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REDUCING ANTIPSYCHOTIC MEDICATIONS IN NURSING HOME RESIDENTS

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The management of dementia is a difficult task in all healthcare settings. Behavioral and psychological symptoms of dementia (BPSD) affect 90% of individuals with dementia. One-third of older individuals living with dementia are regularly prescribed antipsychotic medications to handle dementia-related behaviors. For six decades the FDA has been aware that antipsychotics were being used in nursing homes to sedate residents for BPSD, without dementia being an approved diagnosis. The serious side effects and increased risk of death have led to changes in nursing home policy and regulation. The Centers for Medicare and Medicaid (CMS) teamed up with Federal and State agencies and proposed dementia care planning that involves assessing BPSD and utilizing non-pharmacologic interventions. The primary objective of this project is to determine if educating staff in non-pharmacological management of BPSD will reduce antipsychotic medication use.

Method

This evidence-based quality improvement (QI) project is based on Lewin's Change Theory of unfreezing, moving, and refreezing. Using the PDSA method to move the process forward, a team was established, and a plan of action was developed to reduce the administration of antipsychotics by educating staff in non-pharmacological interventions.

Sixteen nursing staff (n-16) were trained over four days in nonpharmacologic dementia care management. A pre-and-post-assessment questionnaire was conducted. Twenty-two resident participant's medications were reviewed by the Psychiatric Mental Health Nurse Practitioner (PMHNP), and gradual drug reductions (GDRs) were ordered. GDRs are a CMS compliance requirement for nursing homes conducted as standard practice based on the pharmacist recommendations and an important recommendation by CMS in antipsychotic reduction are conducted and documented by the consulting PMHNP. Nursing responses to patients with GDRs who presented with behaviors and antipsychotic dose reductions were reviewed for 30 consecutive days with no new participants and no additional GDRs being conducted.

Findings

The study found that creating an educational training program significantly increased staff knowledge in assessing dementia triggers, and using nonpharmacologic interventions for BPSD. The post-assessment questionnaire demonstrated that 100% of the staff felt they had increased their knowledge, understanding, and comfortability in using non-pharmacological interventions. Out of the 20 resident participants, only one resident did not respond to non-pharmacological strategies as the first line of therapy, requiring a return to the pre-GDR dosing. This demonstrated a 95% reduction in antipsychotic medication dosages in dementia residents exceeding the goal of 50%. Except for the one failed GDR, no new antipsychotic prescriptions were ordered, exceeding the goal of a 45% reduction in antipsychotic prescriptions written.

Conclusion

Numerous studies have examined the impact of antipsychotic medications on the health of nursing home residents with dementia. The consensus among researchers is that administering antipsychotics to dementia patients increases their risk of morbidity and mortality. Nursing staff have traditionally called on physicians and psychiatric providers to prescribe antipsychotic medication because they lack the resources and training to manage BPSD. The Centers for Medicare and Medicaid Services have tightened their requirements related to antipsychotic medication use in nursing homes, making this project critical to the need for change. This facility expressed appreciation for this project and have already begun to implement changes based on federal requirements of gradual drug reductions and recommendations to use nonpharmacologic interventions as the primary measure of intervention for BPSD.

The results of this project emphasize the importance of educating and training nursing staff on nonpharmacological interventions. All staff reported an increase in knowledge and comfortability in implementing nonpharmacologic interventions. Options for staff training and education are being explored by this facility as the interventions used during this project align with the facility's goal of reducing antipsychotic medications, having staff prepared to manage dementia residents by choosing nonpharmacologic intervention as the first line of therapy, and developing new practice guidelines. These guidelines will inform staff in decision-making when caring for residents experiencing dementia-related behaviors.

Reducing Antipsychotic Medications in Nursing Home Residents

A Dissertation

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The Graduate Faculty of Kent State University

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By

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Reducing Antipsychotic Medications in Nursing Home Residents

Approximately 1.4 million older adults live in 25,600 nursing homes in the U.S. (McCain, 2023). Based on these numbers, a third of older persons living with dementia are routinely prescribed antipsychotic medications to manage dementia-related behaviors (McCain, 2023). The primary goal of this project is to determine if educating staff in non-pharmacological management of behaviors and psychological symptoms of dementia will reduce the need for antipsychotic medications.

Several pooled studies and meta-analyses have demonstrated that antipsychotic medications increase the risks of many physiological functions, such as cerebrovascular and cardiovascular disturbances, postural hypotension, walking abnormalities, and higher mortality (Ralph & Espinet, 2018; Schnier et al., 2023; Zhu et al., 2019). These medications, once called major tranquilizers because of their sedative qualities, may momentarily temper behaviors through rapid sedation. They are not curative as they do not eliminate the fundamental thinking disorder. Once administered they arrest behaviors and psychological symptoms of dementia (BPSD), resulting in what is known as a chemical restraint (Robins et al., 2021). In a recent meta-analysis conducted by Ralph et al. (2018), the authors found that the relative risk (RR) of increased all-cause mortality associated with dementia when prescribed antipsychotic drugs was indisputable, citing an overall hazard rate (HR) of 1.8. patients with a dementia diagnosis, who were also prescribed antipsychotics had the greatest risk of death at 78.0% (Kheirbek, 2019). Norgaard et al., (2022) emphasized that the highest mortality occurred between 0-180 days after administration.

Antipsychotic medications have also been linked to increased morbidity. These findings were supported by several other large-scale studies, including Schnier et al., (2023); Anderson (2019); and Norgaard et al., (2022), who also found that antipsychotic drugs were tied to an increased risk of death. Studies also show that the chance of having a stroke is substantially heightened within 2 months of starting antipsychotic therapy (Koponen et al., 2022; Zhu et al., 2019). Since these medications are known to sedate, the risk of dizziness, weakness, and falls are increased, which may result in life-threatening fractures (Wang et al., 2021). Despite available studies and continual warnings regarding the dangers of these drugs in this population, they are prescribed as the primary intervention to target BPSD.

The Center for Medicare & Medicaid Services and the National Partnership to Improve Dementia have made efforts to support a better quality of life for people living with dementia through the use of evidenced-based non-pharmacologic intervention and psychosocial practices (Agency for Health Research and Quality, 2019; CMS, 2023). Patient-centered care practices focus on arresting behaviors and psychological symptoms of dementia by targeting the individual's unmet needs. Non-pharmacologic interventions, which include behavior therapy, validation therapy, psychotherapy, physical exercise, aroma therapy, music therapy, art therapy, reminiscence, and light and multisensory therapies, are commonly accepted first-line practices when managing BPSD today (Cho et al., 2023; Li, 2022).

The aim of this quality improvement project is to determine if training and education of nursing home caregiver staff in the use of nonpharmacological interventions for BPSD in nursing home residents with dementia will limit the administration of antipsychotics.

Background

Dementia is an umbrella for neurocognitive disorders which embodies a progressive neurological process. The most common form is Alzheimer's Disease, often identified by memory deficits and thinking difficulties that impede day-to-day activities. Medications specifically indicated for Dementia are anticholinesterase inhibitors (Donepezil and Rivastigmine) and Memantine (Namenda), which work to prevent the breakdown of acetylcholine, thereby slowing the process of memory loss and increasing levels of chemical messengers that aid memory, language, and decision making (Colovic et al., 2013, 2023). According to Alzheimer's Society (2024), approximately 50% of residents living in nursing homes are diagnosed with dementia or severe memory disorder that is directly associated with BPSD. While the FDA has approved antipsychotic medications for the treatment of schizophrenia, psychosis, delusional disorders, bipolar disorders, and unresolved serious depression, to date, the FDA has not approved any specific medications to manage neurocognitive symptoms of dementia (Khierbek et at., 2019). Many individuals living with dementia in nursing homes are receiving antipsychotic medications without indications approved by FDA or CMS guidelines. This is considered off-label use, in other words, for purposes that the FDA has not deemed approved. While there are many reported side effects, those most often reported were increased sedation

resulting in somnolence, worsening dementia, parkinsonism, unsteady gait, and sudden death due to venous thromboembolic events (Calsolera et al., 2019).

While prescribing antipsychotic medications off-label is neither illegal nor unethical, the using these medications long-term, without proper diagnosis, and as a restraint in patients with dementia remains unauthorized. The FDA has issued a black box warning that manufacturers include on antipsychotic medications. The labeling states that older people with "dementia-related psychosis" are at a higher risk for sudden death (National Academies of Sciences, Engineering, and Medicine, 2022; Root, 2018). In this instance a black box warning has been issued regarding a drug that has never been approved for use. With this understanding, BPSD is a problem where antipsychotic medications are used off-label as a first-line practice in many nursing homes (Kheirbek et al., 2019).

Historical Data

For six decades, the FDA has been aware that antipsychotics were being used in nursing homes to tranquilize residents for BPSD and that these medications had not been approved for a dementia diagnosis (Introcaso, 2018). In 1975 the Senate Special Committee on Aging published documents titled, "Nursing Home Care in the United States: Failure in Public Policy" (Subcommittee on Long-Term care of the Special Committee on Aging, U.S. Senate.gov. 1975). These documents outlined nursing home care dating as far back as the 1950s that demonstrated that nursing home patients were tranquilized to "keep them quiet and make them easier to take care of" (Introcaso, 2018). In 1986, the Institute of Medicine (IOM), produced a report on nursing home quality, citing

the misuse of antipsychotic medications (IOM, 1986). In 2010, according to CMS Chief Medical Officer and Director of Clinical Standards and Quality, Patrick Conway, M.D stated, "A CMS report found that nearly 40% of nursing home residents with dementia were receiving antipsychotic medications with no diagnosis of psychosis" (Centers for Medicare & Medicaid Service, 2012). In 2011, the Department of Health and Human Services found that in 2007, 14% of Medicare nursing home residents had claims for antipsychotic medications of which 83% of these claims were for off-label use or had no clinical indication for use (Office of Inspector General, U.S. Department of Health and Human Services, 2016). As recently as 2023, the US Department of Health and Human Services, through CMS announced new actions to reduce the inappropriate use of antipsychotic medications and bring greater transparency to families when nursing homes receive citations (Centers for Medicare & Medicaid Service, 2023). Increasing evidence supports the reduced use of antipsychotic medications through staff education and training in nonpharmacological interventions (Cloak et. al, 2022; Kim et al., 2017), monitoring protocols, gradual drug reductions, and compliance with clinical practice guidelines (Ballard et. al., 2020; Waykar, et al., 2021).

Problem Statement

The use of antipsychotic medications in dementia residents in nursing homes has been an ongoing concern for decades despite developing research that has shown a detrimental effect on their health, safety, and well-being. CMS has acknowledged serious side effects and increased risks associated with adverse consequences, including increased risk of death among the elderly being prescribed antipsychotic medications

(Office of Inspector General, 2022). Multiple studies likewise have highlighted the use of antipsychotic medications exposing dementia residents to deleterious medication side effects, deterioration of chronic medical conditions, increased risk for falls, increased risk of fractures and head injuries (Wang et al., 2021), causing greater and more rapid cognitive decline, impairs appetite, increases the risk of stroke and sudden death (National Academies of Sciences, 2022; see also Calsolaro, 2019; Kaponen et al., 2019; Kheirbek et al., 2019). Providers continue to use these medications to sedate and arrest BPSD. BPSD displays of unwanted behaviors that present as aggression, agitation, wandering, yelling or crying, fear, care refusal, and inappropriate sexual behaviors. Evidence-based care for managing BPSD involves educating nursing staff in psycho-social nonpharmacological interventions to target specific behaviors, which also includes, assessing for an underlying cause.

CMS developed a National Partnership to Improve Dementia Care after recognizing and acknowledging that the antipsychotic drug use in the nursing home patient population was excessive (CMS, 2012). CMS cited that antipsychotic medications in nursing home residents are only appropriate for residents diagnosed with Tourettes Syndrome, Huntington's Disease, and schizophrenia (CMS, 2020). In an attempt to exert greater restrictions, CMS now requires nursing homes to demonstrate attempted gradual drug reductions of these medications to assure residents are being discontinued routinely (CMS, 2021). The initiative brings tighter safeguards that collectively involve the state and facility, quality programs, increased regulations, citations, delays in reimbursements, and public reporting (CMS 2023). The overarching goal of this quality improvement project is to

train and educate nursing home staff in the use of nonpharmacological interventions for BPSD to decrease the administration of antipsychotic medications.

This quality improvement project aims to provide nursing home caregivers with an evidence-based nonpharmacological training program in the management of BPSD to provide them with the added skills to proactively employ psychosocial interventions when residents display inappropriate behavioral disturbances of dementia that consequently results in the need for antipsychotic medication management. This evidence will assist in establishing new practice protocols for managing behaviors and psychological symptoms of dementia and increase nursing staff education for implementing BPSD strategies.

PICOT

The PICOT question is: Will training and educating nursing home staff in the management of BPSD using nonpharmacological interventions reduce the use of antipsychotic medications within 30 days? The population in this quality improvement project will be the nursing care staff, registered nurses, vocational nurses, medication techs, certified nurse assistants, and activity coordinators. Collectively they provide direct care and management of dementia residents in this skilled nursing facility. The intervention will include evidence-based training in assessing and identifying triggers of BPSD, documenting symptoms, and employing psychosocial behavior-specific non-pharmacological therapies to resolve symptoms.

Comparisons were made by evaluating previous interventions of calling the attending providers for antipsychotic medication orders to sedate residents to stop behaviors with the new strategies of employing psychosocial person-centered

interventions to temper BPSD. This project measured increased staff education in using nonpharmacologic interventions as the primary intervention with a reduced need for antipsychotic use. This was measured from 1) documentation of behavioral triggers and responses to interventions and 2) evidence gathered from pre and post-test assessment evaluation after education and training was completed. Because this project involved employing non-pharmacological strategies to resolve active behaviors, after facility gradual drug reductions, BPSD was anticipated as early as several hours to several days if any at all. The entire project ended after 60 days.

Organizational "Gap" Analysis of Project Site

The CMS, FDA, and gerontology research have all spotlighted the need to limit the unapproved use of antipsychotic medications in patients with dementia due to the deleterious effects on their medical and mental status (Simmons et al., 2017). In this large skilled nursing facility, physicians and practitioners continued to prescribe antipsychotic medications as a first-line measure when patients exhibited behaviors and psychological symptoms of dementia. When faced with a resident who exhibits unwanted behaviors, nursing staff would call providers and physicians requesting medication assistance to target behaviors. Research has deemed administering an antipsychotic to control behaviors as employing a chemical restraint (National Consumer Voice, n.d.; Robins et al., 2021).

Facility administrators are given the responsibility of assuring the safety and welfare of all nursing home residents and monitoring the provision of safe and effective care maintenance and prevention. While this facility has a complex population, there are less

than 10 residents with serious mental illness, although all have some comorbid medical or mental health concerns.

Approximately 68% of the residents in this facility had a dementia diagnosis and all were treated with one or more psychotropic, antipsychotic, or anticonvulsant medications, yet there were no protocols or guidelines in place that recommended management of BPSD or when to call for pharmacological management. The previous practice in this facility represented the organizational gap in practice. While this facility did not have a protocol for managing BPSD, non-pharmacologic approaches to care have become a major focus in skilled nursing home settings as these care practices emphasize the unique needs and preferences of the individual, rather than the disease state, with the hopes of improving life quality and care satisfaction. The facility stakeholders acknowledged this concern and understood the need for change and attempted to comply with CMS-required gradual drug reductions of psychotropic medications routinely (CMS, 2023). The education and training of staff to manage behaviors using nonpharmacologic interventions was missing.

Collectively this prompted the PICOT question: Will increasing staff education and training in the management of BPSD, reduce the need for antipsychotic medications in this population?

To change the behavioral patterns of calling providers for medication management, multiple large-scale studies were reviewed as these studies had explored the effectiveness of nonpharmacological strategies which focused on staff education in psychosocial nonpharmacological strategies to manage BPSD. Increasing evidence demonstrated that

the inappropriate use of antipsychotics could be reduced when nursing staff are trained to manage behaviors and when protocols are in place to ensure compliance with practice guidelines. This was also the recommendation of the Omnibus Budget Reconciliation Act (OBRA) of 1987 (Gurvich et al., 2000), which also focused on standards of care for nursing home settings. These standards included the training of nursing care staff and protecting nursing home residents from medically unnecessary chemical restraints.

Review of the Literature

A review of the literature was conducted to synthesize the evidence to support increasing nursing care staff education in the management of BPSD using nonpharmacological intervention to reduce antipsychotic medication administration in dementia residents. A search of the literature was done using CINAHL and collaborative databases, Google Scholar, MEDLINE, OVID, PubMed, and PsycInfo. The following keywords were used: Dementia, antipsychotics, dementia training, nursing homes, GDR, BPSD, nonpharmacological, and CMS. The search was primarily focused on the last 5 years, between 2018 and 2023, but to compare and demonstrate a historical trend, older articles were included. There were 140 articles found and 52 were used.

Dementia is a progressive disease that affects all aspects of cognitive functioning, impacting over six and a half million people older than 65 living in the United States (Alzheimer's Society, 2023). All studies show that the disease process is progressive over time resulting in a 90% chance of developing behaviors and psychological symptoms. Dementia behavioral symptoms include agitation and aggression, fluctuating sleep patterns, depression, anxiety, and disinhibition (Phan et al., 2019). The severity of the

symptoms varies among individuals and can result in worsening morbidity and increased chance of death (Phan et al., 2019). One of the most disturbing behavioral changes is acute physical aggression. This behavior presents challenges for most nursing home staff because it can lead to harm to the individual, nursing staff, and other residents (Tija et al., 2017).

Clinical Practice Guidelines Limit Antipsychotic Use

In December 2015, The American Psychological Association (APA) Board of Trustees approved the APA Practice Guideline Writing Group's "Practice Guideline on the Use of Antipsychotics to Treatment Agitation or Psychosis in Patients with Dementia," (Reus et.al., 2016). The guideline sought is to bring balance to prescribing practices and improve ways to intervene when managing dementia patients who exhibit extreme bouts of agitation and were unable to be re-directed. The guidelines did not take into account or give focus to the management of those with serious mental illnesses such as schizophrenia spectrums or bipolar disorders but maintained the primary focus on care management of those with dementia receiving off-label antipsychotic medication therapy. Clinical Practice Guideline Statement 8 held significant importance as this guideline recommends that consideration be given when dosing, ensuring that the antipsychotic medications when used in the presence of extreme, dangerous agitation, is started at the minimum effective dosage. If titration becomes necessary, the same process is recommended (Reus et.al., 2016).

Some experts argue that antipsychotic drugs can be of benefit to those with dementia in the presence of extreme aggressive agitation and during acute psychotic

episodes as this can prevent the individual from causing harm to self or others and minimize the burden upon the nursing staff (Reus, et.al., 2016). The boxed warning on these medications issued by the FDA signifies the dangers they present to the dementia patient population (Phan, 2019; Introcaso, 2018), and has cautioned providers to re-evaluate their treatment plans. This further supports the need for clinical practice guidelines in the U.S. for the ordering and administration of antipsychotic medicines by healthcare providers and nursing home care staff to those living in nursing homes with dementia.

Adverse Effects of Antipsychotics

Studies show that there are few dementia patients who display behaviors and psychological symptoms that cannot be managed with nonpharmacologic interventions (Holmkjaek et al., 2022; Kalisch et al., 2020; Rashid et al., 2022). The decision to use a chemical restraint continues even after warnings (Rashid et al., 2022) of worsening morbidity such as advancing diabetes and other metabolic concerns, hyperlipidemia, fractures from falls, and worsening cognitive decline (Horvitz-Lennon et al., 2021). Large-scale meta-analyses and clinical trials not only support the modest efficacy in managing BPSD, but these studies also raise concerns about the safety of these agents causing an increased risk of cerebrovascular events (e.g., ischemic stroke), extrapyramidal symptoms (EPS), ventricular arrhythmias, and sudden cardiac death (Boot, 2023; see also Calsolaro, 2019; Kaponen et al., Phan, et al., 2019; Rubino, 2020). The increased risk of mortality, which led to FDA-mandated black box warnings on atypical antipsychotics as far back as

2005 and on conventional antipsychotics in 2008 (Rubino, 2020), cannot continue to be overlooked.

Current Trends in Long Term Care

Despite guidelines and growing concerns, current research continues to show an alarming number of nursing homes still support antipsychotic use, with approximately 50.2% of nursing home residents with dementia currently prescribed antipsychotic medications (Ma et al., 2022; Machado-Duque et al., 2021; Rosenthal et al., 2022). Several studies pointed out that The National Partnership to Improve Dementia Care in Nursing Homes created by the Centers for Medicare and Medicaid Services was due to the wide usage of antipsychotics and the evident high mortality risk (CMS, 2023; see also Crystal et al., 2020; Rosenthal et al., 2022; Schultz et al., 2018). The primary aim of the partnership was a 15% reduction in antipsychotic drug usage (Shaw et al, n.d.). The original launch in 2012 demonstrated that changes can be made regarding prescribing practices but is multifactorial for maintaining the change, which includes education, staff availability, specifically registered nurses, provider collaboration, and leadership support. (CMS, 2022; Crystal et al., 2020; Rosenthal et al, 2022). CMS has updated the goals for this program.

Education and Staff Development Training

Older practices in nursing home dementia care included a workforce with little or no formal preparation in dementia as a diagnosis or care management as a public health issue. Currently there remains a need for standardized training to prepare nursing staff to assess and recognize the needs of the dementia patient and to adequately intervene. To support a nonpharmacological culture, all clinical staff, not just the attending psychiatric

providers and psychologists must understand current regulations and practices that impact daily responsibility and patient quality of life. Instituting an educational and training program for nurses and nursing assistants during orientation to learn current dementia practice guidelines, what symptoms to look for in dementia diagnoses, and what behaviors might be problematic for the patient, other residents, and staff members will not only demonstrate high care standards but move the facility towards compliance with CMS recommendations. Educating nursing staff on assessment strategies and how to intervene with person-centered nonpharmacologic therapies specific to behaviors will also establish realistic expectations for how much improvement or symptom relief might be expected (Bontrager & Figlerski, 2019).

According to Alzheimer's Association (2024), there are 23 states that now require education and training of nursing staff in the care and management of dementia residents. (CDC, 2024); (Alzheimer's Association, n.d.). Currently the National Partnership to Improving Dementia Care is recommending not only training programs that include educating nursing staff in non-pharmacological measures but establishing a person-centered planning process that begins with an assessment of behavioral symptoms (CMS, 2023; Substance Abuse and Mental Health Services, 2023).

With this understanding, the literature search sought out publications that addressed the implementation of educational training programs offered to nursing staff who routinely care for dementia residents. Recent randomized controlled trials and systematic reviews supported implementing programs to educate staff in nonpharmacological interventions to manage unwanted behaviors to redirect the focus of

the dementia resident and increase the quality of life. The WHELD (Well-being and Health for People Living with Dementia) study, one of the largest randomized controlled trials conducted over five years, found that people living with dementia experienced an improved quality of life and a decrease in BPSD (Ballard et al., 2020; Ballard et al., 2018).

The Staff Training in Assisted Living Residences (STAR) intervention demonstrated significantly reduced levels of affective and behavioral distress (Karlin et al., 2020; Teri et al., 2005). All publications of staff training demonstrated increased knowledge and awareness in the management of dementia residents with behavioral disturbances, provided structured training, and supported intervention for care staff, while dementia residents showed an improved quality of life, and a reduction in agitation and BPSD (Ballard et al., 2020, 2018; see also O'Donnell et.al., 2022; Shaw, et al., 2018; Teri et al., 2005; Van't Leven et al., 2019; Wang et al., 2017).

Carrier et al (2023) conducted a systematic review to address the gap in many studies related to staff management of dementia related behaviors. The study identified ten categories of staff training which included: 1) Structured Protocols, 2) Person-centered care/Psychosocial, 3) communication techniques, 4) staff training for Assisted Living, 5) case conference, 6) concept mapping, 7) emotionally oriented approaches, 8) medication review of antipsychotics, 9) managing agitation and raising the quality of life, and 10) the appropriate use of restraints. Based on the categories of interventions, establishing standardized practices and guidelines, implementing patient-centered nonpharmacologic interventions, and establishing proper modes of communication between caregiver and patients were critical. See Appendix H.

Carrier (2023) found that training in structured protocols which includes cognitive stimulation therapies or group activities showed an impressive reduction in BPSDs, resulting in reduced agitation, as well as, depression and anxiety, ultimately improving mood. This indicates that when nursing staff are prepared with established guidelines, managing BPSDs becomes an easier process, making the process very sustainable. Training staff in the use of Psychosocial/Patient-centered care also showed consistent improvement in BPSD by reducing patient agitation, aggressive behaviors, anxiety, and verbal agitation such as yelling, crying, and other mood disturbances. Other studies that assessed person-centered psychosocial care and interventions reported an overall reduction in patient agitation and frustration, as well as a decrease in staff distress (Ballard et al., 2020; Karlin et al., 2020).

Communication was also shown to be critical to the management of BPSD. Training in communication techniques when managing the care of dementia patients with BPSD was found to positively impact relationships between patients and staff resulting in positive patient outcomes (Carrier, 2023). Training staff in the use of positive tone and communication processes was found to increase resident compliance, prevent care refusals and resistance, and positively support the chances that residents will be more re-directable. It is recommended that nursing staff receive communication technique training to effectively improve their approach and style when communicating with patients with BPSD.

This project holds the assumption that increased staff education in the management of BPSD will reduce the need to control behaviors with antipsychotic

substances. The goal is to equip nursing home clinical staff with the knowledge to manage dementia behaviors through understanding behavior-specific non-pharmacologic interventions specific to behavior to enable them to use these therapies as a first-line measure. By educating staff, the aim is to reduce the administration of prescribed antipsychotic drugs and promote a more effective means to manage behaviors.

Evidence-Based Practice: Verification of Chosen Option

This scholarly project used '*The FOCUS Plan, Do, Study, Act*' quality improvement process. This systematic process expedites testing and enhances learning for continual improvement of a service or process. Commonly known as the Deming Cycle or Wheel, this is an iterative four-stage model used for problem-solving or carrying out the change in this project (PDSA, 2023). This improvement process involves identifying a goal, developing a theory, and establishing a plan (PDSA, 2023). Metrics are defined and a plan is moved into action.

During the planning phase, the stakeholders involved in this project were identified as well as the why, when, how, where, and what questions were discussed. The *Do* phase is where activities occur that will lead to the reduction of inappropriate antipsychotic medications being administered to dementia residents in nursing homes as a result of 1) staff training in the management of BPSD, 2) facility routine gradual drug reduction based on pharmacy recommendations, 3) assessment of behaviors exhibited, 4) implementation of non-pharmacological measures, and 5) documenting patient response to non-pharmacological measures as behaviors are managed or administration of medication.

The *Study* phase is where the strategies implemented are monitored by the project leader. This includes chart reviews, data gathered daily from the Triggers Assessment Form on patient behaviors, assuring that learned skills during training are implemented, examining the interventions used, and monitoring patient response to the interventions. The *Study* phase also includes assessing staff attitudes about the effects of the process on patient outcomes, and staff understanding of changes in protocols and evaluating systems. The final phase is *Act*. This closes the cycle and initiates a process of disseminating findings and integrating the learning from this project into practice as a practice change for this facility.

Theoretical Framework/Evidence-Based Practice Model

This evidence-based quality improvement (QI) project is based on Lewin's Change Theory which describes three stages in the change process known as: unfreezing – moving to a new level or change – refreezing model, where prior learning is rejected and replaced (Petiprin, 2020).

In this QI project, unfreezing involves creating a sense of urgency that staff is educated in the management of BPSD due to immediate changes in CMS regulations and targeted audits being conducted by the Department of Health and Human Services (CMS, 2023). Critical to the process at this stage is alerting nursing staff to why change is important and increasing their enthusiasm for receiving a change in the way of working or managing a situation. During the unfreezing stage, the staff is able to see the importance of their role in the change process. The nursing staff is drawn into the process and informed about the current practice problem, and the specific dangers involved in inappropriate

antipsychotic administration are highlighted. This stage also entails the active collaborative process with the project leader, nursing staff, and stakeholders in the facility. The motivation for the practice change is discussed and goals are identified and clarified. Unfreezing expedites changes by nudging the staff towards a position that will result in the desired change (Petiprin, 2020). By identifying the motivating factors that move one's behaviors away from the current practices, the stage of unfreezing is accomplished (Petiprin, 2020).

The second stage mediates a change in behaviors, feelings, or thoughts about the issue of change, also called movement to a new level or movement (Petiprin, 2020). In this phase the team is moved into action, and each person begins to fulfill assigned roles. Training of nursing staff takes place by the Project leader with assistance from the nurse educator. Chart reviews are done by the project leader and GDRs, which are standard practice based on pharmacy recommendations and an important recommendation by CMS in antipsychotic reduction are conducted and documented by the consulting PMHNP. Nursing care staff will begin implementing nonpharmacological interventions for behaviors as a first-line strategy and documenting resident responses to treatment. Data recordings of GDRs and data collection related to exhibited or not exhibited behaviors are evaluated and documented. It is during this phase there is a decrease in those factors that limit processes from moving from the state of comfortability. This is the state of doing things the way they have always done them, what was considered equilibrium (Petiprin, 2020). This phase exemplifies change happening, where those involved in the change begin to learn new behaviors, processes, and ways of thinking.

The last process of Lewin's change theory, known as refreezing, deals with those involved in the change moving from a transitory state to what is commonly known as a state of equilibrium. It is in this phase that those involved accept or begin to internalize the change as the new way of working. Lewin recognized this final stage as vital to the process because it involves reinforcing the training as a first line, documenting the behaviors and actions taken, and stabilizing and solidifying the new process for the management of BPSD (Petiprin, 2020). The change is now established as the way of doing things. This produces a new habit where the new process becomes the standard operating procedure. In this last stage, efforts are made to lock in the change or reinforce it so that it becomes a part of the organization's culture. Without the final stage of refreezing, it becomes very easy for staff to return to the old way of doing things.

Goals, Objectives and Expected Outcomes

This improvement project was influenced by the framework put forth by the Institute of Medicine which highlighted the following six targets for improving healthcare systems: patient-centered, safe, efficient, effective, equitable, and timely (IOM, 2022). The primary objectives of this improvement project were:

1. By the end of this improvement project, 75% of nursing home care staff will be able to identify and document behaviors and psychological symptoms of dementia and employ patient-centered nonpharmacological interventions for these behaviors, as evidenced by the pre-test and post-test evaluation and daily documentation on the Behavior Assessment form.

2. By the end of this project, there will be a demonstrated reduction in antipsychotic medication dosages by 50% in dementia residents to comply with CMS recommendations of reducing the inappropriate use of antipsychotic medications as evidenced by documented GDR and instituting behaviors specific to nonpharmacologic measures.
3. Within 30 days, there will be a 45% reduction in antipsychotic medications prescribed for BPSD by the PMHNP/APRN as evidenced by new practice protocols to institute psychosocial measures as first-line strategies for BPSD.

Educating nursing staff in the management of nursing home residents with dementia is a recommendation from the Institute of Medicine (IOM) which is congruent with the goals of this DNP project. A primary aspect of this project involves training nursing staff to manage BPSD by intervening with nonpharmacological measures as a first-line strategy. Included in the IOM initiatives were recommendations that a national effort be enacted to improve geriatric care training in all health care providers. (Institute of Medicine, 1986, 2009). The expected outcomes of this project are the development of 1) a quality improvement process that promotes patient safety by avoiding harmful inappropriate medication administration, 2) to implementation of a patient-centered approach to care through employing psychosocial interventions that are evidence-based as a first-line measure for BPSD, and 3) education of nursing staff to assess, recognize, and proactively intervene to manage BPSD, 4) aligning the SNF with CMS recommendations to avoid fines and payment delays by adhering to compliance measures set forth by the National Partnership to Improve Dementia Care in Nursing Homes.

Project Design

This project was conducted in a rural community's 120-bed skilled nursing (LTC) health and rehabilitation facility. This facility is primarily for skilled nursing but also provides post-hospitalization services, such as wound care, physical therapy (PT), occupational therapy (TO), and other rehabilitative services. This project employed a method known as rapid cycle process improvement.

Rapid cycle process improvement was developed to speed up the process of improvement by keeping the focus on the targeted improvement activities, which were to identify, implement, and measure changes made to improve a process or a system (Hampton et al., 2014). This project demonstrated how this facility implemented training processes to manage BPSD instead of the routine use of antipsychotic medications to control dementia-related behaviors. The PMHNP also performed gradual drug reductions of antipsychotic medications at the start of this project based on routine pharmacy recommendations to achieve compliance with federal requirements.

Plan-Do-Study-Act

The Plan–Do–Study–Act (PDSA) Quality Improvement design and popular strategy that originated as far back as the 1920's when the concept of PDSA was first referenced by Walter Andrew Shewhart (Best & Neuhauser, 2006). Known by most as the father of statistical quality control and the Shewhart cycle. He was also a statistician, engineer, and an American physicist. He is known to have described the first three steps to the concept of PDSA in his 1939 works (Best & Neuhauser, 2006). Having been mentored by Shewhart, Dr. William Edward Demings further developed the process modifying the original

Shewhart Cycle into a four-step process that today has become known as the PDSA cycle (Deming, n.d.). Hospital Corporation of America has further established the PSDA process as an improvement strategy to be used in healthcare to improve processes and quality (Abuzied, 2023; Deming, 2024).

The PDSA methodology was a simplistic iterative process that was used to demonstrate how a change can occur through a methodical process over a short period of time and how those changes can be monitored while they are happening. Each PDSA cycle focuses on what is revealed during the phases of planning, doing, and studying the processes (Abusied, 2023). This model aligned well with this project as the PDSA model involved developing an interprofessional team, collecting data through assessing, documenting, and intervening and studying that data from assessment forms (Abusied, 2023).

Implementation of the PDSA Model

After the team understood the improvements needed, interventions were established, and the Plan-Do-Study-Act cycle (PDSA cycle) was used to move the process forward. Fundamental to the PDSA design is understanding that adjustments in nursing care practices are processes that can be decided upon as a team and tried out initially in a more limited scope. If the changes prove wholesome, with positive patient outcomes, the process can be repeated on a broader scope to determine if the same or similar results are obtained (Abusied, 2023).

P – Plan Implementation of Interventions/Improvements

The first step of the PDSA cycle involved developing a dedicated team and then recognizing and implementing a plan of action. The aim of the team was to change the current facility practices of medicating patients with antipsychotics but assessing their needs and applying nonpharmacologic interventions.

The Team

The LTC facility established a cohesive team of healthcare providers within the facility to develop an Antipsychotic Reduction Team (ART). The ART included the Administrator of the facility, Advanced Practice Registered Nurse (APRN), Director of Nursing, MDS Coordinator, Activities Director, Nursing Educator, (2) Nurse Managers, Consulting Pharmacist, and Consulting Psychiatric Mental Health Nurse Practitioner (PMHNP). ART developed the following pertinent questions to reconcile Centers for Medicare/Medicaid Services guidelines for reducing the use of antipsychotic medications in Dementia residents: (1) What was ART seeking to achieve? (2) How did the team know that the change was an improvement? (3) What change did ART make that resulted in an improvement?

The Centers for Medicare/Medicaid Services (CMS) created a prototype Quality Assurance Process Improvement (QAPI) initiative, that required nursing home facilities in the United States to implement comprehensive QAPI programs that highlighted areas of care that could be improved with plans for interventions and indicators of quality of care, patient and staff satisfaction, and patient care outcomes. (Health, 2017). Mandating requirements of QAPI in nursing homes and CMS increasing it's oversight of inappropriate

antipsychotic use in nursing home dementia patients, this project was able to establish key stakeholders that (1) understood the nature of the current problem and (2) stakeholders that had a vested interest as they are actively involved in the care process and working towards the same goal. A need for change was first communicated to the Consulting PMHNP by the MDS Coordinator who also received notices from the Consulting Pharmacist, that gradual reductions needed to be done as a result of alerts and notifications about these requirements by CMS.

During multiple meetings with the Administrator, MDS Coordinator, PMHNP, DON, and APRN, armed with data collected from Pharmacy Consults, orders written by PMHNP and APRN, including past data from the electronic health record (EHR), a picture was presented that described the current situation and processes as they are currently working. It was determined that patients with BPSD were ordered antipsychotic medications to target those behaviors. There was no immediate requirement to employ psychosocial interventions as a first-line measure. It was thought that some staff did attempt to redirect these patients as they waited for psycho-pharmacotherapy to be initiated. It was also confirmed that some patients were admitted from the emergency department to the facility already having started these medications and from home by primary care providers, in some cases, without supporting diagnosis or with inappropriate diagnosis. Contact information was exchanged, a primary contact person was determined to maintain open communication. With this information, a strategic plan was developed to prepare staff to employ nonpharmacological intervention in BPSD to determine if

increased staff training in BPSD would result in a reduced need for antipsychotic medications in dementia residents.

D –Do Implementation of Interventions/Improvements

In the DO phase of the PDSA model, the team members instituted all aspects of activities planned in the previous phase. The activities included steps to move the project forward. Nursing staff was be given four (4) 50-minute- training sessions in dementia care and non-pharmacologically responsive techniques. These classes occurred consecutively over 4 days.

The Psychiatric Nurse Practitioner conducted CMS-recommended gradual drug reductions on 22 residents based on the pharmacist's recommendation and the provider's decision during the last day of nursing staff training. No new patients were added to the project during the project period with additional pharmacy recommendations. The data collection processes began as the patient prompted the need for assessment of BPSD. Nursing care staff responded to BPSDs by first assessing for symptoms and intervening using learned techniques. Interventions were employed, and responses to treatment were documented to determine if symptoms were resolved or medications were needed.

Staff education was pertinent in the management of BPSD to prepare them to employ evidence-based psychosocial non-pharmacological interventions as a first-line strategy and target unwanted behaviors of dementia. The project leader conducted the staff training, with the Nurse Educator and PMHNP present. The training was based on CMS recommendations and "The American Psychiatric Association Practice Guideline on the Use of Antipsychotics to Treat Agitation or Psychosis in Patients With Dementia."

Data Collection

Data collection included only what was needed to complete this project, such as diagnosis of dementia, antipsychotic prescribed, length of time on the antipsychotic, triggers, interventions, responses to intervention, and need for medication. The data was documented daily on all three (3) shifts. Documentation was collected by the Project Leader on Tuesdays and Thursdays weekly. When no behavioral changes occurred, the GDR was documented as successful. When behaviors occurred, the behaviors were assessed, and the interventions was instituted. The data collection process lasted for 30 days and was concluded.

S –Study the Results of the Implementation

In this quantitative research project, the standards for data collection were adapted from The American Psychiatric Association Practice Guideline on the Use of Antipsychotics to Treat Agitation or Psychosis in Patients With Dementia (Reus et al., 2016) and CMS Guidelines. Both guidelines recommend that antipsychotic medications only be used when the dementia person is an immediate danger/risk to themselves or others and where all other methods have been tried and failed. If they are used, these medications should only be prescribed for a short period, no longer than 6-12 weeks (Reus et al., 2016; NICE, 2018, 2023; CMS, 2022).

A thorough examination of patient responses related to data collection from all three (3) shifts were evaluated. Documents were collected weekly and examined. The Antipsychotic Triggers Assessment Form (TAF) included:

a. Assessment of possible causes of agitation and distress. This will include both psychological and physiological stressors
b. Psychosocial nonpharmacological intervention used
c. Patient response to intervention (Problem resolved or medication needed)
d. Medication given if any, and unusual events or occurrences

A TAF was added to each participant's chart daily to document any behaviors that occurred, assessment of those behaviors, interventions performed, and the patient's response to interventions. The TAF also included whether the behaviors were resolved with non-pharmacological interventions or if medications were required. This document proved to be very helpful because, at a glance, one could easily determine any occurrences that a participant exhibited over a 24-hour period. The Nurse Educator daily collected these forms from the participant's charts and delivered them to the DON's office, where they were kept in a locked box. The project leader later collected the TAF on Tuesdays and Thursdays weekly.

In addition to the TAF, there were pre- and post-assessment forms that were used before and after the four day education and training sessions. The Pre-assessment form sought to determine by way of self-assessment the nursing and auxiliary staff's perceived knowledge related to the management and care of dementia residents and the use of non-pharmacological interventions when responding to behaviors and psychological symptoms of dementia. The pre-assessment questionnaire had eight questions, with two questions requiring two answers that were fill-in-the-blank. The post-assessment

questionnaire was identical to the pre-assessment questionnaire. The results were compared to determine if staff perceived an increase in knowledge after training.

A –Act to Hold the Gain and Continue Improvement

In this phase, the Project Leader summarized what was learned from the planning session, study processes, data collected and evaluation. After careful analysis, this information was communicated to the team, which included the Administrator, PMHNP and APRN, Director of Nurses, and the Unit Managers. It was decided without question that implementing this practice change to educate and train staff in the management of dementia-related behaviors was critical to reducing their use of antipsychotic drugs. They are considering their approach to moving forward with this process as well as developing some protocols for staff to follow before calling a Provider requesting drug therapy. The purpose of the A-Act step is to determine if the change is implemented, also described as an "act to hold the gains and continue improvement" (Abuzied, 2023). The change then becomes the new standard of practice while observing for ongoing positive outcomes (Abuzied, 2023).

Project Site and Population

This DNP scholarly project was completed in a 120-bed skilled nursing (LTC) skilled nursing health and rehabilitation facility in a rural community. This facility is primarily for skilled nursing but also supports the needs post-hospitalization for those in rehabilitation requiring wound care services, physical therapy (PT), occupational therapy (OT), and other outpatient services. The facility has two wings, North and South. There are no differences in the two wings as both house dementia residents. There is a large dining hall, gym, and

common areas, and there are multiple outside patios to accommodate the residents. The facility is located within a community with approximately 4,784 persons, of which 94% of the residents are Caucasian (Data USA, 2024). This facility was chosen because of the large dementia population and because the facility administration recognized a practice concern and requested assistance.

The population in this nursing health and rehabilitation center are reflective of the demographics in this community, but residents are also transferred in from many locations. At the start of data collection, the SNF is at capacity with 114 patients of which 78 residents having a dementia diagnosis. While all residents in the facility do not have dementia, all have some comorbid medical diagnosis. The participants included 23 residents with a diagnosis of dementia who are 64 years or older. This age was chosen to expedite the recruitment process. Participants are included if they are taking at least one antipsychotic medication for behavior and psychological symptoms of dementia. These behaviors include wandering, crying, yelling, combativeness, angry outbursts, and inappropriate sexual behaviors. Other emotionally reactive behaviors not listed may also be included as well. Excluded from this project were residents with Tourette's Syndrome, Huntington's Disease, or serious mental illness such as schizophrenia, bipolar disorder, or schizoaffective disorder. No identifying data was collected from the residents at this facility.

The key individuals involved in this project, commonly known as the Antipsychotic Reduction Team (ART) were a part of the strategic planning committee. They are the Administrator, DON, Nurse Educator, MDS Coordinator, Nurse Managers (3), Pharmacist,

PMHNP, APRN, Project Leader (the author), and permanent members of the nursing staff (RNs, LVNs, and CNAs).

Staff training included only staff members, of which the three unit managers and the nurse educator became champions to encourage sticktoitiveness with other staff members. The initial plan was to have nursing staff as champions but due to life circumstances. The PMHNP and the APRN are the primary Providers who prescribe medications for this facility. The PMHNP is the primary prescriber of antipsychotic medications since she is the psychiatric specialist. Only the physician and APRN will prescribe when called by staff.

Given the acuity level of the patients in this facility, there is an immediate need for a quality improvement process that will change the current practice of administering antipsychotic medications as a first-line measure for BPSD. Due to the lack of educational training in the management of BPSD, nursing staff has come to expect providers to prescribe medications for behavioral disturbances. This QI project sheds light on how nursing care staff respond to employing nonpharmacological measures, how providers respond if they are contacted by nursing staff for antipsychotic meds, and how the resident responds to psychosocial patient-centered strategies of care.

Setting facilitators and barriers.

A major resource was the unwavering support from key individuals. These individuals already mentioned have created a solid core of clinical leadership in which to facilitate, encourage, and promote changes in this quality improvement process. Prior to conducting research on antipsychotic use in dementia nursing home residents, the

Administrator broached the subject of reducing antipsychotic medications and wondered how this might be done in his facility. Having a facility already eager to align with CMS guidelines is a resource. The Director of Nursing and her team of Nurse Managers offered immediate support and planned assistance in all manners to promote this project. The PMHNP also agreed to dedicate their efforts towards this project since the prescribing of antipsychotic medications within the facility primarily comes through her, and the GDR of these medications was done by the Psychiatric Practitioner. This is a standard recommendation of CMS that had been long overlooked in this facility in the past. The developments of this project enabled strong collaborative efforts between the APRN, PMHNP, and Pharmacist, all of whom are directly involved and responsible for tracking and monitoring the use of antipsychotic medications.

Other measures that may facilitate this project include the facility's willingness to provide at no cost to the clinical staff, dedicated training and education in interventions for behavior and psychological symptoms of dementia (BPSD) in collaboration with the Nurse Educator, Activities Coordinator, PMHNP, and Project Leader. Finally, this project may influence a clinical practice change that CMS has deemed “a significant health problem”. This change may influence the facility's Star Quality Rating, which is a system used to rate facility performance based on three types of performance measures: health inspections rating, nursing home staffing levels, and resident-level quality measures (CMS, 2023)

Barriers to the reduction of antipsychotic medications and the implementation of nonpharmacological measures include insufficient skill mix and poor staffing practices, as well as limited dementia management knowledge. While some of the staff came with no

dementia management experience, all staff encountered by this Project Leader were eager to learn and participate in the work of this Project. Nurses who manage the care of dementia residents are vital to the success of reducing antipsychotic medications because they are first to encounter behaviors and are positioned to use psychosocial measures to understand the nature of the patient's distress.

The state in which the facility is located does not have minimum staffing requirements for nursing homes (Lindsey, 2022). On a typical day in this facility, there are 30 patients to 2 nurses from 7 am to 11 am, and 60 patients from 11 am to 7 pm with 3 nurses until 3 am. For each shift, there are 3-4 CNAs also staffed. These types of staffing ratios have presented challenges in nursing homes for decades resulting in a lack of immediate response time, increased falls, and increased BPSD (Harrington, et al., 2020). The staffing patterns during this project followed the norm for this facility and were as anticipated. The difference in the staff was the positive attitude and staff morale. The direct care staff appeared to be more engaged as they were included in the project, and their performance was integral to the success of the project. They wanted to participate.

Travel and agency staff are invaluable during staffing shortages. Like many nursing homes, the turnover rate is often higher with greater burnout. This facility also employs travel and agency staff to ensure adequate staffing. This could be a potential barrier as travel and agency staff may not be trained in dementia care. There were no staffing issues during this project that required travel or agency staff, and none were trained for this project.

Another potential barrier would have been a lack of interest from staff members, which could have hindered the smooth progress of the project. The nursing staff-maintained enthusiasm and were actively involved.

Implementation Plan/Procedures

The first step in the implementation plan was to educate key staff on dementia-related behaviors and psychological symptoms to prepare them to employ evidence-based psychosocial non-pharmacological interventions as a first-line strategy to target unwanted behaviors of dementia. The staff training was done primarily by the Project Leader, and the Nurse Educator was present at all classes to assist and understand the expectations to enforce them during the implementation. There were four classes conducted over four days in 50-minute sessions.

Day 1 – CMS Requirements for Antipsychotic Medication in Dementia Patients. This class highlighted CMS requirements when using antipsychotic medications, how they should be used, when use is considered appropriate, as well as how continued inappropriate use may impact the resident and the facility.

Day 2 –Behavioral and Psychological Symptoms of Dementia (BPSD). This class focused on the dementia patient, types of dementia, common and uncommon behaviors, as well as the common causes of aggressive agitation and Inappropriate Sexual Behaviors (ISB).

Day 3—Antipsychotic Medications. This class discussed antipsychotic medications, including those commonly used, dosages, side effects, and behaviors

and activities worsened by their use. We also began discussions about interventions.

Day 4—This last class included learning assessment techniques and identifying BPSD with planned implementation strategies. The Project Leader educated staff on specific interventions for specific behaviors adapted from the American Psychological Association Guidelines for Dementia and CMS Guidelines. All interventions were evidence-based to assist with BPSD.

After staff training, there was a brief time of questions and answers, and then the post-training assessment test was taken to determine the level of understanding in being able to implement interventions and recognize symptoms with an understanding of Dementia. The following day after training, the nursing staff began the following:

1) Assessing for physiological stressors, including pain, hunger, being too cold or warm, or being soiled or wet/soiled. Physiological stressors result in patient behaviors such as crying, moaning, trying to get up, anxiety, and emotional reactions
    a) When physiological stressors occurred, nursing staff were prompt to utilize the Triggers Assessment Form (TAF) to document these behaviors.
    b) Attempts were made to correct the offending problem by using a non-pharmacological intervention
    c) After attempting an intervention, nursing staff would document/check off the trigger, document the intervention used, and the patient's response to the nonpharmacological therapy.

2) Assessing for emotional/psychological stressors (boredom, missing family, fear, anxiety, depression, delusional/hallucination, ISB, loneliness, language barrier, lack of privacy, overstimulated, needing to lie down or get up)
    a) If emotional or psychological stressors occurred, nursing staff again were prompted to document on the TAF (Triggers Assessment Form)
    b) Intervene using evidence-based nonpharmacological strategies.
    c) Document the intervention and patient's response to therapies

The Psychiatric Nurse Practitioner's Intervention

The PMHNP conducted a systematic review of all pharmacy consults for the current period to determine GDR of antipsychotic medications. Gradual drug reductions are a standard practice protocol requirement enacted by CMS as a result of the National Partnership to reduce these medications. The afternoon after the last training session, pharmacy consult documents were reviewed. The pharmacy consultation document includes a suggested dose reduction of antipsychotic medication to half its original dose, the patient's diagnosis for which the medication was prescribed, and how long the patient had been taking the medication without a gradual drug reduction. The PMHNP ordered the dose reduction on 22 residents and the GDR went into effect the following morning. This marked the first day of interventions and data collections.

There were originally 30 resident participants who planned to undergo GDRs. At the start of the project the census only provided 22 resident participants to include in the study as opposed to the anticipated 30. Some patients had already undergone GDRs and were weaned, decreasing the number of available residents. The final number of patients

included in this project was 22 patients. Twenty-two patients were assessed by the Psychiatric Nurse Practitioner and determined appropriate for gradual drug reductions. While GDR's are a common practice protocol in nursing homes, Providers can decline the reduction if they feel it is not in the patient's best interest and wait for a later time. The unit managers placed A Triggers Assessment Form on every patient's chart to allow easy access for documenting behavior and interventions. On day one, the Project Leader remained available at the facility for questions, encouragement, and to clarify any nonpharmacologic interventions.

On day two of the project period, one patient expired. The expiration was unrelated to this project. On day five, another patient's family refused the GDR, stating that the GDR failed during the last attempt. On day six, one patient became agitated and physically violent. A single attempt was made to redirect the behavior, and when the attempt was unsuccessful, this patient was returned to the original dose of medication prior to the GDR. After these adjustments, only twenty patients were included in this project through the 30-day completion.

Data Collection

The data collected was analyzed by the project leader, noting that antipsychotics were reduced on the last day of the educational training session. This means the first day of the gradual drug reduction is aligned with the beginning of the project collection period, with nursing staff documenting behavioral symptoms exhibited by the residents. As nursing staff responded to behaviors, they assessed for possible causes of the behaviors and then instituted nonpharmacological measures to target those behaviors. Data related

to the occurrence was documented on the Triggers Assessment Form (TAF). Every morning, a new TAF was placed on the chart, and the unit managers removed and collected the old form. The completed TAF was stored in the Director of Nurses office in a designated collection box purchased by the project leader. Visits were made to the facility on Tuesdays and Thursdays to monitor and assess progress and to collect completed Trigger assessment forms from the DON, as well as answer any questions that came up over the week.

The TAF documentation included:

a. Assessment data identified possible causes of agitation and distress. This included
b. both psychological and physiological stressors
c. Psychosocial nonpharmacological intervention used
d. Patient response to intervention and whether the problem was solved.
e. Unusual events or occurrences such as those already listed related to family declination of GDR,
f. failed GDR, and expiration.
g. Was antipsychotic medication used or not used

During the 30-day collection period, the nursing staff monitored for any behaviors and psychological symptoms of dementia after gradual drug reductions. When the patient exhibited BPSD, psychosocial measures were used. There were no patient falls or injuries during this project period and agitation was able to be resolved with symptoms relieved for all patients except one. While not monitoring for calls to Providers, the PMHNP realized that calls regarding medications for behaviors reduced to 5 during the project period.

These calls were related to one patient with extreme agitation who failed the GDR and another who declined the GDR.

When BPSD occurred, responses to interventions were documented on the TAF along with any other pertinent data. Patients with no behaviors for the 30 days could potentially be further reduced after the project period at the next GDR interval. The patients only received one GDR and responses were documented for the 30-day project period. Responses to nonpharmacologic interventions support a practice change and assist in establishing new protocols in this nursing home facility. The patient data collection process occurred over 30 days and then stopped. Data was also collected from staff related to past training and experience in the management of dementia residents, knowledge of antipsychotic medication side effects, and the use of nonpharmacological interventions.

Measurement Instruments

The effectiveness and value of this quality improvement project was measured by three types of data collection forms, which were approved by the facility Administrator and DON.

The Pre-Training Baseline Assessment form was used to record responses from nursing staff participants before the training program. The test included eight questions that measured knowledge related to dementia, antipsychotic medication, and managing behaviors and psychological symptoms of dementia (Appendix B). Responses to these questions reinforced anticipated needs for training and gave the Project leader insight related to the level of current knowledge prior to implementing the program.

The Post-Training Assessment test (Appendix C) presented an opportunity for nursing care staff to reflect on and connect with their perceived competency in the management and care of dementia residents after completion of the educational training series. This self-assessment form, like the Pre-Training form, it has 8 assessment questions measured on a Likert Scale to indicate the highest level of understanding of concepts and processes being 5 points or the lowest level of understanding and knowledge acquired being 1 point. There were also two questions that required staff to fill in the blanks using their own words to answer the question.

Another form was designed to measure the behavioral symptoms of dementia exhibited by residents. The Triggers Assessment Form provided the staff with a 24-hour checklist as a progress note to document assessed triggers, BPSD, nonpharmacological interventions, and outcomes of interventions. The outcomes of interventions documented that behaviors were resolved, or medications were given (Appendix D). The development of this instrument evolved from the literature review and was influenced by multiple discussions with the facility stakeholders that guided the usability of the form. The use of the Triggers Assessment Form with implementing the PDSA process remained in use for 30 days following the last dementia training session.

Data Analysis

The data was analyzed by reviewing the pre-assessment questionnaires and plotting out the answers on a spreadsheet. The same method was used for the post-assessment assessment. The pre-intervention data was then compared to the post-intervention data.

Table 1

Demographics for study participants in the pre-assessment survey

Variable	Number (N=16)	Percent
Job Title		
Activity Coordinator (AC)	2	12.5
Certified Nurse Assistant (CNA)	2	12.5
Director of Nursing/RN (DON)	1	6.3
Human Resources/Nurse Aide (NA)	1	6.3
License Vocational Nurse (LVN)	5	31.3
Nurse Aide (NA)	3	18.8
Nurse Practitioner (NP)	1	6.3
Registered Nurse (RN)	1	6.3
Ever been trained		
Yes	12	75.0
No	4	25.0

Table 2

Results of paired t-tests of sample analysis for knowledgeability and comfort (pre & post)

Question	Mean (SD)	Mean Change	p-value
Q1 Knowledgeable in recognizing signs and symptoms of dementia		1.13	<0.001
Pre-intervention	3.56 (0.81)		
Post-intervention	4.69 (0.48)		
Q2 Comfortable in knowing what to assess in dementia resident to determine most appropriate non-pharmaceutical intervention		1.56	<0.001
Pre-intervention	2.63 (1.09)		

Question	Mean (SD)	Mean Change	p-value
Post-intervention	4.19 (0.96)		
Q3 Comfortable in providing non-pharmaceutical interventions		1.19	0. 431
Pre-intervention	3.25 (1.24)		
Post-intervention	4.44 (2.39)		
Q4 knowledgeable with administering antipsychotic medications within guidelines		0.44	<0.001
Pre-intervention	2.06 (2.11)		
Post-intervention	2.50 (2.39)		
Q6 Comfortable with answering questions during annual DoH surveys		1.31	0.001
Pre-intervention	2.13 (1.15)		
Post-intervention	3.44 (1.26)		
Q7 Knowledgeable in identifying possible adverse effects of antipsychotic drugs in dementia residents		1.50	<0.001
Pre-intervention	2.31 (1.01)		
Post-intervention	3.81 (0.91)		

Table 3

Results of paired sample analysis for quantity of practice guidelines and adverse effects (pre & post)

Question	Result from pre- to post-intervention (n)			
	Increased by 1	Increased by 2	Stayed the same	p-value
Q5 Number of practice guidelines related to antipsychotic medication use in dementia residents in nursing homes listed	11	2	3	<0.001
Q8 Number of adverse effects recognized by CMS/FDA related to antipsychotic use in dementia residents living in nursing homes listed	6	4	6	0.004

Patient Data

- Twenty patients total over 30 days
- Number of days with interventions required ranged from 0 to 20
- Percentage of days requiring intervention ranged from 0% to 66.7%
- Overall percentage of days requiring intervention was 26.8% (145 days / 542 days at risk)
- One patient expired, one patient family refused GDR, and one patient required increased medication back to original dose (failed GDR)

There were 16 staff members (N-16) who attended the educational training series as demonstrated in Table 1. Based on the pre-assessment data, it was found that out of the total nursing staff in the training series, 12 staff members had received dementia training, while 4 staff had none. This indicated that 75% of the nursing staff in the training group had prior exposure to dementia training, while 25% had not.

After the training series, the post-assessment data showed remarkable results. All participants perceived themselves to have been trained, and all demonstrated improved knowledge in dementia management. They were able to use nonpharmacologic interventions when dealing with patients who exhibited behaviors. This is a significant improvement, as nonpharmacologic interventions are considered to be a safer and more effective way of managing BPSD. The staff also reported feeling more confident in managing BPSD and were able to recognize behaviors that required assessment for interventions. This is also a positive outcome as dementia patients require specialized care and this training has equipped them to provide more efficient care and management.

The post-training assessment also indicated that training staff in nonpharmacological strategies to manage dementia-related behaviors increased, the use of psychosocial strategies, and decreased the use of antipsychotic medications. This is a noteworthy development as 100% of staff reported improved knowledge in being able to identify and document behaviors and psychological symptoms of dementia as well as employ patient-centered nonpharmacological strategies. Antipsychotic medications come with several side effects, and the use of nonpharmacological interventions is safer and more effective.

Nursing assistants (NAs) who received the training expressed feeling more confident in working with dementia residents. This outcome is worth mentioning as the NAs play a crucial role in care management. They are responsible for providing daily care and support to the patients, and their confidence in managing these patients is essential for providing quality care.

Two LVNs mentioned previous difficulties and appreciated being taught techniques for managing dementia patients with non-pharmacological strategies. They believed these techniques were useful in managing dementia patients with behaviors. This indicates that the training has not only helped improve the staff's knowledge but has also equipped them with practical skills that they can use in their daily work.

Table 2 shows the data collected from pre- and post-assessment questionnaires. The answers were analyzed by using a paired t-test. We conducted a paired sample analysis to assess the relationship between knowledge and comfort using pre- and post-assessment data. The paired t-test evaluated the mean difference for dependent

measures, testing the mean difference = 0 using a type 1 error (alpha) of 0.05. When performing a statistical analysis, we often test a "null hypothesis," which assumes there is no significant difference between two groups, or two measurements taken at different times. We were interested in analyzing the pre-assessment and post- assessment measures. The P-value measures how likely it is that the null hypothesis is true.

If the P-value is less than 0.05, we can reject the null hypothesis with a 95% level of confidence. This means that we can infer that there is a significant difference between the pre-assessment and post-assessment measures and that the mean difference does not equal 0. In other words, the four-day training series was beneficial in educating the staff to the degree that they felt comfortable managing the behaviors of dementia residents as a first-line measure. Having knowledge of how to manage a restless dementia patient significantly changed the course of action from calling the Provider requesting medication to managing the unwanted behavior.

When the P-value is 0.05 or greater, we fail to reject the null hypothesis. This suggests no statistical difference between the pre-intervention and post-intervention measures, such as the case in question 4 (Q4). In other words, the intervention has not had a statistically significant effect, and any observed differences may be due to chance. For question 4: “If you administer/prescribe medications, how knowledgeable are you about CMS/FDA regulations related to antipsychotic drugs in dementia residents?”

This question had a P-value of 0.143 demonstrating no change between the pre-intervention and post-intervention measures. This score may have resulted as such because all in attendance were not licensed to prescribe medications, as this would be

outside of their scope of practice. The answers to this question would remain the same for both the pre and post-assessment, resulting in a P-value greater than 0.05 and appearing to reject the null hypothesis.

Table 3 focused on questions 5 and question 8, which were fill-in-the-blank and required the care team staff to answer using their own words. The Wilcoxon signed-rank test was used to analyze the data. The Wilcoxon signed-rank test is a solid statistical tool that provides a non-parametric substitute to the paired t-test. It accurately assesses the direction and magnitude of the change between two-time points and is widely used in research and analysis. This non-parametric test is used when data do not fit the assumptions of the parametric test.

For questions 5 and 8, there were two fill-in-the-blank items for each question. They were given 1 point for each correct answer. If both fill-in-the-blank answers were correct for each question, they were given 2 points for question 5 and 2 points for question 8. There were only 3 possible outcomes for questions 5 and 8; either asked, which caused the data to violate the assumption of normality. Note in Table 3 none of the study participants decreased in the number of items listed from pre-to-post-intervention, demonstrating improved knowledge or solidifying what they already knew.

Patient Data

This project was planned with the idea that there would be 30 patients included for gradual drug reductions, 15 patients from the North Unit and 15 patients from the South Unit. On day 4 of the educational training series, patients were reviewed for GDRs by the PMHNP. It was then discovered there were only 22 patients available for inclusion. The

change in the sample size was multifactorial as there were facility and university approval delays, patient discharges, transfers, expirations, and previous GDRs.

Goals and Outcomes

During the project period, nursing staff were trained over four consecutive days in dementia care and management, antipsychotic medications, CMS new regulations and requirements, and assessing and implementing nonpharmacologic interventions. Twelve attendees had some dementia training, and four had no training. The pre-assessment questionnaire was compared to the post-assessment questionnaire, which showed a significant increase in understanding of dementia management. The post-assessment data showed that all participants perceived themselves to have been trained and demonstrated improved knowledge in dementia management. They were also able to use nonpharmacologic interventions when they previously had no knowledge in this area.

Goal #1 which stated: By the end of this improvement project, 75% of nursing home care staff will be able to identify and document behaviors and psychological symptoms of dementia and employ patient-centered nonpharmacological interventions for these behaviors, as evidenced by the pre-assessment and post-assessment questionnaire and daily documentation on the Behavior Assessment Form. The post-assessment questionnaire demonstrated that 100% of those in attendance felt comfortable recognizing signs of dementia, assessing the causes of BPSD, and providing nonpharmacologic interventions. This was significant and demonstrates that the four-day training series was beneficial in educating the staff, as evidenced by results documented on the pre- and post-assessment questionnaire.

During the data collection period of 30 consecutive days, the GDRs of antipsychotic medications began on the first day after the educational training series. Each person included in the project received a dose reduction of antipsychotic medication based on pharmacy recommendations. This was done because the patient had been taking the medications for a period longer than federal guidelines recommend. An adjustment to the lowest possible dose was recommended in attempting to discontinue the medication at a future time. The recommended dosage was suggested by the pharmacy, but the Provider can decide on a different dosage at their discretion. Each GDR was reduced to half of the original dose as per pharmacy request.

During the 30-day project data collection period, on day one the gradual dose reduction of antipsychotic medications was initiated. The PMHNP evaluated the patient to determine if the antipsychotic medications could be safely reduced by 50%. Twenty-three patients were reduced. The nursing staff documented any behaviors exhibited by the patients and accordingly intervened with nonpharmacologic interventions. During the 30-day collection period, on day 2, one patient expired; on day 5, the family member of the patient refused to have the GDR; and on day 6, one patient failed the GDR trial after becoming agitated and was returned to the original pre-GDR dose. This decreased the sample size to 20 patients. All other patients remained at the original reduced antipsychotic dosage of 50% for the 30-day project period. This resulted in a demonstrated reduction in antipsychotic medication dosages of 95% in dementia residents to comply with CMS recommendations. This satisfies goal #2, that by the end of this project, there will be a demonstrated reduction in antipsychotic medication dosages by 50% in dementia

residents to comply with CMS recommendations of reducing the inappropriate use of antipsychotic medications as evidenced by documented GDR and instituting behaviors specific to nonpharmacologic measures. The project started with 22 residents; 1 expired on day 1, while another was removed from the study as family refused the GDR. The study continued with 20 residents. From the twenty residents left to participate in the project, 1failed the GDR and was returned to the original pre-GDR dosage while all others remained the 50% reduction for 30 days. This demonstrates a 95% reduction (19/20) in antipsychotic medication dosages by 50% in dementia residents (Appendix H).

The nursing staff carefully documented the behaviors and psychological symptoms of dementia as they occurred and implemented nonpharmacologic interventions as needed. After gradually decreasing medication doses, there were 145 documented episodes of such behaviors during the 30-day project period. Four patients did not require any interventions after their medications were reduced. The number of behavioral opportunities that required intervention ranged from zero to 20. This included the four patients who had no behaviors and required no interventions and one patient who exhibited the most behaviors, having occurrences of 20 days of behaviors and requiring the most interventions during the 30-day project period. Of the 20 patients who remained in the project over the 30-day period, the percentage of patients that required nonpharmacologic interventions ranged from 0% to 66.7% (20 days out of 30 days). We can further deduce that if there were 600 possible opportunities (20 patients X 30 days) for patients to exhibit behaviors, but there were only 145 occurrences of actual behaviors, then the overall percentage of days requiring interventions was 26.8% (145 days out of 542

days at risk). The days at risk are related to the number of days the patients were on the unit. If they were out of the facility for any reason, or if they expired or were no longer eligible for the program, such as if their family refused or their medication was increased, those days are not counted as being "at risk."

When behaviors were exhibited during this time, staff carefully responded with nonpharmacological interventions. In carrying out these newly learned psychosocial strategies, they were able to significantly reduce all behaviors and psychological symptoms of dementia except one. This required the patient to be returned to the original pre-GDR dose. With the exception of a patient who was restarted on antipsychotic medications, no other antipsychotic medication orders were written during the project period. This outcome exceeded the 3rd stated goal of a 45% reduction in antipsychotic medications prescribed for BPSD by the PMHNP/APRN, as demonstrated by the use of newly learned protocols to institute psychosocial measures as first-line intervention for BPSD.

Cost-Benefit Analysis/Budget

The budget allocated for this project can be found in Appendix F. The project was carried out in a skilled nursing facility as a quality improvement initiative, which included an educational training program. The facility identified a need for change that initially seemed unattainable. The project leader proposed this initiative to the facility's leadership as part of their quality improvement process to minimize costs. Various aspects of leadership supported the process, agreed to participate, and assisted where necessary, which included the DON, Nurse Educator, MDS Coordinator, unit managers, and nursing

staff. A PMHNP who was not an employee of the facility but a consultant helped with medication management. The facility allowed this provider to use the conference room as needed, including printing and copying. The project leader used their own resources, including their personal computer and home printer, while other costs included travel expenses, hours spent creating a PowerPoint educational program, stationery for handouts and documentation forms, and snacks for staff morale. The project was completed within the projected budget.

Timeline

This project spanned a 60-day period, beginning with the education of nursing staff. The training program ran for 4 days, with 50-minute sessions each day. After the training the PMHNP gradually lowered drug dosages based on the pharmacist's recommendations. The project began with 22 patients, but changes in participant numbers occurred due to facility, university, and project delays. The delay in starting this project resulted in the facility having to conduct some gradual dose reductions prior to staff training to comply with federal regulations of conducting GDRs.

At the start of the project implementation period, there were 22 patients available for inclusion in the project. GDRs were conducted after the final training session, and assessments, documentation, and interventions began for BPSD. To document BPSD and non-pharmacological interventions used to resolve dementia-related behaviors, a Triggers Assessment Form was placed on the charts of every patient for 24 hours. The documentation process continued for 30 days. After 30 days of documentation, all forms were collected and analyzed over 2 days. One day was spent with the Project leader and

the DON, sorting and organizing data, while further analysis was conducted by the Project leader. The project aimed to institute non-pharmacologic therapies as the primary intervention for dementia-related behaviors, resulting in reduced antipsychotic drug use. The PDSA model was utilized to support the delivery of care that was safe, timely, efficient, and cost-effective.

Ethical Considerations/Protection of Human Subjects

The Kent State University, International Review Board (IRB) approval was obtained prior to initiating the DNP project. The IRB determined the project to be exempt.

This quality improvement project involved implementing an educational training plan that aimed to positively influence patient care outcomes for this skilled nursing facility, which has become home to dementia residents with and without behavioral disturbances. The strategies used in the project were based on similar studies conducted with larger patient samples. Those findings strongly supported an educational program to promote the reduction of antipsychotic medications by employing non-pharmacological interventions. Nursing staff members were encouraged to participate in this practice change to comply with CMS standards of practice.

Staff who participated in any aspect of this project participated voluntarily and without coercion. Members of the leadership initially presented this Project Leader with an organizational concern related to antipsychotic administration. The leadership was followed up with a proposal to share information through training and education. Realizing the benefits and advantages of training, all staff that attended took a genuine interest and did so at their discretion to prepare for this quality improvement project. There was no

sharing of staff or resident identifiers. There was also no contact with any residents of the facility by the Project Leader. Any contact with participants occurred through the facility staff as the normal course of activities within a workday in a nursing home. There were no additional levels of risk to resident participants in the project than those receiving daily care.

Participant data remained secure by being randomly coded to create identification numbers. All data collection forms with created identification numbers were kept in a secure box in the Director of Nurses' office and only accessible to the project coordinators. Electronic data with any information related to this project remained secure by password protection, with only the project leader having access.

Conclusion

The use of antipsychotics in residents living in nursing homes with dementia is not a new occurrence but has been the focus of national attention off and on since the mid-1980s. While there has been some improvement in this practice, a large body of research demonstrates that these medications continue to be used as the number one resource for BPSD in nursing homes throughout the United States. Changes in practice guidelines have given increased attention to the use of non-pharmacological interventions and a need for skilled nursing facilities to establish standardized training and educational programs in the management of dementia residents. This quality improvement project sought to train and educate nursing home staff with the necessary skills to use nonpharmacological interventions to reduce the need for antipsychotic medications over a 30-day period. The staff was educated using evidence-based practice protocols and trained to assess and

identify triggers of BPSD, document symptoms, and institute psychosocial non-pharmacological therapies to resolve symptoms. When comparing the pre-assessment training survey to the post-training survey, the nursing staff perceived themselves as having an improved knowledge of techniques to manage resident who exhibited BPSD and reported feeling more confident in managing the dementia resident. This was demonstrated as nursing staff began utilizing newly learned techniques to manage BPSD and documenting those strategies. All patient remained at the lowered dose of antipsychotic medications except one. In addition, no new antipsychotics were started on any other patients except the one who failed the GDR.

This project significantly demonstrated the overwhelming need to increase staff education as it relates to strategically providing care for dementia residents with behavioral symptoms using evidenced-based nonpharmacological techniques will substantially reduce the use of antipsychotic medications. Prior to this project the nursing staff was uncertain about the use of strategies for controlling dementia behaviors and psychological symptoms and would call the attending providers for antipsychotic medication orders to sedate residents to stop behaviors. Armed with new strategies of employing psychosocial person-centered interventions to temper behaviors and psychological symptoms of dementia, there were a significant reduction in Provider calls regarding patient behaviors and seeking medication assistant. This was noticed by the PMHNP.

It is essential to implement formal educational training programs to prepare staff to manage BPSD using psychosocial nonpharmacological therapies as this study aligns with

others to demonstrate that staff education in psychosocial interventions in BPSD has proven to reduce agitation, overall decrease the need for pharmacotherapy, enhancing the quality of life (O'Donnell et al., 2022; Shaw et al., 2018; PsychDB, 2024, February 2). This quality improvement project aimed to improve patient care outcomes of those with dementia who exhibit BPSD by educating dementia care providers in the use of psychosocial nonpharmacological interventions to target behaviors associated with dementia.

The goals established for were exceeded and demonstrated that reducing antipsychotic drug through educating nursing staff in psychosocial nonpharmacologic interventions. This training successfully aided the nursing staff in understanding why dementia residents exhibit certain behaviors and alerted them to therapies that may resolve behavioral symptoms. This study also demonstrated that when nursing staff perceive themselves as equipped with skills to manage the dementia disease process of BPSD, they are more likely to use those skills and not request medication assistance from Physicians and Providers. This project can inform others regarding the dangers of long-term antipsychotic medication use, CMS guidelines and regulations, and the positive impact on both the nursing staff and the dementia resident. This study has successfully moved the nursing home facility to a place of CMS compliance as GDR are being initiated Provider and staff protocols are being developed related to dementia management and antipsychotic medication use.

Having the right team with a blend of educational backgrounds is pertinent to maintaining a strong dementia management program. Moreover, having a leadership team

that is actively involved, promoting staff education and training, and putting in place protocols for staff and Providers and, actively being involved elevates the importance of a dementia management program.

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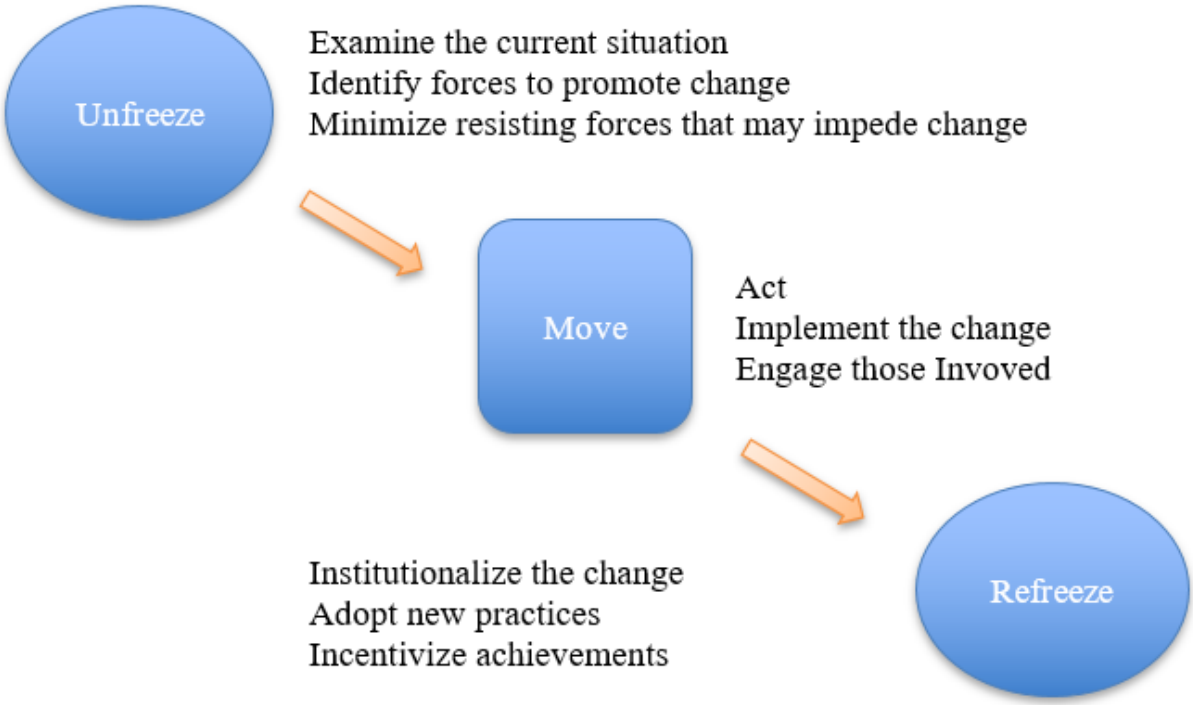
Appendix A

Kurt Lewin's Change Theory



Appendix B

Pre-Training Questionnaire & Evaluation

Your response will provide the best possible need/outcome for educational training.

Rate your level of knowledge from 1 thru 5 (1-least/5-greatest)

Have you ever been trained in the use of nonpharmacological interventions for behaviors and psychological symptoms of dementia?

/ / _Y_E_S_ _/ / _N_O_ _

1. How knowledgeable are you in identifying or recognizing signs and symptoms of **dementia**?

Least Knowledgeable 1 2 3 4 5 Very Knowledgeable

2. How knowledgeable are you in knowing what to assess in the dementia resident to determine the most appropriate non-pharmacological intervention to target a specific Behavior and Psychological Symptom of Dementia (BPSD)?

Least Knowledgeable 1 2 3 4 5 Very Knowledgeable

3. How knowledgeable are you using non-pharmacological interventions with dementia-related behaviors?

Least comfortable 1 2 3 4 5 Very comfortable

4. If you administer/prescribe medications, how knowledgeable are you about CMS/FDA regulations related to antipsychotic drugs in dementia residents?

Least Knowledgeable 1 2 3 4 5 Very Knowledgeable

5. In your own words, please write two (2) practice guidelines related to antipsychotic medication use in dementia residents in nursing homes

1. _____

2. _____

6. How comfortable are you in answering questions from surveyors about using antipsychotic medication with residents?

Least Knowledgeable 1 2 3 4 5 Very Knowledgeable

7. How knowledgeable are you in identifying antipsychotic medication adverse effects of in dementia residents?

Least Knowledgeable 1 2 3 4 5 Very Knowledgeable

8. Please write two (2) adverse effects recognized by CMS/FDA related to antipsychotic use in dementia residents living in nursing homes.

1. _____

2. _____

Appendix C

Post-Training Questionnaire & Evaluation

Your response will provide the best possible need/outcome for educational training.

Rate your level of knowledge from 1 thru 5 (1-least/5-greatest)

Have you ever been trained in the use of nonpharmacological interventions for behaviors and psychological symptoms of dementia?

/ /_Y_E_S_ _/ / _N_O_ _

1. How knowledgeable are you in identifying or recognizing signs and symptoms of **dementia**?

Least Knowledgeable 1 2 3 4 5 Very Knowledgeable

2. How knowledgeable are you in knowing what to assess in the dementia resident to determine the most appropriate non-pharmacological intervention to target a specific Behavior and Psychological Symptom of Dementia (BPSD)?

Least Knowledgeable 1 2 3 4 5 Very Knowledgeable

3. How knowledgeable are you using non-pharmacological interventions with dementia-related behaviors?

Least comfortable 1 2 3 4 5 Very comfortable

4. If you administer/prescribe medications, how knowledgeable are you about CMS/FDA regulations related to antipsychotic drugs in dementia residents?

Least Knowledgeable 1 2 3 4 5 Very Knowledgeable

5. In your own words, please write two (2) practice guidelines related to antipsychotic medication use in dementia residents in nursing homes

1. _____

2. _____

6. How comfortable are you in answering questions from surveyors about using antipsychotic medication with residents?

Least Knowledgeable 1 2 3 4 5 Very Knowledgeable

7. How knowledgeable are you in identifying antipsychotic medication adverse effects of in dementia residents?

Least Knowledgeable 1 2 3 4 5 Very Knowledgeable

8. Please write two (2) adverse effects recognized by CMS/FDA related to antipsychotic use in dementia residents living in nursing homes.

1. _____

2. _____

Appendix D

BPSD Triggers Assessment Form

Patient #													
Med Order/GDR	Appendix D												**Intervention/Medication/Notes**
Day/Evening													
Triggers	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	
Nervousness/anxiety													
Psychosis													
Hunger/Thirst													
angry outburst													
Incontinence													
too cold/warm													
Care refusals													
overstimulation													
Pain													
crying/moaning/yeling													
pacing													
ISB													
Were Nonpharmacological Interventions Used					**YES**	**No**							
Nights													
Triggers	2100	2200	2300	2400	100	200	300	400	500	600	700	800	
Nervousness/anxiety													
Psychosis													
Hunger/Thirst													
angry outburst													
Incontinence													
too cold/warm													
Care refusals													
overstimulation													
Pain													
crying/moaning/yeling													
Pacing													
ISB													
Were Nonpharmacological Interventions Used					**Yes**	**No**							

Appendix E

Cost Analysis/Budget

Project Period: 30 Days

Expenses	Amount (USD)	Rationale
Project Leader Travel Expense Time for training	689.00 volunteer	Facility is 106 miles round trip; based on estimate of 8-10 visits
Stationary/pens	48.00	Forms created for Triggers Assessment, Pre/Post Assessment Documentation purposes
Powerpoint creation	680.00	Educational training material for staff
Collection Box	22.00	Box for data collected in DONs office
Food/snacks/Starbucks	270.00	Snacks for staff Coffee Administrator and DON PMHNP/APRN Lunch
Total	1709.00	

Appendix F

Project Timeline

Activities	September 2023			October 2023				November 2023					December 2023				January 2924				February 2024		
Weeks/Month	1	2	3	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3
Submission of Proposal to Ethics Committee for Approval	X																						
Week 1 Training CMS Guidelines Project Leader				X																			
Week 2 Training Understanding Dementia Project Leader					X																		
Week 3 Training Antipsychotic Meds Project Leader						X																	
Week 4 Training BPSD Interventions Documentation Formpatientss Project leader							X																
Recuitment of Subjects (PMHNP)							X																
Asessment/ data collections begin								X	X	X	X	X											
Project Leader Facility Visit								X		X		X				X							
Study Phase Begins Data Analysis														X	X								
Act Phase Disseminate Data																X							
Presentation of Final Paper and Editiing																	X	X	X	X	X		

Appendix G

The Effects of Staff training in the use of nonpharmacologic interventions

Structured Protocol	
McCabe et al 2015	↓ agitation
Pieper et al., 2016	↓ag, BPSD, dep
Ballard et al., 2020	↓ag, BPSD,
O'Donnell et al, 2022	↓ BPSD, anxiety
Lapane, 2018	↓ apathy
Burley et al., 2022, PsychDB, 2023	↓ag, BPSD, dep
Person Centered	
Karlin, 2020	↓ BPSD, agitation
Martini de Oliveira et a., 2015	↓ aggressivity
Li et al., 2022	↓agitation, dep
PsychDB, 2023	↓ BPSD, agitation
Communication	
Burley et al., 2022,	↓ apathy, dep
PsychDB, 2023	↓anxiety dep
DaSilva Serelli et al., 2017	↓ BPSD
Goyder et al., 2012	↓ BPSD, dep
Nugyen et a., 2019	↓ dep, care resist

Appendix H

Twenty-three gradual drug reductions in effect on the first day

Medications	Pre-GDR Dose	Post-GDR Dose	
2 Seroquel	50mg	25mg	
4 Seroquel	25mg	12.5mg	
1 Seroquel	50mgQAM/100mgQHS	25mg/50mg	Failed
1 Seroquel	75mgQAM/100mgQHS	37.5mg/50mg	
1 Seroquel	25mg TID	12.5mg TID	
1 Seroquel	25mg	12.5mg	Expired
3 Olanzapine	5mg	2.5mg	
1 Olanzapine	15mg	7.5mg	
1 Olanzapine	5mgQAM/10mgQHS	2.5mg/5mg	
2 Risperidone	0.25mg	0.125mg	
1 Risperidone	1.5mg BID	0.75mg BID	
1 Risperidone	1mgQAM/1.5mgQHS	0.5mg/0.75mg	Declined
2 Abilify	2 mg	1 mg	
1Abilify	2mgQAM/5mgQHS	1mg/2.5mg	
1 Lamotrigine	25mgQAM/50QHS	12.5mg/25mg	