

NON-PHARMACOLOGICAL INTERVENTION TO REDUCE RESPONSIVE  
BEHAVIOURS IN SENIORS WITH DEMENTIA AT AN ASSISTED LIVING FACILITY IN  
CALGARY, ALBERTA

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Bachelor of Nursing, University of Lethbridge, 2021

A project submitted  
in partial fulfillment of the requirements for the degree of

MASTER OF NURSING

Faculty of Health Science  
University of Lethbridge  
LETHBRIDGE, ALBERTA, CANADA

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Date of Project Presentation: July 10, 2025

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## ABSTRACT

Responsive behaviours such as agitation, aggression, hitting, and wandering among seniors with dementia present ongoing challenges for healthcare staff. Comprehensive training in non-pharmacological interventions (NPIs), particularly music and physical exercise, is essential for providing high-quality care. While pharmacological approaches remain common, they pose risks of adverse effects in older adults. In contrast, NPIs offer safer, person-centred strategies that promote meaningful engagement and enhance quality of life. Although NPIs are included in undergraduate nursing education, a significant gap persists between policy mandates and practical application in care settings. Despite organizational policies and mandatory dementia education, implementation of best practices is inconsistent. Standardizing education across academic and workplace programs, with emphasis on tailoring interventions to individual preferences and life history, is critical. A 30-minute education session delivered to staff at Cogir Senior Living McKenzie Towne addressed this gap by connecting theory to practice. Staff reported a deeper understanding of the underlying meanings of responsive behaviours and the role of NPIs in dementia care. These findings highlight the need for ongoing, evidence-based, and standardized training to improve care quality and support the well-being of individuals living with dementia.

*Keywords:* Dementia, Responsive behaviours, Non-pharmacological interventions, Music therapy, Physical exercise, Person-centred care, Staff training

## ACKNOWLEDGEMENTS

This project would not have been possible without the invaluable support of several individuals. I am deeply grateful to my family, especially my husband, Dr. Lucky Braimoh and my children Vami, Vize and Mezzy, for their unwavering encouragement and support. I am also profoundly thankful to my mentors at the University of Lethbridge, whose guidance was instrumental throughout my master's journey. Special thanks to Dr. Wendi Lokanc-Diluzio and Keltie Hamiton for their guidance and support, particularly during the final phase of my master's journey.

Your assistance was crucial in bringing my project to completion. To all my instructors over the years, thank you for your support and the invaluable wisdom shared during our classes. I would also like to thank Donna-Lee Wybert for helping in editing my written project. I would like to express my appreciation to my classmates, who provided constant support throughout this journey. A special acknowledgement goes to Annabelle Lewis, my master's buddy, thank you for all your support. Finally, I am grateful to the management at Cogir Senior Living, Mckenzie Towne for allowing me to implement my project at your site. Your collaboration and support were essential in bringing this project to fruition.

To all who have been a source of encouragement for me, thank you.

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## TABLE OF ABBREVIATIONS

|      |  |
|------|--|
| DOC  | Director of care                       |
| ED   | Executive director                     |
| FDA  | Food and Drug Administration           |
| MT   | Music therapy                          |
| NPI  | Non-Pharmacological Intervention       |
| PI   | Pharmacological Intervention           |
| PLST | Progressively Lowered Stress Threshold |
| RB   | Responsive Behaviours                  |
| REB  | Research Ethics Board                  |
| RT   | Reminiscence therapy                   |

## SECTION 1: INTRODUCTION

### Nursing Practice Problem

Dementia is a disorder affecting hundreds of thousands of Canadians (Alzheimer Society of Canada, 2022). In 2024, the Alzheimer Society of Canada estimated that by the beginning of 2025, 771,939 Canadians would be living with dementia. Worldwide, dementia affects approximately 50 million people, with a predicted increase to 152.8 million by 2050 (Li et al., 2022). Dementia symptoms include the following, all of which contribute to responsive behaviours: inability to recall recent events or personal history, confusion about day/time/place, changes in sleep patterns, increased inappropriate decision-making, difficulties with bowel and bladder control, personality and behaviour changes, increased difficulty communicating, and physical changes (Alzheimer's Association, 2023).

Responsive behaviours (RB) in dementia patients encompass actions, words, or gestures that reflect feelings, needs, or reactions to surroundings—often expressing discomfort, bewilderment, frustration, anxiety, or unfulfilled needs (Dookhy & Daly, 2021). RB include hitting, grabbing, pushing, biting, tearing, being sexually expressive in inappropriate ways, negativism, kicking, pacing, wandering, consuming inappropriate substances, hiding, hoarding, performing repetitive mannerisms, restlessness, and screaming (Dookhy & Daly, 2021). Apart from care providers' obvious challenges in managing these behaviours, RB can also result in longer hospitalization, increased healthcare costs, and mortality, generating severe distress for clients and their families (Li et al., 2022). Recent literature has characterized RB as symptomatic of dementia, but, importantly, as also a response to the environment or unmet needs experienced by the person living with dementia (Alzheimer Society of Canada, 2023).

While a behaviour such as aggression can be distressing for the senior with dementia who is behaving in this way, it is also stressful for their families, frontline staff, organizations, and the healthcare system. To manage such incidents, medications are frequently used, given that their fast-acting effects can quickly calm down behaviour (Dijk et al., 2022, p. 2)—but they provide only temporary behaviour management and may cause side effects such as sedation and increased fall risk. Thus, demands for alternative, evidence-based therapy non-pharmaceutical treatments are on the rise, such as music and exercise that can improve the well-being of seniors with dementia without side effects (Dimitriou et al., 2022). Before administering pharmacological treatment, studies recommend using non-pharmacological interventions (NPIs) as the first line of intervention. Nevertheless, research indicates that they are not always used, despite evidence and information recommending these techniques as the first line of treatment (Dijk et al., 2022, p. 2).

### **Purpose of the Project**

This project had three aims: (a) to increase staff knowledge and understanding of the use of NPIs such as music and exercise; (b) to enhance staff knowledge and understanding of various types of RB exhibited by clients with dementia, such as aggression; and (c) to raise staff awareness and knowledge of dementia care strategies for addressing RB. The overarching intention was to improve the quality of care offered to seniors with dementia, ensuring that it is delivered with respect, dignity, and compassion. To accomplish this, a half-hour NPI education training session was provided for frontline staff working with seniors with dementia. The focus was on managing RB such as aggression in an assisted living facility in Calgary, Alberta.

## SECTION 2: LITERATURE REVIEW

### Search Term and Strategies

The following three guiding questions, based on the context described above, directed the literature search: How effective is the use of NPIs such as music and exercise in managing RB? Are frontline staff knowledgeable about NPIs? What resources are in place to assist in implementation of the NPIs? To locate evidence to answer these questions, I searched various databases (journals, CINAHL, Medline, and PubMed) using the following terms: dementia, non-pharmacological intervention, non-pharmacological therapy, pharmaceutical interventions, RB, aggression, therapy, aggressive behaviours, seniors, older adults, continuing care facilities, assisted living, nursing homes, and education programs. The literature search was restricted to 2021 through 2025, for full-text articles written in English. Below, I discuss the most relevant literature, organized as dementia, pharmacological interventions (PIs), NPIs, the effect on clients, effects on frontline staff, staff training on NPIs, gaps in the literature, and future directions.

A total of 29 articles were reviewed. Articles were included if they met the following criteria: (a) they focused on dementia care, (b) they were relevant to nursing knowledge in dementia care, (c) they were written in English, (d) they were peer-reviewed, (e) they addressed either pharmacological or non-pharmacological interventions for dementia, and (f) they were published between 2021 and 2025. Articles were excluded if they were unrelated to nursing, were not peer-reviewed, or did not specifically focus on non-pharmacological interventions (NPIs) or their outcomes.

## **What is Dementia**

Dementia, the umbrella term for global cognitive decline causing functional impairment, is currently the world's seventh greatest cause of mortality, affecting 55 million people worldwide. In 2019, the anticipated global societal cost of dementia was 1.3 trillion dollars (WHO, 2025). In Canada, total healthcare system costs and out-of-pocket expenses associated with caring for people with dementia total at least \$10.4 billion per year. Notably, dementia is a brain disorder that mostly affects the elderly, caused by damage to or loss of nerve cells and their connections in the brain (Chadborn et al., 2024). Although age is the greatest risk factor for dementia, it is not a normal part of aging (Chouliaras & Brien, 2023). Still, by some estimates, up to half of people aged 85 and older may have Alzheimer's disease, which is the most common cause of dementia. Symptoms depend on the area of the brain that is damaged, with both intensity and symptoms varying from individual to individual. However, symptoms typically include the loss of cognitive abilities such as remembering, thinking, and reasoning. Stages are sometimes referred to as early, mid, and late (Alzheimer Society of Canada, 2024).

The most common types of dementia include Alzheimer's disease, vascular dementia, frontotemporal dementia, and Lewy body dementia. Alzheimer's disease is characterized by the accumulation of abnormal proteins in the brain. Vascular dementia is caused by one or more small strokes that impair blood flow, resulting in brain tissue damage. Parkinson's disease dementia and Lewy body dementia are both linked to abnormal cells called Lewy bodies that grow in the brain stem (Chouliaras & Brien, 2023), but the latter condition involves those cells specifically.

Apart from the use of pharmacological interventions for disease management, NPIs such as exercise, can help those with dementia by releasing adrenalin and producing endorphins, which increased positive affect. It also promotes a healthy appetite, boosts energy levels, and enhances sleep. Walking and swimming are excellent types of exercise, delivering both fresh air and relaxing sensations (Alzheimer Society of Canada, 2024).

### **Responsive Behaviours (RB)**

RB in dementia refers to the actions, words, or feelings expressed by a person suffering from dementia, in response to a circumstance, environment, or unfulfilled need (Dookhy & Daly, 2021). RB have been identified as one of the most disturbing dementia effects for both the individual diagnosed and for their caregivers, including family members and professionals. Examples are pacing, confusion, hitting, yelling, and swearing, and these behaviours can be triggered by environment, interaction with staff, and internal discomfort such as pain or hunger, or they are wet and need to be changed (Margaretha et al., 2022).

Nurses, as frontline healthcare providers, are particularly vulnerable to the RB of patients with dementia. For families, their loved one may become unrecognizable, leading to confusion and difficulty knowing how to interact. For professionals, the challenge lies in the limited ability to improve the patient's condition or lived experience, compounded by frustration over scarce resources and, at times, fear of aggressive behaviours. This makes dementia care a significant concern, highlighting the urgent need for ongoing research to ensure the best possible support and treatment for individuals living with the condition. Often inadequate care for dementia patients, including managing RB, may be due to the lack of nursing expertise. However,

accurately evaluating dementia and managing physical and behavioural symptoms is a means to both reduce patient stress while also improving nurses' caregiver experience (Li et al., 2022).

### **Pharmacological Intervention (PI)**

PIs refer to the use of drugs or medication to treat, manage, or prevent a disease, ailment, or medical condition—but they often have negative side effects. To minimize safety risks, selecting an appropriate treatment for patients with dementia necessitates education and close monitoring. Therefore, a good first line of defence are NPIs since they have no side effects (Dimitriou et al., 2022). For instance, the Food and Drug Administration (FDA) recommended that dementia clients with aggressive behaviours be treated with atypical antipsychotics only after all non-pharmacological measures have been proven to be without benefit. In the case of severe self-harm or harm to others, the FDA also suggests that antipsychotics be discontinued after cessation of behavioural disturbances, as well as for patients who experience side effects from such drugs (Carrarini et al., 2021).

### **Non-Pharmacological Intervention (NPI)**

A wide range of non-pharmacological therapies is commonly used to support dementia clients, aiming to enhance both cognitive and physical functioning. These interventions include cognitive training, engaging activities such as reading, playing chess or card games like canasta, music and art therapy, aromatherapy, reminiscence therapy, as well as physical exercise, both aerobic and strength-based (Sikkens et al., 2021). Various non-pharmacological therapies are often utilized for these patients to support and potentially enhance cognitive and physical functioning: cognitive training and activities like reading, playing chess or canasta, music or art therapy, aromatherapy, reminiscence therapy, and physical exercise, both aerobic and anaerobic

(Margaretha et al., 2022). Therapies should stress understanding individuals' specific needs and establishing an atmosphere that promotes independence while lowering hostile behaviours. Consuming brain-healthy foods like almonds, berries, green leafy vegetables, and fish is also encouraged, as well as following a Mediterranean diet (Wang et al, 2022).

Research into NPIs, such as music and exercise, has shown that they are safe and free from negative side effects. As a result, they offer promising strategies for improving the treatment and management of RB in individuals with dementia. For instance, Dimitriou et al. (2022) found that NPIs can be effective in managing RB when implemented from a nursing perspective. Their study highlighted the importance of staff training and education, structured group activities with residents, and the use of music, exercise, or personalized interventions to address residents' immediate needs. The authors suggest that inadequate dementia care may be partly due to a lack of nursing expertise in applying such interventions. Therefore, increasing frontline staff awareness and understanding of NPIs, particularly music and exercise, can enhance the overall quality of care.

Accurate assessment of dementia and effective management of its physical and behavioural symptoms can reduce stress for patients while also improving the caregiving experience for nurses. When patients feel their needs are being met, they are more comfortable and less distressed. At the same time, caregivers may feel more confident in their skills, less frustrated by patient demands, and better equipped to follow individualized care plans (Li et al., 2022). Despite these promising outcomes, dementia continues to pose significant challenges and requires ongoing research to develop optimal care strategies.

The key to effective NPIs is tailoring them to the individual and taking the time to understand and address any unmet requirements, such as hunger, thirst, discomfort, or the need to use the restroom (Kong et al., 2021). This process helps to build effective frameworks and tools for managing dementia patients in a care setting. The following discussion will explore studies that examine nurses' experiences with NPIs in assisted living settings, with the goal of identifying both what is currently understood and where gaps in knowledge remain. For the purposes of this project, the focus will be on music and exercise as therapeutic tools.

### ***Music Therapy***

Music therapy (MT) is an NPI using musical activities to improve the physical and emotional well-being, cognitive performance, and social connections of seniors with dementia in a care setting. Importantly, music can stimulate memories in dementia patients, despite their impaired cognitive capacity. It also has a relaxing effect that prevents stress levels from surpassing the stress threshold (Isaac et al., 2021). Music has been proven to reduce agitation and hostility, which are common behavioural signs among seniors with dementia.

MT can be supplied in two ways: active music, where patients actively participate by singing, applauding, and dancing; and passive music, where patients simply listen to music. MT helps reduce violent behaviours in people with dementia (Bleibel et al., 2023). For example, playing personalized, chosen music for a patient while they shower has resulted in major improvements in aggressive behaviours such as hitting. Further, music has improved patients' communication with caregivers and enhanced caregiver–resident interactions (Prick et al., 2024).

A study by Wong et al. (2024) found that group music therapies twice a week for six weeks dramatically decreased agitation, including violent behaviours. Additionally, regular

group sessions (e.g., twice or three times per week for 30 minutes) can help elderly people with dementia reduce their agitation, while personalized MT may reduce reliance on psychiatric drugs. Wong et al. (2024) also highlight that personalized MT can elicit positive emotions and memories while decreasing agitation; since the music is familiar and preferred by the patient, it increases engagement and improves treatment outcomes. Clearly, overall, MT improves quality of life for such patients (Lee et al., 2022).

Another important aspect is that music's nonverbal nature provides a low-threshold technique for dementia patients who are unable to express themselves verbally. Care settings frequently use music to enhance the atmosphere and bring pleasure—a practice known as reminiscence therapy. Reminiscence therapy (RT) is a non-pharmacological strategy that entails revisiting past experiences. For example, playing familiar or a resident's favourite song can help trigger positive memories and emotional connection in patients. MT aims to also help people with dementia maintain their abilities, such as playing, singing, and dancing to music. According to Prick et al. (2024), daily MT benefits dementia patients in nursing homes by enhancing well-being, social engagement, and memories of their own residents.

In my presentation to front-line care providers, I taught them how to use music as a tool to minimize aggressive behaviour in seniors with dementia. For example, during the intake assessment, nurses are encouraged to ask family members about the resident's preferred music. Based on this information, individualized music selections can be created and played for specific residents. Music may be used either before or during potentially challenging care tasks, such as bathing or dressing. If a resident begins to show signs of increasing aggression, calming music can be played in the background to help reduce distress. Nurses are also encouraged to use music

proactively, particularly during times when agitation tends to occur—for instance, during the late afternoon or early evening, a period commonly associated with sundowning.

### ***Physical Activity Therapy***

Physical activity is a non-pharmacological strategy that can help people with dementia stay active and enhance their quality of life. Physical activity therapy comprises various activities, including dance, walking, swimming, and drama (Wong et al., 2024). In adults with dementia, such movement can improve and maintain fitness, balance, mobility, and functional ability, thus reducing falls and boosting mental health, sleep, mood, and confidence (Isaac et al., 2021). Physical activities can be customized according to mobility, mental level, and desires (such as aerobic exercise like walking outside and dance therapy), making participation more effective and enjoyable for patients (Wong et al., 2024).

Regular physical activity may improve cognitive function, lower the risk of Alzheimer's disease and other dementias, and even delay its onset or progression. Thus, it also has benefits for those with mild cognitive impairment—which encompasses people with declines in memory, attention, and cognitive functioning beyond what is expected for their age or education level (Freeman et al., 2022). Physical activity has these impacts because it increases levels of neurotransmitters such as serotonin, dopamine, and endorphins, which are associated with mood control and stress reduction. This chemical balance can help with irritation, anxiety, and violence (Cutuli et al., 2023). Of course, exercise has also been shown to improve vascular health by lowering blood pressure, arterial stiffness, oxidative stress, and systemic inflammation and improving endothelial dysfunction, all of which are associated with improved cerebral perfusion (Alzheimer Society of Canada, 2024).

Rahman et al. (2022) stated that aerobic and balancing exercises should be adapted to meet the specific needs and abilities of seniors with dementia. They recommend that patients who are able should engage in aerobic activities, such as dancing or walking outdoors, for 30–40 minutes a day, four days per week. For those who are physically strong and stable, brief walks or targeted movements, such as hand-to-knee touches, shoulder exercises, and knee or leg lifts may be beneficial. Patients with limited mobility can perform standing or seated lower-body exercises for approximately five minutes. Individuals unable to move their lower extremities may instead engage in upper-body exercises, including pushing or pulling with the hands and forward/backward arm extensions. Finally, for patients with severe movement restrictions, relaxation techniques, deep breathing, and gentle stretching can be performed while sitting or reclining.

In my presentation, I emphasized the importance of physical activity for seniors with dementia, explaining how it increases levels of neurotransmitters that are linked to improved mood and reduced agitation. I also discussed how regular physical activity can help decrease anger, anxiety, and restlessness. These strategies can be integrated into care plans to support frontline staff in applying them effectively. Staff were taught to incorporate low-impact exercises such as walking, chair exercises, yoga, and stretching.

### **Impact of NPIs on Clients**

RB in those with dementia have a substantial impact on both the individuals exhibiting them and other residents in care homes, particularly when these behaviours jeopardize safety and security, and when they are frequently interpreted as aggressive. According to Crandall et al. (2022), dementia patients typically experience negative emotions such as perplexity, melancholy,

boredom, and frustration when their needs are not addressed. When clients feel unpleasant emotions, they often engage in self-protective actions that disrupt everyday routines and activities. According to Kong et al. (2021), these disruptions emerge as difficulties participating in group activities, changes in sleep habits, and issues sustaining personal care routines, which in turn cause higher stress and agitation among clients.

Aggressive behaviours also worsen emotional suffering, increase depressive symptoms, and cause social withdrawal in those who engage in them (Kong et al., 2021). Furthermore, these behaviours raise the risk of physical injuries, such as falls, thus necessitating professional supervision. Multiple studies have demonstrated the widespread impact of RB, highlighting the importance of NPIs like music and exercise, among others, to address the emotional and physical well-being of all residents in dementia care facilities. Without these tools, healthcare staff confront substantial difficulty in regulating aggressive response behaviours, which ultimately affects the quality of life and safety for all residents (Kong et al., 2021).

### **Impact of NPIs on Frontline Staff**

Behaviours that undermine protection or safety in dementia care facilities have a substantial influence on frontline staff's ability to provide high-quality care Crandall et al. (2022) pointed out that frontline staff face mental and physical obstacles when caring for aggressive clients. Their study underlines the emotional stress on caregivers, highlighting that rigid adherence to timetables because of caregivers' time pressures might impede their capacity to modify care, making tailored care delivery more difficult.

Managing aggression in dementia patients, which includes striking, kicking, spitting, and verbal violence, causes mental discomfort, exhaustion, and physical harm among healthcare

personnel (Van der Riet et al., 2021). Chadborn et al. (2024) report that nurses frequently face moral discomfort when dealing with the emotional requirements of dementia patients; as such they are demanding supportive surroundings and regular crisis management training. Undoubtedly, adequate training and resources are needed to protect healthcare provider's safety, well-being, and job satisfaction.

### **Summarizing Current and Future NPI Dementia Care Strategies**

Dementia in seniors poses a significant burden for global health and social systems, requiring immediate attention due to its high incidence rate and rapid development. The implications of RB for the healthcare system given the extra demands they place on care providers underscore the importance of effective and creative dementia treatment approaches (Wang et al., 2022). Wong et al. (2024) argue that establishing the concept of NPI and continuing to evolve its services and practices are essential to managing RB in seniors with dementia, in light of the increase in RB. Wong et al. further posits that successfully implementing NPI practices in care settings will need organizational resources as well as leadership to support educational and training initiatives for staff. This will raise front-line staff awareness of NPIs, encourage interdisciplinary cooperation, and provide adequate staff support.

### **Conceptual Framework**

This section presents one model and one theory, clarifying how they can support efforts to reduce RB. These two resources collectively provide a conceptual framework that aligns with and supports the overall goals of the project intervention.

### ***The Progressively Lowered Stress Threshold: Relevance to this Project***

The Progressively Lowered Stress Threshold (PLST) model, developed by Hall and Buckwalter (1987), is a well established model that suggests people with dementia gradually lose their ability to handle stress. When environmental demands or internal stressors reach this threshold, reactive behaviours such as hostility, agitation, or wandering may emerge (Pickering et al., 2022). This conceptual framework validates the idea that RB occurs in response to stress. Senior adults with RB have a heightened awareness of stress and a reduced tolerance for stress, often known as a progressively lowering stress threshold. The gradually decreasing stress threshold is caused by neurocognitive changes in the brain that are linked to cognitive decline and affect a person's ability to receive, analyze, and respond to stressful stimuli (Pickering et al., 2022).

When applied to the PLST model, these internal and environmental elements are thought to influence an individual's increased perception and lower tolerance for stress. Together, heightened perception and decreased tolerance for stress reduce a person's ability to cope with it, resulting in an accumulation of behavioural and psychological symptoms. The PLST approach was created to teach caregivers and care teams about environmental and behavioural changes that can be implemented to lessen environmental stress. It has also been used to assist therapies, including massage, therapeutic touch, and MT, that are aimed at changing sensory-related aspects that influence the stress level of person with dementia (Pickering et al., 2022).

The PLST model supports person-centred dementia treatment. The approach implies that behaviours are influenced by both internal and external inputs, including relationships between residents and the nursing home environment. Dementia clients have trouble with their senses,

which causes their behaviour to alter over time. These changes can be grouped into three stages: normal, worried, and dysfunctional. In the typical stage, people use the cognitive abilities they still have and are usually peaceful when the environment is stable and there are not many demands on them. During the anxious stage, external or internal pressures that exceed the person's ability to cope may cause them to feel restless, irritable, or compelled to pace. When someone is in the dysfunctional stage, they feel overwhelmed, which can cause them to act out, become agitated, or withdraw. They may need help to calm down and feel comfortable again.

Dementia patients exhibit impaired sensory perception, leading to increased stress levels. As neurological damage progresses, an individual's ability to comprehend information from their surroundings decreases, ultimately lowering their stress threshold. Neglecting to address stressors can lead to anxiety and dysfunctional behaviours (Pickering et al., 2022). This model posits that stress-related behaviours have an underlying cause. Caregivers can be trained to address a person's needs and change environmental stressors to reduce behavioural and psychiatric symptoms. Environmental elements such as location, light, noise, and physical space can exacerbate behavioural symptoms in dementia. Research suggests that staff training, environmental adjustments, and person-centred activities can effectively treat behavioural and psychiatric symptoms of dementia (Pickering et al., 2022).

It is noteworthy that individuals with dementia have a decreased ability to recognize feelings and deal with stress, which leads to increased anxiety and dysfunctional behaviours. However, when these behaviours have identifiable causes, symptoms can be effectively addressed with sufficient staff training on the use of NPIs, along with modifying environmental aspects (Isaac et al., 2021). Since seniors with dementia have less capacity to manage their stress,

non-pharmacological therapies such as music and exercise, which lessen environmental and emotional stressors, are critical for preventing or reducing RB. The PLST model supports the premise that changing the environment and caregiver approach might improve stress-related behaviours without using medicine.

### ***Integration of Non-Pharmacological Interventions with the PLST Principles***

A person-centred care plan incorporates PLST-based principles and strategies into daily care. These principles include personalized activities, addressing individual needs, reducing environmental stimulation, and improving staff interactions (Pickering et al., 2022). This model states that people with dementia have a decreasing ability to cope with stress. When stimuli surpass their tolerance, they may demonstrate RB. The NPIs in this project, music and exercise, are designed to help care providers identify, mitigate, and prevent these stresses, thereby lowering the frequency and severity of RB and improving patients' quality of life. For instance, music can soothe and regulate mood, helping lower baseline stress (Isaac et al., 2021). Additionally, nurses can use the PLST model to interpret behavioural patterns. For example, by noting behaviours and signs such as pacing, screaming, and resistance to care that indicate the patient's stress threshold has been exceeded. After the intervention, the nurse can look for decreased frequency and intensity of RB, which point to improved stress management.

This project was implemented to train care providers to identify typical environmental and routine triggers. It focused on the use of direct observation, caregiver input, and assessment techniques in determining each individual's tolerance levels. The intent was to determine which circumstances generate distress and at what point agitation occurs. To this end, this program taught care providers to identify early signs of anxiety, such as fidgeting and facial tension, so

they can respond with calming techniques. This would include using soothing vocal cues, instigating environmental changes such as relocating to a quieter area, and offering comfortable diversions, such as music or low-pressure activities that could be watering plants, playing games, or going for a walk.

### ***Knowles' Adult Learning Theory***

This theory emphasizes the unique characteristics of adult learners and incorporates several concepts that support the creation of learner-centred and effective educational experiences. It suggests that adults bring life experience to their learning and prefer education that is relevant and problem-centred (Abdullah et al., 2021). Thus, this theory provides a useful foundation for developing adult education programs and can be used to assess staff member's competency, knowledge, and readiness to learn.

### ***How To Apply Knowles' Adult Learning Theory Principles***

Knowles outlined four principles related to adult learning. First, individuals must actively participate in the planning and evaluation of their education. In the context of this project, caregivers can be encouraged to take an active role in learning NPIs by identifying strategies that best suit their patients. For example, offer a range of NPIs, such as MT and physical activities, and allow staff to select approaches based on each resident's individual needs. This fosters a sense of ownership in care planning, enhancing engagement and promoting consistent use of NPIs.

Second, learning exercises are based on knowledge, including errors, meaning that it is important to build on caregivers' existing knowledge and experience in managing RB. For example, during training sessions, encourage staff to share past successes and challenges with

dementia patients, and then link new NPIs to these experiences. This approach reinforces learning by connecting new strategies to familiar situations, making them easier to apply in practice.

Third, people are most interested in learning topics that are immediately relevant to their professional or personal lives. It is important to connect NPIs directly to the challenges caregivers encounter with RB. For example, present real-life scenarios of agitation, aggression, or wandering, and demonstrate how specific NPIs, such as MT or structured exercise, can help manage these behaviours. This makes caregivers more motivated to use NPIs, as they can see their immediate impact on improving patient outcomes and reducing workplace stress.

Finally, adult learning is problem-focused rather than content-oriented. Focus NPI training on solving real-world problems rather than solely on theory. For example, use case studies or role-playing exercises where caregivers apply music, exercise, or sensory strategies to calm residents exhibiting RB. Furthermore, encourage staff to assess and adjust interventions based on their effectiveness. This approach promotes critical thinking, flexibility, and practical skills, which are essential in dementia care due to the unpredictability of responses. (Govindaraju, 2021).

### **Educational and Training Programs**

With the rising prevalence of dementia and the increasing number of care facilities serving individuals with various types of the condition, ongoing in-service training and professional development for care providers is essential. This may include regular seminars, presentations, or training sessions on dementia management to support all staff. To this end, organizations should compile relevant resources and facilitate ongoing training on the use NPI to

address RB. Continuous follow-up and consistent implementation of evidence-based strategies, such as NPIs, are necessary to ensure the effectiveness of these training efforts (Kong et al., 2022). Furthermore, research supports and suggests that enhanced staff education and sufficient resources are critical for promoting the adoption and consistent use of NPIs as best practice in the care of individuals with dementia.

## SECTION 3: PROJECT DESCRIPTION

### Context

The project took place at the Mckenzie Towne Retirement Residence in Calgary, Alberta, a facility managed by Cogir Seniors Living that was opened in July 2002. This facility provides a variety of services, such as independent living, private assisted living, supportive living, and two dementia units. Most of the staff hired at the facility are newly recruited nurses and healthcare aides with limited knowledge of dementia care. Cogir Senior Living operates five facilities in Calgary. McKenzie Towne Retirement Residence accommodates 150 residents, with 20 residents each in the Aberdeen and Inverness memory care units.

Complex client behaviours such as agitation, aggression, hitting, and wandering often pose challenges for the staff. Providing quality care to seniors with dementia necessitates comprehensive training on the use of NPI and support initiatives. To address this need, this project focused on enhancing the skills of Cogir Mckenzie Towne Residence frontline staff, such as nurses and healthcare aides, through evidence-based education sessions on NPIs and dementia care strategies for clients exhibiting RB, particularly aggression. The project aimed to increase staff knowledge and understanding of NPIs, enhance staff knowledge and understanding of different RB exhibited by clients with dementia, and raise staff awareness and knowledge of dementia care strategies for addressing RB.

During the month of March of 2025, I had an in-person meeting with the Cogir, Mckenzie Towne Residence executive director (ED) and director of care (DOC) in which we discussed the project's intent, goal, audience, and relevance to practice surrounding NPI for their staff. We agreed that a pilot project education session would be appropriate. It provides an

effective implementation solution, free from organizational constraints. They both gave approval to use the facility theatre and projector and to invite the care staff to attend the training. We agreed to scheduling the educational training on the use of NPIs to reduce RB that would accommodate both day and evening staff: specifically two half-hour sessions on May 30, 2025 (one for day staff and another for evening staff), targeting full-time staff providing care to seniors with dementia.

### **Target Population**

The target population for this project is the front-line staff at Cogir Mckenzie Towne Residence, Calgary. This population includes nurses and healthcare aides. The ED and DOC at Cogir Mckenzie Towne Residence were actively consulted for input on the suggested topic and timing of the training, ensuring alignment with organizational goals and objectives. The educational training specifically targeted frontline staff working in the dementia unit, including nurses and healthcare aides.

### **Ethics Determination**

The Determination of Ethics form was submitted to the University of Alberta Research Ethics Board (REB). Based on the review, it was determined that REB review and ethics approval were not required (see Appendix A). The project was a quality improvement initiative aimed at training staff on NPIs such as music and exercise for addressing RB in seniors with dementia at Cogir Senior Living, Mckenzie Towne, Calgary.

## **Project Implementation, Objectives, and Deliverables**

The project was implemented as outlined in Appendix B. I implemented two 30 minute presentations on how NPIs can address RB. A total of 13 staff participated in the training. The sessions were implemented from 2:00–2:30 pm for day staff and from 3:15–3:45 pm for evening staff. The targeted short-term outcome was to increase staff knowledge about the use of NPIs for RB. The hope was that because of the presentation, personalized and tailored NPI care plans would become standardized and deployed as part of best practices for seniors with dementia living at Cogir. Immediately after the presentation, a post-training feedback form was completed by the staff to evaluate the effectiveness of the presentation.

A PowerPoint presentation (Appendix C) that contained seventeen slides was presented over 30 minutes. Four slides covered general content on NPIs and RBs, and two slides covered two case studies for increased applicability and engagement by frontline staff. A handout containing case studies and scenarios from the presentation was provided for attendees to keep. The case studies featured patient-based scenarios in which frontline staff cared for seniors with dementia. These scenarios helped nurses think critically, engage in relational practice, apply learned knowledge, and reflect on potential biases or knowledge gaps in their own practice (Luo et al., 2023). For example, in one scenario, a frontline staff member attempted to provide oral care to a resident who became aggressive, hitting and spitting on the caregiver. The staff member then played the resident's favourite music, which helped calm the individual and enabled the caregiver to complete the oral care.

The presentation incorporated Knowles' adult learning principles, specifically, the idea that adult learners retain more information when they actively participate and draw from

personal experience. To apply this, I divided the class into small discussion groups where participants shared their own experiences using music or physical activity to manage RB. This allowed for peer-to-peer learning and deeper engagement. Additionally, the session focused on teaching frontline care providers practical, job-related skills directly applicable to real-life situations they may encounter when caring for seniors with dementia. Teaching strategies included role-playing, using the earlier scenario to help participants practice managing challenges such as resistance to oral care.

### **Data Collection and Analysis**

Data collection consisted of a post-presentation evaluation form completed by all participants immediately after the educational training (Appendix D). The feedback form included four questions with a 5-point scale rating (strongly disagree, disagree, neutral, agree and strongly agree), and two open-ended questions, which were used to gauge participants' understanding of the presentation content. I wanted to evaluate the perceived effectiveness of the presentation and identify areas for improvement for future training. Thirteen participants completed the evaluation form.

#### ***Evaluation Question 1***

The first question asked, “As a result of the presentation, I have a clear understanding of the non-pharmacological interventions such as music and exercise.” **Eight staff** (61.5%) circled strongly agree, three staff (23.1%) circled agree and two staff (15.4%) were neutral in their responses.

### ***Evaluation Question 2***

The second question asked, “*The presentation enhanced my knowledge of various responsive behaviours, including aggression.*” Eight staff (61.5%) circled strongly agree, three staff (23.1%) circled agree and two staff (15.4%) were neutral in their responses.

### ***Evaluation Question 3***

The third question asked, “*As a result of the presentation, I feel more confident about implementing music in dementia care.*” Eight staff (61.5%) circled strongly agree that as a result of the presentation, they felt more confident implementing music in dementia care, while three staff (23.1%) circled agree, and two staff (15.4%) responded neutrally.

### ***Evaluation Question 4***

The fourth question asked, “*As a result of this presentation, I feel more confident in implementing physical activities in dementia care.*” Eight staff (61.5%) circled strongly agree that as a result of the presentation, they felt more confident implementing physical activities in seniors with dementia, three staff (23.1%) circled agree, while two staff responded neutrally.

### ***Evaluation Question 5***

The fifth question, which was open ended asked, “*What was something new you learned from this training?*” Two of the participants stated that the music and physical activity videos were very helpful. It was apparent in the video, that a patient who was usually very quiet, became very excited and smiling when listening to one of his favourite songs. Additionally, these participants noted that the scenario and group discussion significantly contributed to their understanding of NPIs in managing RB.

### ***Evaluation Question 6***

The sixth question, also open ended, asked, “*Do you have any feedback or recommendations to help improve future presentations?*” Two participants stated that the presentation was good and had no recommendations. Whereas one participant recommended including more videos, increasing training time, and offering additional training sessions to enhance the learning experience.

The evaluation of the educational training revealed that it largely achieved its primary aims: increasing staff knowledge and understanding of non-pharmacological interventions (NPIs) such as music and exercise; enhancing understanding of various types of responsive behaviours (RB) like aggression; and raising staff confidence in implementing of dementia care strategies to manage such behaviours. The overarching intention was to improve the quality of care offered to seniors with dementia. The training proved effective, but implementing additional improvements could further enhance its impact and ensure all staff feel confident and equipped in their roles. Staff at Cogir Senior Living reported positive learning outcomes, noting increased understanding of NPIs such as music and exercise, as well as RB. They also shared that the project offered new perspectives on caring for residents with dementia.

### **Limitations**

One of the main limitations of this project was the constrained time allocated for training. The 30 minute sessions for both day and evening staff were not enough to cover the broad topics related NPIs aimed at reducing RB in seniors with dementia. The feedback consistently indicated a strong desire for longer and more frequent sessions. This suggests that while the training was beneficial, it did not fully meet the participants’ need for in-depth learning and skill development.

Increasing both the duration and frequency of training sessions is essential for more effective knowledge transfer and skill building.

Another limitation was the narrow focus on a single scenario during the training which may have limited the consideration of the diverse clinical manifestations of RB in dementia. RB can vary widely, and training that encompasses a broader range of scenarios and examples would better prepare staff to handle different situations effectively. Furthermore, while the project effectively addressed staff training on NPIs to reduce RB such as aggression, it did not fully cover the breadth of NPIs and dementia care strategies needed to manage these behaviours comprehensively. The feedback indicated a need for more videos, varied scenarios, and practical strategies with guidance on handling specific situations, particularly related to aggression and RB. Finally, it is important to note that the findings were based on self-reported perceptions rather than direct observation of practice or outcomes.

## SECTION 4: REFLECTION

### Personal Insights

At the start of my master's program, selecting a research topic proved to be one of the most challenging tasks. As an educator responsible for training staff in managing responsive behaviours, I observed that pharmacological interventions (PIs), such as medications, were often used as the first line of treatment. Given the potential side effects of PIs, I frequently questioned why non-pharmacological interventions (NPIs), such as music and exercise, were not prioritized instead. These observations regarding the frequent reliance on PIs to address responsive behaviours (RB) in seniors with dementia ultimately guided my choice of research topic.

For the past three years, I have been passionate about providing optimal care for seniors with dementia, particularly in managing their RB, such as aggression. I focused on the use of NPIs, which laid the groundwork for my project. The knowledge I acquired through various activities in my courses became integral to the development of the project. When I discussed my project topic and implementation process with both my director of care and the executive director at Cogir Senior Living, I faced challenges in finding time to implement the project. I was given one hour total for both day and evening staff. Despite the challenge, I remained focused on my topic. I strongly believed staff should receive training on the use of NPIs, such as music and exercise, to reduce aggression in seniors with dementia.

As a staff educator at Cogir Senior Living, this project not only enhanced my understanding of how to apply NPIs to manage RB, but also strengthened my passion for dementia care. The knowledge gained by the staff is invaluable, as it will be incorporated into their daily practice. I am hopeful that this initiative will bring lasting benefits to our facility.

When I started this project, I did not have a deep understanding of the determination of ethics process. This project helped me to gain significant insights into when a project needs to go through ethical approval versus when it does not. It also provided me with deeper insights into the difference between quality improvement versus research.

Through this project, I learned the importance of prioritization and time management, particularly when balancing competing demands and the project's requirements. I consistently made adjustments based on feedback, logistical challenges, and the evolving needs of the project. I struggled with time management, but my instructor helped me create a workplan with a structured timeline. Effective prioritization and time management proved essential in professional practice, helping me manage unforeseen challenges and keep the project on course.

Putting what I have learned into practice has been an important aspect of my nursing career. This project brings together everything I have learned in my master's program. As an educator at Cogir Senior Living, my job is to create and provide training that helps our staff care for residents with dementia, especially those with RB like aggression. I use real-life situations and video demonstrations in my classes to make learning fun and interactive. I also tell my staff to share their thoughts and experiences, which encourages open communication and learning from one another. This encounter has made me even more sure that education can really transform and improve the quality of care. I am hoping that we can keep improving the care for seniors with dementia by using what I know and giving staff additional opportunities to be more confident, caring, and knowledgeable. The implications for nursing practice and its future trajectory are significant.

## **Implications for Nursing Practice**

Providing care for dementia clients with behaviours such as agitation, aggression, hitting, and wandering presents ongoing challenges for frontline staff. Providing high-quality care to this population requires comprehensive training in NPIs, including music therapy (MT), physical exercise and other supportive strategies. Integrating music and physical exercise supports person-centred care by promoting individualized approaches that reflect each client's preferences and life history. For example, playing music the person has enjoyed in the past or tailoring physical activities to their abilities and interests can enhance engagement and increase the effectiveness of interventions for managing RB and improving overall well-being.

Despite their recognized benefits, NPIs like music and exercise are often underutilized or inconsistently applied in practice. Although these strategies are introduced in nursing undergraduate programs, they are rarely taught through a structured or systematic approach. This inconsistency reflects a broader need to standardize NPI training across both academic curricula and employer-led initiatives. Existing educational gaps are often due to variations in program quality, limited depth of content, and insufficient hands-on experience, all of which are critical to the development of clinical competence. Consequently, even with prior exposure, many staff may feel underprepared to apply NPIs and dementia care strategies effectively in real-world settings.

Nurses and caregivers need to learn how to use NPIs correctly and consistently. This means knowing how to use MT tools, conduct the right exercises, and spot indications of agitation early on. NPIs typically make people feel better, calm them down, and help them talk to one another better. This makes the place better for both staff and residents. As part of routine

care, nurses need to make care plans that incorporate NPIs and keep track of how well they work and how people behave.

### **Future Directions**

Future directions should focus on fostering interdisciplinary collaboration, where staff work closely with other healthcare professionals and residents' families to develop and implement comprehensive care plans for dementia clients. Partnering and collaborating more extensively with existing organizations can enhance the training of staff. Exploring further collaborations can provide additional resources and expertise, leading to a stronger training program. This approach can help in sharing best practices and improving the overall quality of dementia care. Early assessment and planning, initiated before residents' admission, are also crucial for facilitating seamless transitions into care facilities. Proactive dementia care strategies should prioritize understanding residents behaviours and meeting their needs to prevent escalation to aggression. Upholding respect and dignity throughout residents' lives is imperative, given the rising incidence of dementia and the complex demands it places on healthcare providers. By addressing these needs proactively, healthcare providers can ensure a higher quality of life for dementia clients and better support for their families.

This project aimed to proactively explore the potential application of scheduled NPIs for RB prevention and management in a particular care setting. Thus, it offers opportunities for staff empowerment and a fresh perspective on understanding dementia client's behaviours. Time allocation for training is fundamental for ongoing skills development and staff competencies. Extending training duration and frequency can reinforce the concepts and practices of NPIs and dementia care strategies.

It is essential that nurses and caregivers possess not only a strong theoretical understanding of NPIs but also the practical competencies necessary to implement them effectively and consistently in daily practice. This includes the skillful application of MT tools, the selection and adaptation of appropriate physical exercises, and the early recognition of agitation or other behavioural cues. When applied correctly, NPIs have been shown to elevate mood, reduce anxiety, and facilitate more meaningful communication among residents, thereby contributing to a more therapeutic and supportive environment for both clients and staff. To maximize their effectiveness, NPIs should be embedded within individualized care plans and accompanied by ongoing monitoring and evaluation to assess outcomes and guide adjustments.

In addition, a truly proactive approach to dementia care begins prior to a resident's admission into a long-term care facility. Early assessment and pre-admission planning are critical for ensuring smooth transitions and enabling staff to tailor care strategies from the outset. Anticipating potential behavioural triggers and addressing individual needs early can help mitigate the risk of RB escalating into aggression or distress. Central to this approach is a steadfast commitment to preserving the dignity, autonomy, and well-being of individuals living with dementia. As the incidence of dementia continues to rise globally, healthcare systems must be equipped to respond to its complex challenges with empathy, preparedness, and innovation. By embracing proactive, collaborative, and person-centred strategies, care providers can improve the quality of life for dementia clients and offer more meaningful support to their families.

Ongoing research is essential to establish standardized guidelines for music and exercise interventions, specifically regarding their frequency, duration, and intensity, tailored to individuals with dementia at various stages. The use of digital platforms and apps that offer

personalized playlists or demonstrate chair-based exercises can enhance consistency and engagement, particularly in settings with limited staffing. To ensure effective implementation, collaboration among music therapists, physiotherapists, recreation workers, and family members is vital. This may include securing funding, hiring specialized staff, and allocating appropriate resources. Additionally, future programs must consider the diverse cultural backgrounds of residents, ensuring that music and activities are inclusive, enjoyable, and culturally respectful.

## **Conclusion**

Responsive behaviours in individuals with dementia continues to challenge healthcare providers, highlighting the need for effective, compassionate, and individualized approaches to care. Through reviewing literature, it was evident that scheduled NPIs particularly music and exercise, can play an important role in managing RB. Although current nursing education introduces NPIs, gaps remain in consistent implementation due to variability in training quality and a lack of hands-on practice. The 30-minute education session at Cogir Senior Living McKenzie Towne served as an important step toward bridging this gap, highlighting staff's increased understanding of RB and their underlying causes. These findings reinforce the urgent need for standardized, practical, and continuous education in NPIs, both in academic settings and professional practice. By investing in evidence-based, person-centred training, healthcare organizations can reduce reliance on PIs, foster therapeutic environments, and ultimately improve the quality of life for individuals living with dementia.

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## APPENDIX A: ETHICS DETERMINATION



RESEARCH ETHICS OFFICE

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2-01 North Power Plant (NPP)  
11312 - 89 Ave NW  
Edmonton, Alberta, Canada T6G 2N2  
[www.uab.ca/reo](http://www.uab.ca/reo)

March 17, 2025

Edith Braimoh  
Faculty/Department: Nursing  
Email: [edith.braimoh@uleth.ca](mailto:edith.braimoh@uleth.ca)

Dear Edith Braimoh:  
RE: Determination of Ethics Review Requirement

Thank you for requesting a determination for your project: "NON PHARMACOLOGICAL THERAPY TO ADDRESS AGGRSSIVENESS IN SENIOR ADULT LIVING WITH DEMENTIA AT ASSISTED LIVING FACILITY IN CALGARY". We have reviewed the details provided in your submission received on 2025-03-17 20:07:50.

The project that you have outlined meets one of the conditions described under Chapter 2 of TCPS2 (2022) as an activity that does not require REB review and, unless you make changes to the project, ethics approval is not needed. As such, the project has been determined to be outside of the REB's mandate. However, please note that if data is collected for the purposes of such activities but later proposed for research purposes, it would be considered secondary use of information not originally intended for research, and at that time may require REB review.

Sincerely,

Charmaine N. Kabatoff  
Senior Officer, REB for  
Anthony S. Joyce, PhD  
Chair, Health Research Ethics Board - Health Panel

## APPENDIX B: LESSON PLAN

| Time    | Exercise Activities  | Guiding Question Focus  | Learning Goals  | Teacher Role   | Learner Role  | Assessment & Learning  |
|---------|--|---|---|--|---|--|
| 2:00 pm | <p><b>Slide 1:</b></p> <ul style="list-style-type: none"> <li>▪ Introduction to dementia and RB in Assisted Living</li> <li>▪ Importance of NPIs</li> <li>▪ Overview of first-line NPI strategies</li> </ul> | <ul style="list-style-type: none"> <li>▪ What are RBs, and why are they important in dementia care?</li> <li>▪ How can NPIs help manage these behaviours?</li> <li>▪ Why are NPIs first-line care?</li> </ul> | <ul style="list-style-type: none"> <li>▪ Understand RBs and their impact</li> <li>▪ Recognize NPIs as a first-line interventions</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Self-introduction</li> <li>▪ Presentation overview</li> <li>▪ Explain core concepts.</li> </ul> | <p>Begin reflecting on NPIs and their significance in dementia care</p>   | <p>Questioning to assess initial understanding of RB and NPI importance</p>  |
| 2:04 pm | <p><b>Slide 2:</b></p> <ul style="list-style-type: none"> <li>▪ Definitions and examples of RBs.</li> <li>▪ Role of NPIs in care</li> </ul>  | <ul style="list-style-type: none"> <li>▪ What is dementia and RB?</li> <li>▪ What triggers RB?</li> <li>▪ How do NPIs help?</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Identify RB examples and triggers</li> <li>▪ Recognize NPI use and benefits</li> </ul>               | <p>Define RB and explain relevance with real-life scenarios</p>  | <p>Respond with prior knowledge and participate in discussion</p>   | <ul style="list-style-type: none"> <li>▪ Clarify misconceptions</li> <li>▪ Assess baseline understanding</li> </ul>                    |
| 2:07pm  | <p><b>Slide 3:</b></p> <ul style="list-style-type: none"> <li>▪ Benefits of NPIs for patients and caregivers.</li> <li>▪ Impact of staff training</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Why are NPIs beneficial?</li> <li>▪ How does training improve outcomes?</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Understand impact of NPIs</li> <li>▪ Value of training in dementia care</li> </ul>                   | <p>Present research and connect with staff context</p>   | <p>Discuss benefits of NPIs and role of training</p>  | <ul style="list-style-type: none"> <li>▪ Connect to clinical relevance</li> <li>▪ Share examples</li> </ul>                            |
| 2:10pm  | <p><b>Slide 4:</b></p> <ul style="list-style-type: none"> <li>▪ Global prevalence of dementia.</li> <li>▪ Safer NPI alternatives like music and exercise</li> </ul>  | <ul style="list-style-type: none"> <li>▪ How does dementia impact globally?</li> <li>▪ What are safer alternatives for RB?</li> <li>▪ Why is more research needed?</li> </ul>                                 | <ul style="list-style-type: none"> <li>▪ Global dementia insight</li> <li>▪ Explore effective NPIs and their evaluation</li> </ul>            | <ul style="list-style-type: none"> <li>▪ Present stats</li> <li>▪ Explain NPIs as safe, effective strategies</li> </ul>                  | <p>Reflect on and share personal experience with NPIs</p>   | <ul style="list-style-type: none"> <li>▪ Recall and list evidence-based NPIs</li> <li>▪ Evaluate their use in context</li> </ul>       |
| 2:14pm  | <ul style="list-style-type: none"> <li>▪ <b>Slide 5:</b> Implementing NPIs using PLST Model.</li> <li>▪ Consider internal/environmental stressors.</li> </ul>  | <ul style="list-style-type: none"> <li>▪ What is PLST Model?</li> <li>▪ How can adult learning help staff improve care?</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Apply PLST for stress reduction</li> <li>▪ Understand adult learning for care improvement</li> </ul> | <p>Facilitate case-based training and theoretical grounding</p>  | <ul style="list-style-type: none"> <li>▪ Practice scenario response using PLST</li> <li>▪ Reflect on learning models</li> </ul> | <ul style="list-style-type: none"> <li>▪ Role-play and discussion</li> <li>▪ Assess practical application and understanding</li> </ul> |

| Time   | Exercise Activities   | Guiding Question Focus  | Learning Goals  | Teacher Role  | Learner Role  | Assessment & Learning   |
|--------|---|---|---|---|---|---|
| 2:18pm | <p><b>Slide 6:</b></p> <ul style="list-style-type: none"> <li>Future of NPIs in nursing practice.</li> <li>Skills for integrating into daily care</li> </ul>      | <ul style="list-style-type: none"> <li>How can NPIs improve quality of life?</li> <li>What training is needed?</li> <li>How to implement NPIs daily?</li> </ul> | <ul style="list-style-type: none"> <li>Promote NPIs in care plans.</li> <li>Evaluate and document outcomes</li> </ul>           | Guide learners in exploring long-term implications and training needs   | <ul style="list-style-type: none"> <li>Identify NPIs for daily use</li> <li>Evaluate long-term effectiveness</li> </ul> | <ul style="list-style-type: none"> <li>Discussion on barriers and strategies</li> <li>Self-reflection on implementation</li> </ul>  |
| 2:22pm | <p><b>Slide 7:</b></p> <ul style="list-style-type: none"> <li>Cogir staff training</li> <li>Scenario-based learning using music and exercise</li> </ul>           | <ul style="list-style-type: none"> <li>How can NPIs be used practically?</li> <li>How can staff use NPIs routinely?</li> </ul>                                  | <ul style="list-style-type: none"> <li>Gain practical NPI skills.</li> <li>Recognize aggression reduction strategies</li> </ul> | Lead in-person training using case scenario   | Participate in role-play and scenario-based learning  | Assess engagement and learning through guided reflection and feedback   |
| 2:26pm | <p><b>Slides 8–9:</b></p> <ul style="list-style-type: none"> <li>Wrap-up</li> <li>Tools for learning and reflection</li> <li>Feedback forms and review</li> </ul> | <ul style="list-style-type: none"> <li>Has your understanding of NPIs changed?</li> <li>How can NPIs be incorporated into practice?</li> </ul>                  | <ul style="list-style-type: none"> <li>Reinforce key learning</li> <li>Plan for future application</li> </ul>                   | <ul style="list-style-type: none"> <li>Summarize key points.</li> <li>Facilitate feedback and discussion</li> </ul> | <ul style="list-style-type: none"> <li>Complete feedback forms</li> <li>Ask questions; share insights</li> </ul>        | <ul style="list-style-type: none"> <li>Post-training feedback form</li> <li>Plan NPI integration</li> <li>Excel analysis</li> </ul> |

## APPENDIX C: POWERPOINT PRESENTATION

### Learning Objectives

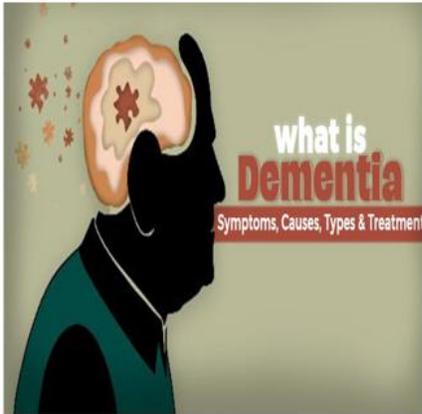


- ❖ To enhance staff understanding of responsive behaviours, including aggression in dementia clients.
- ❖ To raise staff awareness and knowledge of dementia care strategies.
- ❖ To increase staff knowledge and understanding of the use of non-pharmacological interventions, such as music and exercise.
- ❖ To improve the quality of care offered to seniors with dementia.

### Background-Understanding Dementia and Aggression

- ❖ Dementia, a global cognitive decline causing functional impairment, is the seventh leading cause of mortality, affecting 55 million people globally and causing an estimated 1.3 trillion dollars in societal costs (WHO, 2025).
- ❖ Dementia is a disorder affecting hundreds of thousands of Canadians and the Alzheimer Society of Canada predicts that by 2025, 771,939 Canadians will be living with dementia (Li et al., 2022).
- ❖ The most common types of dementia include Alzheimer's disease, vascular dementia, frontotemporal dementia, and Lewy body dementia (Chouliaras & Brien, 2023).

## Background-Understanding Dementia and Aggression



- ❖ Managing responsive behaviours can be challenging for care providers, leading to longer hospitalization, increased healthcare costs, and mortality. RB is a symptom of dementia and a response to environment (Li et al., 2022).
- ❖ Responsive behaviours (RB) in dementia patients include actions expressing discomfort, frustration, or unfulfilled needs, such as hitting, grabbing, pushing, and consuming inappropriate substances (Dookhy & Daly, 2021).

## Introduction to Non-Pharmacological Interventions (NPIs)



NPIs are the use of non-medication interventions to reduce, treat, and manage RB, such as aggression, in seniors with dementia. These interventions aim to enhance overall well-being in a care setting, while avoiding the use of antipsychotics as a first-line treatment for RB in dementia patients (Sikkes et al., 2021).

## Music and Physical Activities Therapy for Dementia Clients



Music therapy (MT) is an NPI using musical activities to improve the physical and emotional well-being, cognitive performance, and social connections of seniors with dementia in a care setting (Isaac et al., 2021). These activities are mostly play by recreation therapists supported by nurses.

Music therapy has shown great promise in reducing agitation and aggression. Familiar music can trigger positive memories, improve mood, and reduce confusion (Wong et al., 2024).

## Music Video

Video clip of how music can calm responsive behaviours (I'll be playing just the music section of the video)

<https://youtu.be/8HLEr-zP3fc?si=B-NL4MV4itNh958W>



## Music and Physical Activities Therapy for Dementia Clients



Physical activity therapy, a non-pharmacological approach, can help dementia patients maintain physical activity and improve their quality of life through activities like dance, walking, swimming, and draman (Wong et al., 2024).

Regular physical activity, such as movement, can improve and maintain fitness, balance, mobility, and functional ability, thus reducing falls and boosting mental health, sleep, mood, and confidence in dementia clients (Isaac et al., 2021). Recreation therapists mostly carry out these activities. However, some nurses also take the seniors for a brief walk around my facility.

## Physical Activity Video

Video clip of physical activities for seniors

<https://youtu.be/2KyEt4utrB8>



## Literature Reviews-Non-Pharmacological interventions



Music has a relaxing effect that prevents stress levels from surpassing the stress threshold. It also reduces agitation and hostility. Music can help prevent aggressive incidents, making the care environment safer for both residents and staff. This also reduces caregiver stress and burnout, which is very important in nursing (Isaac et al., 2021).

Understanding and promoting physical activities such as dancing and walking among seniors with dementia can help reduce irritation, anxiety, and aggression, enabling nurses to tailor care plans that address these behaviors (Wong et al., 2024).

## Scenario

Mrs. Jones is an 82-years old resident with early onset of lewy body dementia (abnormal cells called Lewy bodies that grow in the brain stem). A frontline staff member working with her attempted to provide oral care, but Mrs Jones became aggressive, hitting and spitting on the staff.

### Questions

- 1-How can you use music and physical activities to calm Mrs. Jones so that you can give oral care?
- 2-How can you find out Mrs Jones favourite music?

## Implementation Tips for Cogir Senior Living Staff

- ❖ Cogir staff can create individual music playlists using input from families and the resident's history.
- ❖ Nurses can update the care plan to include the client's favorite music and physical activity
- ❖ Staff will play music during high-risk times for agitation, such as bathing and sundowning.
- ❖ Staff can take resident for a brief walk around facility when client is agitated
- ❖ Train caregivers how to deliver person-centered care, recognize triggers for behaviors, and use music and exercise to de-escalate the situation.
- ❖ Use behavior tracking logs to keep track of changes pre- and post-intervention.
- ❖ Track resident participation, mood, and incident rates.
- ❖ Cogir staff will meet monthly to discuss outcomes and adjust the program.
- ❖ Regular staff training on dementia care support for emotional burnout, team collaboration

## Conclusion

Questions or comments?

Participants:

Can you please complete post feedback form?



**THANKS**

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## References

1. Alzheimer Society of Canada. (2022). Dementia numbers in Canada. <http://alzheimer.ca/en/Home/About-dementia/What-is-dementia/Dementia-numbers>
2. Chouliaras, L., & O'Brien, J. T. (2023). The use of neuroimaging techniques in the early and differential diagnosis of dementia. *Molecular Psychiatry*, 28(10), 4084–4097.
3. Dimitriou, T., Papatriantafyllou, J., Konsta, A., Kazis, D., Athanasiadis, L., Ioannidis, P., ... & Tsolaki, M. (2022). Assess of combinations of non-pharmacological interventions for the reduction of irritability in patients with dementia and their caregivers: A cross-over RCT. *Brain sciences*, 12(6), 691.
4. Dookhy, J., & Daly, L. (2021). Nurses' experiences of caring for persons with dementia experiencing responsive behaviours in an acute hospital: A qualitative descriptive study. *International Journal of Older People Nursing*, 16(4), Article e12379.
5. Gandhi, R. (2024). ADVANCES IN ALZHEIMER'S DISEASE: A COMPREHENSIVE REVIEW OF PATHOGENESIS, DIAGNOSIS, AND TREATMENT INNOVATIONS.
6. Isaac, V., Kuot, A., Hamiduzzaman, M., Strivens, E., & Greenhill, J. (2021). The outcomes of a person-centered, non-pharmacological intervention in reducing agitation in residents with dementia in Australian rural nursing homes. *BMC geriatrics*, 21, 1-11.

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## References

1. Alzheimer Society of Canada. (2022). Dementia numbers in Canada. <http://alzheimer.ca/en/Home/About-dementia/What-is-dementia/Dementia-numbers>
2. Chouliaras, L., & O'Brien, J. T. (2023). The use of neuroimaging techniques in the early and differential diagnosis of dementia. *Molecular Psychiatry*, 28(10), 4084–4097.
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5. Gandhi, R. (2024). ADVANCES IN ALZHEIMER'S DISEASE: A COMPREHENSIVE REVIEW OF PATHOGENESIS, DIAGNOSIS, AND TREATMENT INNOVATIONS.
6. Isaac, V., Kuot, A., Hamiduzzaman, M., Strivens, E., & Greenhill, J. (2021). The outcomes of a person-centered, non-pharmacological intervention in reducing agitation in residents with dementia in Australian rural nursing homes. *BMC geriatrics*, 21, 1-11.

## APPENDIX D: FEEDBACK FORM

### Non-Pharmacological Intervention: Post-Presentation Evaluation

Instructions: For questions 1 to 4, circle the response that most accurately reflects your experience.

|   | <b>Strongly Disagree</b> | <b>Disagree</b> | <b>Neutral</b> | <b>Agree</b> | <b>Strongly Agree</b> |
|---|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1. As a result of the presentation, I have a clear understanding of the non-pharmacological interventions such as music and exercise. | 1                        | 2               | 3              | 4            | 5                     |
| 2. The presentation enhanced my knowledge of various responsive behaviours, including aggression.                                     | 1                        | 2               | 3              | 4            | 5                     |
| 3. As a result of the presentation, I feel more confident about implementing music in dementia care.                                  | 1                        | 2               | 3              | 4            | 5                     |
| 4. As a result of this presentation, I feel more confident in implementing physical activities in dementia care.                      | 1                        | 2               | 3              | 4            | 5                     |

5. What was something new you learned from this training?

6. Do you have any feedback or recommendation to help improve future presentations?