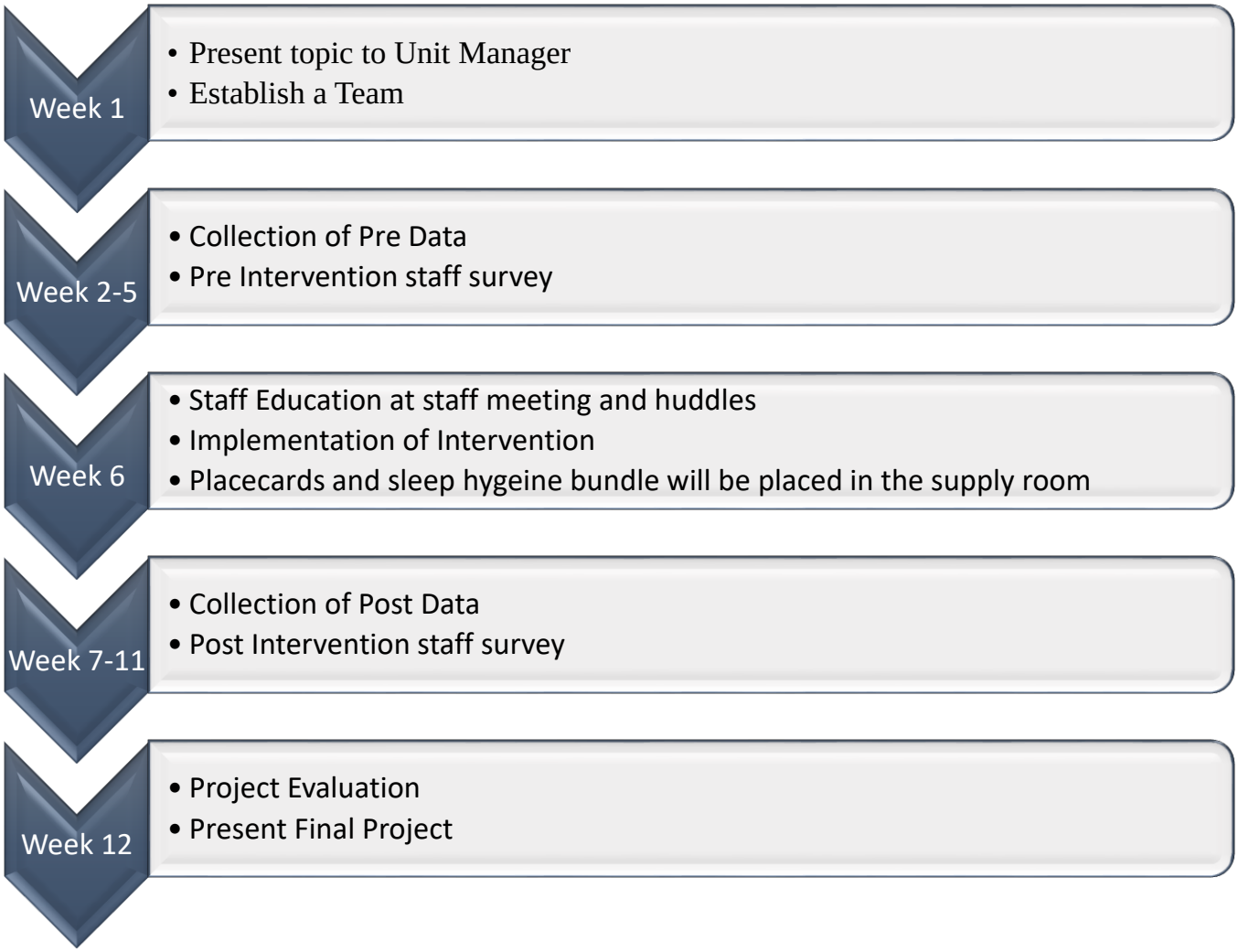
Appendix A

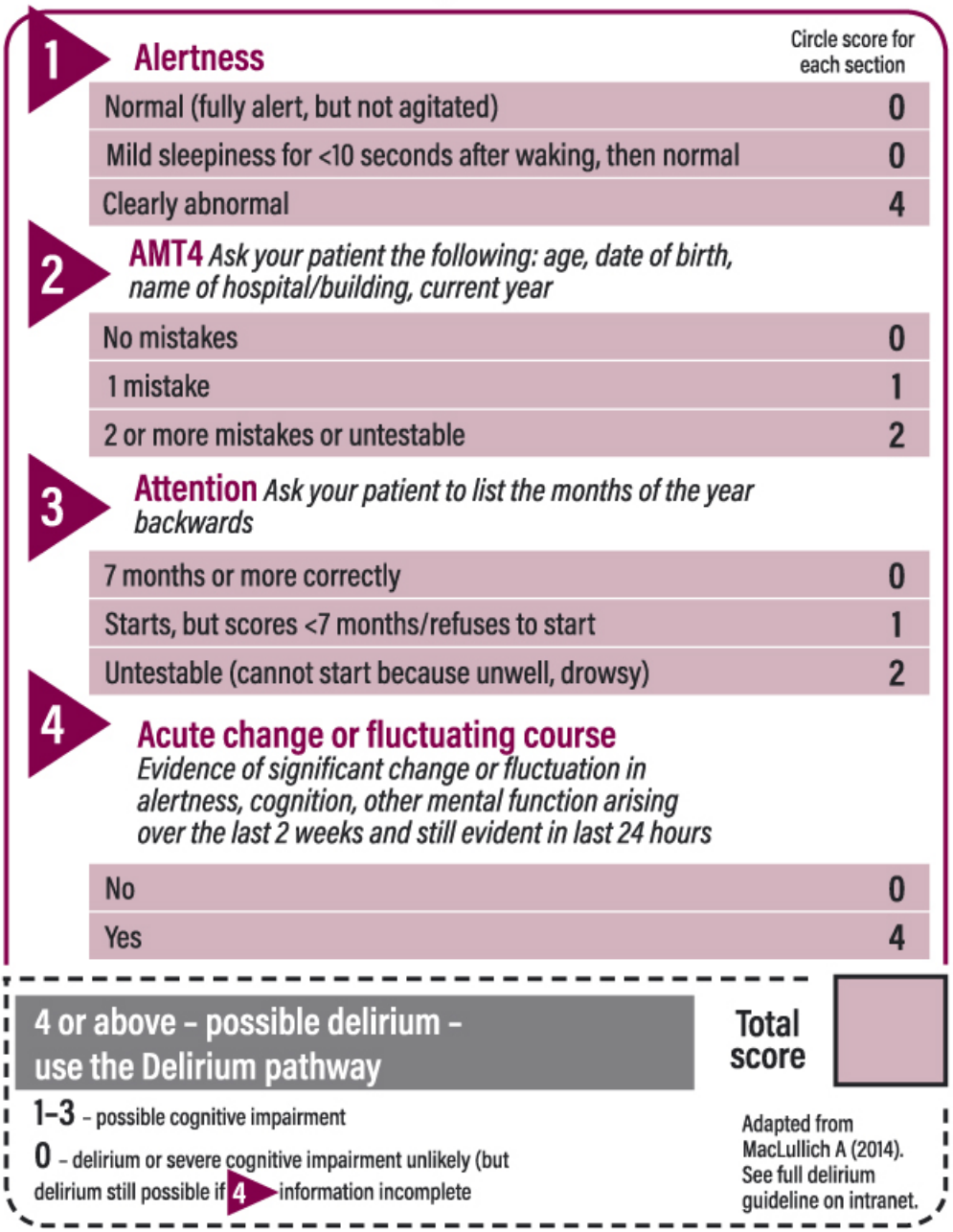
Flowchart



Appendix B

Example of assessment tool used in Epic charting system for delirium

Figure I. 4AT assessment sticker



Appendix C

Intervention Tool

Place card attached to the sleep hygiene bundle

(Front Side)

ARE YOU AT RISK FOR DEVELOPING DELIRIUM?

Did you know that delirium is a common complication that is often overlooked and under treated in hospitalized patients. Older adult patients are at an increased risk for developing delirium. Nonpharmacological interventions aimed at improving sleep can help reduce the development of delirium.

(Back Side)

For your comfort and safety, the following options are available for you to utilize during your stay:

- Ear Plugs
- Eye Mask
- Lavender Essential Oil Patch
- Adjustment of light, noise, and temperature
- Music via the Echo in your room