Practice Inquiry Project Final Manuscript:

Preventing the Unnecessary Use of Psychotropic Medications in Dementia Patients with Accentuation of Caregiver Training in Long-Term Care

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This practice inquiry project has been approved for meeting full requirements for the Doctor of Nursing Practice Degree at the University of Hawaii at Hilo School of Nursing

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Abstract

Behavioral and Psychological Symptoms in Dementia is a widely misunderstood concept especially in geriatric patients with dementia. The challenge that most healthcare practitioners face when it comes to the care of geriatric patients with dementia is how to effectively address these behaviors with individualized interventions that utilize non-pharmacologic methods rather than utilizing psychotropic medications. The use of psychoactive medications significantly impact the quality of life of dementia patients due to their side effect profiles and the increased risk for death while on these medications. This practice inquiry project aimed to determine the effectiveness of a modified Geriatric Mental Health Training Series (GMHTS) program in a long-term care facility to determine its effectiveness in assisting facility staff to more effectively assess and address the causes of behavior problems in patients with dementia from a non-pharmacological standpoint.
Chapter 1

Despite the existent knowledge of non-pharmacological interventions used to manage agitation, there continues to be use of pharmacological medications. In 2011, The Office of the Inspector General of the Department of Health and Human Services reported 83 percent of Medicare claims for atypical antipsychotic medications were used as a treatment for off-label conditions (Levinson, 2011). As of 2015, the national prevalence rate of use is 17.4 percent (Department of Health & Human Services, 2016). A comparison of psychotropic medication use among long-term care residents reveals a 23 percent use of antipsychotics, 21 percent use of anxiolytics, 54 percent use of antidepressants, and 4 percent use of sedatives/hypnotics (Department of Health & Human Services, 2016). The utilization of psychotropic medications to manage agitation behaviors in dementia patients is a practice that suggests healthcare practitioners have deficient skills in the assessment and identification of the unmet needs in this population. Pharmacological methods (i.e. psychotropic medications) are predominantly used over non-pharmacological methods in the clinical setting. The use of psychotropic medications affects the quality of life of geriatric patients with dementia and increases the risks for patient mortality.

Dementia is a general term used to describe the range of symptoms associated with a decline in memory or cognitive processing that is severe enough to affect an individual’s ability to perform daily activities (Alzheimer’s Association, 2016). It is associated with neurodegenerative and vascular diseases. Alzheimer’s disease, which is the most common type of dementia, is prevalent with advancing
age. In 2011, the United States had an estimated 4.5 million individuals over the age of 65 years living with Alzheimer’s Disease (Keene, Montine, & Kuller, 2016). In 2015, the United States had an estimated 5.3 million individuals over the age of 65 years living with Alzheimer’s Disease (Alzheimer’s Association, 2015). Within the state of Hawaii, twenty-six thousand individuals were estimated to have Alzheimer’s Disease and by the year 2025 it is estimated that there will be a 34.6 percent increase in its incidence (Alzheimer’s Association, 2015). Globally, it is estimated that 47 million individuals are affected by dementia (Keene, Montine, & Kuller, 2016).

The incidence of Alzheimer’s disease increases with advancing age. The Alzheimer’s Association (2015) estimates that yearly there will be approximately 61,000 new cases among individuals ages 65 to 74; 172,000 new cases among individuals ages 75 to 84; and 240,000 new cases among individuals ages 85 and older. Additionally, the lifetime risk for developing Alzheimer’s disease increases with age and associated gender. For individuals 65 years and older, men are estimated to have a nine percent increased risk while women are estimated to have a 12 percent increased risk. At age 75 and older, the risk in men increases to 10 percent while the risk in women increases to 19 percent. Finally, at age 85 and older, the risk in men increases to 12 percent while the risk in women increases to 20 percent (Seshadri, 1997).

The annual monetary cost of dementia within the United States ranges from $157 billion to $215 billion (Hurd et al., 2013). This is primarily associated with the increased costs of institutional and home-based long-term care rather than medical
services (Hurd et al., 2013). Additionally, dementia care costs ($109 billion) are similar to the direct health care costs for heart disease ($102 billion) and higher than the direct health care costs for cancer ($77 million) (Hurd et al., 2013).

Alzheimer’s disease is the sixth-leading cause of death in the United States (Centers for Disease Control, 2016). Additionally, it is the leading cause of disability and morbidity due to its slow and insidious progression (Alzheimer’s Association, 2015). In the United States, an estimated 600,000 individuals over the age of 65 years died due to Alzheimer’s disease in 2010 (Weuve, 2014). Xie (2008) indicated that individuals with Alzheimer’s disease (over the age of 65 years) have an average life expectancy of four to five years after being diagnosed. Although other individuals may live longer. Between the years 2000 and 2013, deaths related to Alzheimer’s disease increased by 71 percent while deaths related to heart disease decreased by 14 percent (Centers for Disease Control, 2016). Furthermore, in 2010 Alzheimer’s disease became the twelfth-most burdensome disease (25th in 1990) and ninth-most (32nd in 1990) cause of life years lost in the United States (Murray, 2013).

A study by King (2012) indicated that understanding the pathophysiology of dementia as well as the resultant impact that impaired cognition can have on the ability of the individual to communicate his or her needs is essential. This is influential toward making the decision to utilize non-pharmacological methods rather than pharmacological methods in addressing agitation behaviors. Having a better understanding of how an inability to effectively communicate needs contributes to agitation can assist in determining alternative non-pharmacological
methods to be utilized. Additionally, understanding the interplay between degree of cognitive impairment, past life experiences, and environmental factors assist in selecting individualized non-pharmacological interventions.

The quality of life in geriatric patients with dementia can be maintained and patient mortality rates can be decreased if a healthcare practitioner’s assessment skills can be improved through continued education based on current research findings as well as applying any newly obtained knowledge to clinical practice. However, being able to integrate newly obtained knowledge to clinical practice presents a challenge as there are no standard assessment tools/algorithms currently available to assist healthcare practitioners through the process of determining the underlying causes of agitation.

The goal of this project is to prevent the unnecessary administration of psychotropic medications to manage agitation in dementia patients. This will be accomplished through the provision of caregiver training that emphasizes person-centered care and integration of both the person-environment fit theory and the need-driven dementia-compromised behavior model. Caregiver training will be focused on patient-based, caregiver-based and environmental-based domains (Gitlin, 2010). The Geriatric Mental Health Training Series (GMHTS) program components are consistent with these domains and will be described in chapter two.

**Specific Aim 1: Determine the common underlying indications for the use of psychotropic medications in a geriatric care facility.**

Objective 1: Conduct a microsystem analysis of the facility of interest to determine and understand the processes of dementia care.
Objective 2: Assess healthcare providers understanding of dementia and the definitive causes of agitation/behavioral problems.

Objective 3: Determine whether a deficiency in knowledge and training amongst all staff (licensed nurses) are influential toward the reliance on psychotropic medications to manage agitation behaviors.

**Specific Aim 2:** Integrate the Geriatric Mental Health Training Series (GMHTS) program within an organization to assist the staff in accurately identifying the contributing factors of agitation and guide the implementation of interventions which modify patient-based, caregiver-based and environmental-based factors.

Objective 1: Assemble a team (Medical Director, Director of Nursing, and Naysayer) to promote cooperation and support of staff with the integration of the Geriatric Mental Health Training Series (GMHTS) program within the facility of interest.

Objective 2: Analyze the components of the Geriatric Mental Health Training Series (GMHTS) curriculum and synthesize the information for implementation within the organization.

**Specific Aim 3:** Implement and evaluate the Geriatric Mental Health Training Series (GMHTS) program for its effectiveness in assisting facility staff to more effectively assess and address causes of agitation/behavioral problems in patients with dementia.

Objective 1: Trial the Geriatric Mental Health Training Series (GMHTS) program in the facility of interest.

Objective 2: Evaluate the staff’s adherence to the steps/components of the Geriatric Mental Health Training Series (GMHTS) program and evaluate both
their understanding of the dementia disease process as well as their ability to identify and modify the potential triggers associated with behavioral problems.
Chapter 2

Chapter two provides a theoretical framework and a comprehensive review of the literature that supports the use of caregiver training to reduce the severity and incidence of behavioral problems in geriatric patients with dementia. The Model for Evidence-Based Practice Change provides a guide for identifying a need for change, critical analysis of the evidence presented in the literature, and the determination of a method to address the indicated need for change. Additionally, the review of literature specifically discusses dementia pathology, theoretical considerations relating to the manifestation of behavioral problems, clinical pharmacology of psychotropic medications, impact of psychotropic use on quality of life/risks for increased mortality, psychotropic medication use guidelines, and the significance of caregiver education and training.

Theoretical Framework

The Model for Evidence-Based Practice Change (Larrabee, 2009) (see Figure 1) is the theoretical framework that is utilized to guide the project, which focuses on preventing the unnecessary administration of psychotropic medications in geriatric patients with dementia. The first step involves identifying the need for change in practice and this project identifies that the overuse of pharmacological methods rather than non-pharmacological methods is utilized in managing agitation behaviors. The second step involves conducting a literature review to determine the best evidence that indicates the types of non-pharmacological methods that have been effective in managing agitation behaviors. The third step involves critically analyzing the evidence to determine if such methods can be easily integrated in any
PREVENTING BEHAVIORS

long-term care facility as well as determine if staff members can easily perform such methods. The fourth step is to determine a method that would assist in the assessment of agitation behaviors in the geriatric patients with dementia.

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<th>1. ASSESS need for change in practice</th>
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<td>2. LOCATE the best evidence</td>
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<td>3. CRITICALLY ANALYZE the evidence</td>
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<td>4. DESIGN practice change</td>
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<td>5. IMPLEMENT &amp; EVALUATE change in practice</td>
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<td>6. INTEGRATE &amp; MAINTAIN change in practice</td>
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Figure 1. The Model for Evidence-Based Practice Change. Adapted from “Evidence-Based Practice in Nursing & Healthcare” (p. 255), by B.M. Melnyk, 2011, Philadelphia, PA: Wolters Kluwer Health. Copyright 2011 by Lippincott Williams & Wilkins.

The fifth step involves implementing the Geriatric Mental Health Training Series (GMHTS) program and evaluating if such a program is useful in determining the specific cause of agitation in various patients as well as assist in determining if the decreased administration of psychotropic medications is a resultant outcome. The sixth and final step involves the integration and maintenance of change in practice.

Review of Literature

Dementia is the antecedent to the agitation behaviors observed in geriatric patients. Dementia is due to the death of neurons and/or the loss of communication between neurons (Alzheimer’s Association, 2015). Neurons are connected to one another via synapses and the communication between neurons occurs due to chemical released from one neuron and received by an adjacent neuron (Alzheimer’s Association, 2015). The death of neurons and loss of communication
between neurons is the result of abnormal proteins that accumulate inside and 
outside neurons. Protein beta-amyloid (also called beta-amyloid plaques) 
accumulates outside neurons and protein tau (also called tau tangles) accumulate 
inside neurons (Alzheimer's Association, 2015).

In dementia, the transfer of information at synapses begins to decline, the 
number of synapses decrease, and neurons die (Alzheimer's Association, 2015). Subsequently, there is progressive cognitive impairment and a decline in safety 
judgment that is irreversible (LeMone, 2008). Epidemiological studies have 
indicated that vascular factors increase the risk for the development of dementia. 
Thus, it is imperative that healthcare practitioners identify possible diagnoses of 
diabetes, hypertension, and hyperlipidemia and treat them accordingly (Zec, 2008).

With the progressive decline of cognition comes an impairment in 
communication. The geriatric patient with dementia has increased difficulty with 
communicating his or her needs. Agitation is exhibited when the patient is unable to 
effectively express the experience of pain, has difficulty having bowel movements, 
or is even experiencing side effects of newly ordered medications (King, 2012). 
According to Rosen, Mulsant, and Wright (1992), agitation behaviors may be the 
only way for the geriatric patient with severe dementia to express his or her needs. 
The inability to effectively communicate needs results in agitation behaviors. These 
types of behaviors can be restlessness, frequent pacing back and forth, 
combativeness, and even increased calling out (King, 2012). With a decrease in 
neurons and impaired communication between neurons there is also an impairment 
in cognitive processing ability. This decline in cognitive processing ability is most
likely to cause agitation as tasks that were once simple and easy to complete are now complicated by having to perform step-by-step processes for adequate completion of any given task (Lemone, 2008).

Within the literature behavioral and psychological symptoms of dementia (BPSD) are described (Nishtala, 2009). Various symptoms are attributed to BPSD and include agitation, psychosis, aggression (physical or verbal), restlessness, wandering, and sleep disturbances (Beier, 2007). Devanand (2013) further indicates that delusions, hallucinations, agitation, and hostility tend to increase in frequency and severity as dementia progresses. The possible factors contributing to the expression of these symptoms can be attributed to emotional and cognitive problems. Additionally, these symptoms can also be due to physical problems such as acute illness, adverse medication reactions, medication withdrawal, fatigue, pain, constipation and overstimulation (Beier, 2007).

**Theoretical Considerations**

To address the previously mentioned symptoms of BPSD, the review of literature provides suggestions as well as insights to the possible reasons behind the symptoms being expressed. It is recommended that non-pharmacological interventions should first be implemented and often times the first approach is to consider the environment (Lawton, 1990).

There are several theories within the literature that propose the environment as being influential to the expression of behavioral problems in dementia patients. The person-environment fit theory asserts that there is a need for synergy between the dementia patient and his or her environment. This theory
suggests the patient must adapt to the changing demands of the environment but there must also be the modification of the environment to accommodate the needs of the patient (Lawton, 1990). The notions of this theory are further supported by the environmental vulnerability/reduced stress-threshold model. This model indicates that with the progression of dementia, patients become increasingly vulnerable to their environment and experience lower thresholds for tolerating stimuli which ultimately results in behavioral disturbances (Gitlin, 2008). Such stimuli may be attributed to increased noise, increased distractions, or too many events occurring at the same time around the patient (Harvard Mental Health Letter, 2007). This increased stimulation is also likely to contribute to anxiety, which increases in severity with advanced dementia (Lemone, 2008). Zec (2008) suggests the use of the three R’s (repeat, reassure, redirect) and ABC’s (antecedents, behavior, consequences) as good approaches for behavioral management. Utilization of the ABC’s involves identifying the stimulant source and the consequences of the behavior so that the environment can be modified (Zec, 2008).

Kales et al. (2014) developed the “DICE” approach toward behavioral management. Figure 2 describes the components of the “DICE” approach. DICE stands for Describe, Investigate, Create, and Evaluate and essentially identifies important patient, caregiver, and environmental considerations in each step of the process. This approach was developed by a multidisciplinary national expert panel (composed of 12 U.S. experts in dementia care from geriatric psychiatry, geriatric medicine, behavioral science, geriatric psychology, pharmacy and nursing) to provide an evidence-based standardized approach to detect/manage symptoms and
provide non-pharmacological treatment interventions (Kales et al., 2014).

Furthermore, the literature provides statistically significant evidence that environmental modification (with the consideration of the disease progression in dementia) is effective in decreasing the occurrence of behavioral problems.

Aside from the environment-associated theories mentioned above, there are also two theories concerned with task-driven care and unmet needs in dementia patients that are also contributory to the expression of behavioral problems. The first theory is the need-driven, dementia-compromised behavior theory which indicates that behaviors result from the interaction of background (neurological, cognitive, psychosocial) and proximal factors (personal, physical environment, social environment) found within either cognitively impaired individuals, their immediate environment, or both (Algase, 1996).

**Components of the “DICE” Approach**

<table>
<thead>
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<th>D: Describe – The healthcare provider should describe the “who, what, when and where” of situations where problem behaviors occur</th>
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<tr>
<td>I: Investigate – The healthcare provider should consider the patient’s health, dementia symptoms, current medications and sleep habits that might be combined with physical and social factors to produce the behavior</td>
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<tr>
<td>C: Create – The healthcare provider should develop a plan to prevent and respond to behavioral issues, including changing the patient’s activities and environment</td>
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<tr>
<td>E: Evaluate – The healthcare provider should assess how well the plan is working and what might need to be changed</td>
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*Figure 2. Permission to use material granted by Wiley Global Permissions. Kales H.C., Gitlin, L.N., & Lyketsos, C.G. (2014). Management of neuropsychiatric symptoms of dementia in clinical settings: Recommendations from a multidisciplinary expert panel. Journal of the American Geriatrics Society. © Published 2014. This article is a U.S. Government work and is in the public domain in the U.S.A. John Wiley & Sons, Inc.*
The second theory is the unmet needs theoretical model which suggests that behaviors arise from an individual’s needs and occurs when care is task-driven not person-centered (Kitwood and Bredin, 1992). Cohen-Mansfield (2013) further indicates these behaviors are attributed to a dementia patient’s inability to communicate his or her needs or decreased ability to meet own personal needs (Cohen-Mansfield, 2013). Furthermore, the consequences of such behaviors are the result of caregivers failing to identify or address the patient’s needs and often the behaviors are attributed to pain or physical discomfort, psychological distress (i.e. depression, anxiety, frustration), and loneliness/boredom (Cohen-Mansfield, 2013).

Agitation behaviors may also be due to the confrontational approaches caregivers may have toward geriatric patients with dementia. Some caregivers may have unrealistic expectations of these patients (Zec, 2008). Other times caregivers lack effective skills in communicating with dementia patients thus contributing to agitation (Kales et al., 2014). Due to declines in the cognitive processes of dementia patients there is a decreased ability in concentrating on complex activities. Activities provided to such patients should be simple and involve previously learned skills. Zec (2008) terms previously learned skills as “overlearned skills.” These skills should be identified and utilized as they are less likely to contribute to frustration and anxiety.

Involving a geriatric patient with dementia in activities also requires the caregiver to provide frequent verbal reminders as cognitive impairment contributes to slow information processing and decreased ability to focus on tasks at hand. Anxiety and eventual agitation can be simply managed by decreasing environmental
stimulation, providing a daily structured routine and providing activities that involve previously learned skills (Zec, 2008). Additionally, the Harvard Mental Health Letter (2007) suggests that inquiring through family members about an individual's previous life experiences and interests can better assist the healthcare practitioner to understand what the patient might be trying to communicate through the exhibition of agitation.

The conceptualizations and suggestions above are consistent with the theories concerned with task-driven care and unmet needs in dementia patients. Additionally, the review of literature provides evidence that the provision of person-centered care, communication skills training, and focusing on the simplification of activities/tasks to match patient abilities (including the preservation of previous roles and identities) are effective in decreasing the occurrence of behavioral problems.

**Indications for a Change in Current Practices**

There are several indications for a change in current practices. The specific mechanism of action of antipsychotic medications contribute to an increased side-effect profile. This impacts the quality of life in dementia patients as well as increases the risk for mortality.

**Clinical Pharmacology of Antipsychotic Medications**

The mechanism of action of most first and second generation antipsychotics is the post-synaptic blockade of brain dopamine 2 (D2) receptors. In the central nervous system, dopamine is involved in the control of movement, cognition, affect/mood, and neuroendocrine secretion (Jaber, 1996). With regard to dementia
and neuropsychiatric symptoms, antipsychotic medication use is intended to decrease problematic behaviors such as agitation, aggression, restlessness, wandering, and psychoses (Bostwick, 2013).

Antipsychotic medications are generally metabolized by the liver but have increased percentages of oral bioavailability and lengthened half-lives (Mauri, 2014). With increased oral bioavailability there is an increased amount of unchanged (active) drug within the systemic circulation and the lengthened half-lives of these medications are contributory to the increased time the drug remains in the systemic circulation before being excreted via the kidneys (Mauri, 2014).

Antipsychotic medications are not appropriate for use in older patients due to their side effect profiles. Such medications have serious side effects such as tardive dyskinesia, neuroleptic malignant syndrome, seizures, agranulocytosis, and hypersensitivity reactions which increases the risk of mortality especially in older patients (Jibson, 2016). These side effects are the result of the action on D2 receptors and other receptors within the brain.

Continuous D2 receptor blockade in the nigrostriatal pathway and mesocortical pathway are both contributory to the development of the side effects mentioned above. The nigrostriatal pathway which is responsible for purposeful movement when blocked by continuous D2 antagonism is contributory to the development of tardive dyskinesia (Guzman, 2015). Tardive dyskinesia results in abnormal movements of the mouth, tongue, face, extremities, and trunk (lip smacking, tongue writhing, jaw movements, facial grimacing, and trunk/extremity
writhing). Such abnormal movements can be distressing to patients with dementia or Alzheimer's disease (Jibson, 2016).

Alternatively, the mesocortical pathway is responsible for cognitive function and regulation of emotions/affect (Guzman, 2015). With continuous D2 antagonism, manifestation of depression and further cognitive impairment especially in patients with dementia is observed (Muench, 2010). Additionally, D2 antagonism can contribute to increased sedation in older patients (Muench, 2010).

The other serious side effects such as neuroleptic malignant syndrome, seizures, agranulocytosis, and hypersensitivity reactions especially increase the risk of mortality in older patients (Jibson, 2016). Dopamine receptor blockade within the hypothalamus is contributory to hyperthermia and autonomic dysregulation resulting in hyperthermia, mental status changes, muscular rigidity, labile blood pressures and cardiac arrhythmias (Wijdicks, 2014). Furthermore, antipsychotic medications can lower the seizure threshold, decrease neutrophil counts (may result in fatal infections), and trigger a hypersensitivity reaction (resulting in fever, skin eruption, facial edema, and enlarged lymph nodes) (Roujeau, 2016).

Lastly, aside from D2 antagonism, antipsychotic medications can affect histamine H1 receptors, alpha-1 adrenergic receptors, muscarinic acetylcholine M1 receptors, and cardiac electrical activity. H1 antagonism is contributory to drowsiness while alpha-1 andrenergic antagonism is contributory to orthostatic hypotension (Jibson, 2016). M1 antagonism is contributory to dry mouth, constipation, blurry vision, urinary retention, and cognitive deficits (Jibson, 2016).

The most significant off-target side effect of antipsychotic medications is their
potential to affect cardiac electrical activity which is contributory to the
prolongation of the QT interval and has the potential to cause lethal arrhythmias
(Jibson, 2016).

**Off-label Use of Typical and Atypical Antipsychotics**

Despite the clinical pharmacology of antipsychotic medications, the “off-label” use of such medications have been predominant in dementia patients. These medications are specifically FDA-approved for use only in patients with schizophrenia as well as bipolar disorder but medical providers otherwise prescribe these medications for dementia-related behaviors. In 2008, the most commonly reported atypical antipsychotics were quetiapine (16.7 million treatment visits), risperidone (12.0 million treatment visits), aripiprazole (6.7 million treatment visits), and olanzapine (6.2 million treatment visits) (Alexander, Gallagher, Mascola, Moloney, Stafford, 2011). Additionally, the use of these medications has been reported to be higher in long-term care settings than in community settings (Agency for Healthcare Research and Quality, 2011). The use of atypical antipsychotics (second generation) has been more prevalent in recent years because typical antipsychotics (first generation) are poorly tolerated and with significant irreversible adverse effects (i.e. tardive dyskinesia). By 2001, ninety-six percent of antipsychotics prescribed to new users were of the atypical class (Agency for Healthcare Research and Quality, 2011). Risperidone, quetiapine, and olanzapine are currently the most commonly prescribed antipsychotics for off-label use in dementia patients (Agency for Healthcare Research and Quality, 2011). Of the atypical antipsychotics used in elderly patients with dementia, risperidone has been
noted to significantly increase the risk for cerebrovascular accidents (Number Needed to Harm, NNH=34) and cardiovascular events (NNH=53) (Agency for Healthcare Research and Quality, 2011). The NNH indicates how much people need to be exposed to the treatment before a single patient is to be harmed by the treatment. Furthermore, extrapyramidal symptoms in elderly patients are common with risperidone (NNH=20) and olanzapine (NNH=10) (Agency for Healthcare Research and Quality, 2011). These findings are also supported with a meta-analysis of randomized, placebo-controlled trials by Schneider, Dagerman, and Insel (2006), where it was determined there is an increased risk for adverse effects specifically related to the use of risperidone. This study indicated an increased risk for extrapyramidal side effects as well as the significantly increased risk for cerebrovascular accidents (CVA) in individuals taking Risperidone versus placebo (Schneider et al., 2006).

**Impact on the Quality of Life**

Antipsychotic medications are often preferred over non-pharmacological interventions due to several factors which include 1) lack of provider training in the use of non-pharmacological strategies, 2) the extensive amount of time required to incorporate such interventions within the clinical setting, and 3) the scarcity of guidelines concerned with the application and intended duration of non-pharmacological interventions (Kales, 2015). Despite this justification for the preference of antipsychotic medications, the literature indicates that quality of life is not enhanced in the dementia patients who are provided these medications.
Zec (2008) investigated the risks versus benefits regarding the use of antipsychotic medications to address agitation behaviors. Zec (2008) considered the Clinical Antipsychotic Trials of Intervention Effectiveness in Alzheimer’ Disease (CATIE-AD) in which the findings did not portray significant benefits of antipsychotic use in the arena of managing agitation behaviors. Furthermore, Vigen, Mack, Keefe, Sano, and Schneider (2011), considered the effects of time and medication treatment (olanzapine, risperidone, quetiapine, or placebo) on cognitive functioning during the CATIE-AD study. The findings revealed a significant decline in Mini Mental State Exam (MMSE) scores in the patients receiving any of the antipsychotic medications. The MMSE is a 30-point questionnaire that is used to measure cognitive impairment. A score of 24 or greater indicates no cognitive impairment. Over the reported 36-week trial period, patients had an average 2.46-point greater decline on the MMSE than placebo and this finding demonstrated statistical significance (p=.004) (Vigen et al., 2011). Alternatively, Schneider, Dagerman, and Insel (2006) considered the efficacy and adverse effects of atypical antipsychotics for dementia via a meta-analysis of randomized-controlled trials. In the meta-analysis concerning randomized-controlled trials involving the use of risperidone and olanzapine (in nursing home settings) and MMSE outcomes, there was no noted significant improvement in MMSE scores (weighted mean difference for olanzapine = 0.54; weighted mean difference for risperidone = 0.59). Hence, the overall findings favored placebo over drug intervention (Schneider et al., 2006).

Another study that did not indicate any significant benefits was a multi-center, double-blind, placebo-controlled study. The findings indicated cognitive test
scores were noted to have declined while the patients were on antipsychotic medications (i.e. olanzapine, quetiapine, and risperidone) (Lieberman, 2005). Furthermore, adverse effects were experienced in the patients that included increased sedation, confusion, and extrapyramidal symptoms (abnormal movements of mouth, face, and extremities as well as muscle rigidity) (Lieberman, 2005).

The potential for increased sedation and increased susceptibility to other side effects like orthostatic hypotension and anticholinergic effects (i.e. constipation, urine retention, dry mouth, tachycardia, and worsening cognitive impairment) while taking antipsychotic medications causes an impact on the quality of life of geriatric patients with dementia (Zec, 2008). Increased sedation coupled with the susceptibility for orthostatic hypotension increases the risk for falls and potential for consequences such as bone fractures and traumatic brain injury (Beier, 2007). A study by Ray, Thapa, and Gideon (2000), reported a high rate of falls with benzodiazepines and an increased risk for falls with higher dosages. A study by Sgadari et al. (2000), noted an increased risk for fractures among geriatric patients over the age of 85 years receiving high-dose benzodiazepines. Increased sedation can consequently result in increased fall rates as well as increased risk for bone fractures associated with fall injuries. Furthermore, the use of benzodiazepines in conjunction with the use of antipsychotic medications can further potentiate the effects of sedation and hypotension.

**FDA Black Box Warning Policy Implementation**
The review of literature also presents findings of the increased risk for death in geriatric patients with dementia receiving antipsychotic medications. In April 2005, the Federal Drug Administration (FDA) required a black box warning on the prescription labels of antipsychotic medications that highlighted the increased risk for death in patients taking these medications (Bostwick, 2013). Schneider et al. (2005) evaluated 15 randomized, placebo-controlled trials of antipsychotic use in geriatric patients with dementia and found equal significance in the risk for death in individuals taking atypical antipsychotics such as risperidone, olanzapine and quetiapine. Furthermore, in a retrospective cohort study, Wang, Schneeweiss, Avorn, Fischer, Mogun, Solomon, and Brookhart (2005) found a significantly increased risk for death within 180 days from the initiation of conventional antipsychotic medications in 22,890 geriatric patients with dementia. The findings indicated that the risk of death was greatest with conventional antipsychotics soon after the medication was initiated and then the risks decreased to that of the rates of death associated with atypical antipsychotics (Wang et al., 2005). Gerhard, Huybrechts, Olfson, Schneeweiss, Bobo, Doraiswamy, and Crystal (2014) examined the risk of death in 31,090 patients within 180 days from the initiation of atypical antipsychotics. This retrospective, observational cohort study reported severely increased potential for mortality with risperidone (hazard ratio 1.0) and haloperidol (hazard ratio 1.97) with moderately increased potential for mortality with olanzapine (hazard ratio 0.78, 22% risk), quetiapine (hazard ratio 0.66, 34% risk), ziprasidone (hazard ratio 0.64, 36% risk), and aripiprazole (hazard ratio 0.45, 55% risk) (Gerhard et al., 2014). Additionally, there are noted concerns for the increased
risk for metabolic syndrome due to weight gain while on these medications (Zec, 2008).

In a retrospective, observational cohort study of 136,393 patients with new antipsychotic treatment episodes, it was noted that there was an increased mortality risk during the first six months of treatment and were dose dependent (Gerhard et al., 2014). It was noted that there is a higher risk for mortality with increased doses of risperidone, olanzapine, and haloperidol (Gerhard et al., 2014). Hence, this suggests that there is more of a correlation between increased dosages and mortality rates versus the individual pharmacodynamic properties of the drugs themselves (Gerhard et al., 2014). The findings of this study are also supported by the findings of a retrospective case-control study by Maust, Kim, Seyfried, Chiang, Kavanagh, Schneider, and Kales (2015). This study examined the 180-day crude mortality for psychotropic medication users versus nonusers. Haloperidol had the highest mortality rate at 20.7 percent, risperidone at 13.9 percent, olanzapine at 13.9 percent, quetiapine at 11.8 percent, and antidepressants at 8.3 percent (Maust et al., 2015). Furthermore, the study examined the number needed to harm (NNH) rate and indicated that haloperidol had a NNH of 26, risperidone with a NNH of 27, olanzapine with a NNH of 40, quetiapine with a NNH of 50 (Maust et al., 2015). Additionally, a comparison between antidepressants and haloperidol versus antidepressants and quetiapine was completed. The absolute risk for mortality with haloperidol was 12.3 percent higher (NNH of 8) compared with antidepressant use and 3.2 percent higher for quetiapine (NNH 31) compared with antidepressant use (Maust et al., 2015).
Overall, the findings suggest that the risk of adverse side effects are greater than the benefits and leads to recommendations for the restricted use of antipsychotic medications in geriatric patients (Zec, 2008). Additionally, the geriatric dementia population is at increased risk for experiencing such adverse effects due to impaired liver and kidney functioning (a result of aging) and various chronic illnesses that require the administration of multiple medications (Beier, 2007). Studies have also reported that the use of antipsychotic medications has limited beneficial effects on aggression and psychosis over a period of six to twelve weeks in patients with Alzheimer’s disease (Alzheimer’s Society, 2013).

According to Ballard (2008), a randomized and double-blinded discontinuation trial of antipsychotics in 165 individuals with dementia revealed no significant differences on global cognitive functioning or neuropsychiatric symptoms. The measure of global cognitive functioning was conducted with the severe impairment battery (SIB) tool which evaluates cognitive abilities in six subscales (attention, orientation, language, memory, visuospatial ability and construction). The range of possible scores is 0-100 and a score less than 63 is considered to be “very severely impaired” (Saxton, McGonigle, Swihart, & Boller, 1993).

The SIB score between baseline and six months, indicated a 6.2 point decline in cognitive functioning for the continued treatment group versus a 5.7 point deterioration for the placebo (discontinuation) group. The neuropsychiatric index (NPI) score between baseline and six months, indicated a 1.3 point deterioration for the continued treatment group versus a 4.5 deterioration for the placebo
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(discontinuation) group (Ballard, 2008). This research indicates that patients receiving antipsychotics actually experienced a worsening of their symptoms. Also, according to Gill et al. (2005), their retrospective cohort study of 17,845 geriatric patients with dementia (on atypical antipsychotics) found an increased incidence in the rates of stroke especially in individuals with risk factors for stroke. According to the review of two meta-analyses in 2004 by the Committee on Safety of Medicines in the United Kingdom, a threefold increased risk for stroke and transient ischemic attacks were discovered in dementia patients treated with olanzapine and risperidone (Haddad, 2007). In a meta-analysis by Ballard (2006), several findings indicated increased risk for mortality, accelerated cognitive decline, and other debilitating symptoms attributed to the adverse side effects of psychotropic medications. In a FDA study, there was a noted 1.7-fold increased risk for mortality among Alzheimer dementia patients treated with atypical antipsychotic medications (U.S. Food & Drug Administration, 2005). McShane, Keene, and Gedling (1997), reported patients receiving antipsychotic medications experienced a greater rate of cognitive decline than patients who did not receive these types of medication. Lastly, McKeith (1992) reported that approximately 50% of the patients studied with Lewy Body Dementia experienced increased extrapyramidal symptoms, autonomic instability, and sustained an increased number of falls while taking antipsychotic medications.

As noted in the review of literature, the Omnibus Reconciliation Act (OBRA) of 1987 was passed to address nursing home reform legislation. This act focused on protecting residents of long-term care facilities from medically unnecessary physical
or chemical restraints (Gurvich, 2000). It also specifies that antipsychotic drugs should only be administered for agitated, aggressive or psychotic behavior that is either distressing to the patients themselves or dangerous to others (Harvard Mental Health Center, 2007). The American Psychiatric Association (APA) practice guideline further supports the restriction of antipsychotic use in dementia patients by recommending that they should only be used for the treatment of agitation or psychosis when symptoms are severe, dangerous, and/or cause significant distress to the patient (2016). Furthermore, federal regulations mandated (in April 2005) that a black box warning highlighting the increased risk for death in geriatric patients be incorporated on the labeling of all antipsychotic medications (Bostwick, 2013). The black box warning became mandated due to the FDA having conducted a review of several controlled studies and the findings indicated a 50% increased death rate in individuals taking antipsychotic medications than those who were provided a placebo (Bostwick, 2013).

Being able to identify the underlying contributing factors to agitation can assist with the decreased incidence of the administration of psychotropic medications. Therefore, this would lead to decreased morbidity and mortality as well as an improvement in the quality of life of these patients. The administration of psychotropic medications will only temporarily decrease the agitation that is exhibited but the agitation will continue to ensue unless the underlying causes are identified and addressed.

**Guidelines for Psychotropic Medication Use**
Various organizations such as the American Association for Geriatric Psychiatry (AAGP) and American Geriatrics Society (AGS) provide guidelines for the use of antipsychotic medications in BPSD or agitation (Beier, 2007). The guidelines that are provided by these organizations have similar recommendations but all organizations recognize and emphasize the importance of first assessing for any contributing factors to BPSD or agitation and then attempting to utilize non-pharmacological methods first. These organizations recommend that the administration of antipsychotic medications should only be considered when patients pose a danger to self and others and exhibit physical aggression, hallucinations, delusions and severe behavioral/psychotic symptoms (Beier, 2007).

The AAGP indicates that neuropsychiatric symptoms must first be identified with the Neuropsychiatric Inventory (NPI). Symptoms may range from delirium, apathy, depression, and psychotic disturbances to specific behavioral problems (wandering, restlessness, verbal agitation, physical aggression) (AAGP, 2006). Once a symptom has been identified the healthcare provider must consider possible contributing causes and the need for a medical workup (AAGP, 2006). The causes that must be considered include 1) medications, 2) medical illness (pain, constipation, dehydration, urinary tract infection, upper respiratory infection, or other chronic illness), 3) cognitive symptoms, 4) environmental precipitants, 5) unmet physical needs, or 6) unmet psychological needs. The AAGP (2006) specifies that non-pharmacological interventions be tried first. Suggested approaches include cognitive interventions (reorientation, reminders, cueing, prompting), environmental modifications (provision of familiar objects; reduction of clutter or
visual distractors; adjustment of noise level), changes in activity demand
(implementation of routines; reduction in the amount and complexity of activities),
or interpersonal approaches (use of simplified language, focusing on patient’s
wishes/interests/concerns) (AAGP, 2006). Additionally, the AAGP (2006) specifies
that such approaches be based on the unique characteristics of the patient and the
severity of neuropsychiatric symptoms. Should these approaches be unsuccessful
the AAGP (2006) indicates that psychotropic medications be implemented only
when neuropsychiatric symptoms cause significant distress to the patient, impedes
the delivery of essential care, or poses a danger to self or others (AAGP, 2006). Most
importantly it is emphasized that such medications should not be used indefinitely
and attempts at drug withdrawal should be made regularly (AAGP, 2006). Steinberg
(2012) provides two additional recommendations to the AAGP guidelines. The first
is the consideration of utilizing a standardized measure of behavioral symptoms (i.e.
Cohen-Mansfield Agitation Inventory) to monitor the effects of treatment. The
second is the consideration of tapering and discontinuing psychotropic medications
when the target symptoms have diminished (Steinberg, 2012). Furthermore, the
AAGP (2006) indicates that healthcare providers are advised to give serious
consideration to involving a geriatric psychiatrist, geriatrician, or neurologist with
expertise in the pharmacological treatment of neuropsychiatric symptoms in
dementia.

Likewise, the AGS (2011) specifies that non-pharmacological interventions
be tried first before the initiation of psychotropic medications. Consistent with the
AAGP guidelines, the AGS also emphasizes that such medications should not be
continued indefinitely and attempts at drug withdrawal should be made at intervals of every three to six months (AGS, 2011). The AGS (2011) guidelines emphasize that the goal associated with neuropsychiatric symptoms is reduction rather than elimination of the symptoms. Therefore, the AGS (2011) guidelines indicate that a geriatric psychiatrist, geriatrician, or neurologist with specific expertise in the pharmacological treatment of the neuropsychiatric symptoms of Alzheimer’s disease should be consulted (American Geriatrics Society, 2011).

**Significance of Caregiver Training**

The recommendations provided by the previously stated organizations have significant value to healthcare practitioners but there are gaps in knowledge in regards to the appropriate assessment process in determining any contributing factors to BPSD or agitation. The review of literature is deficient in providing any specific guidance in regards to the starting point in the assessment process. There is lack of insight as to whether the healthcare practitioner should first consider the environment or delve straight into determining any physical ailments or acute illnesses that the patient may be experiencing.

The review of literature provides various insights into the associated factors contributing to behavioral disturbances and agitation but does not provide any specific guidance for the healthcare practitioner in regards to the initial step to be considered in the assessment process. However, the review of literature strongly indicates that the patient’s environment should be a primary consideration while concomitantly fostering a person-centered care approach. These considerations support the importance of caregiver education to promote the understanding of the
dementia disease process. Additionally, caregiver education intends to provide skills training centered around the identification of precipitating factors which influence the development of behaviors.

Excessive environmental noise has the tendency to contribute to agitation behaviors as certain noises can be overstimulating. According to King (2012), decreased environmental noise is noted to result in calmer behaviors. Increased noise pollution coupled with overstimulating factors such as staff performing multiple tasks within the proximity of these demented patients has the tendency to contribute to increased agitation. Decreasing the amount of visual stimuli can also decrease agitation (King, 2012). Rapid pacing movements in addition to excessive bright lighting can cause overstimulation. Additionally, strong accent colors on walls or an environment with a variety of colors can contribute to additional overstimulation as bright lighting has potential to bounce off strongly accented colors (King, 2012). Furthermore, being exposed to multiple-color environments involves a complex cognitive processing ability which may not be possible for patients with dementia as their cognitive processing ability is decreased (King, 2012).

There is a breadth of evidence-based information centered on caregiver training aimed at addressing unmet needs in dementia patients, identifying and modifying their environmental vulnerabilities, and improving the caregiver interactions with this patient population. There are several studies which have noted significant improvements in behavioral problems through the
implementation of caregiver training programs which are focused on the above elements.

The first program that has demonstrated improvements in behavioral problems is the Staff Training in Assisted Living Residencies (STAR) program. This program specifically teaches caregivers how to identify the factors within the environment and within their own interactions with the dementia patients (Teri, Huda, Gibbons, Young, & Leynseele, 2005). It emphasizes the ABC’s (activators, behaviors, and consequences) of behavioral distress in order to alter the sequence of events that initiate or maintain behavioral problems (Teri et al., 2005). Training addresses specific topics in a series of modules which include 1) basic information about dementia and how it affects daily life, 2) verbal and nonverbal skills for communication with dementia patients, 3) introducing and maintaining pleasant events for such patients, and 4) improving communication between staff and families, and 5) using the ABCs approach toward identifying and decreasing patient distress (Teri et al., 2005).

Teri et al. (2005) conducted a small randomized controlled trial of 114 staff and 120 residents in 15 assisted-living residencies over the course of two months. The findings indicated that residents were noted to have significantly reduced levels of affective and behavioral distress compared with control residents. Additionally, staff receiving STAR training reported less adverse impact and reaction to residents’ problems and more job satisfaction (Teri et al., 2005). Specific to resident outcomes, there were observed statistical significances with regard to general behavior measurements as well as with depression and anxiety measurements. There were
significant decreases in the post-test scores of the Revised Memory and Behavioral Problems Checklist, the Agitated Behavior in Dementia scale, the Clinical Anxiety scale, and the Geriatric Depression Scale (Teri et al., 2005). Whereas the residents who were part of the control group demonstrated stable or worsening post-test scores (Teri et al., 2005).

Another study using the STAR program included 44 direct care staff and 36 leadership staff. This multi-site feasibility trial considered whether the STAR program could be implemented as a standardized method in assisted-living facilities and improve staff abilities to identify the ABCs (antecedents, behavior, consequences) of behavioral problems in dementia patients (Teri, McKenzie, Pike, Farran, Beck, Paun, & LaFazia, 2010). After training was provided to staff, it was noted that 89% of staff were able to identify a dementia-related behavior and 90% were able to identify the ABCs of their interactions with residents (Teri et al., 2010). Furthermore, over the course of training the staff ability to independently identify and develop plans for problematic dementia-related behaviors significantly improved over time (68% session 1 to 93% session 4) as well as improved staff ability to identify consequences of behavioral problems (31% session 1 to 77% session 4) (Teri et al., 2010).

To further substantiate the findings of the above STAR program, a Cochrane review of four cluster-randomized controlled studies revealed caregiver education resulted in a decrease of the proportion of residents with antipsychotic drug use or a reduction in days with antipsychotic use per 100 days per resident (Richter, 2012). Also, in a six-month randomized controlled trial of 145 nursing home
residents (with caregiver education and supervision as the intervention), the primary outcome measure (the Cohen-Mansfield Agitation Inventory or CMAI) demonstrated a decline in CMAI score from baseline to six-month follow-up in the intervention group and was further reduced at the 12-month follow-up (Testad, Ballard, Bronnick, and Aarsland, 2010). The decrease in CMAI score in the intervention group was statistically significant compared to the control group which did not demonstrate any decline in CMAI score (Testad et al., 2010).

A second program that has demonstrated improvements in behavioral problems is the Advanced Caregiver Training (ACT) program. It conceptualized behavior problems as a consequence of the interaction of factors reflecting three domains which are patient-based (unmet needs, discomfort/pain, incipient medical conditions), caregiver-based (stress, communication style), and environmental-based (clutter, hazards) (Gitlin, 2010). Additionally, this training program was designed to target problem behaviors identified by caregivers as most troublesome and provide strategies to manage them effectively (Gitlin, 2010).

This randomized controlled study consisted of 272 caregivers and 131 dementia participants and was conducted over 16 weeks with additional follow-up at 24 weeks. The primary observed outcome was a significantly greater improvement in the occurrence of primary target behavior problems for ACT (67.5%) versus the control group (45.8%) (Gitlin, 2010). Additionally, the control group caregivers reported behavior problems worsened in the dementia patients (31.7%) or remained at baseline (22.5%) compared to ACT caregivers (18.4% and 14% respectively) (Gitlin, 2010). The most common behavioral problems identified
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were resistance to care (15.4%), repetitive questioning (10.5%), and argumentativeness (8.4%). Additionally, these outcomes were based on scores of the Revised Memory and Behavioral Problems Checklist and the Agitated Behavior in Dementia scale at 16 weeks.

With regard to caregiver outcomes, there was a statistically significant greater improvement in confidence (measured with the 13-item Perceived Change Index; scores: 0=no change; >0=improvement; <0=worsening) managing the target problem behavior in ACT caregivers (baseline 2.1; 16 weeks 2.5) than in the control group caregivers (baseline 2.0; 16 weeks 2.2) (Gitlin, 2010). At 16 weeks, there was statistically significant treatment differences favoring ACT caregivers for improvements in well-being. At 24 weeks, there was statistically significant treatment differences favoring ACT caregivers for improvements in simplification strategy use and a trend toward favoring ACT caregivers decreased utilization of negative communication (Gitlin, 2010). Additionally, at 24 weeks, ACT caregivers reported a greater improvement in understanding the disease process of dementia (69% vs 25.2%), confidence in managing behaviors (71.9% vs 29.1%), enhanced ability to provide care (58% vs 16.7%), and improving patients' daily life (36.4% vs 7.8%) (Gitlin, 2010).

A third program that has demonstrated improvements in patient aggression is a Nursing Assistant Communication Skills Program (NACSP) which was designed to help nursing assistants interact more effectively with nursing home residents with moderate to severe dementia (McCallion, 1999). In two skilled-care nursing homes, nursing assistants in four units were randomly assigned by unit to NACSP or
to a wait-list control condition (WC) and were assessed at baseline, three months, and 6 months (McCallion, 1999). The WC group was given the intervention after a six-month assessment period (partial crossover design). The NACSP resulted in the improvement in the well-being of nursing home residents being cared for by nursing assistants who had received the training. Additionally, the NACSP resulted in increased knowledge of appropriate communication responses to the nursing home residents (McCallion, 1999).

With regard to this communication skills program, the Cohen-Mansfield Agitation Inventory (CMAI) was utilized to evaluate outcome measures. The outcome measures revealed that with the CMAI physically-nonaggressive behaviors declined from baseline to three months for NACSP residents and increased with WC residents (McCallion, 1999). WC residents (after receiving the intervention after the six-month assessment period) had an observed decline in physically-nonaggressive behaviors as well indicating a correlation with intervention time frame (McCallion, 1999). Verbally aggressive behavior decreased for NACSP residents from baseline to three months (indicating significant correlation with intervention time frame) and increased for WC residents from baseline to both three months and six months (McCallion, 1999). Aggressive behaviors were significantly reduced for NACSP (from baseline to six months) and WC (from six months to nine months) after receiving the intervention indicating significant correlation with intervention time frame (McCallion, 1999).

The Caring for Aged Dementia Care Resident Study (CADRES), considered the comparison of outcomes associated with person-centered care, dementia-care
mapping, and usual care in dementia (Chenoweth, King, Jeon, Brodaty, Stein-Parbury, Norman, & Luscombe, 2009). This study was a randomized controlled trial that selected 15 care sites with 289 residents based on the criteria that such sites were task-focused and not person-centered care systems (Chenoweth et al., 2009). Furthermore, the Cohen-Mansfield Agitation Inventory (CMAI) was the chosen primary outcome measure as the researchers deemed it to be more responsive than other measures to the effects of psychosocial care interventions tested in the study. The study was four months in duration with CMAI measured before the intervention and four months after completion (Chenoweth et al., 2009).

The outcomes of CADRES indicated that agitation increased in usual care sites and persisted at follow-up while it decreased with the person-centered care approach with a further decline at follow-up (Chenoweth et al., 2009). Additionally, agitation was also noted to be decreased within the sites that provided dementia-care mapping (Chenoweth et al., 2009). Aside from the primary outcome measure (CMAI), this study also considered the Neuropsychiatric Index (NPI) as a measure of psychiatric symptoms in dementia. The outcomes revealed that the sites providing person-centered care resulted in a significant decrease in such symptoms and was associated with the extent of time the intervention was implemented (Chenoweth et al., 2009).

In the CADRES study, the staff at the sites providing person-centered care had more autonomy in determining specific ways to develop and apply care plans (Chenoweth et al., 2009). This approach encouraged caregivers to be involved and take ownership for changes in practice as opposed to dementia care mapping which
constitutes careplanning based on the observations of the individuals performing the mapping procedures (Chenoweth et al., 2009).

Lastly, it is important to discuss the significant findings of Hodgson (2011) through her retrospective analysis of two randomized controlled trials (Project ACT and Care of Persons with Dementia in their Environment - COPE) that examined the prevalence of undiagnosed acute illness and coexisting neuropsychiatric symptoms in community-residing older adults (N=256) with Alzheimer’s disease or related disorders. The measures included a brief nursing assessment and lab test evaluations (complete blood count, basic metabolic panel, thyroid studies, urinalysis with culture/sensitivity).

The findings indicated 36% (N=96) of patients had clinical findings indicative of undetected illness (specifically 56 out of 226 patients in Project ACT and 40 out of 243 in COPE) (Hodgson, 2011). The conditions that were most prevalent were bacteriuria (15%), hyperglycemia (6%) and anemia (5%) (Hodgson, 2011). The behavior most often demonstrated among those patients with detected illness were resistance of care or refusal of care (66% vs 47% without detected illness) (Hodgson, 2011). Furthermore, those with detected illness had significantly lower functional status scores (measured with the Caregiver Assessment of Functional Dependence and Caregiver Upset (CAFU) instrument), lower cognitive status scores (measured with the Mini Mental State Examination (MMSE)), and were more likely to be prescribed antipsychotic medications for behavioral problems than the patients without illness (41% vs 26%) (Hodgson, 2011). Other significant findings included a significant correlation between bacteriuria and agitation, hyperglycemia
and both agitation/repetitive vocalizations, and anemia with crying out behaviors (p=0.03) (Hodgson, 2011). Metabolic disturbances (hypernatremia, hypokalemia, and thyroid disorders) were significantly correlated with delusions, hallucinations, and agitation (p<0.05) (Hodgson, 2011).

The review of literature provides strong evidence-based findings that emphasize caregiver education and training while considering the patient’s environment, application of a person-centered care approach, and assessment of undiagnosed illness. Therefore, it is fitting that the Geriatric Mental Health Training Series (GMHTS) program be the primary consideration for implementation within this project. This program has the potential to improve caregiver education in regards to the identification and modification of potential triggers contributory to behavioral problems. More specifically, this training program allows caregivers to target specific behavioral problems that are identified as the most troublesome.

The GMHTS program is a six-part training program that was developed by Buckwalter and Smith (2003) which is recognized by the Hartford Center of Gerontological Nursing Excellence (HCGNE). Each of the modules addresses common problems encountered within long-term care settings and are designed to help staff be more knowledgeable about the causes of behavioral problems and the techniques that may be utilized to manage such behaviors (Buckwalter & Smith, 2003). This project utilizes three of the six modules which include the following: Recognizing and Managing Alzheimer’s Type Dementia – Part I (Module four), Recognizing and Managing Alzheimer’s Type Dementia – Part II (Module five), and Back to the A-B-C’s – Understanding and Responding to Behavioral Symptoms in
Dementia (Module six). Module one through module three of the GMHTS program are concerned with the topics of mental illness, caregiver barriers, and depression in geriatric patients. Module four through module six are concerned with understanding the various types of dementia, basic interventions for behavior problem management in dementia, and guiding caregivers in the use of the Antecedent-Behavior-Consequence (ABC) model to improve the outcomes of behavior problems in dementia.

Module one provides a review of behavioral and psychological symptoms that may indicate mental illness in older individuals. It is centered around understanding the things that cause behavioral symptoms and how caregivers should change their feelings directed toward the behaviors of Alzheimer’s dementia (Buckwalter & Smith, 2003). It further emphasizes how caregivers can make older individuals feel supported and cared about when these individuals have impaired coping abilities (Buckwalter & Smith, 2003).

Module two focuses on “getting the facts” and taking the time to collect additional information about behavior problems to develop a better understanding of why such behaviors occur (Buckwalter & Smith, 2003). It also explores the barriers (attitudes/beliefs, age-related changes, diseases/disabilities) that influences appropriate communication with Alzheimer’s dementia patients (Buckwalter & Smith, 2003).

Module three specifically focuses on the topic of “depression” in older individuals. It provides an overview of the signs and symptoms of depression,
common problems that cause or mimic depression, and ways to assist older
individuals who may be depressed (Buckwalter & Smith, 2003).

Module four provides an overview of the various types of dementia but more
specifically Alzheimer's Disease. It discusses the stages of Alzheimer's Disease and
the common behavioral problems of each stage (Buckwalter & Smith, 2003).
Furthermore, it discusses the Progressively Lowered Stress Threshold (PLST) model
of care which is intended to help staff reduce stress and encourage independence of
Alzheimer's Disease patients (Buckwalter & Smith, 2003).

Module five focuses on the basic interventions that may be used to prevent,
reduce, and manage behavioral symptoms in Alzheimer's Disease (Buckwalter &
Smith, 2003). Such interventions are centered around the PLST model and the
module also discusses communication strategies that staff may utilize to
compensate for the impaired communication comprehension experienced by
Alzheimer's Disease patients (Buckwalter & Smith, 2003).

Module six focuses on the Antecedent-Behavior-Consequence (ABC) model to
assist staff in assessing and modifying antecedents (triggers) and consequences
(reactions) of behaviors. Furthermore, it discusses the various factors that may be
contributory to behavioral problems and emphasizes the necessity of understanding
the problem from the perspective of the patient with Alzheimer's Disease
(Buckwalter & Smith, 2003).

The review of literature indicates the importance of considering
environmental factors as well as utilization of a person-centered approach to reduce
the severity and frequency of behavioral problems in dementia patients. Also, there
is an inherent need for caregivers to consider their communication approach when interacting with these patients. The cognitive impairments in dementia patients result in a decreased ability to comprehend complex forms of communication thus contributing to behaviors. Moreover, evidence indicates that the use of antipsychotic medications decrease the quality of life in dementia patients and do not significantly improve behavioral problems or cognitive function when compared to placebo. The mechanism of action of these medications as well as their side effect profiles are contributory to a reduce quality of life. Furthermore, the evidence indicates there is an increased risk for mortality within 180 days from the initiation date of both typical antipsychotics as well as atypical antipsychotics. Hence, caregiver education training centered on the assessment and management of behavior problems in dementia is of utmost importance. The evidence from caregiver education training studies have demonstrated significant reductions in behaviors (which are evaluated with behavioral assessment instruments) as well as improved confidence of caregivers in managing behavioral problems.
Chapter 3 – Project Design and Evaluation Plan

Chapter three provides an outline of the project design and evaluation plan. The PDSA (Plan-Do-Study-Act) cycle and PICO (Problem, Intervention, Comparison, Outcomes) model are the methodological frameworks used to guide this project. The project design encompassed a microsystem analysis, preliminary assessment of staff knowledge concerned with dementia and the causes of behaviors, assembly of a project support team, implementation of a caregiver training program, post assessment of staff competency and adherence to the imparted knowledge, and evaluation via descriptive data analysis. The Geriatric Mental Health Training Series (GMHTS) was the identified caregiver training program which sought to assist the staff (in the facility of interest) in accurate identification of the contributing factors of agitation. The GMHTS was also intended to guide staff in the consideration of interventions which are centered around the modification of patient-based, caregiver-based and environmental-based factors.

Methodological Framework

A methodological framework that was used to guide the project is the the Plan, Do, Study, Act (PDSA) cycle. There are four steps in the cycle – Plan, Do, Study, and Act. It essentially is utilized for testing a change by planning an observation (or test), implementing it on a small scale, analyzing the data/results, and acting on what is learned (Agency for Healthcare Research and Quality, 2008). The ‘Plan’ stage identifies the objective and generation of any predictions. This stage also involves developing a data collection method to address the objective. The ‘Do’ stage involves initiating the observation (or test) and initial analysis of the data obtained. The
'Study' stage involves completing the analysis of data, comparing the data to predictions, and reflecting on what is learned. The ‘Act’ stage assists with the decision to refine the change and implementing it on a broader scale (Institute of Healthcare Improvement, 2017).

This project focused on the ‘Plan’ and ‘Do’ stages of the PDSA cycle. Considering the facility of interest did not have a clearly defined policy or standardized process for behavior management in dementia, this will be explored further. This subsequently assisted in identifying areas of need and focusing the content of GMHTS training program on the specific needs of the facility.

The PDSA cycle was further supplemented by the Problem, Intervention, Comparison, Outcomes or PICO (PICO) model. In essence, this model was intended to guide a researcher to develop a well-built clinical question as well as structure the search strategy through the identification of the key concepts that need to be addressed to explicitly answer the question (Duke University Medical Center, 2016).

The PICO model consists of four steps with the first component considering the ‘patient population’ and the ‘primary problem’ (P) (Duke University Medical Center, 2016). In this project the population was dementia patients and the specific problem identified was deficient skills of healthcare practitioners concerned in the assessment and identification of the unmet needs in this population. The second step was the consideration of the key intervention (I) that intended to solve the problem (Duke University Medical Center, 2016). The identified intervention was the provision of staff training program that emphasizes person-centered care and integration of both the person-environment fit theory and the need-driven
dementia-compromised behavior model. Therefore, the GMHTS program coincided with these principles. The third step was the comparison (C) intervention which considered the standard care provided by staff within a geriatric care facility (Duke University Medical Center, 2016). The final step was the consideration of anticipated outcomes (O) which addressed the intent of the intervention. Thus, this project was intended to increase the staff understanding of the dementia disease process as well as enhance their skills in the identification and modification of the potential triggers associated with behavioral problems. This project integrated all of the PICO components to determine the deficiencies of staff related to understanding the appropriate management of dementia-related behaviors, understanding the standard process of care in the facility of interest, and the appropriate development of an intervention that is patient-centered and fits the needs of the staff (registered nurses) performing direct patient care.

The review of literature supports the importance of caregiver education as an intervention to promote the understanding of the dementia disease process and provide skills training toward identifying precipitating factors of behaviors and modifying the triggers of such behaviors. The specific aims and objectives in the next section provided the basis for the development and integration of the GMHTS program within the facility of interest. Furthermore, the aims and objectives guided the completion of the ‘Plan’ and ‘Do’ stages of the PDSA. Additionally, the aims and objectives guided the evaluation of outcomes related to staff competency and knowledge of managing behavioral problems based on the principles of the GMHTS program.
Specific Aim 1

_Determine the common underlying indications for the use of psychotropic medications in a geriatric care facility._

**Objective 1:** Conduct a microsystem analysis of the facility of interest to determine and understand the processes of dementia care.

The Dartmouth Hitchcock Clinic’s 5P Wall Model guided the microsystems analysis. The 5Ps are Purpose, Population, Professionals, Processes, and Patterns (The Dartmouth Institute, 2010). Permission to use the 5P Wall Model was in correspondence with the Dartmouth-Hitchcock’s privacy policy (see Appendix I).

The model indicated a process for gathering information about the clinic’s microsystem. Utilizing this model, the current processes and patterns of dementia care in the geriatric care facility was investigated. The microsystem analysis sought to understand the following processes: 1) Who first observes the behavior (the certified nurse aide or licensed nurse)? 2) To whom does the “observer” report the behavior? 3) Are non-pharmacological interventions attempted before the administration of psychotropic medications? 4) Are precursors to the behavior first assessed before the administration of psychotropic medications? 5) Who makes the decision to treat the behavior problem with a medication versus the use of a non-pharmacological intervention? Lastly, are any appropriate referrals made to a geriatric psychiatrist, geriatrician, or neurologist for evaluation of the behavior before ultimately notifying the Medical Doctor (MD) of the persistence of a behavioral problem? To understand such items, floor staff, unit managers, Minimal Data Set (MDS) Coordinators, and Director of Nursing (DON) were interviewed and
asked to convey their perceptions of the behavior management processes within the facility.

**Objective 2:** Assess staff (registered nurses and/or licensed practical nurses) understanding of dementia and the definitive causes of dementia-related behaviors.

To better understand the competency of healthcare providers concerned with the dementia disease process and the contributing factors of dementia-related behaviors, a pre-test consisting of 10 questions was developed independently by the project director to determine if any knowledge deficits exist. To also assess current knowledge in appropriate dementia care processes a single (pre-test) vignette was developed by the project director. The development of the pre-test was based on fundamental information of Alzheimer’s Disease and Dementia derived from the Alzheimer’s Association website, the British Columbia Behavioural and Psychological Symptoms of Dementia (BPSD) guidelines, and the GMHTS program. The vignette was developed based on the AAGP guideline and the British Columbia (BPSD) guidelines. The vignette was intended to elicit whether staff were able to identify the ABCs (Antecedents, Behavior, Consequences) of a behavior problem which is a principle concept in GMHTS. The appropriate identification of ABCs is essential for the provision of patient-specific interventions. Both the pre-test and vignette would be distributed to the staff and collected for analysis within seven to 14 days.

**Pre-test.** Pre-test questions and model answers (see Figure 3) included in the analysis would be based on fundamental information derived from the Alzheimer’s Association and the British Columbia
BPSD guidelines, and the GMHTS program. The analysis was scored using a 10-point system. Questions were not derived from any existing questions that may be available. The questions were centered around four categories (knowledge of appropriate interventions, dementia disease process, pathophysiology of dementia, & person-centered care approach) to better understand if deficiencies concerning behavior management are multifactorial. Questions 1 and 6 on the pre-test assesses knowledge of appropriate interventions. Question 1 significantly assesses whether licensed nurses are aware that antipsychotic medications are not approved for use in Alzheimer’s disease. Questions 2, 5, and 8 assessed understanding of the disease process in dementia. Questions 2 and 8 assessed whether licensed nurses are aware that there is a lost ability to self-regulate stress in dementia and results in behavioral problems. Hence, these two questions were centered around the Progressively Lowered Stress Threshold (PLST) model of care. Question 5 assessed whether licensed nurses were aware of the difference between the manifestation of delirium versus Alzheimer’s disease. This being that delirium is often mistaken for Alzheimer’s disease or dementia. Questions 3 and 4 assessed the basic understanding of the pathophysiological process involved in the development of Alzheimer’s disease. Lastly, questions 7, 9, and 10 assessed licensed nurses knowledge regarding the importance of person-centered care in dementia. All questions required either a true or false response.
**Vignette.** Vignette questions and model answers (see Figure 4) included in the analysis were based on criteria from the British Columbia BPSD guidelines and the GMHTS program. The analysis was scored using an 10-point system. The staff member scored two points for each question aside from the question concerning the risk for self-harm or harm of others and the sequencing of steps to determine the causal factors of behaviors. These two questions were scored one point each. Component one of the vignette was used to identify whether staff...
were able to 1) associate the behavior with an existing medical diagnosis, 2)
determine if the behavior presents a risk for self-harm or the harm of others, and 3)
identify a specific behavior as well as the triggers and consequences of such
behavior (i.e. ABCs). Component two was used to assess the staff members’ ability to
correctly sequence the steps of determining the potential causal factors of
behaviors. The vignette (Figure 4) was not derived from any existing vignettes that
may be available. Question 1 assesses whether licensed nurses are able to make the
connection between an underlying medical diagnosis and its contribution to the
manifestation of behaviors. Question 2 assessed whether licensed nurses are able to
appropriately identify a patient who is at risk for harming self (also others around
him or her) and requires emergency evaluation and treatment. A patient who is at
risk for harming self is one who inflicts physical self-harm (i.e. hitting head on table
or self-infliction of wounds). A patient is at risk for harming others when there is an
increasing severity of verbal or physical aggressiveness/agitation. Questions 3 and 5
assessed whether licensed nurses can accurately identify a “trigger” (antecedents)
and “consequence” of the behavior indicated in the vignette. The GMHTS program
emphasizes that behavioral problems can result from “triggers” (antecedents) as
well as “consequences” (reactions of caregivers due to the behavior or the
subsequent impact on the patient). Question 4 assessed whether licensed nurses can
identify the “specific” behavior exhibited by the patient in the vignette. Question 6
assessed whether licensed nurses are able to correctly sequence the steps of
determining the potential causal factors of behaviors. The British Columbia BPSD
Guidelines indicate there should be a systematic approach toward determining the
Figure 4. Vignette. This vignette assessed healthcare provider knowledge and processes for identifying the potential contributing factor(s) to behavior problems in dementia patients.

underlying cause of behavior problems before notifying the MD and administration of a psychotropic medication. The approach should (step 1) consider unmet basic needs then proceed to environmental factors (step 2), consideration of communication approach (step 3), consideration of psychosocial needs (step 4), complexity of activities/tasks (step 5), the onset of acute illness or exacerbation of
chronic illnesses (and/or new medications/side effects/drug-drug interactions) (step 6), and lastly notifying the MD and administering a psychotropic medication to manage the persistent or frequent behavior (step 7).

**Objective 3:** Determine whether a deficiency in knowledge and training amongst all staff (licensed nurses) are influential toward the reliance on psychotropic medications to manage agitation behaviors.

To analyze whether a reliance on psychotropic medications by staff is correlated to a deficiency of knowledge and training in non-pharmacological behavior approaches, a four-item questionnaire (Figure 5) would be developed by the project director with the following considerations, 1) Is the absence of mandated dementia care training in Hawaii influential? 2) Does the facility’s administration/management offer in-house opportunities for non-pharmacological behavior-management training? 3) Do nurse managers on the care units offer guidance/support that utilizes non-pharmacological interventions? and 4) If psychotropic medications are on a patient’s medication list, does this influence the staff’s decisions to first use the medication to manage the behavior before employing any non-pharmacological interventions?

**Four-item questionnaire.** The questionnaire was intended to determine whether staff had knowledge of non-pharmacological interventions, if the organization was influential in the provision or non-provision of non-pharmacological interventions, and whether psychotropic medications indicated on the patient’s medication list
influences staff reliance on such medications for behavior management.

### Figure 5.

Four-item questionnaire. This questionnaire assessed the healthcare provider self-perceived knowledge of non-pharmacological interventions and the influence of the facility in the utilization of non-pharmacological interventions.

#### Specific Aim 2

*Integrate the Geriatric Mental Health Training Series (GMHTS) program within an organization to assist the staff (licensed nurses) in accurately identifying the contributing factors of behavior problems and guide the implementation of interventions which modify patient-based, caregiver-based and environmental-based factors.*
**Objective 1:** Assemble a team (Medical Director, Director of Nursing, and naysayer) to promote cooperation and support of staff with the integration of the Geriatric Mental Health Training Series (GMHTS) program within the facility of interest.

The facility’s Director of Nursing was contacted directly via both email communication and telephone communication in regards to the integration of GMHTS within the facility of interest. The project director would work with the Director of Nursing to obtain support for the intervention from the facility’s medical director as well as the identification of a naysayer whose perceptions concerning non-pharmacological interventions are meant to be improved. The team was assembled within a two-week timeframe.

**Objective 2:** Analyze the components of the Geriatric Mental Health Training Series (GMHTS) curriculum and synthesize the information for implementation within the organization.

The training program specific for the facility of interest would be developed based on select items from the Geriatric Mental Health Training Series (GMHTS) curriculum (Appendix G) and supplemented with pertinent information derived from the British Columbia BPSD guidelines. Additionally, the development of the facility-specific program considered the findings of Specific Aim 1, Objectives 1 and 2 indicated above. The training program was developed by the project director and reviewed by the project’s support team within one to two weeks of conducting a microsystem analysis and assessment of staff knowledge concerning dementia and related behavioral problems. In addition to reviewing the training program, the support team provided their perceptions/inputs of the behavior problem
assessment processes in the facility. Additionally, they were expected to facilitate the process of ensuring pre-test questions and pre-test vignettes were completed in a timely manner (one week) for prompt analysis by the project leader so that the training program could be tailored to the specific needs of the facility. Selection of the components from the GMHTS curriculum were specifically based on results of the pre-test questions and pre-test vignette. The questions on the pre-test were based on the following categories: 1) pathophysiological changes, 2) disease process of Alzheimer’s, 3) person-centered care, and 4) knowledge of appropriate interventions. The pre-test vignette is centered around the A-B-Cs (Antecedents-Behavior-Consequences) concept of behavior management and the processes for identifying the potential contributing factor(s) to behavior problems.

Specific Aim 3

*Implement and evaluate the* Geriatric Mental Health Training Series (GMHTS) *program for its effectiveness in assisting facility staff in the identification of the causal factor(s) of agitation in individual dementia patients.*

**Objective 1:** Trial the Geriatric Mental Health Training Series (GMHTS) program in the facility of interest.

After review and approval of the training program by the project support team, GMHTS was implemented within the facility for a duration of 21 days or three weeks. A two-part series training session (consisting of two hours each for Part I and Part II) would be provided to full-time staff (licensed nurses) working either the morning, evening, or night shifts. Part I and II training sessions were provided in a single four-hour period. Scheduling and attendance of the two-part, four-hour
training session was conducted over the course of three weeks. The Director of Nursing informed all shift staff that attendance of the four-hour training session was mandatory. The project director would work with the scheduler to identify the full-time staff and determine the days that these staff members were able to attend the training session within the allotted 21 days to avoid any conflict with regular staff scheduling. An additional seven days was allotted for the purpose of analyzing evaluation materials (indicated below) for any improvements of staff competencies concerned with the material presented within the training session.

**Objective 2:** Evaluate the staff’s adherence to the steps/components of the staff training program and evaluate both their understanding of the dementia disease process as well as their ability to identify and modify the potential triggers associated with behavioral problems.

To evaluate the staff’s competency and adherence to the facility-specific training program, a post-test consisting of 10 questions and a single (post-test) vignette was developed independently by the project director to determine if there were any improvements in the competency and knowledge of staff in managing behavioral problems. It was intended to elicit whether the staff member’s assessment process improved toward identification of the trigger(s) and consequence(s) of behavior problems and whether staff develop an increased awareness and understanding of the systematic process used to determine contributory factors of behavior problems. Both the post-test questions and vignettes were based on the components of GMHTS and the British Columbia BPSD guideline. The post-test questions and post-test vignette were administered
immediately after the completion of the four-hour training program. Furthermore, the post-test vignette was re-administered one week from the date the participants’ complete the training program. This was specifically to assess the retention of the training information as well as determine any improvements in the participants’ ability to apply the concepts to a scenario which they have been previously exposed to (post-test vignette administered one week prior).

**Figure 6.** Post-test questions. This post-test assessed for improvements in healthcare provider knowledge concerned with dementia-related behaviors.

**Post-test.** Post-test questions and model answers (see Figure 6) included in the analysis were based on fundamental information derived from the GMHTS and the British Columbia BPSD guidelines.
The analysis was scored using a 10-point system. The questions were not based on any existing questions and were different from the pre-test questions.

**Vignette.** Vignette questions and model answers (see Figure 7) included in the analysis were based on criteria from the GMHTS and British Columbia BPSD guidelines. The analysis was scored using a 10-point system.

**Figure 7.** Vignette. This vignette assessed for improvements in healthcare provider processes concerned with identifying the potential contributing factor(s) to behavior problems in dementia patients.

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**Moderate-to-severe Dementia**

Mrs. E is a 82 yo female with diagnoses CVA, Alzheimer’s dementia, HTN, depressive disorder, obesity, and CHF. Has hx of MVA several years ago. She is on medications for HTN, CHF, and depression. She has recently been admitted to the skilled nursing facility. Her primary language is English. She is usually pleasant and likes to interact with other patients and staff members. Despite the severity of her dementia she is independent with eating, bed mobility, toileting (although incontinent most times), and self-transfers. She requires assistance with bathing and dressing. She goes to the activities program daily. She has a behavior in which she is only able to remain seated for few minutes at a time whether she is in the nursing station for observation or while in the activities room. She is usually not easily agitated but keeps wandering back and forth between her room and the activities room. There is usually increased “flow-thru” traffic (increased work activities) on both the unit where her room is located and in the activity room (increased amount of visitors and staff). When she is given an activity task or craft project she is usually able to remain seated for a limited amount of time and is observed to get up and leave the activity room. She does not always complete the activity task. The only times she is noted to have increased wandering is when she is left sitting on her own without any interaction or anything to focus her attention on. Recently she has been noted to exhibit physical aggression when staff try to make her sit down and remain in the activities room or when staff try to stop her from walking back to her room. Staff often have to chase down Mrs. E to bring her back to the activities room because she can be disrupting the activities of the other patients on the unit (walking into other patient’s room besides her own). Staff also have the tendency to be argumentative with her, increase their tone of voice, and continue to insist that she go back to the activities room. Her behaviors occur daily and she does not have a PRN medication to address the severe agitation nor does she have a scheduled medication for her Alzheimer’s dementia.

**What is the behavior related to? Based on your consideration of her medical diagnoses.**

**Is the patient at risk for harming herself and others around her?**

**What are the triggers for the patient’s behaviors?**

**What is the specific behavior(s) that occurs?**

**What is the consequence after the behavior occurs or continues?**

**In order of priority, indicate the steps you would take to address this patient’s agitation/behavior problem.**

- A. assess for environmental factors such as increased noise, number of people in activity room, familiarity with the environment; move patient to an area with decreased environmental stimuli
- B. assess for boredom and need for social interaction; provide an activity that the patient enjoys and based on past life hobbies/interests AND/OR talk about someone or a subject that is meaningful to the patient
- C. ensure basic needs have been met
- D. assess the complexity of activities/projects, are they focused on previously learned skills and match the patient’s current cognitive abilities
- E. assess for medication side effects and acute/chronic medical illnesses, notify MD/INP, and treat as indicated
- F. notify MD that patient does not have any medication for the dx Alzheimer’s dementia and no PRN medication for severe agitation
- G. assess your communication approach toward patient; provide simple communication (short & clear) and provide distraction/redirection; repeat communication exactly as you did the first time if not understood
Each question was assigned two points except for the question concerning risk for self-harm or harm of others (Question 2) and the sequencing of steps to determine the causal factors of behaviors (Question 6). These two questions were scored one point each. Component one of the vignette is used to identify whether staff competencies increased related to 1) associating the behavior with an existing medical diagnosis, 2) determining if the behavior presents a risk for self-harm or the harm of others, and 3) accurate identification of the trigger(s) and consequence(s) of behavior problems using the ABCs approach. Component two was used to assess the staff members’ ability to correctly sequence the events of determining the potential causal factors of behaviors. The vignette was developed independently by the project director and was not derived from any existing vignettes.

**Evaluation**

Data analysis in regards to staff reliance on psychotropic medications and whether there was any correlation to a deficiency of knowledge and training in non-pharmacological behavior approaches involved the review of responses indicated on a rating scale questionnaire consisting of four questions (see Specific Aim 1, Objective 3, Four-item Questionnaire). Data analysis in regards to determining staff deficiencies pertaining to the identification of behavior problems and its triggers involved the review of responses indicated on a pre-test of 10 questions and a pre-test vignette. Descriptive statistics would be used to convey findings.
Data analysis concerned with evaluating the feasibility and applicability of the GMHTS training program within the long-term care setting would involve the review of responses indicated on a self-administered questionnaire consisting of rating scale questions (i.e. strongly disagree to strongly agree responses) (see Figure 8). The rating scale questions would be developed independently by the

![Staff Evaluation of Caregiver Training Program](image)

**Figure 8.** Staff Evaluation of Caregiver Training Program. This evaluation assessed healthcare provider perceptions of the feasibility and applicability of the GMHTS training program within the facility.
project director and were not derived from any existing rating scale questions. Such rating scales were intended to determine staff perceptions of the value of the GMHTS training program and also to determine staff perceived improvements in their competencies concerning the identification of causal factors that are contributory to behaviors. Furthermore, data analysis concerned with the evaluation of the staff’s comprehension of the GMHTS program materials involved the review of responses to questions in a post-test vignette and post-test of 10 questions. More specifically the post-test vignette would allow for the analysis of the staff members’ critical thinking and the use of an appropriate assessment process toward identifying contributing factors of a behavior and intervening appropriately (with a non-pharmacological intervention) before resorting to pharmacologic measures. Overall, data analysis occurred over a two-week time frame and utilized descriptive statistics to communicate the overall findings.

IRB approval was obtained on January 11, 2017 (Appendix A). A Memorandum of Understanding (MOU) between the University of Hawaii at Hilo and a long-term care facility in rural Hawaii was obtained on January 17, 2017 (Appendix B). Informed consent from the study participants were obtained prior to administration of the training program (Appendix C).
Chapter 4 - Results

In this chapter the results of the project are presented according to the aims and objects outlined in chapter three. A facility analysis was conducted to determine the long-term care facility's processes of care relating to the identification and management of problematic behaviors in dementia patients. Ten question pre- and post-tests as well as pre- and post-training vignettes were utilized to understand the licensed nurses understanding of the contributing factors of dementia-related behaviors and to evaluate the effectiveness of the GMHTS program.

The study site was a long-term care facility in rural Hawaii. It consists of 109 beds and services include skilled nursing and intermediate care. The staff-to-patient ratio is approximately 1 to 20 per unit with a total of three units within the facility.

Specific Aim 1

Objective 1: Conducted a microsystem analysis of the facility of interest to determine and understand the processes of dementia care.

The microsystem analysis was performed on January 18, 2017 through January 20, 2017. The Dartmouth Hitchcock Clinic’s 5P Wall Model was used to guide the microsystem analysis. The five Ps considered in the microsystem analysis are purpose, population, professionals, processes, and patterns (see Appendix L).

Purpose

Of the several purposes of the long-term care (LTC) facility, the primary purpose/aim identified is the facility's provision of intermediate care for dementia/Alzheimer’s patients who are not considered to be safe for a home discharge or who need skilled services secondary to post-hospitalization.
Population

The patient population in the facility varied in health background, services needed, and age. The facility primarily serves patients with various health conditions but of the patients with dementia (the focus population), these individuals already have an established diagnosis prior to admission into the facility. Patients’ are primarily young-old and middle-old individuals (age range 60-90 years old).

Professionals

The number and types of professionals directly involved in the management of behaviors were identified. The professionals within the facility are made up of approximately 15 staff members (per unit as the facility encompasses three separate units). This includes five CNAs, one to two licensed nurses (staff consist of a mix of licensed practice nurses and registered nurses with either Associates Degree in Nursing or Bachelor’s of Science Degree in Nursing), one unit manager (all are registered nurses with Bachelor’s of Science Degree in Nursing), two social services associates who serve all units (both without any higher education degrees), three MDS Coordinators (i.e. nurse assessment coordinators who develop individual patient careplans based on the results of a Minimum Data Set, MDS, which is a health screening and assessment tool) who serve all units, one Director of Nursing (a registered nurse with Associates Degree in Nursing), and one Adult-Gerontology Nurse Practitioner (AGNP) who serves all units. There are 10 medical doctors (MDs) who have varied patient caseloads within the facility but these doctors have external primary care practices. These MDs usually only see their specific patients
during initial admission to the facility and following the Medicare recertification process. The licensed nurses inform the AGNP of the behaviors that present on the unit and the AGNP ultimately cares for the needs of the dementia patients by ordering diagnostic tests and collaborating with the MDs regarding the management approach.

Processes

Identification of the professionals within the facility assisted in determining the process of care concerned with managing problematic behaviors in dementia patients. Processes were based on the professional scope of practice. Performance patterns that were used in the microsystem analysis focused primarily on the availability of the professionals involved in the processes of behavior management throughout the workweek and during the facility’s hours of operation. A significant problem concerned with the processes of care is the CNAs immediately rely on the licensed nurses (licensed practical nurse or registered nurse) to assess the basic needs of dementia patients. The CNAs do not make any effort to address such basic needs before notifying the licensed nurses of their difficulties with managing a behavior problem.

The CNAs are primarily responsible for the provision of daily patient care and notifying the licensed nurses of an increasing severity of problematic behaviors. The licensed nurses administer the daily medications of patients and assess the individual needs of patients based on their underlying medical histories. Additionally, the licensed nurse provides the initial assessment of behavior severity and notifies the unit manager (a registered nurse) should the behavior continue to
increase and not respond to basic non-pharmacological interventions (i.e. assessment of basic needs, comfort, environmental factors etc.). The unit manager works in unison with the licensed nurses to further investigate potential reasons for specific behavior problems.

Should the behavior continue to escalate in which the patient is increasingly combative or refusing care, the social services associates and DON are notified. The social services associates (who do not have any prior academic preparation) and DON attempt to provide one-to-one interactions with the patient and consider the need for psychiatric specialist consultation, medication review, and institute other interventions in order to curtail the behavior. Lastly, the nurse practitioner or MDs are notified of the numerous unsuccessful attempts made by the staff to manage and decrease problematic behaviors. MDs were noted by the DON to proceed immediately with the prescription of psychotropic medications rather than first offering other suggestions for non-pharmacological intervention. The primary role of the NP is caring for the needs of dementia patients by ordering diagnostic tests and collaborating with the MDs regarding the management approach. The MDs have the ultimate say in the prescription of a medication intervention if it is deemed necessary. The DON indicated the prescription of a psychotropic medication by the MD occurs most times when behavioral management is needed.

Patterns

Considering performance patterns, it is important to note that not all members of the interdisciplinary team are available on the weekends. The unit managers, social services associates, MDS Coordinators, DON, and nurse
practitioner are off duty on the weekends. The facility operates 24-hours a day but the social services associates, MDS Coordinators, unit managers, DON, and nurse practitioners only work during the daytime hours. Hence, the evening and night shifts would not have the support of these specific professionals, leaving the licensed nurses and CNAs to solely attempt behavior management.

**Objective 2:** Assess staff’s basic understanding of the dementia disease process and the contributing factors of dementia-related behaviors.

The pre-test of 10 questions and pre-test vignette were distributed to licensed nurses (mix of licensed practical nurses and registered nurses) from January 18 through January 22, 2017. It was distributed to a total of 12 licensed nurses encompassing all shifts (morning, evening, and night). All were informed of the project within the facility and they were asked to complete the forms to assist in determining the specific caregiver education needs of the facility as well as tailoring the GMHTS training program toward these identified needs. Along with the data collection forms, security tinted envelopes were provided to the recipients and such recipients were instructed to seal their forms in the envelopes. Furthermore, they were asked to place their sealed envelopes in a larger manila envelope provided to each respective unit. Three sets of the distributed questionnaires/vignettes were collected on January 27, 2017. Three additional sets of questionnaires/vignettes were collected on January 30th. All forms were unable to be collected by January 30. In order to ensure optimal participation a reminder was sent to all possible participants and an extension to February 1, 2017 was given. All remaining sets of questionnaires/vignettes were collected on February 1, 2017.
The return rate of completed pre-tests was 100%. The results of the 10-question pre-test (Appendix D) were one individual scored 60%, four individuals scored 70%, three individuals scored 80%, and four individuals scored 90%. Further analysis of the individual pre-test questions revealed that 8 of 12 individuals (67%) believed that psychotropic medications are approved for use in Alzheimer’s disease by the U.S. Food and Drug Administration (FDA) (Question 1). Six of 12 individuals (50%) were unaware that the decreased stress threshold in Alzheimer’s disease patients is primarily responsible for the exhibition of behavior problems (Question 2). Three of 12 individuals (25%) didn’t believe that Alzheimer’s disease is due to nerve cell death and tissue loss in the brain (Question 3). Twelve of 12 individuals (100%) are aware that Alzheimer’s is not a normal part of aging (Question 4). Five of 12 individuals (42%) believed that Alzheimer’s disease patients present with a “sudden loss” in cognitive functioning (Question 5). One of 12 individuals indicated that it was “false” to first try non-pharmacological approaches to manage behaviors in Alzheimer’s patients who are not a threat to self or others (Question 6). Twelve of 12 individuals (100%) are aware that management of behavior problems in Alzheimer’s patients should be individualized and person-centered (Question 7). One of 12 individuals (8%) was unaware that increased environmental stimuli can be a source of stress for patients with Alzheimer’s disease (Question 8). Twelve of 12 individuals (100%) are aware that a primary goal in Alzheimer’s dementia care is to allow patients to be independent based on their current abilities (Question 9). Two of 12 individuals (17%) indicated that it was “true” for tasks to be focused on “staff needs” versus offering choices and maintaining a consistent daily routine (Question 10).
The return rate of completed vignettes was 100%. The vignette (Appendix E) was intended to elicit whether staff are able to identify the ABCs (Antecedents, Behavior, Consequences) of a behavior problem which is a principle concept in GMHTS. The appropriate identification of ABCs is essential for the provision of patient-specific interventions. The staff were instructed to read the vignette carefully and answer the questions to the best of their knowledge. Results of the pre-test vignette were three individual scored 0%, three individuals scored 20%, two individuals scored 40%, two individuals scored 60%, and two individual scored 70%. The total score the participants could receive for the vignette was 100%.

Seven of 12 individuals (58%) were not able to accurately identify that the patient in the vignette had a diagnosis of Alzheimer’s dementia and/or a diagnosis of depression (with anxiety) which is contributory to the patient’s agitation (Question 1). Nine of 12 individuals (75%) misidentified the patient as being at risk for harming self or others secondary to her agitation (Question 2). Four of 12 individuals (33%) weren’t able to identify the trigger for the behavior as being due to being left alone or being unable to make her needs known (Question 3). Seven of 12 individuals (58%) were not able to identify the specific behaviors in the vignette which were either increased vocalizations or attempts to get out of bed. All of these seven individuals identified the behavior as “agitation” which is a general term that is not specific enough to determine if the individuals are truly able to identify what behaviors are exhibited (Question 4). Eleven of 12 (92%) individuals were not able to identify the consequences of the behavior as being contributory to the upsetting of other patients, increased shortness of breath due to increasing agitation, or staff disregarding the vocalization of the patient (Question 5).
Twelve of 12 individuals (100%) were not able to accurately prioritize the steps toward assessing the contributing factor(s) of the behavior problem exhibited (Question 6).

Nine pre-tests and pre-test vignettes were administered separately from the above 12 completed tests and vignettes. Thus, a total of 21 pre-tests and vignettes were administered. The DON was not able to permit all staff participation in the training considering conflicts with employee scheduling and understaffing. Therefore, nine individuals volunteered to receive the training. This was the primary reason for administering the nine pre-tests and vignettes separately. Additionally, the 12 completed tests and vignettes were obtained to determine all licensed nurse (licensed practical nurse and registered nurse) understanding of the dementia disease process as well as the contributing factors of dementia-related behaviors. Furthermore, it was utilized to assess all licensed nurse knowledge in regards to appropriate dementia-care assessment processes.

In regards to pre-test results, one individual scored 60%, three individuals scored 70%, two individuals scored 80%, and three individuals scored 90%. Further analysis of the individual pre-test questions revealed that four of nine individuals (44%) believed that psychotropic medications were approved for use in Alzheimer’s disease by the U.S. Food and Drug Administration (FDA) (Question 1). Five of nine individuals (56%) were unaware that the decreased stress threshold in Alzheimer’s disease patients is primarily responsible for the exhibition of behavior problems (Question 2). Four of nine individuals (44%) did not believe that Alzheimer’s disease is due to nerve cell death and tissue loss in the brain (Question 3). One of nine individuals (11%) was not aware that Alzheimer’s is not a normal part of aging (Question 4). Four of nine individuals (44%) believed that
Alzheimer’s disease patients present with a “sudden loss” in cognitive functioning (Question 5). Nine of nine individuals (100%) were aware that non-pharmacological approaches should be tried first to manage behaviors in Alzheimer’s patients who are not a threat to self or others (Question 6). Nine of 9 individuals (100%) are aware that management of behavior problems in Alzheimer’s patients should be individualized and person-centered (Question 7). Nine of nine individuals (100%) were aware that increased environmental stimuli can be a source of stress for patients with Alzheimer’s disease (Question 8). Nine of nine individuals (100%) were aware that a primary goal in Alzheimer’s dementia care is to allow patients to be independent based on their current abilities (Question 9). Nine of nine individuals (100%) were aware that tasks should not be focused on “staff needs” but should instead be focused on offering choices and maintaining a consistent daily routine (Question 10).

Pre-test vignette results include one individual scored 0%, one individual scored 20%, one individual scored 30%, two individuals scored 40%, two individuals scored 50%, and two individuals scored 60% (see pg. 73 for model answers; see pg. 87 for individual question analysis of pre-test vignette compared to post-test vignette). Four of nine individuals (44%) were not able to accurately identify that the patient in the vignette had a diagnosis of Alzheimer’s dementia and/or a diagnosis of depression (with anxiety) which is contributory to the patient’s agitation (Question 1). Seven of nine individuals (78%) misidentified the patient as being at risk for harming self or others secondary to her agitation (Question 2). Three of nine individuals (33%) were not able to identify the trigger for the behavior as being due to being left alone or being unable to make her needs known (Question 3). Five of nine individuals (56%) were not able to identify the
specific behaviors of the vignette which were either increased vocalizations or attempts out of bed. Four of these five individuals identified the behavior as “agitation” or “restlessness” which is a general term that is not specific enough to determine if the individuals are truly able to identify what behaviors are exhibited. One individual did not provide a response (Question 4). Six of nine (67%) individuals weren’t able to identify the consequences of the behavior as being contributory to the upsetting of other patients, increased shortness of breath due to increasing agitation, or staff disregarding the vocalization of the patient (Question 5). Eight of nine individuals (89%) were not able to accurately prioritize the steps toward assessing the contributing factor(s) of the patient’s agitation (Question 6).

<table>
<thead>
<tr>
<th>Model Answers: Pre-test vignette</th>
<th>Participant Answers: Pre-test vignette</th>
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</thead>
<tbody>
<tr>
<td><strong>Q1 (Associated medical Dx)</strong></td>
<td>Alzheimer’s dementia</td>
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<td>- Alzheimer's dementia</td>
<td>Depression w/ anxiety</td>
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<tr>
<td>- May also include dx depression w/ anxiety</td>
<td>Vascular dementia</td>
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<td><strong>Language barrier</strong> (trigger or antecedent)</td>
<td><strong>Husband leaving</strong> (trigger or antecedent)</td>
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<td>Unable to express her feelings</td>
<td><strong>Frustration expressing self</strong> (trigger or antecedent)</td>
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<td>Frustration expressing self</td>
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<td><strong>Q2 (Risk for harm)</strong></td>
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<td>No</td>
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</tr>
<tr>
<td><strong>Q3 (Antecedents)</strong></td>
<td>Expressing herself*</td>
</tr>
<tr>
<td>Either of the following:</td>
<td>Recognizes familiar staff*</td>
</tr>
<tr>
<td>- being left alone (when husband leaves, recognizing familiar staff)</td>
<td>When husband leaves*</td>
</tr>
<tr>
<td>- unable to make needs known d/t language barrier</td>
<td>Language barrier*</td>
</tr>
<tr>
<td>(* = an accepted response which is similar to model answer)</td>
<td>Needing attention from familiar faces</td>
</tr>
<tr>
<td>Being alone*</td>
<td>Longing for companionship*</td>
</tr>
<tr>
<td>Unmet basic needs/pain</td>
<td></td>
</tr>
<tr>
<td><strong>Q4 (Specific behavior that occurs)</strong></td>
<td>Agitation</td>
</tr>
<tr>
<td>Either of the following:</td>
<td>Calling out*</td>
</tr>
<tr>
<td>- increased vocalization</td>
<td>Attempting to get out of bed*</td>
</tr>
<tr>
<td>- attempts out of bed/restless</td>
<td>Wants someone to come be with her</td>
</tr>
<tr>
<td>(* = an accepted response which is similar to model answer)</td>
<td><strong>Anxiety</strong> (a diagnosis that could contribute to behavior)</td>
</tr>
<tr>
<td>Depression (a diagnosis that could contribute to behavior)</td>
<td>Confusion</td>
</tr>
<tr>
<td><strong>Q5 (Consequences)</strong></td>
<td>Falls</td>
</tr>
<tr>
<td>Either of the following:</td>
<td><strong>Anxiety</strong> (a diagnosis that could contribute to behavior)</td>
</tr>
<tr>
<td>- other residents get upset with the increased calling out</td>
<td>Stress to staff</td>
</tr>
<tr>
<td>- staff ignore her vocalizations/verbalizations</td>
<td><strong>Antipsychotic drugs used</strong> (not mentioned in vignette to have been used)</td>
</tr>
<tr>
<td>- patient gets increasing short of breath due to increased agitation</td>
<td>Increased agitation resulting in shortness of breath*</td>
</tr>
<tr>
<td>(* = an accepted response which is similar to model answer)</td>
<td>Gets ignored/staff ignore her*</td>
</tr>
<tr>
<td>Other residents get irritated/get upset*</td>
<td>Remaining in bed most of the time (not mentioned in vignette)</td>
</tr>
</tbody>
</table>

Table 1. Pre-test Vignette: Model Answers & Participant Answers
**Objective 3:** Assess for a deficiency in knowledge and training amongst all staff and whether these are influential toward any reliance on psychotropic medications to manage behavior problems in dementia patients.

Along with the pre-test of 10 questions and pre-test vignette that were distributed to the licensed nurses, a four-item questionnaire (see Appendix F) was also distributed from January 18 through January 22, 2017. It was distributed to the same 12 licensed nurses who also received the 10-question pre-test and pre-test vignette (discussed previously). They all were informed of the project within the facility and asked to complete the four-item questionnaire to determine an underlying need for further knowledge and training concerned with management of behavior problems in dementia.

In regards to the results, one of 12 individuals indicated that the facility administration/management staff offer opportunities for non-pharmacological behavior management training. However, the remaining 11 individuals (92%) indicated that non-pharmacological behavior management training opportunities are not offered. A majority of the individuals (seven of 12 or 58%) rated their nurse manager as a “3” with respect to the nurse managers’ knowledge of non-pharmacological interventions. This specific question asked the staff to rate their unit manager on a scale of 1 to 5 with respect to their personal perceptions of the managers knowledge of non-pharmacological interventions (1= no knowledge; 5 = extensive knowledge). A majority of the individuals (four of 12 or 33%) rated their likelihood of using antipsychotic/antianxiety medications to manage behavior problems (if such were indicated on the patient’s medication list) a “3” or “4.” This specific question asked the staff to rate their likelihood of using psychotropic medications to manage behavior problems on a scale of 1 to 5 (1= very
unlikely to use; 5 = very likely to use). Lastly, a majority of the individuals (nine of 12 or 75%) rated their personal knowledge of non-pharmacological interventions to manage behavior problems as a “3.” This specific question asked the staff to rate their personal knowledge of non-pharmacological interventions on a scale of 1 to 5 (1= no knowledge; 5 = extensive knowledge).

Nine four-item questionnaires were administered separately from the above 12 completed questionnaires. As indicated above, this was due to the DON not being able to permit all staff participation in the training considering conflicts with employee scheduling and understaffing. These questionnaires were administered one week before the commencement of training. In regards to the results (see Table 2), two of nine individuals (22%) indicated that the facility administration/management staff offer opportunities for non-pharmacological behavior management training. However, the remaining seven individuals (78%) indicated that non-pharmacological behavior management training opportunities aren’t offered (Question 1). A majority of the individuals (five of 9 or 56%) rated their nurse manager as a “3” with respect to the nurse managers’ knowledge of non-pharmacological interventions. One individual rated their nurse manager as a “4.” Three individuals chose not to provide a rating for their nurse manager (Question 2). It is unknown why these three individuals chose not to provide a rating. Nine of nine individuals (100%) rated their likelihood of using antipsychotic/antianxiety medications to manage behavior problems (if such were indicated on the patient’s medication list) a “3” (Question 3). Lastly, a majority of the individuals (seven of 9 or 78%) rated their personal knowledge of non-pharmacological
### Table 2. Four-item Questionnaire: Participant Responses Per Individual Question

<table>
<thead>
<tr>
<th>Question</th>
<th>Number of Participant Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the facility's administration/management staff offer opportunities for non-pharmacological behavior-management training</td>
<td>Yes = 2</td>
</tr>
<tr>
<td></td>
<td>No = 7</td>
</tr>
</tbody>
</table>
| On a scale of 1 to 5, rate your perception of the nurse manager(s) knowledge of non-pharmacological interventions to address behavior problems (in dementia patients) (1 = manager has no knowledge; 5 = manager has extensive knowledge) | Scale response:  
Scale “3” = 5 of 9 (56%)  
Scale “4” = 1 of 9 (11%)  
No answer = 3 of 9 (33%) |
| On a scale of 1 to 5, rate the likelihood that you would rely on the use of antipsychotic/antianxiety medications to manage behavioral problems when it is indicated on the patient's medication list (1 = very unlikely to use Rx; 5 = very likely to use Rx) | Scale response:  
Scale “3” = 9 of 9 (100%) |
| On a scale of 1 to 5, rate your knowledge of non-pharmacological interventions that may be used to address behavioral problems in dementia patients (1 = no knowledge; 5 = extensive knowledge) | Scale response:  
Scale “3” = 7 of 9 (78%)  
Scale “4” = 2 of 9 (22%) |

interventions to manage behavior problems as a “3” (Question 4). Analysis of the results indicate the facility does not offer behavior management training and these individuals predominantly feel their nurse managers are not very knowledgeable of non-pharmacological interventions for behavior problem management. Additionally, staff feel their knowledge of non-pharmacological interventions are “average” and there may be an increased likelihood of the use of psychotropic medications should it be readily available in the patient’s medication regimen.

**Specific Aim 2**

**Objective 1:** Assemble a team (Medical Director and Director of Nursing) to promote cooperation and support of staff with the integration of the Geriatric Mental Health Training Series (GMHTS) program within the facility of interest.
The team consisting of Medical Director and DON of the facility was assembled on January 20, 2017. However, the DON was not able to identify a specific naysayer as she perceived that all the staff were consistent with the utilization of non-pharmacological interventions before resorting to the use of pharmacological interventions. The Medical Director and DON were chosen for this project as it was envisioned they both could influence and encourage the staff to participate in the caregiver training program. It was anticipated that they would be able to communicate the importance of participation to staff and impart onto them the facility’s goal which was to decrease the reliance on psychotropic medications to manage behavior problems in dementia. Much of the communication regarding the integration of the GMHTS program within the facility was between the projector director and the DON. The primary reason being the Medical Director had his medical practice on another island and only presented to the facility once weekly to round on his patient roster. However, the Medical Director fully supported the decision of the DON to have this training program administered within the facility. This is primarily because of the recent scrutiny by federal and state surveyors identifying the continued utilization of psychotropic medications in the facility to manage behavioral problems in dementia patients as being problematic.

**Objective 2:** Analyzed the components of the Geriatric Mental Health Training Series (GMHTS) curriculum and synthesized the information for implementation within the facility of interest.

The GMHTS training program (Appendix G) was developed based on the findings indicated in Specific Aim 1, Objectives 1 and 2 indicated above. In general, the findings indicated that the facility did not have a standard systematic procedure for
assessing contributory causes of behavior problems which would guide appropriate implementation of interventions. It was also determined that there were knowledge deficits in the following areas: 1) dementia pathophysiology/disease processes, 2) dementia versus delirium, 3) person-centered care, 4) communication approach, 5) the decreased tolerance of stress in dementia (PLST model) and 6) the A-B-Cs (Antecedents-Behavior-Consequences) of understanding problematic behaviors.

The development of the facility-specific training program was completed on February 6, 2017 with complete review by the DON and Medical Director on February 10, 2017. Both approved the content of the training program without any further suggestions (Appendix M: Contents of Facility-specific Caregiver Education Program).

**Specific Aim 3**

**Objective 1:** Trial the Geriatric Mental Health Training Series (GMHTS) program in the facility of interest.

The GMHTS program was trialed in a LTC facility in rural Hawaii on the following dates: February 14, February 15, February 16, February 22, and February 23, 2017. A total of nine staff members participated and informed consent was obtained before administration of the training program. A total of eight registered nurses (RNs) were identified and one licensed practical nurse. Seven nurses worked on the day shift while two worked on the evening shift. There were no nurses who worked the night shift. Two of nine individuals indicated caring for an average of one to two dementia patients with agitation or behavior problems. Three of nine nurses indicated caring for an average of three to four dementia patients with agitation or behavior problems. Three of nine nurses indicated caring for an average
of five to six dementia patients with agitation or behavior problems. One of nine nurses indicated caring for an average of seven or more dementia patients with agitation or behavior problems. This data was obtained from the demographic information in the “staff evaluation of GMHTS program” (Appendix H).

The training was provided as a two-part series (Part I and Part II) for a total duration of four hours. A 20-minute break was allowed between both training segments. The training was conducted using a Powerpoint presentation which focused on the specific needs of the facility. Using the results of the 10-question survey, the caregiver education program was centered on dementia pathophysiology/disease processes, the differentiation between dementia and delirium, person-centered care, communication approach, the decreased tolerance of stress in dementia (PLST model) and the A-B-Cs (Antecedents-Behavior-Consequences) of understanding problematic behaviors. Furthermore, education regarding the assessment of contributory factors to behaviors was a significant need of the facility as there appeared to be no specific processes utilized by all staff. The project director worked with the DON to identify the full-time staff who would potentially participate in the training. Of the full-time staff, nine individuals opted to receive the training as the dates coincided with their days off. The remaining full-time staff were not able to participate due to their work schedule. Their participation would have conflicted with the facility’s staffing as the facility (during the period of the project) was short-staffed. Additionally, recruitment efforts were made but it appeared the other staff members were not interested in the training or simply because it was not considered to be “paid work time.” The project leader
made frequent visits to the facility to distribute and follow-up on completion of questionnaires/vignettes. This would have provided staff ample time to express their interest in the training based on their availabilities outside of their regular work schedule. Immediately after the provision of the training, evaluation materials (10-question post-test, post-test vignette, and staff evaluation of GMHTS program) were distributed and collected after completion.

**Objective 2:** Evaluate the staff’s adherence to the steps/components of the staff training program and evaluate both their understanding of the dementia disease process as well as their ability to identify the triggers (antecedents) and the consequences associated with behavioral problems.

The analysis of the evaluation materials are as follows. In regards to 10-question post-test results, two individual scored 80%, three individuals scored 90%, and four individuals scored 100% (see Table 3 for individual post-test question analysis compared to pre-test). Further analysis of the individual post-test questions revealed that only one of nine individuals (11%) still did not understand that antipsychotic medications are not approved for use in Alzheimer’s disease by the FDA (Question 1). The understanding of this concept improved considering four of nine (44%) individuals on the pre-test believed such medications are approved for use in Alzheimer’s disease. One of nine (11%) individuals still did not understand the concept of the decreased stress threshold in Alzheimer’s disease patients as being responsible for the exhibition of behavior problems (Question 2). The understanding of this concept improved considering five of nine (56%) individuals on the pre-test were not aware that Alzheimer’s disease patients have an
Table 3. Pre-test vs. Post-test: % (n) Answered Correctly Per Individual Question

<table>
<thead>
<tr>
<th>Question (True or False Response)</th>
<th>% (n) Answered correctly: Pre-test</th>
<th>% (n) Answered correctly: Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Antipsychotic medications are approved for use in Alzheimer’s disease by the US Food and Drug Administration (False)</td>
<td>56% (5)</td>
<td>89% (8)</td>
</tr>
<tr>
<td>#2 Behavioral problems in Alzheimer’s disease patients are primarily due to a decreased stress threshold in these patients (True)</td>
<td>44% (4)</td>
<td>89% (8)</td>
</tr>
<tr>
<td>#3 Alzheimer’s disease is due to nerve cell death and tissue loss throughout the brain as a result of aging (True)</td>
<td>56% (5)</td>
<td>78% (7)</td>
</tr>
<tr>
<td>#4 Alzheimer’s is a normal part of aging (False)</td>
<td>89% (8)</td>
<td>100% (9)</td>
</tr>
<tr>
<td>#5 Alzheimer’s disease often presents as a sudden loss in cognitive functioning (False)</td>
<td>56% (5)</td>
<td>100% (9)</td>
</tr>
<tr>
<td>#6 Non-pharmacological approaches should be tried first in Alzheimer’s patients who are not a threat to themselves or others (True)</td>
<td>100% (9)</td>
<td>100% (9)</td>
</tr>
<tr>
<td>#7 Interventions for managing behavior problems in Alzheimer’s disease patients and other dementias should be individualized and person-centered (True)</td>
<td>100% (9)</td>
<td>100% (9)</td>
</tr>
<tr>
<td>#8 Sources of stress for patients with Alzheimer’s disease include increased environmental stimuli (True)</td>
<td>100% (9)</td>
<td>100% (9)</td>
</tr>
<tr>
<td>#9 A primary goal concerned with caring for patients with Alzheimer’s is allowing them to continue to be independent based on their current abilities (True)</td>
<td>100% (9)</td>
<td>100% (9)</td>
</tr>
<tr>
<td>#10 When providing care for Alzheimer’s disease patients, tasks should be focused on what you would like them to do rather than offering choices and maintaining a consistent daily routine (False)</td>
<td>100% (9)</td>
<td>100% (9)</td>
</tr>
</tbody>
</table>

impaired ability to self-regulate stress. Two of nine (22%) individuals still did not understand that Alzheimer’s disease is due to nerve cell death and tissue loss throughout the brain as a result of aging (Question 3). The understanding of this concept improved considering four of nine (44%) individuals on the pre-test weren’t aware of this. Nine of nine (100%) individuals demonstrated understanding that Alzheimer’s is not a normal part of aging (Question 4). Nine of nine (100%) individuals demonstrated an increased awareness that Alzheimer’s disease does not present as a sudden loss in cognitive functioning (Question 5). Thus indicating an improved understanding of the difference between delirium and the normal progression of Alzheimer’s disease. This is considering four of nine (44%) individuals on the pre-test lacked appropriate knowledge of this
concept. Nine of nine individuals (100%) remained consistent in their awareness that non-pharmacological approaches should be tried first to manage behaviors in Alzheimer’s patients who are not a threat to self or others (Question 6). Nine of 9 individuals (100%) remained consistent in their awareness that management of behavior problems in Alzheimer’s patients should be individualized and person-centered (Question 7). Nine of nine individuals (100%) remained consistent in their awareness that increased environmental stimuli can be a source of stress for patients with Alzheimer’s disease (Question 8). Nine of nine individuals (100%) remained consistent in their awareness that a primary goal in Alzheimer’s dementia care is to allow patients to be independent based on their current abilities (Question 9). Nine of nine individuals (100%) remained consistent in their awareness that tasks should not be focused on “staff needs” but should instead be focused on offering choices and maintaining a consistent daily routine (Question 10).

A separate post-test specific to the content of the training program was also administered (see Table 4 for results). One of nine individuals (11%) still did not understand that antipsychotic medications are not approved for use in Alzheimer’s disease by the U.S. Food and Drug Administration (FDA) (Question 1). One of nine (11%) individuals still didn’t understand the concept of the decreased stress threshold in Alzheimer’s disease patients as being responsible for the exhibition of behavior problems (Question 2). Nine of nine (100%) individuals demonstrated understanding that rest periods should be allowed for Alzheimer’s patients throughout the day to decrease their stress levels (Question 3). Nine of nine (100%) individuals demonstrated understanding that it is not appropriate to “correct” an Alzheimer’s disease patient’s misbeliefs by
<table>
<thead>
<tr>
<th>Question (True or False Response)</th>
<th>% (n) Answered correctly: Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Antipsychotic medications are approved for use in Alzheimer’s disease by the US Food and Drug Administration (False)</td>
<td>89% (8)</td>
</tr>
<tr>
<td>#2 Behavioral problems in Alzheimer’s disease patients are primarily due to a decreased stress threshold in these patients (True)</td>
<td>89% (8)</td>
</tr>
<tr>
<td>#3 Rest periods should be allowed for Alzheimer’s patients throughout the day to decrease their stress levels (True)</td>
<td>100% (9)</td>
</tr>
<tr>
<td>#4 When communicating with Alzheimer’s patients, it is important to “correct” the patient by providing reality statements and dispute their altered reality perception (False)</td>
<td>100% (9)</td>
</tr>
<tr>
<td>#5 Communication provided to Alzheimer’s patients should be short and simple and articulated slowly to allow the patient to understand the message (True)</td>
<td>100% (9)</td>
</tr>
<tr>
<td>#6 Patients with dementia live in a 24-hour continuum (True)</td>
<td>89% (8)</td>
</tr>
<tr>
<td>#7 Delirium is a normal characteristic of Alzheimer’s disease and other dementias (False)</td>
<td>89% (8)</td>
</tr>
<tr>
<td>#8 The first consideration when attempting to determine the triggers or contributing factors of behavior(s) should be that focused on physical factors and underlying medical illness (True)</td>
<td>78% (7)</td>
</tr>
<tr>
<td>#9 The use of validation therapy/approaches means confronting and correcting the misbeliefs of a patient with Alzheimer’s (False)</td>
<td>100% (9)</td>
</tr>
<tr>
<td>#10 When trying to understand the underlying context of behaviors, it is an appropriate consideration to inquire with family members about the patient’s past life experiences, personality traits, and life-long routines (True)</td>
<td>100% (9)</td>
</tr>
</tbody>
</table>

**Table 4.** Post-test – Training Program Specific: Percent Answered Correctly Per Individual Question

providing reality orientation (Question 4). Nine of nine (100%) individuals demonstrated understanding that communication provided to Alzheimer’s patients should be short and simple and articulated slowly to allow understanding (Question 5). One of nine (11%) individuals missed the concept of dementia patients living in a “24-hour continuum” (Question 6). One of nine (11%) individuals missed the concept that delirium is not a normal characteristic of Alzheimer’s disease and other dementias (Question 7). Two of nine (22%) individuals misunderstood the concept of first focusing on both physical factors and underlying medical illness in determining the specific contributory factor(s) of behavior problems (Question 8). Nine of nine (100%) individuals demonstrated understanding that the concept of “validating” patient misbeliefs does not mean confronting and “correcting” the misbelief (Question 9). Lastly, nine of nine (100%)
individuals demonstrated understanding that it is appropriate to inquire with family members about the patient’s life experiences, personality traits, and life-long routines to get a better understanding of the underlying context of behavior problems (Question 10).

In regards to the post-test vignette results (immediately after the training), one individual scored 50%, two individuals scored 60%, four individuals scored 70%, and two individuals scored 80% (compared to the pre-test vignette results one individual scored 0%, one individual scored 20%, one individual scored 30%, two individuals scored 40%, two individuals scored 50%, and two individuals scored 60%). Three of nine individuals (33%) were not able to accurately identify that the patient in the vignette had a diagnosis of Alzheimer’s dementia and/or a diagnosis of depressive disorder and cerebrovascular accident (CVA) which is contributory to the patient’s agitation (Question 1). Three of nine individuals (33%) misidentified the patient as not being at risk for harming self or others secondary to her agitation (Question 2). Three of nine individuals (33%) weren’t able to identify the trigger for the behavior as being due to increased flow-thru traffic in common areas or lack of interaction/provision of an activity task (Question 3). One of nine individuals (11%) weren’t able to identify the specific behavior(s) of the vignette which were either boredom, wandering, or restlessness (Question 4). Three of nine individuals (33%) weren’t able to identify the consequences of the behavior as being contributory to the development of physical aggression, argumentative communication of staff toward the patient, or the disruption of other patients on the unit (Question 5). Seven of nine individuals (78%) weren’t able to accurately prioritize the steps toward assessing the contributing factor(s) of the behavior problem exhibited (Question 6) (see Figure 11 for comparison against pre-test vignette results; Table 5 for model answers).
The patient presented in the post-test vignette differed from that in the pre-test vignette but the question content remained the same.

![Figure 11. Pre-test vs. Post-test vignette - Number of participants Answered Incorrectly Per Question (N=9)](image)

To further elaborate on Component 2 on the post-test vignette (immediately after training), there was a consistency in regards to not assessing the environment after the assessment of basic needs (6 of 9, 67%). Seven of nine (77%) individuals had difficulty recognizing that after the assessment of basic needs (first) and the environment (second), their communication approach toward the patient should be assessed third. Five of nine (56%) individuals demonstrated uncertainty between assessing for boredom/need for social interaction versus the assessment of the activity task complexity. Three of nine (33%) individuals demonstrated a change in which they proceeded first with the assessment of the environment rather than first assessing for unmet basic needs. The varied “assessment processes” by each participant may have been due to much of the emphasis on considering the environment within the training program. All were consistent in noting that the assessment of potential medication side effects and
### Model Answers: Post-test vignette

<table>
<thead>
<tr>
<th>Question</th>
<th>Participant Answers: Post-test vignette</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 (Associated medical Dx)</td>
<td>Keeps wandering when bored (consequence)</td>
</tr>
<tr>
<td>- Alzheimer's dementia</td>
<td>Gets tired easily</td>
</tr>
<tr>
<td>- May also include CVA or depressive disorder</td>
<td>Alzheimer’s dementia</td>
</tr>
<tr>
<td></td>
<td>CVA</td>
</tr>
<tr>
<td></td>
<td>Depression/Depressive disorder</td>
</tr>
<tr>
<td></td>
<td><strong>Unable to remain seated</strong> (consequence)</td>
</tr>
<tr>
<td>Q2 (Risk for harm)</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>She could fall</td>
</tr>
<tr>
<td></td>
<td>At risk</td>
</tr>
<tr>
<td>Q3 (Antecedents)</td>
<td>Busy environment/change in environment*</td>
</tr>
<tr>
<td></td>
<td>No quiet environment to rest due to room traffic</td>
</tr>
<tr>
<td></td>
<td>Change in her daily routine</td>
</tr>
<tr>
<td></td>
<td>Increased traffic on unit/activity room*</td>
</tr>
<tr>
<td></td>
<td>Having no interaction or something to focus her attention*</td>
</tr>
<tr>
<td></td>
<td>Left sitting on her own with no interaction or anything to focus her attention*</td>
</tr>
<tr>
<td></td>
<td>Increased amount of visitors and staff*</td>
</tr>
<tr>
<td></td>
<td><strong>Boredom/short attention span</strong> (specific behavior that occurs)</td>
</tr>
<tr>
<td>Q4 (Specific behavior that occurs)</td>
<td>Agitation</td>
</tr>
<tr>
<td></td>
<td>Unable to remain seated*</td>
</tr>
<tr>
<td></td>
<td>Wandering/walking around unit*</td>
</tr>
<tr>
<td></td>
<td>Restless</td>
</tr>
<tr>
<td></td>
<td>Gets bored easily*</td>
</tr>
<tr>
<td>Q5 (Consequences)</td>
<td>Physically aggressive*</td>
</tr>
<tr>
<td></td>
<td>Verbally aggressive</td>
</tr>
<tr>
<td></td>
<td>Falls</td>
</tr>
<tr>
<td></td>
<td>Patient argumentative with staff</td>
</tr>
<tr>
<td></td>
<td>Patient disrupts others*</td>
</tr>
<tr>
<td></td>
<td>Restless</td>
</tr>
<tr>
<td></td>
<td><strong>Increased agitation and wandering</strong> (specific behavior that occurs)</td>
</tr>
</tbody>
</table>

(* = an accepted response which is similar to model answer)

**Table 5.** Post-test Vignette: Model Answers & Participant Answers

Notification of the MD for an as needed (PRN) antipsychotic medication are usually the last steps in the assessment process.

In comparing the post-test vignette results against the pre-test vignette results, there is noted to be an improvement in knowledge attainment and utilization (see Table 6 for individual question analysis of post-test vignette compared to pre-test vignette).
Although both vignettes differed (post-test vignette being a bit more challenging), the percentages demonstrate improvement as a result of the GMHTS training program. Sixty-seven percent of individuals (6 of 9) answered Question 1 correctly versus 56% (5 of 9 individuals) in the pre-test vignette. Sixty-seven percent of individuals (6 of 9) answered Question 2 correctly versus 22% (2 of 9 individuals) in the pre-test vignette. Eighty-nine percent of individuals (8 of 9) answered Question 4 correctly versus 44% (4 of 9 individuals) in the pre-test vignette. Sixty-seven percent of individuals (6 of 9) answered Question 5 correctly versus 33% (3 of 9 individuals) in the pre-test vignette. Twenty-two percent of individuals (2 of 9) answered Question 6 correctly versus 11% (1 of 9 individuals) in the pre-test vignette. Scores for Question 3 remained consistent at 67% (6 of 9 individuals for both pre-test and post-test vignettes).

<table>
<thead>
<tr>
<th>Question</th>
<th>% (n) Answered correctly: Pre-test vignette</th>
<th>% (n) Answered correctly: Post-test vignette</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 What is the behavior related to? Based on your consideration of her medical diagnosis</td>
<td>56% (5)</td>
<td>67% (6)</td>
</tr>
<tr>
<td>#2 Is the patient at risk for harming herself and others around her</td>
<td>22% (2)</td>
<td>67% (6)</td>
</tr>
<tr>
<td>#3 What are the triggers for the patient’s behaviors</td>
<td>67% (6)</td>
<td>67% (6)</td>
</tr>
<tr>
<td>#4 What is the specific behavior that occurs</td>
<td>44% (4)</td>
<td>89% (8)</td>
</tr>
<tr>
<td>#5 What is the consequence after the behavior occurs or continues</td>
<td>33% (3)</td>
<td>67% (6)</td>
</tr>
<tr>
<td>#6 In order of priority, indicate the steps you would take to address this patient’s agitation/behaviors</td>
<td>11% (1)</td>
<td>22% (2)</td>
</tr>
</tbody>
</table>

Table 6. Pre-test vs. Post-test Vignette: % Answered Correctly Per Individual Question

One week post-training, the post-test vignette was re-administered to assess the retention of the training provided. It was also re-administered to assess any improvements in the staff’s adherence to the systematic assessment process of determining the specific contributing factor(s) to a patient’s behavioral problem (Question 6 on
vignette) (see Figure 12). In regards to the post-test vignette results (1-week post-training), there was an improvement (6 of 9 individuals or 67%) in recognizing that the second step after assessing the basic needs of the patient is the assessment of the environment (compared to 3 of 9 individuals or 33% immediately after training). Five of nine (56%) individuals improved in recognizing that their communication approach should be the third step in the assessment process after assessing basic needs and the environment (compared to 2 of 9 individuals or 22% immediately after training). Two of nine (78%) individuals demonstrated an understanding of assessing for boredom/need for social interaction (fourth step) prior to the assessment of the activity task complexity (fifth step) (compared to 4 of 9 individuals or 44% immediately after training). Eight of nine (89%) were consistent in noting that the assessment of potential medication side effects and notification of the MD for an as needed (PRN) antipsychotic medication are usually the last steps in the assessment process (compared to 9 of 9 or 100% immediately after training). Of the nine, two individuals were able to accurately prioritize the steps toward assessing the contributing factor(s) of the behavior problem exhibited. In comparison to the same vignette which was administered “immediately after” the training, the result remained consistent at two individuals out of nine.
Finally, the analysis concerning the “staff evaluation of GMHTS program” are as follows. After receiving the GMHTS training, all nurses rated themselves as having “increased confidence” in the assessment and management of behavior problems. All nurses predominantly agreed that the training was “understandable and easy to follow.” All nurses “strongly agreed” that the GMHTS training program is a valuable tool to help in the assessment and management of behavior problems. Lastly, all nurses “strongly agreed” that the training helped them to better understand the factors that are contributory to behavior problems. Additionally, the majority stated the training program was both helpful and useful for application within the long-term care setting. They particularly felt the emphasis on determining the “triggers” (or antecedents) and “consequences” of behaviors are important learning points.

**Summary of Results**

The results of the 10-item pre-test scores versus the post-test scores significantly revealed much of the facility staff are under the impression that psychotropic medications can be used in Alzheimer’s disease patients without any implications and presumably a decreased awareness of the adverse reactions that may be experienced by this patient.
population. The staff have a decreased awareness of the increased risk for mortality associated with the use of psychotropic medications. Furthermore, there is a knowledge deficit concerning the decreased ability of Alzheimer’s disease patients to self-regulate stress and how the environment/staff approaches can be contributory to increasing stress levels in Alzheimer’s disease patients. In regards to their impressions of the factors contributory to behavior problems (prior to receiving the training), all nurses identified unmet needs/pain, medical illness, and the environment as being contributory. Thus, revealing a limited perception of all contributory factors (or triggers/antecedents) which have an impact on behavior problem presentation.

The results of the pre-test vignette versus the post-test vignette indicate a further need to reinforce knowledge concerned with accurately identifying “triggers” (or antecedents) and “consequences” of behavior problems. There was also a need to reinforce knowledge concerned with assessment of the patient’s medical history for further insight to better understand what may potentially be causing a behavior problem to occur. Lastly, there was a need to educate the staff regarding the appropriate procedure/steps in systematically identifying contributing factors to behaviors before proceeding with notification of the MD for pharmacological intervention.

The trial of the GMHTS program in a rural LTC facility demonstrated improvements in the staff understanding of the concepts that are integral to effective behavior management in dementia patients. Staff became much more aware that antipsychotics are not approved for use in Alzheimer’s disease by the FDA. Staff became cognizant of how a decreased stress threshold in Alzheimer’s disease patients contributes to the exhibition of behavior problems. Lastly, staff demonstrated an increased
understanding of how communication approach, person-centered care, and environmental considerations promote positive outcomes in behavior problem management. The utilization of the training concepts also demonstrated improvement within the post-test vignette results. Staff became increasingly knowledgeable of what constitutes a risk for self-harm or harm on others. Staff also improved in their ability to specify the exact behavior problem that results from triggers (or antecedents). Likewise, staff improved in their ability to identify the consequences of a behavior problem that is exhibited. The staff ability to identify the triggers of a behavior problem remained consistent compared to pre-test vignette results. Lastly, the staff knowledge of the appropriate procedure/steps in systematically identifying contributing factors to behavior problems improved marginally.
Chapter 5: Discussion, Recommendations, Conclusions, and Implications for Practice

In this chapter, results of this project will be discussed more in-depth, conclusions will be summarized, and implications for nursing practice will be addressed. The ‘Plan’ and ‘Do’ stages of the PDSA cycle (methodological framework) revealed significant findings relating to the study’s specific aims and objectives. The facility in which the study was conducted did not have any standardized process for assessing and managing problem behaviors. Furthermore, the distribution of the questionnaires/vignettes (evaluated prior to the administration of the training program) revealed varied levels of knowledge amongst the staff members in regards to the dementia disease process and management of behavior problems in dementia patients through non-pharmacological means.

Discussion and Recommendations

Microsystem Analysis

The microsystem analysis revealed that there was essentially no standardized “process” within the facility for assessing why certain “problematic” behaviors occur in the facility. The floor staff varied in their ideas of what should be assessed when a patient displays a behavioral problem. Conversely, the unit managers, MDS Coordinators, and DON seemed to be congruent in their rationalization of the current assessment process. A significant concern revealed by the microsystem analysis was that the majority of licensed nurses noted a reliance by the CNAs on them to assess the basic needs of the patient. It was also noted that the licensed nurses have a limited repertoire in what they believe to be contributory to the manifestation of behavior problems. Their assessment process is primarily
centered on unmet basic needs, comfort level, and environmental stimulation. There was essentially no consideration of communication approach, unmet psychosocial needs, health status (i.e. acute/chronic disease exacerbation), and medication side effects/interactions. There also appeared to be a lack of knowledge at the level of the social services associates and DON. Their primary role concerned with behavior management simply involves one-to-one patient interactions and consideration of the need for specialist provider evaluation or medication regimen evaluation. Additionally, their suggestions for other interventions appeared to be situationally versus proactively determining how to prevent the onset of behavior problems. Lastly, there was a noted knowledge deficit regarding the assessment of behavior problem severity which would subsequently lead to the notification of the MD and prescription of a psychotropic medication. All staff appeared to be unaware that the notification of the MD should essentially be under the circumstances when the patient presents a harm to himself or herself (self-infliction of harm) or others (verbal/physical aggression that continues to escalate). The OBRA of 1987 specifies that antipsychotic medications should only be administered for agitated, aggressive, or psychotic behavior that is either distressing to the patient themselves or the patient is a danger to others (Harvard Mental Health Center, 2007).

**Staff Knowledge**

The analysis of distributed questionnaires/vignettes revealed a variation in the staff’s understanding of both the dementia disease process and factors contributory to behavior problems. The analysis of the 10-item pre-test indicated that facility staff were under the impression that psychotropic medications can be used in Alzheimer’s disease
patients without any implications. Consequently, this knowledge deficit contributed to a decreased awareness of the adverse reactions related to the use of psychotropic medication and a decreased awareness of the increased risk for mortality associated with the use of such medications. Furthermore, the analysis revealed staff needed remediation of education regarding the differences between delirium and the normal progression of Alzheimer’s disease. Additionally, staff needed remediation regarding the pathophysiology of Alzheimer’s disease and how this contributes to cognitive declines and the manifestation of behavior problems. Lastly, there was an apparent knowledge deficit concerning the decreased ability of Alzheimer’s disease patients to self-regulate stress and how the environment/staff approaches could be contributory to increasing stress levels in Alzheimer’s disease patients. The environmental vulnerability/reduced stress-threshold model indicates that with the progression of dementia, patients become increasingly vulnerable to their environment and experience lower thresholds for tolerating stimuli which ultimately results in behavioral disturbances (Gitlin, 2008).

The analysis of the pre-test vignette indicated that staff have insufficient knowledge to understand that there is a need to consider the past medical history for potential diagnoses that might be contributory to a behavior. Second, there is a need for staff to understand what constitutes a severe risk for patient self-harm or harm to others. A patient presents a harm to self if there is physical infliction of injury to oneself (banging head on table or using an object to inflict wounds) or demonstrating increased physical or verbal aggressiveness. When a patient exhibits such behavior then there is a need for emergency intervention to reduce the severity of the behavior problem (British Columbia, 2012). Third, there is a need for staff to develop a better understanding of how
to identify specific “triggers” of behavior problems by primarily being aware that both internal and environmental cues have an impact on behavior presentation. Fourth, there is a need for staff to develop a better understanding of what “consequences” of behaviors are and how such influences the improvement or worsening of the behavior. Lastly, staff need to be educated regarding the appropriate procedure/steps for systematically identifying contributing factors to behaviors before proceeding with notification of the MD for pharmacological intervention. The STAR program emphasizes the ABC’s of behavioral distress in order to alter the sequence of events that cause behavior problems (Teri et al., 2005). The knowledge deficits identified in both the 10-item questionnaire and vignette are possibly the reason for the predominant use of antipsychotic medications within the facility. This finding indicates the significant value of having routine behavior management training to reduce antipsychotic use within the facility. A Cochrane review of four cluster-randomized controlled studies revealed caregiver education resulted in a decrease of the proportion of residents with antipsychotic drug use or reduction in days with antipsychotic use per 100 days per resident (Richter, 2012).

Overall, the analysis of the pre-test vignette indicated that facility staff are under the impression that psychotropic medications can be used in Alzheimer’s disease patients without any implications and presumably a decreased awareness of the adverse reactions that may be experienced by this patient population. Furthermore, there was a decreased awareness of the increased risk for mortality associated with the use of psychotropic medications. Also, there was a knowledge deficit in regards to the differentiation between delirium and the normal progression of Alzheimer’s disease. Lastly, there was a knowledge deficit concerning the decreased ability of Alzheimer’s disease patients to
self-regulate stress and how the environment/staff approaches can be contributory to increasing stress levels in Alzheimer’s disease patients.

**Training Needs**

The analysis of the four-item questionnaire revealed the facility essentially did not provide any opportunities for non-pharmacological behavior management training. This suggests another possible reason for the increased reliance on antipsychotics for behavior problem management within the facility. The analysis also significantly revealed the staff perceived their nurse managers as not having extensive knowledge of non-pharmacological behavior management (average scale response of “3”) nor did the staff feel they had adequate knowledge concerning non-pharmacological behavior management (average scale response of “3”). Lastly, there appeared to be a substantial reliance on the use of psychotropic medications if such are indicated on the patient’s medication list and readily available for administration.

These findings indicate that there is a need for administrative staff to provide consistent opportunities for non-pharmacological behavior management training. Should staff have these opportunities readily available to them, there is the potential to increase the knowledge levels of nurse managers as well as floor staff. This would foster stronger collaboration between the floor staff and managers toward conducting a comprehensive assessment of the patients whom exhibit behavior problems. However, administrative staff should also be encouraging and supportive of floor staff in the pursuit of training centered on non-pharmacological techniques. Furthermore, the administrative staff should be influential in helping staff realize
the impact of training and the improvement on quality of life and prevention of patient mortality. According to a STAR program study by Teri et al. (2010) (which included direct care staff and leadership staff), the provision of training resulted in 89% of staff being able to identify a dementia-related behavior and 90% being able to identify the ABCs of their interactions with residents.

**GMHTS Modification**

Prior to modifying the GMHTS program for integration within the facility, an analysis of pre-tests and pre-test vignettes were used to determine knowledge deficits concerned with behavior problem management in dementia. The findings provided a clearer explanation as to why the facility has an increased reliance on antipsychotics for behavior problem management. The knowledge deficits were specifically concerned with the concepts in the GMHTS training program. The findings underscored the need for review about the dementia pathophysiology/disease process as well as the importance of being able to recognize delirium from the normal progression of dementia. It is perceived that the concepts of communication approach, the PLST model, and the A-B-Cs of behavior problems requires specific emphasis in any training program because these concepts are not necessarily covered within the curriculum of a nursing program. This demonstrates that with any training program consideration there is a need to evaluate the baseline knowledge of all staff so that the training program contents can be appropriately focused. The STAR program study by Teri et al. (2010) determined that a training program resulted in 89% of staff being able to identify a dementia-related behavior and 90% were able to identify the ABCs of resident
behavior problems. The ACT program determined there was greater improvement in caregiver confidence levels in managing target behavior problems for those in the experiment group than those in the control group (Gitlin, 2010). The ACT caregivers reported a greater improvement in understanding the disease process of dementia (69% vs 25.2%), confidence in managing behaviors (71.9% vs 29.1%), enhanced ability to provide care (58% vs 16.7%), and improving patients’ daily life (36.4% vs 7.8%) (Gitlin, 2010).

Training Implementation

The GMHTS training program was successfully administered on five separate days in the month of February. The training program was provided as a two-part series for a total duration of four hours. The limitations of this project were attributed to the small number of participants (N=9) who volunteered to receive the training. This was due to all other staff members not being able to participate due to their work schedule. Previous talks with the DON indicated an opportunity to provide training for 20 staff members. However, as the dates for the training drew near the DON indicated that the training of 20 staff members would not be possible because of the “costs” involved. The training would have been part of “paid work time.” Additionally, the facility was experiencing a shortage of staff that interfered with adequate unit staffing. Furthermore, recruitment efforts were made but it appeared the other staff members were not interested in the training or simply because it was not considered to be “paid work time.” The project leader/researcher made frequent visits to the facility to distribute and follow-up on completion of questionnaires/vignettes. This would have provided staff ample time to express
their interest in the training based on their availabilities outside of their regular work schedule. This demonstrates a need for any project leader/researcher to ensure the facility’s administrative staff is committed to warrant all staff the benefit of training. Furthermore, if any facility is to benefit from a training program and impact a change in the decreased utilization of antipsychotic medications, administrative staff should encourage staff to participate in as well as support the staff pursuit of training. Furthermore, the administrative staff should be influential in helping staff realize the impact of training and the improvement on quality of life and prevention of mortality in dementia patients.

**Project Evaluation**

To determine any improvements in staff knowledge concerned with behavior problem management in dementia, a post-test, post-test vignette, & a self-administered evaluation of the GMHTS training program were analyzed. The findings revealed an improved understanding of key concepts. The analysis of the 10-item post-test results revealed staff were much more aware that psychotropic medications are not appropriate for use in Alzheimer’s disease and developed a better understanding of the decreased stress threshold in Alzheimer’s disease patients. There were three outliers on the post-test results. One individual lacked an awareness that patients with dementia live in a 24-hour continuum. One individual incorrectly indicated that delirium is a normal characteristic of Alzheimer’s disease. Lastly, two individuals disagreed that physical factors and underlying medical illnesses should be the first consideration in determining the triggers of behavior problems. These outliers may have possibly been due to misunderstanding or misinterpreting the questions
especially at the end of a long training session. Behavioral management programs have demonstrated improvements in the assessment processes of caregivers/staff. The ACT program determined there was greater improvement in caregiver confidence levels in managing target behavior problems for those in the experiment group than those in the control group (Gitlin, 2010). The ACT caregivers reported a greater improvement in understanding the disease process of dementia (69% vs 25.2%), confidence in managing behaviors (71.9% vs 29.1%), enhanced ability to provide care (58% vs 16.7%), and improving patients’ daily life (36.4% vs 7.8%) (Gitlin, 2010).

Comparison of the pre-test vignette results versus the post-test vignette results indicated a further need to reinforce knowledge concerned with accurately identifying “triggers” (or antecedents) and consequences of behavior problems as well as specifically identifying the behavior that occurs within the vignette. There was also a need to reinforce knowledge concerned with assessment of the patient’s medical history for further insight to better understand what may potentially be causing a behavior problem to occur (the GMHTS program illustrates a connection between medical diagnoses and certain behavior problems). The post-test vignette results demonstrated an improvement in identifying a medical diagnosis that could be contributory to a behavior problem. The staff also improved in identifying the specific behavior within the vignette as well as identifying the consequences of the behavior. The staff ability to identify the “triggers” of the behavior did not change from baseline. Hence, the recommendation for improvement involves a more thorough discussion of the sources of stress for dementia patients and how such stressors can cause behaviors to occur. Furthermore, there should be additional
opportunities for training recipients to participate in case scenarios to supplement their understanding of how to identify the “triggers” of a behavior.

The findings of the post-test vignette results also took a deeper look at the improvements in the systematic assessment process of identifying the contributing factor(s) to behavior problem manifestation. The analysis of the post-test vignette results (immediately after the training) revealed varied “assessment processes” by each participant. There were noted uncertainties about the second step in the assessment process which is the assessment of the environment after ensuring all basic needs have been met. Six of nine individuals incorrectly sequenced this step. Seven of nine individuals had difficulty recognizing that after the assessment of basic needs (first step) and the environment (second step), their communication approach toward the patient should be assessed third. Three of nine individuals demonstrated a change in which they proceeded first with the assessment of the environment rather than first assessing for unmet basic needs. This may have been due to much of the emphasis on considering the environment within the training program. Lastly, five of nine individuals demonstrated uncertainty between assessing for boredom/need for social interaction (fourth step) versus the assessment of the activity task complexity (fifth step). The uncertainty between these two steps may have been attributed to the project leader’s delivery of the teaching as both steps were presented simultaneously on the same slide and possibly contributing to confusion regarding which step should be attempted prior to the other. The STAR program indicates the importance of an assessment process via the consideration of environmental factors and the communication/interaction approach utilized by caregivers. These considerations are all encompassed within the training
modules and emphasizes the use of the ABC approach. As a result of this assessment approach it has been demonstrated that caregivers who received the training demonstrated significant improvement (over the course of training) to independently identify and develop careplans for problematic dementia-related behaviors (Teri et al., 2010).

The analysis of the post-test vignette results (one week after training) revealed an improvement in staff recognizing that the first three steps in the assessment process include the assessment of basic needs (first), the environment (second), and their communication approach (third). It was also revealed there is a need to further reinforce the knowledge that the assessment for boredom/need for social interaction (fourth step) should be done prior to assessing whether any activity task is too complex for the patient’s current capabilities (fifth step). The slide which discusses these two steps should reflect which item should be considered first and what would be considered next.

The analysis of post-test vignette results (immediately after training) and post-test vignette results (one week after training) demonstrated an improvement in the application of the systematic assessment process at the one week re-evaluation. The differences between post-test vignette results immediately after the training and the one-week follow-up may have been attributed to the stressors of new knowledge attainment. This suggests that immediate post-training assessment may influence and tax the staff members’ cognitive processes. However, comparison of both items was essential to determine whether staff had retained the training information. Furthermore, the improvement at the one week follow-up date indicates a need for periodic reinforcement of the training content (potentially at
PREVENTING BEHAVIORS

monthly intervals). The comprehension of the training concepts can further be improved and reinforced with the provision of hands-on training with patients whom exhibit behavior problems within the facility.

**Conclusions**

This project addresses the importance of caregiver education and training to increase the knowledge base of licensed nurses concerned with appropriate assessment and management of behavioral problems in dementia. The Progressively Lowered Stress Threshold (PLST) model of care (Buckwalter & Smith, 2003) and the A-B-Cs (Antecedents-Behavior-Consequences) of dementia care (Teri et al., 2005) are crucial towards assisting licensed nurses in determining the specific factors that result in the expression of behavioral problems.

This project provides insight into the processes of a facility through a microsystems analysis. The microsystems analysis is fundamental to understanding why there may be an increased reliance on psychotropic medications to manage behavior problems and also to understand why staff may have difficulties in decreasing the severity and frequency of such behaviors. The microsystems analysis was supplemented with a 10-question pre-test, pre-test vignette, and four-item questionnaire which provided a deeper understanding of knowledge deficits that hinder successful management of behavior problems. This project identified both knowledge gaps and no standardized process of dementia care in the facility. A standardized process of care is tremendously important to successfully manage behavior problems in dementia. Hence, the recommendation for practice improvement in long-term care settings involves the dissemination of a 7-step
Standardized Assessment Guideline for caregivers. The assessment process concerned with behavior problem management in dementia patients must be streamlined for long-term care environments considering the fact that staff in these facilities take care of more than one dementia patient. This guideline (see Figure 13) is based on the teachings of the Geriatric Mental Health Training Series as well as the British Columbia Behavioural and Psychological Symptoms of Dementia (BPSD) best practice guidelines (British Columbia, 2010).

**Figure 13.** 7-Step Standardized Assessment Guideline for Behavior Problem Management. Adapted from “BC BPSD Algorithm” by British Columbia Ministry of Health, 2012. Copyright 2012 by British Columbia Ministry of Health.

There were several limitations of this project as the sample size of the participants was small and it was conducted within a small rural facility in Hawaii. Considering the sample size was small, the findings cannot be generalized to all the licensed nurses employed by the facility. Furthermore, since all the forms and questionnaires were completed confidentially it was difficult to determine whether registered nurses or licensed practical nurses provided the best responses on the
data collection tools. Should the project have had the capability to identify the responses according to specific license credentials, this would have afforded the opportunity to tailor the training specific to the needs of registered nurses as well as tailor the training specific to the needs of licensed practical nurses. Furthermore, the inclusion of certified nurse aides would have afforded the opportunity to assess their knowledge deficits and provide a tailored training specific to their needs considering this class of professionals provide a majority of the direct patient care especially for those with dementia.

**Implications for Nursing Practice**

The literature presents evidence that the use of psychotropic medications to address behavioral problems in Alzheimer’s Dementia provides no clear benefits but rather contributes to the detrimental side effects that affect quality of life and increases the risk for mortality. The harmful side effects of such medications can contribute to stroke, metabolic syndrome and increases a patient’s risk for falls which in itself has added consequences such as bone fractures and traumatic brain injury. Most significantly the use of psychotropic medications in these patients increases the risk for mortality. Therefore, it is of great importance to avoid the unnecessary administration of psychotropic medications to address behavior problems in geriatric patients with Alzheimer’s Dementia. It is essential for care to be person-centered. The characteristics of the environment and how we communicate with Alzheimer’s Dementia patients are key considerations. Having a systematic process for assessing and determining the specific contributing factors to behavior problems is of utmost importance. Increased knowledge in these specific
areas can be accomplished with the “targeted training modules” such as those available in the GMHTS.

Healthcare practitioners must develop an understanding of the “triggers” (or antecedents) and “consequences” of behaviors and how both influence the improvement or worsening of dementia-related behavior problems. The progressive decline of cognition in Alzheimer's Disease patients affect the ability of such individuals to communicate their needs and thus behavior problems often times are exhibited. Behavior problems are also associated with the decreased ability of Alzheimer's Disease patients to tolerate stressful situations and the inability to self-regulate their stress levels. The patient’s environment provides considerable clues as to why behavior problems are exhibited. The environment may be anxiety-provoking, provide too much stimulation, may result from unmet psychosocial needs, or may even be due to staff approaches directed toward patients with Alzheimer's dementia. Person-centered care can be achieved by setting realistic expectations and providing simple tasks that involve the patient’s current cognitive abilities. Furthermore, inquiring through family members about an individual’s past life experiences and interests can provide insights into what the patient may be trying to communicate through expression of the problem behaviors.

The administration of psychotropic medications should be reserved in events where patients pose a danger to self or others. Such patients must not, however, be subjected to maintenance doses of psychotropic medications as these types of medications have severe adverse side effects that will affect a patient’s quality of life and increase the risk for mortality. The benefits of psychotropic medications do not
outweigh the risks in this population, therefore increased education and training is essential. Training should emphasize the importance of conducting a comprehensive assessment which is critical to behavior problem management. The assessment should address both physical and psychosocial needs. Furthermore, it is crucial to examine the patient’s medical diagnosis history and investigate the possibility of medication side effects/drug-drug interactions as both provide further clues as to why behavior problems may manifest. Taking these steps can potentially prevent the unnecessary administration of psychotropic medications.

Both education and training regarding the contributory factors of behavioral problems in Alzheimer’s Dementia are important in influencing a shift from pharmacological management to non-pharmacological management. Caregivers need to develop a thorough understanding of how cognitive impairments impact comprehension and communication abilities as well as the ability to tolerate stressful situations. Frequent education and training to reinforce this knowledge is necessary to allow healthcare practitioners to maintain their assessment skills and continue to develop their confidence levels in implementing non-pharmacological interventions to decrease behavior problem severity.

Advanced Practice Registered Nurses (i.e. Nurse Practitioners) can be leaders for influencing the shift to non-pharmacological behavior problem management by advocating to all healthcare providers the importance of conducting a comprehensive assessment in dementia patients who exhibit behavior problems. Although nurse practitioners have the capability to prescribe medications, they can encourage the utilization of non-pharmacological interventions by also becoming
more knowledgeable of all the potential contributing factors of behavior problems in dementia. With this knowledge, they can assist other healthcare providers in improving their assessment processes toward determining the specific factor(s) contributory to behavior problems in all individual patients. It is also of utmost importance that nurse practitioners convey the risks of mortality and the resultant impact on the quality of life in dementia patients that is associated with the use of antipsychotic medications as they are clearly not indicated for use in dementia patients.
References


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Appendix A: IRB Approval

University of Hawai'i System

Office of Research Compliance
Human Studies Program

TO: Davis, Alice, PhD, University of Hawai'i at Hilo, School of Nursing
FROM: Hachey, Leo, Daniel, BSN, University of Hawai'i at Hilo, School of Nursing

PROTOCOL TITLE: Preventing the Unnecessary Use of Psychotropic Medications in Dementia Patients with Accoutonement of Caregiver Training in Long-Term Care

FUNDING SOURCE: NONE

PROTOCOL NUMBER: 2016-31082

NOTICE OF APPROVAL FOR HUMAN RESEARCH

This letter is your record of the Human Studies Program approval of this study as exempt.

On January 11, 2017, the University of Hawai'i's (UH) Human Studies Program approved this study as exempt from federal regulations pertaining to the protection of human research participants. The authority for the exemption applicable to your study is documented in the Code of Federal Regulations at 45 CFR 46.101(b) 2.

Exempt studies are subject to the ethical principles articulated in The Belmont Report, found at the OHRP Website www.hhs.gov/ohrp/humansubjects/guidance/belmont.html.

Exempt studies do not require regular continuing review by the Human Studies Program. However, if you propose to modify your study, you must receive approval from the Human Studies Program prior to implementing any changes. You can submit your proposed changes via email to shrb@hawaii.edu. (The subject line should read: Exempt Study Modification.) The Human Studies Program may review the exempt status at that time and request an application for approval as non-exempt research.

In order to protect the confidentiality of research participants, we encourage you to destroy private information which can be linked to the identities of individuals as soon as it is reasonable to do so. Signed consent forms, as applicable to your study, should be maintained for at least the duration of your project.

This approval does not expire. However, please notify the Human Studies Program when your study is complete. Upon notification, we will close out files pertaining to your study.

If you have any questions relating to the protection of human research participants, please contact the Human Studies Program by phone at 808-974-6007 or email shrb@hawaii.edu. We wish you success in carrying out your research project.
Memorandum of Understanding

Between

University of Hawaii at Hilo
(Doctor of Nursing Practice Program)

and

This Memorandum of Understanding (MOU) sets for the terms and understanding between the UH Hilo – DNP Program and the implement and evaluate the Geriatric Mental Health Training Series (GMHTS) caregiver training program for its effectiveness in assisting staff to more effectively assess and address causes of agitation/behavioral problems in patients with dementia.

Background

The literature presents evidence that the use of psychotropic medications (i.e. antipsychotics) to address agitation behaviors provides no clear benefits but rather contributes to the detrimental side effects that affect quality of life and increases the risk for mortality. The harmful side effects of such medications can contribute to stroke, metabolic syndrome, increased risk for falls, increased risk of adverse side effects, and increased risk of death. Therefore, it is of great importance to avoid the unnecessary administration of psychotropic medications to address agitation/behavioral problems in geriatric patients with dementia.

There is a breadth of evidence-based information centered on caregiver training aimed at addressing unmet needs in dementia patients, identifying and modifying their environmental vulnerabilities, and improving the caregiver interactions with this patient population. The literature supports the importance of caregiver education as an intervention to promote the understanding of the dementia disease process and provide skills training toward identifying precipitating factors of behaviors and modifying the triggers of such behaviors.

Purpose
This MOU underlies the goal of this Practice Inquiry Project (PIP) by the Doctor of Nursing Practice (DNP) student (Leo Butac). The general objective is the prevention of the unnecessary administration of psychotropic medications to manage agitation/behavioral problems in dementia patients. This will be accomplished through the provision of caregiver training (the GMHTS program as described above) that emphasizes person-centered care and integration of both the person-environment fit theory and the need-driven dementia-compromised behavior model. Caregiver training will specifically be focused on patient-based, caregiver-based and environmental-based domains.

**Reporting**
Adherence to this agreement will be evaluated by the Program Director of the UH Hilo Doctor of Nursing Practice (DNP) program (Dr. Alice Davis).

**Funding**
This MOU is not a commitment of funds.

**Duration**
This MOU is at-will and may be modified by mutual consent of (UH Hilo – DNP Program) and authorized officials from (UH Hilo – DNP Program) and the authorized officials from (UH Hilo – DNP Program) and will remain in effect until modified or terminated by any one of the partners by mutual consent (UH Hilo – DNP Program) and in the absence of mutual agreement by (UH Hilo – DNP Program) and the authorized officials from this MOU shall end on (April 1, 2017).

**Contact Information**
Partner name:
Position:
Address:
Telephone:
Fax:
E-mail:

Date: Jan 17, 2017
Appendix C: Informed Consent

University of Hawaii

Consent to Participate in Research Project:

Preventing the Unnecessary Use of Psychotropic Medications in Dementia Patients with Accommodation of Caregiver Training in Long-Term Care

My name is Leo-Daniel V. Butac. I am a graduate student at the University of Hawaii at Hilo in the School of Nursing. As part of the requirements for earning my graduate degree, I am conducting a research project. The purpose of my project is to evaluate the effectiveness of a caregiver training program for teaching licensed nurses to understand, assess, and address agitation and other problematic behaviors in patients with dementia/Alzheimer’s disease. This caregiver training program encourages licensed nurses to identify and implement appropriate non-pharmacological interventions that decrease behavioral problem severity.

Activities and Time Commitment: If you participate in this project, you will be required to attend an 8-hour training session which provides education regarding the contributory factors of agitation/behavior problems in dementia patients. The education also discusses the Progressively Lowered Stress Threshold (PLST) model of care which is intended to help staff reduce stress and encourage independence of dementia/Alzheimer’s Disease patients. There will be a total of seven (7) surveys/questionnaires that you will be asked to complete. The first survey (a four-item questionnaire) will ask you to rate your personal knowledge of non-pharmacological interventions to address behavioral problems in dementia as well as your evaluation of the nurse manager(s) you work with in regards to non-pharmacological interventions. You will be asked to complete this survey one week before you are scheduled to receive the training and will be notified by Leo-Daniel V. Butac when to do so. You will be asked to complete this survey in the

(2) case studies/vignettes, you will be asked to complete one case study/vignette one week before you receive the training (you will be completing this during the same time period you complete the four-item questionnaire) and one case study/vignette immediately after the training is complete. These case studies/vignettes consist of two components each. One component is to evaluate your ability in regards to identifying the trigger(s) of behavioral problems as well as your ability to determine if the patient’s behavior presents a risk of harm to self- and/or others. The other component is to evaluate your ability to correctly sequence the steps of determining the potential causal factors of behaviors and providing appropriate interventions. There will be a Pre-test questionnaire (you will be completing this during the same time period you complete the four-item questionnaire and the case study/vignette) and a Post-test questionnaire (provided immediately after the training is complete). Furthermore, the Post-test questionnaire will be re-administered one week after receiving the training to evaluate retention of the training materials. Once again, you will be asked to complete this questionnaire in the

These questionnaires are meant to evaluate your knowledge of the dementia disease process as well as the contributing factors of dementia-related behaviors. Additionally, after the training provided to you has been completed, you will be asked to complete an Evaluation questionnaire which will be used to help Leo-Daniel V. Butac understand your personal perspectives concerning the usefulness and effectiveness of the GMHTS training program.

You will be notified by Leo-Daniel V. Butac of your scheduled attendance date within the 15-day duration of the research project. Your scheduled date will be determined by Leo-Daniel V. Butac and the employee scheduler to ensure that there are no conflicts between your attendance date and work dates. The training will be provided by myself, Leo-Daniel V. Butac. You should expect to commit a total of approximately 15 hours to allow for completion of surveys/questionnaires/evaluations as well as receive the 8-hour training program. The training will take place at the

and will start at 8:00 a.m. and end at approximately 5:00 p.m. From 8:00 a.m. - 9:00 p.m. you will receive the training program. Then, from 4:00 p.m. - 5:00 p.m. the case study/vignette, Post test questionnaire, and Evaluation questionnaire will be administered for you to complete. This research project will be conducted in the

for a duration of 25 days to allow Leo-Daniel V. Butac to analyze the responses of the surveys/questionnaires provided one week prior to receiving the training, provide the 8-hour training program, and analyze the responses of surveys/questionnaires provided immediately after the training is complete (as well as one week post-training). You are only expected to complete the surveys/questionnaires/evaluations as indicated and outlined above as well as attend the training program on your ‘scheduled date’ despite the stated 25-day duration of the project. Approximately 6 to 20 participants are anticipated to take part in this research project.

Benefits and Risks: There will be no direct benefits to you for participating in this research study. However, you will gain increased knowledge and awareness of the contributory factors of agitation/behavior problems in dementia patients. The results of this study will provide insights and clarification regarding the barriers that licensed nurses (RN/LPN) experience in implementing non-pharmacological interventions for managing behaviors. Additionally, the GMHTS training program will be evaluated based on your ability to critically analyze and determine the triggers and consequences of agitation/behavior problems and your ability to correctly sequence the steps of an assessment process toward the identification of potential causal factors of
Appendix C continued: Informed Consent

behaviors (on a vignette/case study). There is less likely risk to you for participating in this research project. However, there is potential risk for loss/breach of privacy and/or confidentiality (i.e. inadvertent disclosure of responses on the four-item questionnaire which asks you to rate your nurse manager(s) knowledge of non-pharmacological interventions used to address behavior problems in dementia patients). Additionally, you may experience stress related to learning new knowledge and practicing new skills.

Privacy and Confidentiality: I will keep all information in a safe place. Only my University of Hawaii advisor and I will have access to the information. Other agencies may have the right to review research records. For example, the University of Hawaii Human Studies Program has the right to review research records for this study. When I report the results of my research project, I will not use your name or any other personal identifying information. To maintain confidentiality, please DO NOT include any personal information on the surveys/questionnaires/evaluations that are administered to you for completion.

Voluntary Participation: Your participation in this project is completely voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you. Your choice to participate or not participate will not affect your employment in any way.

Questions: If you have any questions about this study, please call or email me at [808-639-4250 or ldbutac@hawaii.edu]. You may also contact my advisor, Dr. Alice Davis at [808-932-7073 or adavis@hawaii.edu]. If you have questions about your rights as a research participant, you may contact the UH Human Studies Program at 808.956.5807 or uhhrb@hawaii.edu.

Please keep the section above for your records.
If you consent to participate in this project, please sign and date the signature section below and return it to Leo-Daniel V. Butac.

---------------------------------------------------------------------------------------------
Tear or cut here

Signature(s) for Consent:

I give permission to join the research project entitled, Preventing the Unnecessary Use of Psychotropic Medications in Dementia Patients with Accentuation of Caregiver Training in Long-Term Care

Name of Participant (Print): ________________________________________________

Participant's Signature: _________________________________________________

Signature of the Person Obtaining Consent: ________________________________

Date: ______________________
Appendix D: Pre-test Questions

Pre-test questions

1. Antipsychotic medications are approved for use in Alzheimer’s disease by the U.S. Food and Drug Administration (FDA)  T or F

2. Behavioral problems in Alzheimer’s disease patients are primarily due to a decreased stress threshold in these patients  T or F

3. Alzheimer’s disease is due to nerve cell death and tissue loss throughout the brain as a result of aging  T or F

4. Alzheimer’s is a normal part of aging  T or F

5. Alzheimer’s disease often presents as a sudden loss in cognitive functioning  T or F

6. Nonpharmacologic approaches should be tried first in Alzheimer’s patients who are not a threat to themselves or others  T or F

7. Interventions for managing behavior problems in Alzheimer’s disease patients and other dementias should be individualized and person-centered  T or F

8. Sources of stress for patients with Alzheimer’s disease include increased environmental stimuli (increased noise and too many people)  T or F

9. A primary goal concerned with caring for patients with Alzheimer’s is allowing them to continue to be independent based on their current abilities  T or F

10. When providing care for Alzheimer’s patients, tasks should be focused on what you would like them to do rather than offering choices and maintaining a consistent daily routine  T or F
Appendix D continued: Model Answers

Pre-test questions (ANSWERS)

1. Antipsychotic medications are approved for use in Alzheimer’s disease by the U.S. Food and Drug Administration (FDA)  
   T or F

2. Behavioral problems in Alzheimer’s disease patients are primarily due to a decreased stress threshold in these patients  
   T or F

3. Alzheimer’s disease is due to nerve cell death and tissue loss throughout the brain as a result of aging  
   T or F

4. Alzheimer’s is a normal part of aging  
   T or F

5. Alzheimer’s disease often presents as a sudden loss in cognitive functioning  
   T or F

6. Nonpharmacologic approaches should be tried first in Alzheimer’s patients who are not a threat to themselves or others  
   T or F

7. Interventions for managing behavior problems in Alzheimer’s disease patients and other dementias should be individualized and person-centered  
   T or F

8. Sources of stress for patients with Alzheimer’s disease include increased environmental stimuli (increased noise and too many people)  
   T or F

9. A primary goal concerned with caring for patients with Alzheimer’s is allowing them to continue to be independent based on their current abilities  
   T or F

10. When providing care for Alzheimer’s patients, tasks should be focused on what you would like them to do rather than offering choices and maintaining a consistent daily routine  
    T or F
Appendix E: Pre-test Vignette

**Moderate Dementia**

Mrs. C is a 78 yo female with diagnoses [Alzheimer's](#) dementia (on Namenda), vascular dementia, [HTN](#), hyperlipidemia, [Vitamin D](#) deficiency, osteoarthritis, asthma (has [PRN](#) Albuterol and scheduled [Pulmicort](#)) and [Depression](#) with [Anxiety](#) (has [PRN](#) Ativan PO and on [Citalopram](#). She understands basic English and her primary language is Japanese. She is not always able to make her needs known due to the language barrier. She has been residing in the skilled nursing facility for a few years now. She has behaviors where she has increased calling out with agitation and attempts with getting out of bed. Other residents on the unit get upset with the increased calling out. She is also one that needs increased encouragement to eat her meals and drink fluids. Her agitation can occur anytime throughout the day and there appears to be no apparent stimulus or trigger. However, it seems to be increased when she recognizes familiar staff walking in the hallway while she is laying down in bed. She remains in bed most of the day aside from attending the activities program. Her agitation at times will increase in severity when her husband leaves after visiting. It is difficult for staff to de-escalate her agitation. Staff get frustrated and thus often ignore her verbalizations associated with agitation. Additionally, the patient’s agitation is distressing to the patient contributing to increasing shortness of breath.

What is the behavior related to? Based on your consideration of her medical diagnoses.

Is the patient at risk for harming herself and others around her?

What are the triggers for the patient's behaviors?

What is the specific behavior that occurs?

What is the consequence after the behavior occurs or continues?

In order of priority, indicate the steps you would take to address this patient’s agitation/behavior problem.

___ A. provide [PRN](#) Ativan and contact MD for antipsychotic medication order
___ B. assess pain and provide [PRN](#) pain medication
___ C. assess for unmet needs and ensure that basic needs have been met
___ D. assess in-room comfort and any environmental factors contributing to agitation/vocalizations
___ E. assess for changes in medication regimen or newly prescribed medications (potential side effects/interactions)
___ F. assess for loneliness and need for social interaction; provide one-to-one attention and talk about her husband or past life experience
___ G. assess for acute/chronic medical illnesses, notify MD/NP, and treat as indicated
Moderate Dementia (MODEL ANSWERS)

Mrs. C is a 78 yo female with diagnoses Alzheimer’s dementia (on Namenda), vascular dementia, HTN, hyperlipidemia, Vitamin D deficiency, osteoarthritis, asthma (has PRN Albuterol and scheduled Pulmicort) and Depression with Anxiety (has PRN Ativan PO and on scheduled Citalopram). She understands basic English and her primary language is Japanese. She is not always able to make her needs known due to the language barrier. She has been residing in the skilled nursing facility for a few years now. She has behaviors where she has increased calling out with agitation and attempts with getting out of bed. Other residents on the unit get upset with the increased calling out. She is also one that needs increased encouragement to eat her meals and drink fluids. Her agitation can occur anytime throughout the day and there appears to be no apparent stimulus or trigger. However, it seems to be increased when she recognizes familiar staff walking in the hallway while she is laying down in bed. She remains in bed most of the day aside from attending the activities program. Her agitation at times will increase in severity when her husband leaves after visiting. It is difficult for staff to de-escalate her agitation. Staff get frustrated and thus often ignore her verbalizations associated with agitation. Additionally, the patient’s agitation is distressing to the patient contributing to increasing shortness of breath.

Component 1:
What is the behavior related to? Based on your consideration of her medical diagnoses.
-Alzheimer’s dementia; may also include dx depression w/ anxiety
Is the patient at risk for harming herself and others around her?
-No
What are the triggers for the patient’s behaviors?
Either of the following:
-Being left alone (when husband leaves, recognizing familiar staff)
-Unable to make needs known d/t language barrier
What is the specific behavior(s) that occurs?
Either of the following:
-Increased vocalization
-Attempts out of bed/restless
What is the consequence after the behavior occurs or continues?
Either of the following:
-Other residents get upset with the increased calling out
-Staff ignore her vocalizations/verbalizations
-Patient gets increasing short of breath due to increased agitation

Component 2: In order of priority, indicate the steps you would take to address this patient’s agitation/behavior problem.

1. C. assess for unmet needs and ensure that basic needs have been met
2. D. assess in-room comfort and any environmental factors contributing to agitation/vocalizations
3. B. assess pain and provide PRN pain medication
4. F. assess for loneliness and need for social interaction; provide one-to-one attention and talk about her husband or past life experience
5. A. provide PRN Ativan and contact MD for antipsychotic medication order
6. G. assess for acute/chronic medical illnesses, notify MD/NP, and treat as indicated
Appendix F: Four-item Questionnaire

Four-item questionnaire

Are you aware that other states in the U.S. Mainland (except Hawaii) have mandated dementia care training?

Yes or No

Does the facility’s administration/management staff offer opportunities for non-pharmacological behavior-management training?

Yes or No

On a scale of 1 to 5, rate your perception of the nurse manager(s) knowledge of non-pharmacological interventions to address behavioral problems (in dementia patients)

1 _______ 2 _______ 3 _______ 4 _______ 5
(manager has no knowledge) (manager has extensive knowledge)

On a scale of 1 to 5, rate the likelihood that you would rely on the use of antipsychotic/antianxiety medications to manage behavioral problems when it is indicated on the patient’s medication list

1 _______ 2 _______ 3 _______ 4 _______ 5
(very unlikely to use Rx) (very likely to use Rx)

On a scale of 1 to 5, rate your knowledge of non-pharmacological interventions that may be used to address behavioral problems in dementia patients

1 _______ 2 _______ 3 _______ 4 _______ 5
(no knowledge) (extensive knowledge)
Appendix G: GMHTS Curriculum (Training Modules Utilized)

Statement of Intended Use

This training module is provided by the Hartford Center of Geriatric Nursing Excellence (HCGNE), College of Nursing, University of Iowa, as a free service. The training program, “When You Forget that You Forgot: Recognizing and Managing Alzheimer’s Type Dementia, Part I” is revised and updated from a module by the same title that was first published in The Geriatric Mental Health Training Series (GMHTS). The GMHTS was developed and evaluated during a five year grant from The Division of Nursing, Bureau of Health Professions, Department of Health and Human Services, Grant # D10NU2711801, between 1989 and 1994. Other titles in the GMHTS include:

- Whose Problem Is It? An Introduction to Mental Health and Illness in Long-term Care Centers
- Getting the Facts: Effective Communication with the Elderly
- Help, Hope, and Power: Issues of Control and Power in Long-term Care
- When You Are More Than Just Down in the Dumps: Depression in the Elderly
- When You Forget that You Forgot: Recognizing and Managing Alzheimer’s Type Dementia, Part II (Interventions)
- Acting Up and Acting Out: Assessment and Management of Aggressive and Acting Out Behaviors

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To facilitate widest dissemination and use of the training modules in the GMHTS, the original paper and slide format has been modified so that materials may be accessed as electronic versions. Updated copies in Microsoft Word and Powerpoint, as well as materials converted to PDF format, are provided. Permission is granted for individuals to print, copy and otherwise reproduce these program materials in an unaltered form for use as personal development activities, inservice education programs, and other continuing education programs for which no, or only fees to cover expenses, are charged. Use of these materials for personal profit is prohibited. Users are asked to give credit to the Hartford Center of Geriatric Nursing Excellence, College of Nursing, University of Iowa, for use of the training materials.

Questions regarding copyright or use of materials may be directed to:
Attn: Marianne Smith
HCGNE
College of Nursing
Iowa City, Iowa 52242
When You Forget That You Forgot: Recognizing and Managing Alzheimer’s Type Dementia: Part I

**Purpose:**
Alzheimer’s Disease and other dementias are commonly encountered in the long-term care setting. However, staff frequently misinterpret or misjudge behaviors and abilities due to lack of knowledge about the extent and nature of lost abilities. This program provides an overview of various types of dementia, but focuses on Alzheimer’s Disease (A.D.). The stages of A.D. are reviewed, including common behavioral problems associated with each. The Progressively Lowered Stress Threshold model of care is introduced as a model to help caregivers reduce stress and promote more functional behavior in dementia.

**Objectives:**
1. Define dementia and list 3 common types.
2. List 3 possible causes of “reversible” dementia.
3. Describe the type of problems that are typical in each of the 4 stages of Alzheimer’s Disease.
4. Describe (in simple terms) the Progressively Lowered Stress Threshold model of care.
5. Discuss the relationship between stress and problem behaviors.
6. List 3 very common causes of stress for demented residents.

**Content Outline**

*Introduction and overview*
- Reversible vs. irreversible causes
- Dementia defined
- Essential features, losses in dementia
- Age and incidence of dementia

*Types of dementia*
- Alzheimer’s Disease (A.D. or SDAT)
- Vascular dementia (also known a Multi-infarct Dementia or MID)
- Mixed dementia
- Frontotemporal dementia (FTD)
- Lewy Body Dementia (LBD)
- Other causes:
  - “Reversible”dementias
Appendix G continued: GMHTS Curriculum (Training Modules Utilized)

**Content Outline**

*Introduction and overview*
- Reversible vs. irreversible causes
- Dementia defined
- Essential features, losses in dementia
- Age and incidence of dementia

*Types of dementia*
- Alzheimer's Disease (A.D. or SDAT)
- Vascular dementia (also known a Multi-infarct Dementia or MID)
- Mixed dementia
- Frontotemporal dementia (FTD)
- Lewy Body Dementia (LBD)
- Other causes:
  - "Reversible"dementias

*Stages of dementia*
- Forgetful
- Confused
- Ambulatory
- Endstage

*Common behavioral problems*
- Problems resulting from lost abilities
- Catastrophic reactions
- Progressively Lowered Stress Threshold (PLST) model

*Assessment*
- Loss due to disease
- Stress: fatigue, change, stimuli, demands, physical
- Careplanning with the PLST model
- Common care problems

*Summary*
- Alzheimer's is incurable, not untreatable
When You Forget That You Forgot: Recognizing and Managing Alzheimer's Type Dementia: Part II

**Purpose:**

Alzheimer's Disease and other dementias are commonly encountered in the long-term care setting. The second half of this two part program briefly uses the Progressively Lowered Stress Threshold (PLST) model as a basis for describing interventions. After briefly reviewing the PLST model (which was described in detail in Part I) common forms of stress for persons with dementia are reviewed. Nursing interventions to reduce stress and promote more functional behavior among those with dementia are described. An emphasis placed on managing the environment, adjusting routines, adjusting communication strategies and using validation methods.

**Objectives:**

1. Discuss person-centered care and the importance of avoiding negative labels.
2. List 3 very common causes of stress for persons with dementia.
3. List 2 assumptions of the PLST model of care.
4. Describe 4 basic things that caregivers can do to keep stress at a manageable level for persons with dementia.
5. Describe communication methods that can promote comfort and function for persons with dementia.
6. Give an example of how to use Validation principles to reduce “You are wrong” messages.

**Content Outline**

*Introduction and overview*
- Dementia – incurable, but not untreatable
- Goals for today
- New “culture” of dementia care

*Review of Part I*
- PLST behaviors
- Stress in dementia: fatigue, change, stimuli, demands, physical
- Care planning goal
Appendix G continued: GMHTS Curriculum (Training Modules Utilized)

Interventions

Prevention is best intervention
Person-centered care
PLST Principles

PLST Care Planning

Reduce environmental stress
Compensate for lost abilities: Approaches
Compensate for lost abilities: Routines
Allow for lowered stress
Provide unconditional positive regard

Communication: An important form of regard and respect

Simplify the message
Simplify your style of speech
Use nonverbal communication effectively
Avoid “you are wrong” messages

Validation principle: Another method to show respect

Reality orientation: advantages, disadvantages in dementia care
Validation therapy: advantages, disadvantages in dementia care
Validation principles: examples to illustrate
Misperception vs. delusions, hallucinations
Validation approaches: Do’s and Don’ts

Documentation of symptoms is key to problem-solving
Evaluate care: sleep, weight, incidents, medication use

Summary

Alzheimer's is incurable, not untreatable
Appendix G continued: GMHTS Curriculum (Training Modules Utilized)

Statement of Intended Use

This training module is provided by the Hartford Center of Geriatric Nursing Excellence (HCGNE), College of Nursing, University of Iowa, as a free service. The training program, “Back to the A-B-C’s: Understanding and Responding to Behaviors in Dementia” is revised and updated from a module titled “Acting Up and Acting Out: Assessment and Management of Aggressive and Acting Out Behaviors” that was first published in The Geriatric Mental Health Training Series (GMHTS). The GMHTS was developed and evaluated during a five year grant from The Division of Nursing, Bureau of Health Professions, Department of Health and Human Services, Grant # D10NU2711801, between 1989 and 1994. Other titles in the GMHTS include:

- Whose Problem Is It? Mental Health and Illness in Long-term Care
- Getting the Facts: Effective Communication with the Elderly
- Help, Hope, and Power: Issues of Control and Power in Long-term Care
- When You Are More Than Just Down in the Dumps: Depression in the Elderly
- When You Forget that You Forgot: Recognizing and Managing Alzheimer’s Type Dementia, Part I (Introduction and Overview)
- When You Forget that You Forgot: Recognizing and Managing Alzheimer’s Type Dementia, Part II (Interventions)

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HCGNE
College of Nursing
Iowa City, Iowa 52242
Appendix G continued: GMHTS Curriculum (Training Modules Utilized)

Back to the A-B-C’s:
Understanding and Responding to Behavioral Symptoms in Dementia

Purpose:
Behavioral symptoms in dementia are often troubling to staff, other residents, and family members alike. But most important, behaviors are form of communication and signal that the person with dementia is uncomfortable and needs assistance. Development of individualized, person-centered care plans depends on accurate assessment and preventative methods. This program uses the Antecedent-Behavior-Consequence (ABC) approach to help caregivers understand underlying causes of behavior, including the effects of personal, health-related, and environmental factors. Specific questions are introduced to assist caregivers in developing individualized care plans for persons with dementia.

Objectives:
1. Compare and contrast key aspects of the “old” and “new” dementia care cultures (i.e., attitudes, labels, focus of care and interventions).
2. Explain why “prevention is the best medicine” in dementia care.
3. Define the main components of the A-B-C approach to care.
4. Give an example of common antecedents or “triggers” in dementia care.
5. Give an example of common automatic reactions in dementia care.
6. Describe the relationship between behavioral symptoms, antecedents/triggers and consequences/reactions.
7. Develop a plan of care for a person with dementia using the A-B-C approach.
8. List crisis intervention techniques that may be used to calm and redirect a person who is intensely upset and threatened.

Content Outline:

Introduction and overview
- Old culture of dementia care
- New culture of dementia care
- Adjust language to reduce negative labels
- Behaviors are troubling to all, but primarily to person with dementia

Reframe dementia care
- Person-centered care
- Labels for behavioral symptoms
- Labels for care, focus of interventions
Appendix G continued: GMHTS Curriculum (Training Modules Utilized)

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*Behavioral symptoms are communication*

Communicate unmet needs, stress, discomfort

Many problems other than dementia contribute to behaviors

*Using the A-B-C Approach*

Prevention is the best medicine

Intervene early to defuse the situation

ABC: Antecedents, Behaviors, Consequences

*Assessment: Checking it out*

Assessment: Everyone’s responsibility

Describe the behavior

Identify antecedents and triggers

Examine consequences and reactions

*Interventions: Managing and modifying*

Set behavioral goals

Change antecedents and triggers

Change consequences and reactions

Evaluate effectiveness of interventions

*Managing the crisis*

Staff attitudes and feelings

Body awareness and movement

Communication: what and how

Situation specific directions, explanations

Listen, respond, soothe

Protect yourself and others

*Summary*
Appendix H: GMHTS Staff Evaluation of Training

Staff Evaluation of Caregiver Training Program

1. Please indicate if you are a registered nurse (RN) or licensed practical nurse (LPN) (please check box):
   □ RN
   □ LPN

2. Please indicate your shift of work (please check box):
   □ DAY
   □ EVE
   □ NOC

3. On average, how many dementia patients with agitation or behavior problems do you provide care for on your shift (please circle):
   1-2  3-4  5-8  >7

   *In this next section, I would like to get a better understanding from your perspective of the usefulness and effectiveness of the GMHTS training program

4. Prior to receiving the GMHTS training, what factors did you believe were contributory to agitation or behavior problems in dementia patients? Please write your response below.

5. On a scale of 1-10, how confident are you NOW in assessing and managing agitation or behavior problems in dementia patients after receiving the GMHTS training (please circle one):
   1 2 3 4 5 6 7 8 9 10
   (not confident at all) (very confident)

6. The GMHTS training program content was understandable and easy to follow (please circle one)
   Strongly disagree  Disagree  Neutral  Agree  Strongly agree

7. The GMHTS training program is a valuable tool to help me assess and manage agitation or behavior problems in dementia patients (please circle one)
   Strongly disagree  Disagree  Neutral  Agree  Strongly agree

8. Receiving education and training helped me to better understand the factors that contribute to agitation and other problematic behaviors in dementia patients (please circle one)
   Strongly disagree  Disagree  Neutral  Agree  Strongly agree

9. Additional comments about the GMHTS training program. Please write your response below.
Appendix I: Dartmouth Institute Microsystem Academy Privacy Policy with Respect to Personal Data

THE DARTMOUTH INSTITUTE MICROSYSTEM ACADEMY

PRIVACY POLICY WITH RESPECT TO PERSONAL DATA

Dartmouth College is an internationally recognized institution of higher education and research. The Dartmouth Institute for Health Policy & Clinical Practice Microsystem Academy (the “Microsystem Academy”), an organization within Dartmouth, conducts research and provides educational and training assistance to third parties relating to the organization, study and development of clinical microsystems, including quality improvement capability to support improvement in the delivery of healthcare and the performance of clinical research (“Programs”). In providing such educational and training assistance, Dartmouth may collect certain data about participants in its Programs (“Participants”) and Participants may provide certain information to the Microsystem Academy about their participation in the Programs that may be used by the Microsystem Academy to administer and improve the Programs and for other purposes.

The Microsystem Academy may collect information that will allow it to assess Participants’ progress in developing proficient team coaching skills (“Evalitative Data”). Such data will be defined by the Microsystem Academy and may include, without limitation, (i) responses of members of teams which Participants coach as part of their professional duties to surveys soliciting their views as to Participants’ performance or effectiveness, (ii) Participants’ responses to pre- and post-training surveys and (iii) assessment of Participants’ post-training performance in specified activities.

The Microsystem Academy may also collect certain background information about Participants, which may include, without limitation, Participants’ names, ages, genders, job titles, job descriptions, number of years and types of professional experience and level of educational attainment (“Demographic Data”).

The Microsystem Academy may use all or some of such Evalitative Data and Demographic Data to create other data that will be stripped of identifying information (“Derived Data”).

The Microsystem Academy may collect the Evalitative Data and Demographic Data, to create and use the Derived Data, and to permit a Participant’s employer or sponsor or the employers and sponsors of other Participants to use the Evalitative Data, Demographic Data and Derived Data (collectively, “Data”) for research or any other purposes elected by the Microsystem Academy. The Microsystem Academy may also permit third parties other than employers or sponsors to use Derived Data for research or any other purposes elected by Dartmouth.

The Microsystem Academy may also disclose the Data: (i) to others departments within Dartmouth College; (ii) to service providers who work on the Microsystem Academy’s
Appendix I continued: Dartmouth Institute Microsystem Academy Privacy Policy

with Respect to Personal Data

behalf and who have agreed to use the Data solely in furtherance of the Programs; (iii) as required by law, such as to comply with a subpoena or other legal process, or to comply with government reporting obligations; (iv) when the Microsystem Academy believes in good faith that disclosure is necessary (a) to protect its rights, the security or integrity of the Microsystem Academy’s or the Programs’ electronic resources or for the safety of Participants or others, or (b) to detect, prevent or respond to fraud, intellectual property infringement, violations of the Programs’ terms, violations of law or other misuse of the Programs’ electronic resources; and (v) to the extent reasonably necessary in conjunction with a transaction involving all or a portion of the Programs’ assets.

Data may be processed by the Microsystem Academy in the United States or in any other country in the Microsystem Academy’s discretion, where it may be subject to a lawful request by law enforcement officials.

Finally, the Microsystem Academy may maintain the Data on portable and stationary computing devices, and that the Data may be transmitted by the Microsystem Academy through the Internet or via other mediums. While the Microsystem Academy will strive to maintain reasonable security safeguards to protect the Data, the Microsystem Academy does not guarantee the absolute security of the Data. The Microsystem Academy is not responsible for the security of any information transmitted by Participants to the Microsystem Academy over networks that Dartmouth College does not control, including the Internet and wireless networks.

This Privacy Policy with Respect to Personal Data is effective as of August 1, 2014.
### Appendix J: Post-test Questions

<table>
<thead>
<tr>
<th>Post-test questions</th>
<th>T or F</th>
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<tbody>
<tr>
<td>1. Antipsychotic medications are approved for use in Alzheimer’s disease by the U.S. Food and Drug Administration (FDA)</td>
<td>T or F</td>
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<tr>
<td>2. Behavioral problems in Alzheimer’s disease patients are primarily due to a decreased stress threshold in these patients</td>
<td>T or F</td>
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<tr>
<td>3. Rest periods should be allowed for Alzheimer’s patients throughout the day to decrease their stress levels</td>
<td>T or F</td>
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<tr>
<td>4. When communicating with Alzheimer’s patients, it is important to “correct” the patient by providing reality statements and dispute their altered reality perception</td>
<td>T or F</td>
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<tr>
<td>5. Communication provided to Alzheimer’s patients should be short and simple and articulated slowly to allow the patient to understand the message</td>
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<tr>
<td>6. Patients with dementia live in a “24-hour continuum.”</td>
<td>T or F</td>
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<tr>
<td>7. Delirium is a normal characteristic of Alzheimer’s disease and other dementias</td>
<td>T or F</td>
</tr>
<tr>
<td>8. The first consideration when attempting to determine the triggers or contributing factors of behavior(s) should be that focused on physical factors and underlying medical illness</td>
<td>T or F</td>
</tr>
<tr>
<td>9. The use of “validation” therapy/approaches means confronting and “correcting” the misbeliefs of a patient with Alzheimer’s</td>
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</tr>
<tr>
<td>10. When trying to understand the underlying context of behaviors, it is an appropriate consideration to inquire with family members about the patient’s past life experiences, personality traits, and life-long routines</td>
<td>T or F</td>
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</table>
### Post-test questions (ANSWERS)

1. Antipsychotic medications are approved for use in Alzheimer’s disease by the U.S. Food and Drug Administration (FDA)  **T or F**

2. Behavioral problems in Alzheimer’s disease patients are primarily due to a decreased stress threshold in these patients  **T or F**

3. Rest periods should be allowed for Alzheimer’s patients throughout the day to decrease their stress levels  **T or F**

4. When communicating with Alzheimer’s patients, it is important to “correct” the patient by providing reality statements and dispute their altered reality perception  **T or F**

5. Communication provided to Alzheimer’s patients should be short and simple and articulated slowly to allow the patient to understand the message  **T or F**

6. Patients with dementia live in a “24-hour continuum.”  **T or F**

7. Delirium is a normal characteristic of Alzheimer’s disease and other dementias  **T or F**

8. The first consideration when attempting to determine the triggers or contributing factors of behavior(s) should be that focused on physical factors and underlying medical illness  **T or F**

9. The use of “validation” therapy/approaches means confronting and “correcting” the misbeliefs of a patient with Alzheimer’s  **T or F**

10. When trying to understand the underlying context of behaviors, it is an appropriate consideration to inquire with family members about the patient’s past life experiences, personality traits, and life-long routines  **T or F**
Appendix K: Post-test Vignette

Moderate-to-severe Dementia

Mrs. E is a 82 yo female with diagnoses CVA, Alzheimer’s dementia, HTN, depressive disorder, obesity, and CHF. Has hx of MVA several years ago. She is on medications for HTN, CHF, and depression. She has recently been admitted to the skilled nursing facility. Her primary language is English. She is usually pleasant and likes to interact with other patients and staff members. Despite the severity of her dementia she is independent with eating, bed mobility, toileting [although incontinent most times], and self-transfers. She requires assistance with bathing and dressing. She goes to the activities program daily. She has a behavior in which she is only able to remain seated for few minutes at a time whether she is in the nursing station for observation or while in the activities room. She is usually not easily agitated but keeps wandering back and forth between her room and the activities room. There is usually increased “flow-thru” traffic (increased work activities) on both the unit where her room is located and in the activity room (increased amount of visitors and staff). When she is given an activity task or craft project she is usually able to remain seated for a limited amount of time and is observed to get up and leave the activity room. She does not always complete the activity task. The only times she is noted to have increased wandering is when she is left sitting on her own without any interaction or anything to focus her attention on. Recently she has been noted to exhibit physical aggression when staff try to make her sit down and remain in the activities room or when staff try to stop her from walking back to her room. Staff often have to chase down Mrs. E to bring her back to the activities room because she can be disrupting of the activities of the other patients on the unit (walking into other patient’s room besides her own). Staff also have the tendency to be argumentative with her, Increase their tone of voice, and continue to insist that she go back to the activities room. Her behaviors occur daily and she does not have a PRN medication to address the severe agitation nor does she have a scheduled medication for her Alzheimer’s dementia.

What is the behavior related to? Based on your consideration of her medical diagnoses.

Is the patient at risk for harming herself and others around her?

What are the triggers for the patient’s behaviors?

What is the specific behavior(s) that occurs?

What is the consequence after the behavior occurs or continues?

In order of priority, indicate the steps you would take to address this patient’s agitation/behavior problem.

___ A. assess for environmental factors such as increased noise, number of people in activity room, familiarity with the environment; move patient to an area with decreased environmental stimuli
___ B. assess for boredom and need for social interaction; provide an activity that the patient enjoys and based on past life hobbies/interests AND/OR talk about someone or a subject that is meaningful to the patient
___ C. ensure basic needs have been met
___ D. assess the complexity of activities/projects, are they focused on previously learned skills and match the patient’s current cognitive abilities
___ E. assess for medication side effects and acute/chronic medical illnesses, notify MD/NP, and treat as indicated
___ F. notify MD that patient does not have any medication for the dx Alzheimer’s dementia and no PRN medication for severe agitation
___ G. assess your communication approach toward patient; provide simple communication (short & clear) and provide distraction/redirection; repeat communication exactly as you did the first time if not understood
PREVENTING BEHAVIORS

Appendix K continued: Model Answers

**Moderate-to-severe Dementia (MODEL ANSWERS)**

Mrs. E is a 82 yo female with diagnoses CVA, Alzheimer’s dementia, HTN, depressive disorder, obesity, and CHF. Has hx of MVA several years ago. She is on medications for HTN, CHF, and depression. She has recently been admitted to the skilled nursing facility. Her primary language is English. She is usually pleasant and likes to interact with other patients and staff members. Despite the severity of her dementia she is independent with eating, bed mobility, toileting (although incontinent most times), and self-transfers. She requires assistance with bathing and dressing. She goes to the activities program daily. She has a behavior in which she is only able to remain seated for few minutes at a time whether she is in the nursing station for observation or while in the activities room. She is usually not easily agitated but keeps wandering back and forth between her room and the activities room. There is usually increased “flow-thru” traffic (increased work activities) on both the unit where her room is located and in the activity room (increased amount of visitors and staff). When she is given an activity task or craft project she is usually able to remain seated for a limited amount of time and is observed to get up and leave the activity room. She does not always complete the activity task. The only times she is noted to have increased wandering is when she is left sitting on her own without any interaction or anything to focus her attention on. Recently she has been noted to exhibit physical aggression when staff try to make her sit down and remain in the activities room or when staff try to stop her from walking back to her room. Staff often have to chase down Mrs. E to bring her back to the activities room because she can be disrupting of the activities of the other patients on the unit (walking into other patient’s room besides her own). Staff also have the tendency to be argumentative with her, increase their tone of voice, and continue to insist that she go back to the activities room. Her behaviors occur daily and she does not have a PRN medication to address the severe agitation nor does she have a scheduled medication for her Alzheimer’s dementia.

**Component 1:**
What is the behavior related to? Based on your consideration of her medical diagnoses.
- Alzheimer’s dementia; may also include CVA or depressive disorder

Is the patient at risk for harming herself and others around her?
- Yes

What are the triggers for the patient’s behaviors?
- Either of the following:
  - Increased flow-thru traffic/Increased people
  - No interaction or task to do

What is the specific behavior(s) that occurs?
- Either of the following:
  - Boredom
  - Wandering
  - Restless

What is the consequence after the behavior occurs or continues?
- Either of the following:
  - Physical aggression when staff try to make her stay in activities room
  - Staff communication with the patient becomes argumentative and insisting
  - Patient disrupts the activities of other patients on the unit
Component 2: In order of priority, indicate the steps you would take to address this patient’s agitation/behavior problem.

2. A. assess for environmental factors such as increased noise, number of people in activity room, familiarity with the environment; move patient to an area with decreased environmental stimuli
3. B. assess for boredom and need for social interaction; provide an activity that the patient enjoys and based on past life hobbies/interests AND/OR talk about someone or a subject that is meaningful to the patient
4. C. ensure basic needs have been met
5. D. assess the complexity of activities/projects, are they focused on previously learned skills and match the patient’s current cognitive abilities
6. E. assess for medication side effects and acute/chronic medical illnesses, notify MD/NP, and treat as indicated
7. F. notify MD that patient does not have any medication for the dx Alzheimer’s dementia and no PRN medication for severe agitation
8. G. assess your communication approach toward patient; provide simple communication (short & clear) and provide distraction/redirection; repeat communication exactly as you did the first time if not understood
Appendix L: Microsystem Analysis

Microsystem Name
ICF/SNF care for Dementia/Alzheimers Patients

Purpose/AIM

Processes

Professionals

Performance Patterns

Microsystem Approach ANITECH
Revised: 12/30/06

Preventing Behaviors

PREVENTING BEHAVIORS
Appendix M: Contents of Facility-specific Caregiver Education Program
Appendix M continued: Contents of Facility-specific Caregiver Education Program
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Appendix N: Terms of Use – BC BPSD Algorithm

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<th>Terms of Use</th>
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This is the Terms of Use Agreement ("Terms") between the BC Patient Safety & Quality Council (also known as BC PSQC), and the website, bcbpsd.ca ("Site"), and you the user.

The BPSD Consensus Algorithm project is a provincial collaborative effort, that originated and was led by Interior Health, and included representation from all BC Health Authority partners (Fraser Health, Island Health, Northern Health, Vancouver Coastal Health), the BC Ministry of Health, general and specialist physician partners, community pharmacists, and the BC Patient Safety & Quality Council.

The mobile tool is intended to provide an accessible online format for health authorities, physicians, clinical experts and care staff in all of British Columbia’s health care settings to use the Algorithm and Guidelines with the goal of supporting interdisciplinary, evidence-based, person-centred care for persons with behavioural and psychological symptoms of dementia (BPSD).

You agree to indemnify and hold BC PSQC and bcbpsd.ca, its officers, subsidiaries, affiliates, successors, assigns, directors, agents, service providers, suppliers and employees, harmless from any claim or demand, including reasonable attorney fees and court costs, made by any third party due to or arising out of Content you submit, post or make available through the Site, your use of the Site, your violation of the Terms, your breach of any of the representations and warranties herein, or your violation of any rights of another.

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