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Repositioning of Long-term Care Residents and the Effects on Sleep Quality

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Abstract

Quality sleep is important for everyone, but especially for long-term care residents, as quality sleep helps improve mood, boost the immune system, increase wound healing and reduce stress. In a long-term care (LTC) facility with 26 residents, it was apparent that quality sleep was an issue when interviewing residents. Of the 26 residents interviewed, 17 of them identified having impaired sleep quality. One root cause impacting sleep quality was that the correct repositioning techniques were not being consistently implemented by staff. A survey was used to assess the current knowledge of repositioning procedures of the aides and nurses in the facility. The staff were educated on proper positioning and common positions for sleep. The staff repositioned each other to feel how comfortable or uncomfortable repositioning can be when a person is unable to adjust their position. After the education and simulation session, a survey was completed to determine the effectiveness of the education. Additionally, following the education session, a sleep template was used to measure the effect of repositioning the resident on quality of sleep. The results of these measures will be reported.

Focus

Sleep plays a crucial role in maintaining and improving function in long-term care residents. Out of 26 total residents, 17 of them identified having sleep problems. Sleep problems included: not being able to fall asleep, not being able to stay asleep, going to bed late, wide awake in the middle of the night, waking up to use the bathroom multiple times a night, and being woken up in the night for medications or scheduled repositioning. This was identified through a questionnaire that a nursing student asked residents at the LTC facility. The nurse's input helped determine sleep quality for residents with cognitive issues. Sleep disturbances are assessed by LTC staff and family members. Assessment includes observing the effects of sleep deprivation and evaluating the resident's sleep through the day and night. This is crucial to identifying the problem and implementing a solution.

Currently, many residents are being scheduled for repositioning every two or three hours. Repositioning every two hours in the night causes sleep fragmentation. Sleep fragmentation is "sleep that is interrupted throughout the night inhibiting the opportunity for restorative sleep that is required for overall health and well-being" (Empira, 2021). Disrupting sleep causes memory impairment, depression, anxiety, increased confusion, poor balance and strength, accidents, impaired immunity, obesity, impaired healing, and high blood pressure, which all affect the mind and body.

Sleep deprivation can cause residents to be confused, have increased anxiety and depression, impair the body's ability to heal, decrease balance and strength, produce more falls, and cause an increase in mortality (Ye & Richards, 2018, p. 2). Due to the effects of sleep deprivation, the LTC facility has started to find ways to improve their residents' sleep. They have begun the process by having the hallway lights off at bedtime, decreasing noise, and limiting

napping during the day. They also have just received a watch that they will put on residents to track the number of hours they sleep, how much light is in the room during the night, and other parameters. After consulting with the nurses and the DON at the LTC facility, correct repositioning techniques implemented by the nursing aides at night was an intervention they felt needed to be improved. Many of the residents are turned and repositioned every two or three hours to prevent pressure ulcers, causing a sleep disruption every few hours. Repositioning also requires correct positioning techniques for the resident to be comfortable.

The LTC facility takes pride in their care for their residents and feels that poor sleep negatively affects their residents. Our focus was to improve the quality of sleep among residents at the LTC facility through repositioning reevaluation and education. By reassessing repositioning techniques and educating staff on correct repositioning techniques, we will improve the quality of sleep among the residents, and therefore their overall wellbeing at the LTC facility. Our goal is to promote restorative sleep that improves mind and body functioning instead of inhibiting.

Analysis

Positioning of LTC residents is a basic procedure that is performed frequently by staff. Any position, after some time, can become uncomfortable and potentially painful. In the case of a LTC resident dependent on staff for positioning or is unable to move to change positions or shift weight, positioning is a crucial element of ensuring comfortability (Ariek, 2016, p. 7). Therefore, residents must be repositioning frequently and correctly to minimize discomfort. Frequent repositioning is important because it aids in comfort, relieves pressure on specific areas, helps prevent pressure ulcers, and increases circulation (Ariek, 2016, p. 7).

There are various principles for correct positioning. These include: the resident must be positioned in proper body alignment at all times, the resident's body should be supported and aligned with positioning aids, and the frequency of positioning for each resident should be identified through skin assessment results and determining the resident's needs (Ariek, 2016, p. 8). Correct body alignment involves aligning the body's moveable parts, so there is no unnecessary stress placed on parts of the body (Ariek, 2016, p. 8). It is essential to maintain alignment in the anterior-posterior position and laterally. Staff can use positioning aids, such as pillows, towels, face cloths, or trochanter rolls, to maintain proper alignment (Ariek, 2016, p. 12). Repositioning every two, three, or four hours is used to prevent pain, discomfort, pressure ulcers, damage to nerves or blood vessels, and promote circulation (Ariek, 2016, p. 14). The most common repositioning frequency to reduce pressure ulcers is every two hours. However, there is an absence of strong evidence supporting this intervention (Miles et al., 2013, p. 32). An increasing amount of evidence indicates that the use of support surfaces, such as cushions, pillows, and alternating pressure mattresses, can increase the turning and repositioning frequency to every four to six hours (Miles et al., 2013, p. 32).

A study conducted by the University of Southampton examined the variability of repositioning techniques among staff, the effectiveness of staff interventions, and the influence of education on repositioning techniques (Woodhouse et al., 2019, p. 58). Participants were given an initial survey to identify their years of experience, education regarding pressure ulcer prevention, and how often they repositioned residents in their role. Each participant was invited to reposition a volunteer from a supine to a left tilt position, using the technique they routinely use. Following, the participant examined a written description and illustration of the method and performed the reposition again on the volunteer. After each reposition, researchers evaluated the

technique by measuring angles, assessing offloading, and taking photos. The results indicated "considerable variability in the repositioning techniques" among participants (Woodhouse et al., 2019, p. 60). The written education and illustrations improved the repositioning technique; however, there was no improvement in offloading at-risk bony prominence sites (Woodhouse et al., 2019, p. 60). Repositioning to unload at bony prominences is a crucial element of preventing pressure ulcers. Pressure ulcers are most common over bony prominences due to less fat protecting the skin from the bone (Ariek, 2016, p. 14). "The longer a resident is in the same position, the more pressure from the supporting surface is on the skin, blood vessels, and underlying tissue," if the pressure continues without frequent and correct intervention, pressure ulcers occur (Ariek, 2016, p. 14). The study emphasized the need for further education on offloading at prominent bony sites. This study's limitations include a small number of participants and a controlled lab environment with a healthy volunteer, which did not account for the variability in individuals and medical factors.

The University of Southampton study is the first study to examine the repositioning techniques of staff. It noted that many studies have focused on the frequency of repositioning and not the techniques of positioning. Therefore, this is not a heavily researched topic, and more research and studies need to be conducted with more participants to get an accurate measurement of technique knowledge. In conclusion, the research suggested and "identified a requirement for staff training that involves a demonstration of the procedural aspects of repositioning individuals for pressure ulcer prevention and includes opportunities to practice this skill" (Woodhouse et al., 2019, p. 61).

Data was collected using two methods. The first method was to interview each resident about their sleep patterns. We created an interview template to use with every resident. These

questions included: “What time do you go to bed at night?”; “How long do you lay in bed before falling asleep?”; “What time do you wake up in the morning?”; “How many times, if any, do you wake up in the middle of the night?”; “What are some reasons you wake up in the middle of the night?”; and “Do you feel that you are getting quality sleep at night?”. Some of the residents were nonverbal or suffered from severe dementia. Therefore, they weren’t able to completely understand and respond to the interview questions. Despite this challenge, we still interviewed every resident, whether they responded appropriately or not. Most of the residents were able to express their sleep problems with us. For the residents that weren’t able to respond to our questions, we interviewed the night shift nurses and nurse aides to discuss common sleep patterns of the residents. The night nurses and aides were able to share detailed information about the specific resident’s sleep patterns. After interviewing every resident, there were many patterns among the facility. Many of the residents went to bed between 8 pm and 10 pm. Most of the residents stated they did not fall asleep until around midnight. Only one resident reported that they sleep through the entire night until the following day. The remaining 25 residents reported consistently being woken up in the middle of the night due to excessive noise, light disturbances, not feeling tired, being in pain, needing to use the bathroom, or repositioning themselves independently or with staff assistance.

The residents reported many aspects that interfered with obtaining quality sleep at night, most of which are difficult to control. For example, having to get up and use the bathroom in the middle of the night can be prevented by not drinking close to bedtime and scheduling medications such as diuretics during the day instead of at night. Despite these measures, elderly individuals still may have urinary changes such as bladder control issues, leakage, incontinence, retention, and increased urinary tract infections (MedlinePlus.gov). Although there were many

reasons for the lack of quality sleep in the long-term care facility, we determined the root cause to be nighttime positioning which can easily be changed for every resident across the board.

Develop

In the beginning stages of the project, several solutions we considered to improve sleep were diet changes, frequency of positioning, proper positioning techniques by aides, bedtime, pain level, caffeine intake, sleep environment, and aromatherapy. After considering all these topics, we felt frequency or accuracy of positioning would be the most beneficial and needed for this facility. This was due to input from nurses that they did not feel residents were always accurately being positioned. Additionally, the residents that receive assistance with turning and repositioning are already on an individualized, varied repositioning program, which can range from one to three hours depending on their status and condition.

After choosing proper turning and repositioning techniques to be our focus to improve sleep, we designed surveys for staff to assess their levels of knowledge and confidence related to repositioning, facilitated a turning and repositioning lab for nursing assistants, and created a sleep template to be integrated into care aide charting. We chose nursing assistants to be our focus for the intervention as they are the ones most often turning and repositioning residents. However, nurses were encouraged to participate in the intervention as well.

We decided our most critical intervention to improving sleep would be holding a turning and repositioning lab for the staff at the facility by demonstrating the correct way to position residents. However, before implementing the lab, we wanted to get a baseline of the nursing assistants' knowledge and confidence. The nursing assistants were asked to rate their knowledge and confidence regarding turning on a five-point scale, turning and repositioning training history, years employed as a nursing assistant, and areas they think they could improve on, and areas of

strength. After analyzing the data collected from the surveys, the average level of confidence reported regarding turning and positioning before the intervention was 4.6 out of 5. The average level of knowledge reported prior to the intervention was 4.7 out of 5. All participants reported receiving formal training on turning and positioning residents, but only 36 percent reported that they practiced turning and repositioning prior to working in a nursing home. Aspects the nursing assistants felt they could improve on are ensuring the residents are on their side enough, turning the residents at the right time, maintaining accurate positioning, focusing on placement of the arms specifically, and keeping residents off their buttocks to prevent pressure ulcers. Aspects the nursing assistants felt they already excelled at were ensuring resident comfort, knowing where to place the pillows, preventing skin breakdown, explaining the process to the resident, making sure the resident is in the middle of the bed, and alternating the residents from side to side.

In conducting our turning and repositioning skills lab, we used credible resources to guide our implementation. The first resource we utilized was the Pearson Vue Nurse Aide Skills Handbook to guide our implementation regarding proper positioning. The handbook serves as a resource to those obtaining their nursing assistant or home health aide certification in Minnesota through the National Nurse Aide Assessment Program (NNAAP). The handbook lists the processes for 23 skills required for the NNAAP examination, with positioning residents on their side being one of them (Pearson Education, 2018). Our demonstration aligned closely with the handbook's steps for turning patients. We also used the Registered Nurses Association of Ontario Nursing Best Practices Guideline Program. In their learning packet, "Positioning Techniques in Long-Term Care," the association outlines positioning aids such as towels and pillows and how they can be used in positioning a patient, common places for pressure ulcers, and the steps for turning a patient onto their side with photographs as a guide (Registered

Nurses' Association of Ontario, 2007). This was also a beneficial resource in planning our skills lab.

We held our turning and positioning skills lab at change-of-shift to get a combination of both day and evening nursing assistants. At the start of the lab, we gave background on the purpose of the lab and conveyed how turning and repositioning affects sleep. Then, we used a manikin, facility bed, draw sheet, and pillows to demonstrate the proper technique for turning and positioning a resident to their side. We emphasized important information such as ensuring the bed is flat, moving the bed to a comfortable working height, explaining how to move the resident as you turn them, placing pillows under the coccyx, knees, ankles, and arm, asking the resident their comfort level, and observing the resident at the foot of the bed to check for overall alignment. After demonstrating correct positioning, we had the employees split into groups and turn and position each other to understand better what their techniques truly feel like. We encouraged the participants to think about how comfortable their position would be to sleep in and encouraged them to actively think about comfort and sleep when repositioning the residents at night. After completing the skills lab, we had the staff fill out another survey to see if our intervention improved their confidence, knowledge, and comfort in repositioning residents. Our intervention was effective, as both the confidence and knowledge levels increased to an average reported level of five on a scale of one to five. When asked if they felt more comfortable turning and repositioning residents on the survey, all staff members reported yes.

Additionally, we implemented a template in the resident's chart to see if repositioning at night disrupted the resident's sleep. We partnered with the head registered nurse to implement the form into five of the residents' charts at the facility on nighttime repositioning schedules. The form was to be completed once per night shift, approximately one hour after the resident was

repositioned. On the form, we asked the nursing assistants to answer three questions, which were: “Is the resident awake?”; “Is the resident restless?”; and “Is the resident in the correct position?”. The form was implemented before our lab intervention, so we collected data regarding the effect of nighttime repositioning on the residents' sleep both before and after educating staff through the skills lab. The staff was strongly committed to completing the template as the template was completed every overnight shift as planned. The sleep template will continue to be used by nursing aides under the supervision of the head registered nurse, despite our departure from the facility. The data we collected is shown below:

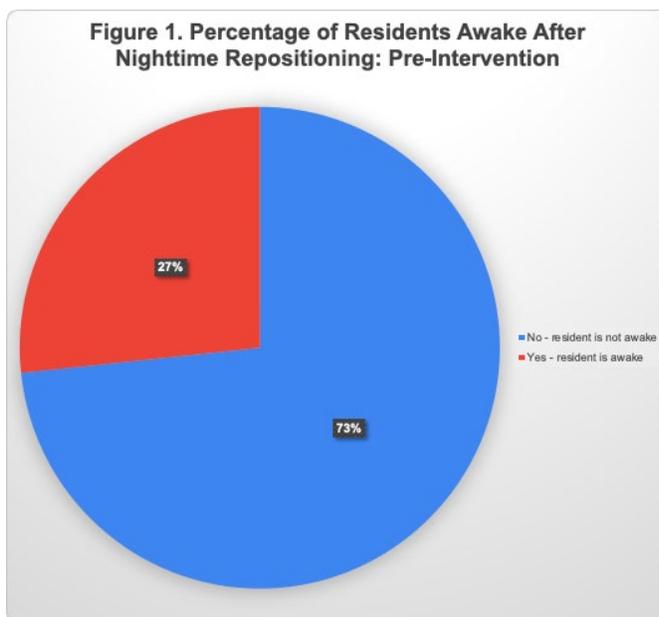


Figure 1. Displays the total percentage of residents who were awake vs. still sleeping one hour after repositioning during the night shift before we implemented our lab to educate staff on nighttime repositioning and sleep. Each of the five residents we collected data from is on a nighttime repositioning schedule.

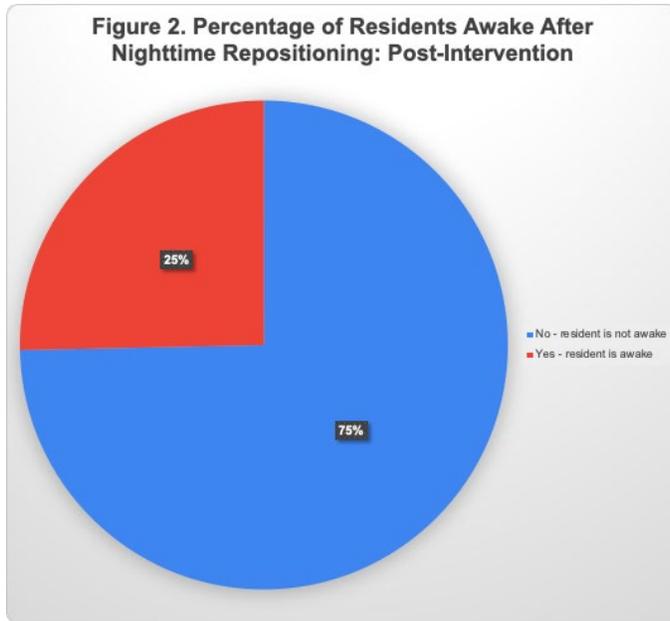


Figure 2. Shows the total percentage of residents who were awake vs. still sleeping one hour after repositioning during the night shift after we implemented our lab to educate staff on nighttime repositioning and sleep. Each of the five residents we collected data from is on a nighttime repositioning schedule.

The data indicated that after implementing the skills lab, the percentage of times the residents were found to be awake approximately one hour after being repositioned was slightly lower than 25% versus 27% before the skills lab. However, it is important to note that our sample size was small, and the number of responses was limited by time and by lack of responses for some residents on certain days.

Dissemination and Evaluation

The target audience of our quality improvement project was the nurses and nursing assistants at the long-term care facility. We noticed that many of the staff participating in our lab seemed to rush through it and did not take their time with repositioning. We have also noticed that many of the staff at the facility seem somewhat resistant to change, as many of the nursing

aides are older, more experienced, and often continue with the same older practices because that is how they have always done it. Since many of the aides have more experience than we have as nursing students, we felt they did not demonstrate the ideal level of readiness to learn. This made it hard for us to properly implement our changes, as our audience was somewhat resistant to change. We worked closely with a few very motivated nursing aides and nurses who seemed committed to the change, which helped keep the rest of the staff motivated. We also had a limited timeframe to implement our plan. We believe we may have had a better outcome if we could have formed relationships with the staff over a more extended period to gain their trust and reach more staff members. We originally planned on studying the frequency of turning and its impact on sleep. However, due to lack of time, lack of literature support, and the ethicality of potentially harming the residents regarding turning and pressure ulcers, we decided to shift our focus towards repositioning techniques and the impact on sleep.

After our lab and survey implementation, we created a poster explaining the findings of our project and providing further education and guidelines for turning and repositioning residents. We placed the poster in the communal breakroom, as we felt that was a place where most staff members would see it. We also created a survey for staff to fill out after reviewing the poster to gauge the poster's effectiveness in providing staff information. The survey asked: "How engaging was this poster on a scale of one to five?"; "True or false, turning and repositioning can affect a resident's sleep"; "After reviewing this poster, rate your understanding of different repositioning techniques on a scale of one to five"; "After reviewing this poster, how comfortable do you feel implementing these techniques on a scale of one to five?"; and "After reviewing this poster, how confident do you feel implementing these techniques on a scale of one to five?". We also included a space at the end of the survey to list any further questions or comments the staff

may have about our poster or project. Overall, we received limited responses to the survey. However, the responses we did receive were positive and indicated the poster was relatively engaging, and our poster aided in the staff's learning.

Our post-lab intervention surveys showed a slight increase in the level of confidence and level of knowledge regarding turning and repositioning. As previously stated, only 36 percent of the staff that responded to our pre-lab survey indicated that they had practiced turning and repositioning techniques prior to working in a nursing home, which is where our lab session came into play. By giving the staff the time and space to practice these techniques, we aimed not only to increase the staff's knowledge and confidence in repositioning and turning residents but also ensure proper techniques were being utilized to maximize the quality of sleep of the residents.

Overall, we feel our plan was relatively effective. Although our plan differed from what we initially thought, we were able to obtain helpful information regarding the residents' sleep, which allowed us to implement changes within the facility. In order to improve the effectiveness of our solution, commitment to change and the wellbeing of the residents must be demonstrated by the facility. Since we cannot be present at the facility in the future to ensure this, we must rely on motivated staff to ensure changes occur. The information regarding our quality improvement project needed to reach all the staff at the facility more effectively. Unfortunately, we struggled with this aspect because we could only be at the LTC site during the day and evening shifts. This left the night shifts to rely on word of mouth from other staff members regarding the crucial information of our quality improvement project, its design, and our goal for the facility.

Conclusion

Through this experience, we've developed insight, skills, and knowledge regarding

quality improvement. We are now familiar with the various aspects involved in quality improvement, such as problem identification, data collection, delegation, solution development, and implementation. Although we only had six weeks to carry out our quality improvement project, we achieved these outcomes and improved the quality of care at the long-term care facility. We will use what we've learned throughout this process to guide quality improvement implementation throughout our nursing careers.

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