

The University of San Francisco

USF Scholarship: a digital repository @ Gleeson Library | Geschke Center

Master's Projects and Capstones

Theses, Dissertations, Capstones and Projects

Fall 12-17-2021

Establishing Quiet Hours in Long-term Care: A Quality Improvement Project

Heather Battaglia
hbattaglia@dons.usfca.edu

Follow this and additional works at: <https://repository.usfca.edu/capstone>

Recommended Citation

Battaglia, Heather, "Establishing Quiet Hours in Long-term Care: A Quality Improvement Project" (2021). *Master's Projects and Capstones*. 1302.
<https://repository.usfca.edu/capstone/1302>

This Project/Capstone - Global access is brought to you for free and open access by the Theses, Dissertations, Capstones and Projects at USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. It has been accepted for inclusion in Master's Projects and Capstones by an authorized administrator of USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. For more information, please contact repository@usfca.edu.

Establishing Quiet Hours in Long-term Care: A Quality Improvement Project

Heather Battaglia

SONHP, University of San Francisco

December 2, 2021

Abstract

Problem: Sleep disturbances in long-term care residents are associated with falls, behavioral problems, and increased mortality rates, yet long-term care facilities are traditionally noisy environments at night. Designated quiet hours have been shown to improve patient sleep as well as decrease stress levels in nurses.

Context: In a skilled nursing facility that provides care for military veterans with complex medical and psychosocial needs, signage exists that indicates to be quiet between 10:00 p.m. and 7:00 a.m., but no defined guidelines were available for staff to observe.

Interventions: Standards for quiet hours were established and posted throughout the microsystem. Lecture-style teaching was conducted over an 11-day period during the evening and night shift change huddles. Staff were provided a supplemental handout on the newly established guidelines for quiet hours, the importance of undisturbed sleep, and approaches to minimizing sleep disruptions.

Measures: Outcome measures focused on capturing initial competency data from 100% of the evening and night shift staff immediately following educational sessions.

Results: Thirty of the 37 evening and night shift staff members attended an education session, received the education handout, and successfully completed the competency worksheet, accounting for 81.1% of total staff.

Conclusions: Continued efforts are necessary to reach and maintain 100% staff education of quiet hours. Introduction of a quiet hours champion can help to ensure the sustainability, longevity, and possible expansion of this improvement.

Keywords: long-term care, sleep disturbance, noise, quiet hours, education

Introduction

Sleep is a basic physiological need that is essential for health and well-being. In addition to promoting vital functions such as learning, memory, and neural development, the quantity and quality of sleep achieved has been shown to play a key role in healing and restoration (Mukherjee et al., 2015). *Healthy People 2030*, an initiative of national goals set by the U.S. Department of Health and Human Service (HSS), lists sleep as a main objective with the aim to “improve health, productivity, well-being, quality of life, and safety” (Office of Disease Prevention and Health Promotion, n.d.). Despite decades of research showing that sleep is imperative for restoration, facilities that are meant to promote healing and restoration are traditionally noisy environments at night (Schnelle et al., 1999). In long-term care (LTC) residents, disturbances in sleep have been associated with fall risks and increased mortality rates (Martin & Ancoli-Israel, 2008). In patients with dementia, who represent over 60% of residents in LTC (Cadieux et al., 2013), sleep disturbance is even more common and results in increased agitation and decreased ability to eat, drink, and communicate (Webster et al., 2020).

Sleep disturbances in LTC facilities can be caused by a number of behavioral, environmental, physiological, and pharmacological factors (Ye & Richards, 2018). Being on the frontlines, healthcare workers are in a position to modify these factors in order to improve patient sleep and, thus, overall quality of life. However, in a recent national survey, it was revealed that healthcare workers have limited knowledge of the importance of sleep for residents and a “general lack of awareness regarding sleep disturbance” (Ye & Richards, 2018). Both of these gaps lend themselves to staff performing duties out of convenience rather than in alignment with what is best for patients. The first step to improving this problem is to provide education in order

to create awareness of the critical importance of sleep in LTC settings as well as to standardize the expectations surrounding nighttime care.

The term quiet hours refers to a designated length of time where activity and conversations are minimized in order to maintain a quiet environment and support patient rest. In a best practice guide compiled by Massachusetts General Hospital Patient Care Services (MGHPCS), key ways to observe quiet hours were dimming the lights, minimizing conversations and non-urgent clinical interventions, closing doors when safe and preferred, and turning televisions off or offering headphones. To reinforce quiet hours to staff, patients, and visitors, MGHPCS recommends that designated signage be placed throughout the unit (n.d.). Implementing these guidelines and reinforcements will build upon staff education and awareness of sleep disruption.

Problem Description

On an urban medical campus that provides care for military veterans, there is a 120-bed skilled nursing facility that cares for patients with complex medical and psychosocial needs. Some of these patients require rehabilitative care, some have long-term continual needs, and other patients receive palliative and end-of-life care. Staff in the microsystem were observed over the course of three nights between 8:30 p.m. and 1:30 a.m. and asked six questions (see Appendix A). Upon reviewing answers from 25 interviewed staff, it was noted that one question received a variety of different responses: “What do you do to promote ‘quiet hours’ from 10:00 p.m. to 7:00 a.m.?” This question referred to signage posted around the microsystem that reads, “Quiet, please, healing in progress, 10:00 p.m. to 7:00 a.m.” (see Appendix B). Noting the variety of answers, it became questionable whether there were any set standards to which this sign referred. As such, a follow-up question was asked if there were specific guidelines that staff

followed between 10:00 p.m. to 7:00 a.m. All interviewees answered unanimously that there were not.

In order to properly analyze a potential gap in the promotion of quiet hours, five themes were identified from the 25 staff answers. Sixty-four percent of answers were categorized into three themes: “Minimizes Noise,” “Minimizes Light,” and “Minimizes Noise and Light.” These themes indicate that partial measures are taken by these staff members to promote quiet hours. Alternatively, 36% of staff answers belonged to two themes indicating that they take no intentional measures to promote quiet hours. These themes are, “Does Nothing Different” and “For Patients to Follow.” In further investigating these two themes where no intentional measures are taken, it was found that the majority of staff members work the evening shift. Viewing the data by position, nursing assistants (NA) held this majority versus licensed vocational nurses (LVN) and registered nurses (RN). For visual representations of this data, please refer to Appendix C.

A lack of guidelines in how staff are expected to promote quiet hours from 10:00 p.m. to 7:00 a.m. leaves actions taken during this timeframe open to interpretation; what is disruptive to one person may not be disruptive to another. Without proper teaching and an establishment of standards, staff will remain unaware of how inconsistencies in promoting quiet hours across the microsystem can contribute to behavioral, emotional, and physiological health problems displayed by patients. Furthermore, these effects that ultimately burden the vulnerable patient population being cared for at this facility are misaligned with their patient-centered health model that aims to empower veterans to improve their well-being. Presenting the findings to staff, providing education on the consequences of sleep disruption, and promoting standardized guidelines for quiet hours will benefit both patients and staff alike.

Available Knowledge

Substantial amounts of research exists regarding the implementation of designated quiet hours in healthcare settings. In order to refine research findings to focus on implementation as well as staff education and knowledge, a PICOT (population, intervention, comparison, outcome, timeframe) question was framed as follows: “In evening and night shift staff (P), does establishing standards for quiet hours and providing education on preventing sleep disruption (I) versus no established standards for quiet hours and education on preventing sleep disruption (C) improve staff knowledge of designated quiet hours and prevention of sleep disruption (O) over a 4-week period (T)?” Keywords used were quiet time, quiet hours, education, teaching, staff, long-term care, skilled nursing, sleep, and healing. To evaluate and ensure the quality and relevance of individual, peer-reviewed articles, the Johns Hopkins Evidence-Based Appraisal tool was utilized.

Literature Review

As previously noted, nighttime noise levels and sleep disturbances in LTC are commonly known and well-studied. A randomized control trial studying the effects of environmental factors on patient sleep in LTC found that noise was a primary variable contributing to poor quality sleep in patients (Schnelle et al., 1999). It was found in this trial that nursing homes averaged 32 incidents per night where noise levels exceeded 60 decibels, the level at which a sound can wake a person from sleep. Additional findings from this trial reported that noise levels remained high until midnight and only decreased between the hours of 1:00 a.m. and 4:00 a.m. (Schnelle et al., 1999). Noise, however, is not the only environmental factor that can contribute to sleep disturbances in patients. In 2012, a mixed-method study that aimed to determine the causes of poor sleep quality in LTC found that staff duties and safety checks were factors that seriously

impeded patient sleep (Eyers et al.). Looking to address this issue, a research study conducted in 2010 on sleep disturbances in LTC concluded that cultural and environmental changes implemented can make a significant impact on the quality of patient sleep (Neikrug & Ancoli-Israel).

In recent years, a number of studies have shown that designated quiet hours decrease noise and improve patient experience in hospital settings. A 2018 study conducted on two acute care hospital units concluded that the implementation of nighttime quiet hours improved patient perception of noise levels, which resulted in increases in Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) “always quiet” scores (Hedges et al.). In a similar study that tested quiet hours during the daytime, it was shown that complaints of poor rest due to noise decreased from 61.11% to 0% (Joseph et al., 2018). However, quiet hours not only improve the patient experience, but they improve the staff experience as well. Following the implementation of quiet hours on a medical-surgical unit, one study showed that 67% of nurses surveyed indicated that their productivity levels increased as they were free of distractions and able to catch up on their documentation (Boehm & Morast, 2009). Another researcher found that the implementation of quiet hours in a similar microsystem resulted in a significant reduction in nurse stress levels. The team concluded, “Quiet time is an easily performed energy-saving intervention to promote a healthy work environment” (Reimer et al., 2015).

The strategy to implement quiet hours in a microsystem is just as important as the results it yields. In the article *Making Time for Quiet*, researchers concluded that noise awareness education programs should be introduced to unit staff in small components in order to properly assess their impact and build up to a larger transformation (Halm, 2016). In another study of the quiet time implementation on a neurosurgical intensive care unit, researchers found that

educating the unit staff on current best practices prior to implementation was a key component in the success of the project (Goeren et al., 2018). Further findings from this study indicated that simply dimming the lights acted as a reminder to staff to lower voices and follow-through on complying with quiet hours. These studies remind us of the importance of implementation strategy and attaining staff buy-in in order to successfully implement quiet hours.

Rationale

There are several theories that provide frameworks for how a leader can best implement, manage, and evaluate change. One of the most well-known and straightforward theories is Kurt Lewin's three-stage model of change, which is built upon his force-field model. Lewin postulates that there are two forces in a stable environment on the brink of change: driving forces that push in the direction of change and restraining forces that hinder and push against the change. Change can successfully occur when driving forces override restraining forces. With that in mind, the first stage in Lewin's three-stage model is unfreezing, which involves encouraging those within the microsystem to let go of old patterns and resist the restraining forces that may be around them. The change stage is sometimes the most difficult because it requires modification in thoughts, feelings, and behaviors which can lead to uncertainty and fear without the proper support and communication. When this stage is complete, the refreezing stage begins where the change will persist over time and become part of the normal routine (Wagner, 2018).

Lewin's change model was appropriate for the implementation of this proposed change as this simple model allowed for discovery throughout each stage. The unfreezing stage began with education provided to the staff via the evening and night shift change huddles. Findings from microsystem observations, evidence found in research, as well as the importance of undisturbed sleep and consequences of sleep disturbance was presented in a lecture-style format. Completion

of competencies following education and the quiet hours signage officially posted in the microsystem signified the change stage of this model as staff began putting their knowledge into practice and have visual cues to act as reinforcements. The final refreeze stage will occur over time as the current staff routinely follow the new standards of care during designated quiet hours and new staff members in the microsystem begin to adopt these guidelines without realizing there was any change at all.

Global Project Aim

The global aim of this project was to improve staff observation of designated quiet hours. The process of promoting quiet hours begins with care provided by evening shift staff at 10:00 p.m. and ends with care provided by night shift staff at 7:00 a.m. By working on this process, the quality and quantity of uninterrupted patient sleep will be increased, thus improving patient well-being and decreasing stress levels in staff members. It was important to work on this because sleep disturbance has been an identified issue for patients in LTC (Martin & Ancoli-Israel, 2008) and there were no established standards for quiet hours for staff to follow in this microsystem.

Specific Project Aim

The specific aim of this project was to educate 100% of evening and night shift staff members on new guidelines to follow during designated quiet hours, followed by the completion of a competency worksheet to ensure teaching was effective. Achieving this goal helps to cultivate an awareness of the consequences of sleep disruption as well as provides reinforcement that promoting quiet hours ultimately aligns with the healthcare organization's patient-centered healthcare model that empowers veterans to improve their well-being.

Methodology

Implementing even the smallest change within a microsystem requires detailed planning and careful execution. With a four-week timeframe to implement a change, it was imperative to employ a structured and comprehensive plan of action allowing for continuous improvement. A Plan-Do-Study-Act (PDSA) model is a repeatable, four-stage process that aids in the successful implementation of change in a system (Speroff & O'Connor, 2004). Using this model, it was possible to implement change using Lewin's three-stage model, yet have the ability to pivot based on real-time outcomes as necessary (see Appendix D).

In order to ensure an efficient use of time, the PDSA model was taken one step further, overlaying the tasks on a Gantt-style chart (see Appendix E). This type of chart provides a detailed activity schedule of the project in an easy-to-read, graphically illustrated format (Nelson et al., 2007). After determining the tasks necessary for each stage of the project, each item was plotted on the Gantt chart in order to ensure all tasks were completed within the four-week timeframe. Throughout the project, the Gantt chart allowed for easy monitoring of progress and the ability to pinpoint tasks in need of remediation in order to stay on schedule.

Context

Meticulous analysis of the microsystem is a foundational component of building an effective and enduring project. One framework that offers a thorough and systematic approach to assessing a microsystem with the intention of process improvement is the 5P model (see Appendix F). Each "P," purpose, patients, professionals, patterns, and processes, offers a different category to develop themes and, ultimately, identify areas for improvement (Nelson et al., 2007).

Microsystem Assessment

Purpose. The purpose of this skilled nursing environment is dependent on the individual needs of each patient. At a high level, this microsystem provides a place of residence that resembles a home as much as possible while providing safe and appropriate skilled nursing care. For some patients, the care provided aims for restoration to the highest level of health and well-being possible. For others, the prevention of declines in health and well-being is the goal, as well as providing a comfortable and dignified end-of-life.

Patients. The patients at this facility are all military veterans who are in need of skilled nursing care. Often difficult to place elsewhere, patients are placed at this facility for a variety of reasons, including short-term rehabilitation, long-term continual care, long-term dementia care, and hospice. Over the course of this quality improvement project, the patient census in this microsystem has remained between 35 and 40, with between five and ten patients receiving hospice care.

Professionals. During the day shift, many clinical specialties are represented in this microsystem, including physicians, nursing staff, pharmacists, psychologists, physical therapists, occupational therapists, dietitians, recreational therapists, social workers, and chaplains. As day shift ends, the amount of clinical professionals in the microsystem decreases considerably as specialties aside from nursing staff leave for the day. Evening staff generally consists of two RNs, four LVNs, and six NAs. Night staff decreases further with one RN, two LVNs, and six NAs until specialty staffing returns in the morning. Finally, there is one security guard staffing the front entrance of the building 24 hours a day, seven days a week.

Patterns. Throughout the day, various patterns exist in the microsystem that staff and patients conform to, sometimes without any awareness of doing so. An obvious pattern is reflected in the 8-hour shifts that staff fulfill, with shift change occurring at 7:30 a.m., 3:30 p.m.,

and 11:30 p.m. every day of the week. Staff accommodate the circadian rhythms of most of the patients, reflecting patterns of wake-up times in the mornings and bed-times in the evenings. In order to ensure safety of the patients throughout the day and night, staff also check in on the patients approximately every hour.

Processes. There are numerous processes that interdisciplinary team members participate in to provide care for patients. For nursing staff, charting patient care in the electronic health record is a core duty that helps to ensure documentation of relevant events that can equip other professionals with vital patient information. Medication administration has a stringent process surrounding documentation and multiple checkpoints to ensure the right medication is being given to the right patient at the right time. The shift change process occurs at a scheduled time between shifts where incoming staff receives a report from the charge nurse and then proceeds to the hallways where patient hand-off, referred to as endorsement, takes place. This process allows for the transfer of information from shift to shift.

SWOT Analysis

Following the completion of the microsystem assessment, it was necessary to determine the readiness of the microsystem to implement a change. To accomplish this and ensure successful planning and implementation, a SWOT analysis was performed (see Appendix G). This type of analysis involves assessment of the strengths, weaknesses, opportunities, and threats of the microsystem in order to identify the positive and negative aspects that may affect a quality improvement project (King et al., 2021).

A major strength of the microsystem in which this implementation took place was that an established timeframe to observe quiet hours already existed. As previously stated, signage around the microsystem (see Appendix B) indicates to be quiet during the hours of 10:00 p.m. to

7:00 a.m. Additionally, baseline findings revealed that staff were aware of noise in the microsystem and 64% of evening and night shift staff were already taking at least one measure to promote quiet within this timeframe (see Appendix C). With regard to weaknesses, defining the timeframe to be quiet was the only information the signage in the microsystem provided. A lack of established standards for nighttime care and vague signage resulted in 36% of staff being unaware that they should do anything differently.

Opportunities identified in this microsystem existed at the management level. Every week, an interdisciplinary management team meets to discuss current metrics, which allows for a space to share baseline data collected and a proposal for established standards of quiet hours. At this meeting, quality improvement measures from a national organization that works to enhance resources and training are also covered and uninterrupted sleep has been emphasized frequently. Thus, the importance of the proposed quiet hours has been well-established. The threats to implementing a change, however, were the policies in place to keep patients safe. Standards such as keeping patient doors open in order to perform safety checks are very important, yet perpetuate disruptive sleep which can lead to further safety concerns.

Cause and Effect Diagram

Establishing standards for quiet hours required a thorough evaluation of the causes of sleep disruption in this particular microsystem. Through initial baseline observations and interviews, potential causes of sleep disruptions were identified and organized utilizing a fishbone diagram (see Appendix H). This diagram allowed for a visual representation of the organized categories and individual factors that result in interrupted sleep patterns. While individual factors on the top half of the diagram were able to be applied to what the standardized guidelines for quiet hours should entail, review of the bottom half of the diagram shows that

increasing education and awareness in how staff can make an impact will play a major role in making a lasting change.

Intervention

Utilizing information obtained from the microsystem assessment, SWOT analysis, and cause and effect diagram in addition to the initial baseline data collected, a plan was developed to establish standards for staff to observe between the hours of 10:00 p.m. and 7:00 a.m. Proposed guidelines for quiet hours were submitted to management for review and were met with positive feedback. Following this approval, a sample of evening and night shift staff in the microsystem were also shown the proposed guidelines to gather feedback. One safety concern surrounding the closing of patient doors was raised from multiple staff members and was subsequently revised to specify determinations of safety prior to closing doors for noise reduction.

The final guidelines for quiet hours were then made into a poster format as this has been found to be an effective approach to convey information in clinical settings (Bastable, 2019). A simple, high-contrast color scheme was selected, with a sleeping moon image and star-shaped bullet points (see Appendix I). This look and feel was intentional to help the viewer know at a glance what the poster is about before reading any of the content. Finally, only essential information was included to keep the poster concise and easy to read. These posters were laminated and then placed next to the existing signage in the hallways and at the nurses station. In total, ten posters were hung across the microsystem.

In order to raise awareness around these new guidelines, education for all evening and night shift staff was essential. Lecture-style teaching sessions were held over an 11-day period during the shift change huddle held at 3:30 p.m. for evening staff and 11:30 p.m. for night staff. This style of teaching allowed for efficient and cost-effective education. To increase the

effectiveness of the lecture-style teaching, supplemental education handouts were utilized as a visual aid to highlight important information. Furthermore, these handouts acted as a reference that reinforced teaching well after the educational session had ended. The same look and feel of the posters were applied to the educational handouts in order to create a visual connection between them. Information was laid out in a sequential order beginning with who is doing this project and what it is about, why undisturbed sleep is important, microsystem findings and gaps, current research to support the implementation, and how staff are involved and affected (see Appendix J).

Study of the Intervention

The strategy used to measure the quiet hours education session was through a content evaluation. This type of evaluation determines whether the staff has acquired the knowledge taught and is performed shortly after the education session (Bastable, 2019). Referred to as a competency at this facility, staff are required annually to complete a questionnaire or demonstration to show their degree of knowledge on a subject essential to performing their job.

Aligning with current facility practices, a competency worksheet was distributed to staff for immediate completion and submission after the teaching of quiet hours (see Appendix K). To ensure the teaching was effective, three open-ended questions asked to name five functions that sleep plays a major role in, three causes of sleep disturbances, and three ways to minimize sleep disruption. As this implementation introduced new standards for nighttime care, understanding the short-term retention of the nursing staff helped to know that they had a basic understanding of the quiet hours concepts taught.

Measures

The outcome measure for this implementation of established quiet hours and education is focused on capturing initial competency data from 100% of the evening and night shift staff in the microsystem. This measure marks improvement over the baseline data obtained which indicated that 64% of staff interviewed were taking partial measures to promote quiet hours and 36% were either unaware of quiet hours or not making any intentional efforts to promote them. Maintaining this percentage and potentially increasing it over time is the process measure, which will be achieved by educating newly hired staff and float staff on the importance of adhering to quiet hours guidelines via the competency worksheet. In addition to this, annual completion of the competencies should occur on an annual basis. Finally, to monitor the positive and negative impact of this implementation, the balancing measure includes monitoring trends in patient safety as the application of quiet hours has the potential to limit the amount and quality of safety checks performed throughout the night.

Results

Among the 37 staff members who work the evening and night shift in this microsystem, 30 staff members attended the education session, received the education handout, and successfully completed the competency worksheet, accounting for 81.1% of total staff. When viewing the competency worksheets completed by shift, results yielded an 87.0% completion rate for evening shift staff and a 71.4% completion rate for night shift staff. Broken down by position, four of seven RNs, seven of nine LVNs, and 19 of 21 NAs completed the competency worksheets, accounting for 57.1%, 77.8%, and 90.5% respectively. For visual representations of this data, please refer to Appendix L. In comparison to the initial baseline data collected where 36% of staff members did not know to take intentional measures to promote quiet hours and 64% reported taking only partial measures, the education provided and competency handouts

collected from 81.1% of staff marks an improvement in staff knowledge of the importance of uninterrupted sleep, how to minimize sleep disturbances in patients, and the newly established guidelines for the microsystem.

Discussion

Promotion of standardized quiet hours guidelines are only achieved when staff are aware of the need, benefits, and expectations surrounding the new protocols. The quiet hours education sessions were welcomed and met with little resistance from all staff regardless of the different shifts or positions held. It was acknowledged by staff that sleep disruption is indeed a problem that needs to be addressed within this microsystem and standardized actions to promote a quiet environment are necessary. When approached with plans for educational sessions, all charge nurses graciously allowed approximately ten minutes of the shift change huddle for an introduction to the quality improvement implementation, a walk-through of the educational handout, and completion of the competency worksheet.

Though educating 81.1% of both evening and night shift staff is a marked improvement in awareness of the newly implemented quiet hours guidelines, the goal of 100% education was not achieved. Following the initial education sessions where all staff in the shift change huddle were participating, a shift schedule was utilized to target staff members who had not yet received the education. Despite determined efforts to attend shift huddles with those targeted staff in mind, not all thirty-seven listed staff members were able to be reached. This was in part due to last-minute changes that were not reflected in the schedule provided, for example when staff called out sick or switched days with another staff member. Additionally, some staff members were not on the schedule for the entirety of the 11-day period in which education was held.

The strategic approach and positioning of new standards for quiet hours was a vital component to the receptivity of staff in learning and implementing these guidelines. Being sensitive to the manner in which gaps were presented helped to eliminate resistance and defensive reactions to the proposed change. Prior to reviewing the new standards for quiet hours, acknowledgement was made that most of these guidelines were actions that were already being taken by staff and that the emphasis of these new standards is to ensure consistency across all positions and shifts. Furthermore, linking the benefits of these new standards to not only benefitting the patients, but to reducing stress levels in staff led to further receptivity in educational engagement and completion of the competency worksheet.

Limitations

A significant limitation to implementing standardized quiet hours and achieving the goal of 100% education of evening and night shift staff was the time constraints faced. Due to the lengthy process involved in onboarding at the facility in which the microsystem is located, initial observations and interviews were unable to be conducted until nine weeks into the 16-week timeframe established for the implementation project. While a gap was ultimately identified that warranted a process improvement, extra time would have allowed for a more thorough assessment and observation of the microsystem. For example, some staff indicated that they took no intentional measures to promote sleep, however further observation may have uncovered that they unintentionally do promote quiet hours. In regards to education, lecture-style teaching was selected based on its time efficiency, yet other modes of teaching could have been more suited to the learning styles and needs of the staff. More time would also have been beneficial in ultimately achieving a 100% completion rate of the education and competency worksheet. Finally, utilization of the additional nine weeks would have allowed for an expanded project

scope to include patients in the teaching for quiet hours and to provide education to day shifts on how they can contribute to ensuring adequate patient sleep as well.

Future Recommendations

The initial education and competency worksheet completion of newly established quiet hours guidelines are part of the first Plan-Do-Study-Act (PDSA) cycle in this quality improvement project. Studying the results of the interventions taken, a clear path forward is to repeat the PDSA cycle until the specific aim of 100% staff education and competency worksheet completion is achieved. As staff are hired into the microsystem, education and competency worksheets should be a standard part of the new-hire orientation process in order to maintain this goal. Additionally, reeducation should be provided to staff on an annual basis.

Future PDSA cycles recommended include the creation and implementation of a quiet hours champion. Having a staff member who takes ownership of the observation of quiet hours can help to ensure the compliance of other staff members. The quiet hours champion can be responsible for the education of current and newly hired staff as well as the completion of annual competencies. Working together with the microsystem's Clinical Nurse Leader (CNL), this champion can continue implementing evidence-based practices (EBP) that aim to improve the quality of patient sleep and potentially expand to other microsystems or target patients specifically rather than only staff. Continuously running PDSA cycles will help ensure the longevity of this project to meet the global aim of improving evening and night shift staff observation of designated quiet hours, thus increasing the quality and quantity of patient sleep and decreasing stress levels in staff.

Conclusion

Educating evening and night shift staff on the importance of observing quiet hours and providing specific guidelines to follow is the first step to addressing sleep disturbances in this LTC microsystem. By collecting competency data following the educational sessions, a basic introduction and understanding of the new guidelines was established. The goal of educating 100% of evening and night shift staff was not met, however it is still possible to achieve this with continued efforts and a longer timeframe. Introduction of a quiet hours champion can help to ensure sustainability of 100% education rates for all staff and help to enforce the guidelines. Additional work with the microsystem's CNL can continue to implement EBP that aims to decrease sleep disturbance in patients, roll out quiet hours to other microsystems, and ultimately understand the effects of quiet hours on the patient population.

References

- Bastable, S.B. (2019). *Nurse as educator: Principles of teaching and learning for nursing practice*. Jones & Bartlett Learning.
- Boehm, H., & Morast, S. (2009). Quiet time. *AJN The American Journal of Nursing*, 109(11), 29-32.
- Cadieux, M. A., Garcia, L. J., & Patrick, J. (2013). Needs of people with dementia in long-term care: a systematic review. *American Journal of Alzheimer's Disease & Other Dementias*®, 28(8), 723-733.
- Eyers, I., Young, E., Luff, R., & Arber, S. (2012). Striking the balance: night care versus the facilitation of good sleep. *British journal of nursing*, 21(5), 303-307.
- Goeren, D., John, S., Meskill, K., Iacono, L., Wahl, S., & Scanlon, K. (2018). Quiet time: a noise reduction initiative in a neurosurgical intensive care unit. *Critical care nurse*, 38(4), 38-44.
- Halm, M. (2016). Making time for quiet. *American Journal of Critical Care*, 25(6), 552-555.
- Hedges, C., Hunt, C., & Ball, P. (2019). Quiet time improves the patient experience. *Journal of nursing care quality*, 34(3), 197-202.
- Joseph, E., Rindani, P., Cruz, P., & Tribhuvan, V. (2016). Streaming quiet time to ensure adequate rest for patients. *International Journal for Quality in Health Care*, 28(1), 23-23.
- King, C.R., Gerard, S.O., & Rapp, C.G. (Eds.). (2021). *Clinical nurse leaderSM certification review*. Springer Publishing Company.
- Martin, J. L., & Ancoli-Israel, S. (2008). Sleep disturbances in long-term care. *Clinics in geriatric medicine*, 24(1), 39-50.

- Massachusetts General Hospital Patient Care Services. (n.d.). Addressing quietness on units best practice implementation guide. *Nursing and patient care services clinical resources*.
https://www.mghpcs.org/eed_portal/Documents/PatExp/ADDRESSING-QUIETNESS.pdf
- Mukherjee, S., Patel, S. R., Kales, S. N., Ayas, N. T., Strohl, K. P., Gozal, D., & Malhotra, A. (2015). An official American Thoracic Society statement: the importance of healthy sleep. Recommendations and future priorities. *American journal of respiratory and critical care medicine*, *191*(12), 1450-1458.
- Neikrug, A. B., & Ancoli-Israel, S. (2010). Sleep disturbances in nursing homes. *The journal of nutrition, health & aging*, *14*(3), 207-211.
- Nelson, E.C., Batalden, P.B., & Godfrey, M.M. (2007). *Quality by design: A clinical microsystems approach*. Jossey-Bass.
- Office of Disease Prevention and Health Promotion. (n.d.). Sleep. *Healthy People 2030*. U.S. Department of Health and Human Services.
<https://health.gov/healthypeople/objectives-and-data/browse-objectives/sleep>
- Riemer, H. C., Mates, J., Ryan, L., & Schleder, B. J. (2015). Decreased stress levels in nurses: a benefit of quiet time. *American Journal of Critical Care*, *24*(5), 396-402.
- Schnelle, J. F., Alessi, C. A., Al-Samarrai, N. R., Fricker Jr., R. D., & Ouslander, J. G. (1999). The nursing home at night: effects of an intervention on noise, light, and sleep. *Journal of the American Geriatrics Society*, *47*(4), 430-438.
- Speroff, T., & O'Connor, G. T. (2004). Study designs for PDSA quality improvement research. *Quality Management in Healthcare*, *13*(1), 17-32.
- Wagner, J. (2018). *Leadership and influencing change in nursing*. University of Regina Press.

Webster, L., Powell, K., Costafreda, S. G., & Livingston, G. (2020). The impact of sleep disturbances on care home residents with dementia: the SIESTA qualitative study.

International Psychogeriatrics, 32(7), 839-847.

Ye, L., & Richards, K. C. (2018). Sleep and long-term care. *Sleep medicine clinics*, 13(1), 117-125.

Appendix A

Baseline Interview Questions Asked to Evening and Night Shift Staff

1. How would you describe the noise level during your shift?
2. What does staff do to promote “quiet hours” from 10:00 p.m. to 7:00 a.m.?
 - a. Are there specific guidelines to follow during these hours?
3. From your perspective, how would you describe patient quality of sleep on average?
4. Do you have to provide any care for patients during the night and do you have to wake them for it?
5. Do you ever notice the Yacker Tracker turn red? If so, what noise caused it?
 - a. If certain noise is identified, how often?
6. Is there anything that day shift nurses can do to improve the quality of patient sleep?

Appendix B

Existing Signage Throughout the Microsystem



Appendix C

Baseline Evening and Night Staff Interview Results

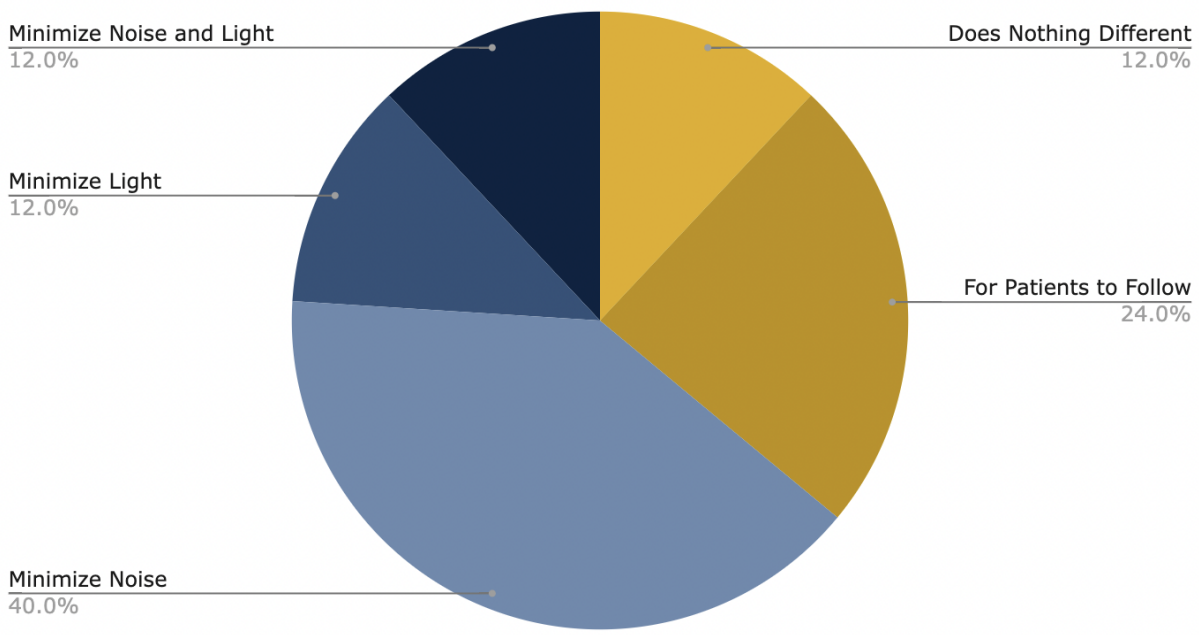


Figure C1: Pie chart displaying combined evening and night shift staff answer themes to the baseline interview question: “What do you do to promote ‘quiet hours’ from 10:00 p.m. to 7:00 a.m.?” Yellow represents themes in which no intentional measures were taken and blue represents themes where partial measures were taken.

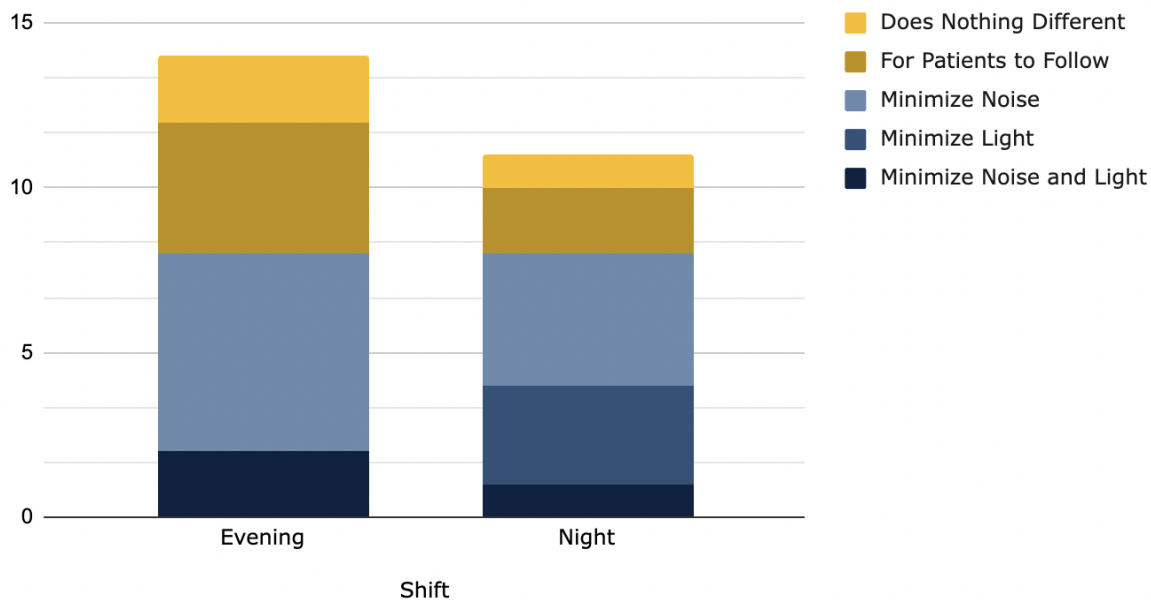


Figure C2: Stacked bar chart displaying the staff answer themes to the baseline interview question: “What do you do to promote ‘quiet hours’ from 10:00 p.m. to 7:00 a.m.?” broken out by shift. Yellow represents themes in which no intentional measures were taken and blue represents themes where partial measures were taken.

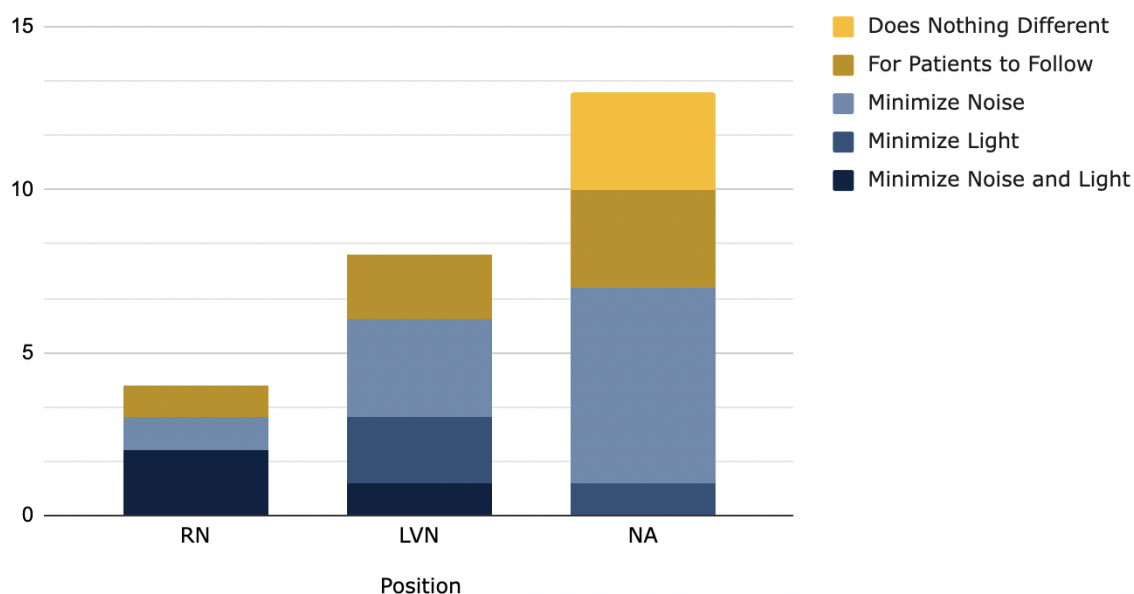
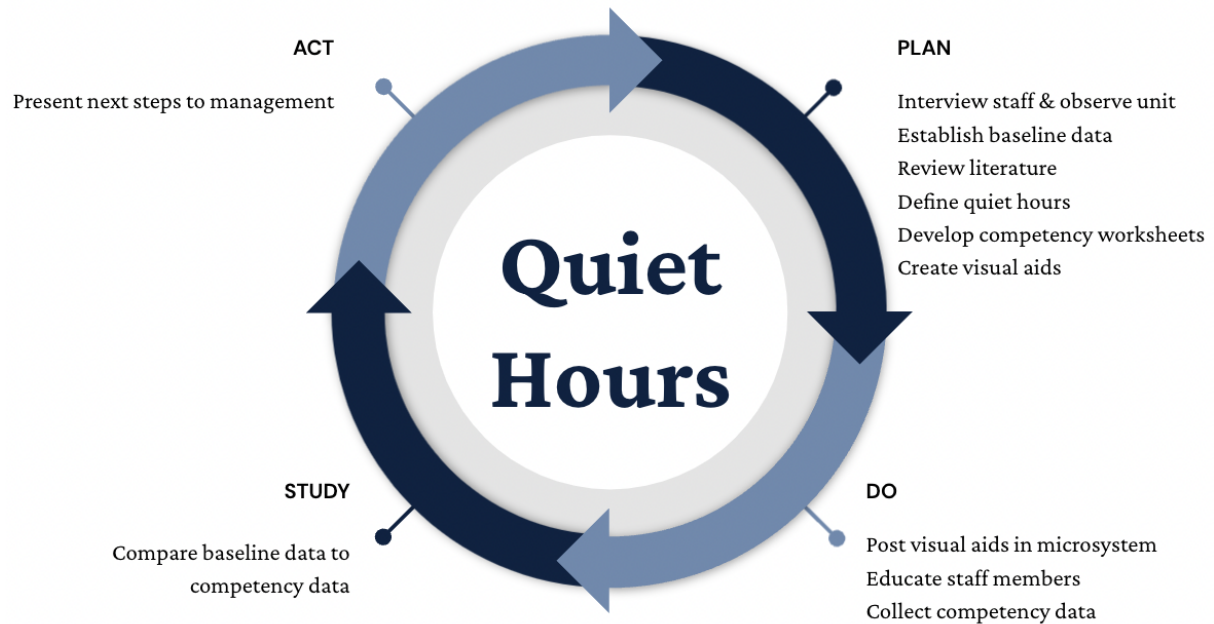


Figure C3: Stacked bar chart displaying the staff answer themes to the baseline interview question: “What do you do to promote ‘quiet hours’ from 10:00 p.m. to 7:00 a.m.?” broken out by position. Yellow represents themes in which no intentional measures were taken and blue represents themes where partial measures were taken.

Appendix D

Plan-Do-Study-Act Model



Appendix F

5P Microsystem Assessment

Purpose	Patients	Professionals	Patterns	Processes
<p>Provide a place of residence that resembles a "home" as much as possible while providing safe and appropriate skilled nursing care, including restoration of well-being, prevention of decline, and comfortable and dignified end-of-life care.</p>	<ul style="list-style-type: none"> - Military veterans who are in need of skilled nursing care. - Complex medical and psychosocial needs that are difficult to place elsewhere. - Patient census between 35 and 40 patients with 5-10 patients receiving hospice care. 	<ul style="list-style-type: none"> - A variety of specialized healthcare professionals exist during day shifts, including MDs, PTs, OTs, social workers, dietitians and pharmacists. - Evening and night shifts consist of only nursing staff: RNs, LVNs, and NAs. - One security guard is present at the front entrance 24/7. 	<ul style="list-style-type: none"> - Eight hour shifts with shift changes occurring at 7:30am, 3:30pm, and 11:30pm. - Patient circadian rhythms of bedtime in the late evenings and wake-up in the early mornings. - Safety checks completed on an hourly basis. 	<ul style="list-style-type: none"> - Chart in the EHR of patient care provided to equip other specialties with vital patient info. - Multiple checkpoints in patient administration to ensure safety. - Information hand-offs at shift change to transfer vital information from shift to shift.

Appendix G

SWOT Analysis



STRENGTHS

- Quiet hours timeframe already exists
- Some quiet hours interventions are already practiced
- Staff is aware that noise levels at night are a problem



WEAKNESSES

- No current standards exist for nighttime care
- Some staff are unaware of the quiet hours timeframe
- Current signage is vague
- No monitoring or enforcement of current quiet hours timeframe



OPPORTUNITIES

- Consequences of sleep disruption are well-studied
- Improving sleep is an initiative at a national level to prevent falls
- Management team meets weekly to discuss current metrics

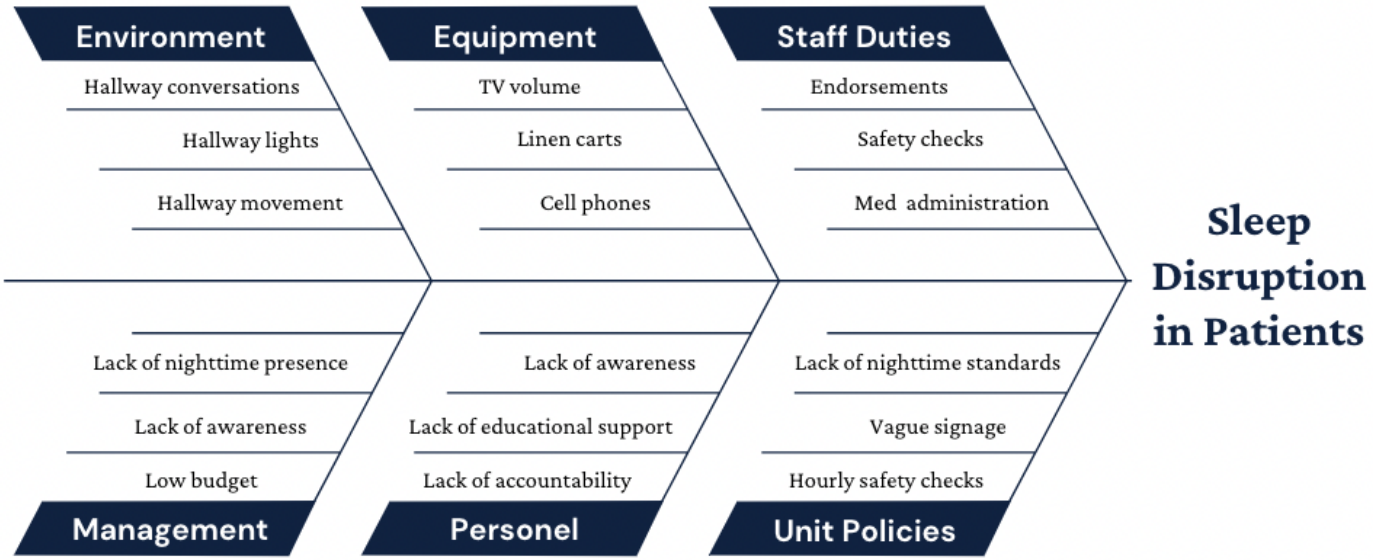


THREATS

- Organizational safety standards interfere with promoting undisturbed sleep in patients

Appendix H

Cause and Effect Fishbone Diagram



Appendix I

Quiet Hours Poster

Quiet Hours

10pm-7am



Help us maintain a quiet, healing environment.

- ★ Dim hallway lights from 10pm-7am
- ★ Keep hallway conversations to a minimum, soft voices are encouraged
- ★ Be mindful of noises made by equipment and personal items (linen carts, phone, keys, etc)
- ★ Turn TVs off by 10pm, use headphones if necessary
- ★ Answer call lights quickly to avoid disturbances
- ★ During endorsements:
 - Close patient doors if safe and preferred
 - Use soft voices

Above all, remember to provide individualized, supportive care.

Appendix J

Quiet Hours Education Handout

Quiet Hours:

A Quality Improvement Project



Who We Are

Doha Elsir & Heather Battaglia

- University of San Francisco ME-MSN students
- Final capstone project: Quality Improvement
 - Our Aim: To improve patient sleep

Our Project

Implementing Standardized
“Quiet Hours” Guidelines &
Annual Competencies

Why is Sleep Important?

The quality & quantity of sleep achieved plays an important role in:

- Healing & Restoration
- Emotional Regulation
- Memory & Learning
- Neural Development
- Cardiovascular Function
- Metabolic Function
- Cellular Toxin Removal

Sleep disturbance can lead to:



- Falls / Physical Weakness
- Agitation / Aggression
- Impaired Communication
- Difficulty swallowing

“There is a lack of formal sleep education globally for physicians and other health care providers.”

(Mukherjee et al, 2015)

Observations

“What does staff do to promote 'Quiet Hours' from 10pm-7am?”



25 Evening & NOC Interviews

- 15 Nurses (RNs & LVNs)
- 10 Nurse Assistants

Our Findings

- “Quiet Hours” means different things to different people
- There are no set guidelines of what “Quiet Hours” at the CLC entail

Quiet Hours Continued

What the Research Says

Sleep Disturbance in Long-term Care

Noise at night>
Lights at night>
Unpleasant temperature>
Limited daytime activity>
Limited daylight exposure>

How Staff Can Improve Patient Sleep

Minimize night conversation/activities
Dim lighting at night
Ensure moderate temperature
Encourage daytime activities
Open blinds during daytime

(Ye & Richards, 2018)

Quiet Hours Implementation Findings

- Improved patient experience
- Improved healing process
- Decreased hospital readmissions
- Decreased stress levels in nurses

“The simple task of dimming the lights promotes a sense of calm and works as a visual cue to health care providers that quiet time is occurring.”

(Goeren et al, 2018)

Implementation



Next Steps

- Post "Quiet Hours" signage
- Complete staff education
- Collect staff competencies

Please take a few minutes to complete the competency sheet and hand it in when you are finished.

Resources

Goeren, D., John, S., Meskill, K., Iacono, L., Wahl, S., & Scanlon, K. (2018). Quiet time: a noise reduction initiative in a neurosurgical intensive care unit. *Critical care nurse*, 38(4), 38-44.

Mukherjee, S., Patel, S. R., Kales, S. N., Ayas, N. T., Strohl, K. P., Gozal, D., & Malhotra, A. (2015). An official American Thoracic Society statement: the importance of healthy sleep. Recommendations and future priorities. *American journal of respiratory and critical care medicine*, 191(12), 1450-1458.

Ye, L., & Richards, K. C. (2018). Sleep and long-term care. *Sleep medicine clinics*, 13(1), 117-125.

Appendix K
Quiet Hours Competency Worksheet

CLC Quiet Hours Competency Worksheet

Employee Name/Title:

Unit:

Manager:

Name 5 functions that sleep plays an important role in:

1. _____
2. _____
3. _____
4. _____
5. _____

Identify 3 causes of sleep disturbance:

1. _____
2. _____
3. _____

Describe 3 ways to minimize sleep disruption:

1. _____
2. _____
3. _____

Appendix L

Evening and Night Staff Education and Competency Handout Completion Results

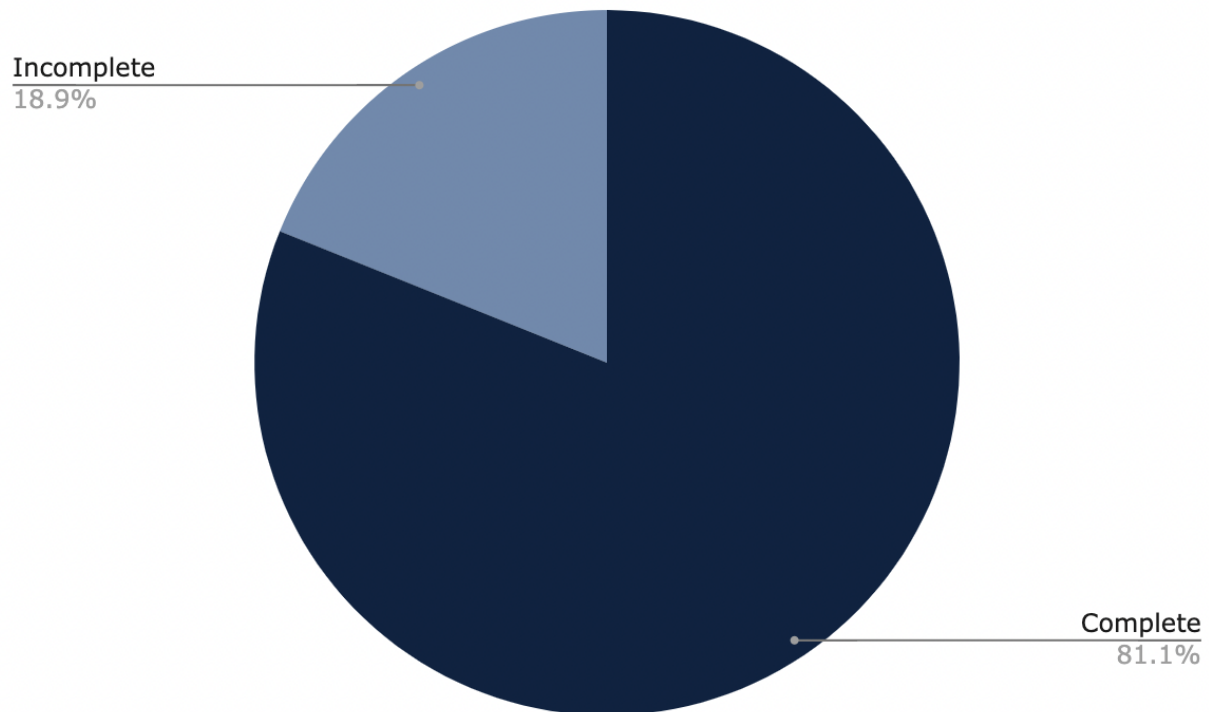


Figure L1: Pie chart displaying the percentage of total staff who attended quiet hours education and completed the competency worksheet.

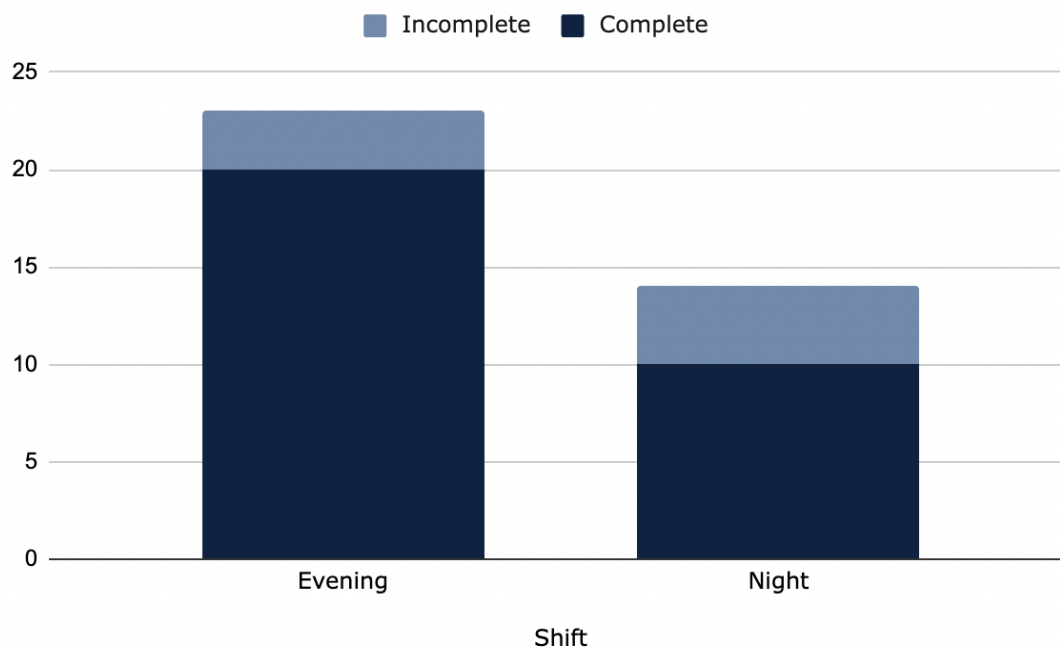


Figure L2: Stacked bar chart displaying the amount of staff who attended quiet hours education and completed the competency worksheet broken out by shift.

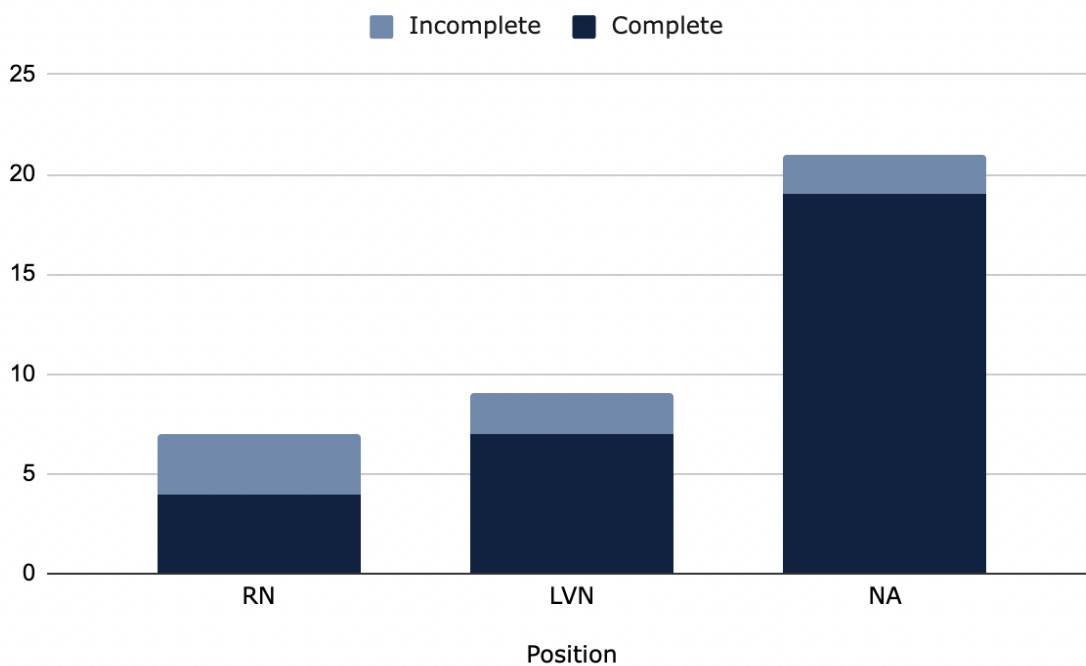


Figure L3: Stacked bar chart displaying the amount of staff who attended quiet hours education and completed the competency worksheet broken out by position.