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Non-Pharmacological Management of The Behavioral And Psychological Symptoms of Dementia

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Capstone Project

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Abstract	3
Introduction.....	4
Evidence of the Problem.....	6
Intervention	8
Review of Literature	8
Theoretical Framework	11
Project Setting	13
Stakeholders:	15
Barriers & Facilitations to Implementation	16
Design and methods	16
SAMPLE	17
METHOD OF EVALUATION	19
DATA ANALYSIS	20
Plan	20
PROTECTION OF HUMAN SUBJECTS	20
Budget.....	20
Results, Findings, Data Analysis	23
Outcomes:	26
Discussion	27
Proposed solutions:.....	28
Limitations:.....	29
Conclusions:	30
References.....	31
Appendix 1	37
Appendix 2	39
Appendix 3	40
Appendix 4	43
Appendix 5	43
Appendix 6	44
Appendix 7	45

NON-PHARMACOLOGICAL MANAGEMENT OF THE BEHAVIORAL

Abstract

The focus of this change in practice implementation project is to emphasize and encourage the use of non-pharmacological interventions as the first line intervention in managing the Behavioral and Psychological Symptoms of Dementia (BPSD) among nursing home residents. A sample of nurses (N = 14) and nursing assistants (N = 11) working in two local nursing homes participated in an educational intervention about dementia care. Two hundred and one charts were reviewed of the residents of both homes for antipsychotic use. Regardless that one home seems very organized, is using less antipsychotic than the other home compared to their bigger capacity as well as fully engaging the residents in regularly scheduled daily activities, no significant difference was found in terms of attitudes and knowledge of the staff towards non-pharmacological management of the BPSD. Results were computed using SPSS Anova and T-test.

Introduction

Dementia is not a specific disease but is used to refer to a group of symptoms caused by brain disorders. It affects thinking and ability of the individual to solve problems or control their emotions bringing about personality change which is progressive. While dementia is very common to the elderly, it is not part of normal aging process. It is one of the most common reasons for nursing home residency. This setting will be the focus of this practice improvement plan implementation. One epidemiology study of aging and dementia in the oldest old (90+), reported that dementia (from all causes) doubled every 5yrs for women while remaining stable for men implying that dementia will become a greater public health problem as these age group increases in terms of number of people with it and cost of managing dementia (Jeffrey, 2008).

Cognitive problems for people with dementia had been the main focus of treatment interest and research in the past, now some common non-cognitive symptoms have been recognized to be problematic not only to the individual with dementia and caregivers but also in clinical management. Most obvious include: agitation, aggression, mood disorders, psychosis, sexual disinhibition, eating problems and abnormal vocalizations (Douglas, James, & Ballard, 2004). BPSD are usually transient and often respond to simple changes in the environment or removal of aggravating factor(s) (The Royal Australian and New Zealand College of Psychiatrists (RANZCP), Faculty of Psychiatry of Old Age (New Zealand) [Bpacnz], 2008).

Unfortunately, pharmacological interventions which should be second line treatment have over the years become first line treatment whether intentionally or unintentionally despite the calls for non-pharmacological treatment interventions to be utilized first. One of the reasons for this trend could be increased cost for human labor and time which will be needed to implement non-pharmacological interventions. It appears that facilities easily turn to pills for management

of behavioral and psychological symptoms which can be quicker to administer and requires less personnel compared to implementing behavior modification therapies/interventions which require more training and personnel but can channel some behavioral outbursts from people with dementia into more appropriate and beneficial outcome for the patients. Inappropriate and unnecessary prescribing of neuroleptics/anti-psychotics and or other sedative medications without exhausting or even attempting non-pharmacological interventions or other treatments first have become of concern. This concern is born out of documented research on the substantial adverse effects like sedation, falls, extra pyramidal signs as well as possibility of reduction in quality of life and possibly accelerating cognitive decline (Douglas et al., 2004).

In an attempt to address this issue, a more personalized care plan is proposed which takes into consideration each individual's personal characteristics and exhibition of dementia symptoms as well as a systematic approach which will involve families and staff of nursing home residents. Interventions include:

- **Education:** direct care providers in nursing homes need to understand the importance of paying closer attention to patients' needs especially providing basic human needs like toileting, making basic personal care items reachable to the patients/residents, identifying any early sign of distress with quick/prompt intervention, identifying any communication deficits and addressing it, etc. Both facility's caregivers & families have to understand the dangers of pharmacological interventions and the benefits of attempting all possible non-pharmacological interventions first.
- **Other interventions include:** behavioral therapy, reality orientation, validation, Reminiscence, Standard therapies, Alternative therapies, Art, Music, activities,

complementary, aromatherapy, bright-light therapy, multisensory approaches, brief psychotherapies, cognitive-behavioral therapy & interpersonal therapy.

Evidence of the Problem

The Boston Globe in March 2010, highlighted research which showed that a significant number of nursing home residents in Massachusetts received powerful antipsychotics without having a psychiatric diagnosis justifying use (Massachusetts Senior Care Foundation [Mass Senior Care], 2013). The seemingly over use of antipsychotics especially as the first line of treatment without exhausting non-pharmacological interventions in managing behavioral issues with residents with dementia in Nursing homes prompted the Centers for Medicare & Medicaid Services (CMS) to roll out an initiative between March & May 30, 2012 announcing a government partnership with providers, caregivers & patients to improve dementia care in nursing homes. More than 17% of nursing home patients had daily doses of antipsychotic exceeding recommended levels in 2010 according to CMS (Brooks, 2013). The goal of this initiative is to reduce nationally by fifteen percent by the end of 2012, the use of antipsychotic drugs in nursing home residents (Centers for Medicare & Medicaid Services [CMS.gov], 2012). This partnership uses the 3 R's: Rethink (rethink our approach to dementia care), Reconnect (reconnect with residents through person-centered care practices and Restore (restore good health and quality of life) to promote a multi-dimensional approach towards realization of its goal (Centers for Medicare & Medicaid Services [CMS.gov], 2013). The three main steps for achieving this goal are:

- First, enhanced training emphasizing person centered care, prevention of abuse and high quality residents' care.

- Secondly, increasing transparency by publishing data starting from July 2012, on Nursing Home Compare about each nursing home's antipsychotic drug use.
- Thirdly, the use of alternatives to antipsychotic medications with emphasis on non-pharmacological alternatives like consistency in staff to resident assignments, increased exercise/activity time or time outdoors, monitoring and managing acute and chronic pain and planning individual activities.

Recent data from CMS show some significant progress since this launch, the national prevalence of antipsychotic use in long term nursing home residents has dropped 9.1% in the first quarter of 2013 compared with the last quarter of 2011 and 11 states at least have hit or exceeded a 15% target with others approaching same goal (Brooks, 2013). Alabama, Delaware, Georgia, Kentucky, Maine, North Carolina, Oklahoma, Rhode Island, South Carolina, Tennessee and Vermont are states listed as have met or exceeded the target.

In Massachusetts, the Mass Senior Care Foundation piloted the OASIS curriculum and training in 11 Massachusetts nursing facilities over a 12-month period (June 2011 - June 2012) as part of its broader initiative to reduce antipsychotics use in MA nursing homes (Mass Senior Care, 2013). Lack of staff training was identified as the most immediate and critical issue; then other factors including prescribing practices, noting that antipsychotics are more likely to be used by staff untrained or ill-equipped to respond to residents exhibiting BPSD (Mass Senior Care, 2013). Due to the success of the pilot study, Mass Senior Care with encouragement from the MA Department of Public Health (DPH), sought and received \$182,000 in funding from CMS through Civil Monetary Penalties (CMP) funds to support a one year "Statewide Initiative to Safely Reduce the Off-Label Use of Antipsychotics"(Mass Senior Care, 2013). Other states like

Vermont are watching the OASIS program in MA for possible emulation/implementation (Vermont Legislative Joint Fiscal Office, 2012).

Intervention

Review of Literature

Search results were found using Cumulative Index of Nursing and Allied Health Literature (CINAHL) with Medical Subject Headings (MESH) including: Non-pharmacologic, dementia and intervention, including hand/manual searches in relevant literatures like references or primary documents. Eighteen results were yielded, at first and then with addition of other words like Pet therapy and Music, more results yielded. Inclusion criteria was any study referencing nursing home residents while exclusion criteria was any study referencing primary care or family caregivers for non – institutionalized patients.

Kong, Evans & Guevara (2009) conducted randomized clinical trials (RCTs) of non-pharmacological interventions for agitation in dementia published in English or Korean, for its' effectiveness, with interventions categorized into seven types: sensory, social contact, activities, environmental modifications, caregiver training, combination therapy and behavioral therapy. Fourteen studies were included (n=586). Results showed sensory interventions to be statistically significantly effective in reducing agitation (Standard mean difference: SMD -1.07; 95% confidence interval (CI) -1.76 to -0.38, p=0.002) while social contact (SMD -0.19; CI -0.71 to 0.33), activities (SMD -0.20; CI -0.71 to 0.31), environmental modification (weighted mean difference (WMD) 1.90; CI -2.82 to 6.62), caregiver training (SMD 0.21; CI -0.15 to 0.57), Combination therapy (WMD 1.85; CI -1.78 to 5.48), and behavioral therapy interventions (SMD -0.27; CI -0.72 to 0.19) were not significantly effective in agitation reduction.

Deudon et al (2009) conducted an RCT in sixteen nursing homes, in France, 306 residents with behavioral & psychological symptoms of dementia (BPSD) were selected. Allocation of nursing homes to intervention group or control group was random, and then an eight-week staff education and training program was done in the intervention group nursing homes. Assessments were done at baseline (W0), at the end (W8) and twelve weeks post (W20) using Cohen-Mansfield Agitation Inventory (CMAI) as the main outcome measure and an observation Scale (OS) score. Results showed significant decrease in the global CMAI score between baseline and W8 (-7.8; $p > 0.01$) and between baseline and W20 (-6.5; $p > 0.01$) in the intervention group but not in the control group. The results of the OS showed same pattern of result. The effects of these interventions were still evident three months post the program providing confirmation that non-pharmacological interventions like caregiver education helps to manage BPSD.

Robinson et al (2007) conducted a systematic review evaluating the effectiveness of non-pharmacological interventions as well as assessing their acceptability and ethical issues associated with their use in managing wandering in dementia. There was no robust evidence to recommend any of the interventions from eleven studies (eight RCTs of a variety of interventions), exercise showed some weak evidence for clinical effectiveness. For Acceptability/ethical issues, the views of people with dementia were not reported directly in any of the papers. There were no ethical concerns about music therapy and exercise and were the most acceptable while tracking and tagging devices ignited ethical debate but were acceptable to caregivers, physical restraints were unacceptable. The review called for high quality research to determine the effectiveness of non-pharmacological interventions that are practical and ethically acceptable to users with effort to include the views of people with dementia.

Reminiscence (Doll) Therapy: Using dolls and teddy bears as part of a non-pharmacological intervention, James & colleagues (2006) studied thirty-four residents of an Elderly Mentally III (EMI) home. The impact of the dolls/teddy bears were assessed over a twelve week period on five domains (Appropriate activity level, interacting with staff/other residents Happier/content and Agitation) and findings were generally positive in varying degrees with each resident, with only few residents not showing any improvement over the five domain assessed, of note also is that none of the residents showed any worsening of their well being during the twelve week assessment period.

Pet Therapy: Colombo & Colleagues (2006) studied the effect of pet therapy on the psychopathological status and perception of quality of life in cognitively unimpaired institutionalized elderly using 144 cognitively intact elderly residents (97 females & 47 males) from seven elderly rest homes in Veneto Region of Northern Italy. They were randomly divided into three groups (one group received a canary, second group a plant and the third group nothing) and observed for three months. This study reinforced the hypothesis that pet therapy may have a beneficial effect on the psychological well being of institutionalized elderly particularly on depressive symptoms and perception of quality of life.

Pain Management: Kovach, Cashin & Sauer (2006) using components of the Serial Trial Intervention (STI), designed to address problems of physical & affective discomfort in people with late-stage dementia studied fifty-seven participants from seven different nursing homes in the treatment arm of their study. The study found components of STI effective in resolving unmet needs of dementia patients who can no longer communicate their needs through speech/language. Trials of non-pharmacological treatment were effective for 62% while trials of analgesics were effective 75%. Those who received higher dose of the intervention had

statistically significant less discomfort after treatment. The nurses who were the interventionists received training on using the steps of the STI as well as required to have at least 6 months experience in caring for dementia patients and to be working 32-hours day-shift hours weekly. In all, 93% of the participants that received STI improved 50% or more in their behavioral symptoms. The levels of evidence matrix are found on Appendix 3.

Theoretical Framework

Kurt Lewin's change theory will be the theoretical foundation for implementing the switch from using pharmacologic intervention as first line to non-pharmacologic interventions in managing the behavioral components of dementia in nursing home elderly residents. Lewin's theory comprises of 3 stages: Unfreezing - Change – Refreeze, which requires prior learning to be rejected & replaced. Refreezing is important to prevent a return to the old norm.

Lewin's theory views behavior as a dynamic balance of forces working in opposite directions involving driving forces and restraining/opposing forces. Equilibrium is a state where driving & restraining forces equalize resulting in no change. Changes occurring between the driving & restraining forces either raise or lower equilibrium. While driving forces are towards change, restraining forces resist change (prefers the status quo).

The driving force for nursing homes to change at this present time is intensified by the push by the Centers for Medicare & Medicaid Services (CMS) to reduce nationally by 15% by the end of 2012, the use of antipsychotic drugs in nursing home residents (Centers for Medicare & Medicaid Services [CMS.gov], 2012), homes that are not showing evidence of attempts towards this goal face the risk of non-compliance tags during their routine surveys. This is also the unfreezing stage of this change process. The change stage will involve staff education to trial various non-pharmacological interventions like, careful & attentive observation of each resident

to identify needs & peculiar methods of expressing these needs/discomforts, addressing these needs timely and documenting results. The refreezing stage involves preparing care plans specific to each resident which includes documenting all non-pharmacological interventions attempted with results before seeking pharmacological intervention. This makes it the new normal rejecting the previous/status quo of using pharmacological interventions first without significant attempt/trial of non-pharmacological.

Literature review showed that non-pharmacological interventions when implemented well can have a positive effect on decreasing BPSD nursing home residents with Dementia. Kong, Evans & Guevera (2009) found sensory interventions to decrease agitation, same was found by Deudon et al (2009), using an eight-week staff education and training program. Similar positive findings were noted by James & Colleagues (2006) using Reminiscence (doll) therapy and by Colombo & Colleagues (2006) with pet therapy. Likewise, positive effects were noted by Kovach, Cashin & Sauer (2006) using components of the Serial Trial Intervention (STI) for pain management in nursing home residents with late-stage dementia.

For this implementation study, an educational intervention highlighting the use and benefits of different types of non-pharmacological interventions as first line intervention for BPSD as well as highlighting the adverse effects of pharmacological interventions used as first line intervention will be implemented to a sample of nurses and nursing assistants in two different nursing homes. The goal is to change the current status quo of using medications first with little to no use of non-pharmacological management despite studies showing the ill-effects of such medications' use in the elderly dementia population especially. Attitudes and knowledge of dementia questionnaire will be administered before the educational intervention, then again

immediately following educational intervention and then a month after educational intervention to check for retention.

Project Setting

Two facilities Home A and Home B (real names not used) in suburban Massachusetts will be used for implementation. Nurses and NAs are expected to work 8 hour shifts/day which means that there are 3 different 8 hour shifts through each day. One is a 92 bed nursing home facility with two units (approximately 46 residents in each unit). One unit (A unit) considered Short term rehab where patients generally stay short term but has some Long term residents who are high functioning but with some cognitive or physical impairment. The other unit (B unit) is a dementia long term locked unit where the residents are more cognitively and or physically impaired. Each shift is staffed as follows:

- **Day shift:** between 2 - 3 nurses and 4 - 5 nursing assistants (NAs) for a Resident to Nurse ratio of 23:1, and Resident to NA ratio of 9 -12 : 1. This means that each nurse has approximately 21 minutes for each patient in an 8 hour day shift and each NA has between 40 to 53 minutes for each resident care.
- **Evening Shift:** 2 nurses with 4 NAs, translating to same ratio of resident to nurses in the day shift with same 21 minutes to each resident and 12:1 resident to NA ratio with 40 minutes NA time for each resident.
- **Night shift:** 1 nurse and 2 NAs for each unit, translating to about 10 minutes of nursing time for each resident with a 46:1 resident to nurse ratio. With NAs, it translates to 23:1 resident to NA ratio with approximately 21 minutes for each resident.

Recently, this facility significantly cut down on hours of activities for the residents as well as on the activities' staff and during implementation of this project, staffing was being reduced daily due to low census. On the day shift, each unit is supposed to have a unit manager but lately, that has not been the case.

The second facility has an affiliation with an organized religion and has more activity hours as well as activities staff (4) for their residents. Daily scheduled activities run by the activity department typically runs from 9 am to 7 pm. It is a Non-profit Nursing home with 118 beds. It has four units - one short term (A unit) and three long term units (B, C and D units). B and C units are joined on same floor level and so share staffing on each shift. Each unit is staffed with a nurse manager on the day shift, other staffing is as follows:

Unit	Bed Capacity	Shift	# Nurses	# Aides	Comment
B unit	30	Day	1.5	5	1 nurse/NA floats between A and C units.
		Evening	1.5	4.5	
		Night	1	2	
C unit	28	Day	1.5	4	1 nurse/NA floats between A and C units
		Evening	1.5	3.5	
		Night	1	2	
D unit	40	Day	2	6	
		Evening	2	5	
		Night	1	3	

A unit	20	Day	1	3	
		Evening	1	3	
		Night	1	2	

In this second facility, staffing translates as follows:

- **Day Shift:** Resident to Nurse Ratio translates to between 19 – 20:1 implying approximately 24 - 25 minutes for each resident and 6 – 7:1 resident to NA ratio implying 68 – 80 minutes for each resident.
- **Evening shift:** same resident to nurse ratio and care time as day shift with approximately 7:1 resident to NA ratio translating to about 69 minutes for each resident.
- **Night shift:** Resident to Nurse Ratio translates to between 20 – 40:1, implying approximately 12 – 24 minutes for each resident and 13 – 15:1 resident to NA ratio translating to 32 – 37 minutes for each resident.

Stakeholders:

Include the consultant Psychiatric Nurse Practitioner (Psych NP), Primary Care Nurse Practitioner who works with each of the Medical Doctors (MD) with residents in these nursing homes, the off -site pharmacy/pharmacists for a printed copy of all antipsychotics prescribed with doses & dates. The directors and assisted Directors of nursing, the Administrators, staff educators, nurses, nursing assistants and family members of residents are stakeholders too. A letter requesting authorization/approval was sent through the Psych NP (Appendix 4 and 5) and verbal approval was received from both facilities. A written/signed approval was obtained at the start of implementation.

Barriers & Facilitations to Implementation

The two major barriers encountered during implementation were getting the staff (main subjects) to complete the questionnaires as well as attend the intervention sessions. Another barrier was the unstable atmosphere in one facility which affected the staff from participating well in this project, poor staffing was very relevant and verbalized by the staff for limiting their engagement. Overall, staffing and resident safety was the top consideration by the DNP student to enable staff participation no matter how little. This dictated the duration of the sessions which is not enough for learning and retention intended.

Facilitations include the consistent effort by the Psych NP to assess residents on antipsychotics regularly, attempt dose reductions with eventual discontinuation. Also the staff educators at both facilities were very helpful in advertising the intervention sessions and in providing a convenient space for the sessions as well as the Director of Nursing in one facility in getting staff down to the sessions. The evening/weekend supervisor as well as the weekend staff were very cooperative in completing the post tests promptly.

Another major facilitation is the current initiative by CMS with the plan to publish the names of nursing homes with their rate of antipsychotic use. The completion and adoption of the OASIS program which is a mandatory educational retraining for Nursing home staff and reflects change of practice towards reduction in antipsychotic use in one home, seems to have made a difference in how the staff viewed this project implementation.

Design and methods

This was a quality improvement project geared towards staff education/training to improve the care of residents with dementia in two nursing homes with focus on the use of non-pharmacological interventions as the first line of intervention rather than the all too common

pharmacological intervention without attempting/exhausting non-pharmacological interventions. It was based on the Plan-Do-Study-Act (PDSA) cycle. The Act part will depend on each facility as the results will be shared with them.

SAMPLE

A convenience sample of the day shift and evening shift Nurses and Nursing Assistants was used as well as some night shift staff. Overall goal was at least 50% of staff participation but this was not reached counting returned questionnaires and intervention attendance if judging per facility but overall, adding both facilities, it was good. One hundred and twenty questionnaires were distributed for the pretest and Competence assessment, 25 were returned for each category excluding incomplete ones (15 from one home and 10 from the other). The first post test was administered at the end of each intervention session with 29 subjects (18 from one home and 11 from the other). Twenty-five responses were collected from the 2nd post test, 60 were given out (15 and 10 respectively). There is no guarantee that the post test respondents are the same as the pre-test respondents. A total of 85 charts for pre and 87 for post review were completed in one facility and 112 pre with 114 post in the other home, giving a range of 197 to 201 residents in all.

Intervention: Studies have shown that better dementia management with the use of non-pharmacological intervention as first line intervention rather than pharmacological intervention is more effective (Gitlin et al., 2012) and more easily done when staff is more educated and aware of these interventions.

An initial assessment of BPSD common in each facility – behaviors that staffs view as challenging to performing their duties optimally was first done. A list of common BPSD (appendix 6) was distributed to staff to check off those applicable as well as hand write-in those not listed. After reviewing these and charting with some staff, inappropriate sexual behavior was

thought to be very challenging and a management plan for it was added to the intervention power-point. Knowledge of and attitudes toward non-pharmacologic interventions for treatment of behavior symptoms associated with dementia: A comparison study of Psychologists and Nurse Practitioner questionnaire adapted to fit this population was used as pre and post tests (appendix 1). The pre test was administered together with a competence in dementia questionnaire (appendix 7). First chart review was done at this time identifying use of antipsychotic, antidepressant, anti-anxiety, acetyl-cholinesterase inhibitors, melatonin and Namenda in each facility as well as percentage with dementia, anxiety, depression and insomnia diagnoses. After collecting the pre-tests and competence questionnaires, the intervention was implemented.

Teaching was directed at staff of these nursing homes on a selected day, agreed on by each facility. Multiple 30 minutes sessions were held on the chosen day within the time frame pre-approved by each facility. Each staff educator stated that after 3:30pm, they were certain that no staff will show up and it was true. Power point hand outs with basic information on dementia and its' management, highlighting non-pharmacological interventions as well as the risks of pharmacological interventions with a specific care plan directed at Inappropriate sexual behavior from a dementia resident was distributed to each attendee. Also included in the intervention was discussion of the current CMS plan for anti-psychotic use in nursing homes as well as discussion of various non-pharmacological interventions (Appendix 2) to think of and do first with any resident exhibiting a challenging behavior of dementia, before requesting Psychotropic. The goal is that with time, staff will become aware of each resident's specific pattern and effective intervention which will now be used to compose a care plan specific to each resident – this happens to be the core message of the OASIS program as well. At the end of each session, each

attendee completed a post test (post-test 1). Same questionnaire (appendix 1) was re-administered one month post intervention (post-test 2) to test for retention. At the time of post-test 2 assessment, 2nd chart review was done to assess for any change in prescription for same medications as reviewed in the initial chart review.

METHOD OF EVALUATION

Measurable outcome will be any measurable change in knowledge evidenced from comparing results of the pre & post tests (appendix 1). Pre/Post test questionnaire is Likert-style, has 14 items and scored as it is from 0 (strongly disagree) to 5 (strongly agree). The items are divided into 3 main sections: Attitudes favoring the use of non-pharmacological treatments (1 – 5), Attitudes favoring the use of pharmacological treatments (6 – 8) and Attitudes concerning staff behavior and resources (9-14). Overall scores were divided in 3 ranges; below 15, 15 – 25 and greater than 25. Scores between 15 – 25 show positive attitude and knowledge towards non-pharmacological dementia management while outside this range show inadequate knowledge or attitude towards non-pharmacological management. Lower post test scores represent learning has occurred while no difference in pre & post test scores or higher post-test scores shows no learning has occurred immediately following intervention, and in one month post intervention. On the other hand, no increase in use of psychotropics and or decrease in prescribing and usage during the study period will also indicate positive learning and change in practice.

Outcome measure between the two facilities will be comparing the use of psychotropics before and after the project implementation in terms of percentage of patients on psychotropic medications, anti-depressants or anti-anxiety whether scheduled or as needed (prn) for BPSD management in both facilities during the study period.

Another outcome measure will be whether sense of competence calculated from SCID questionnaire (appendix 7) among staff translates to better/lower scores in the attitudes and knowledge of dementia management questionnaire (appendix 1).

DATA ANALYSIS

An excel sheet was compiled as data was collected at each step of implementation. These data were then transferred to the Statistical Package for the Social Sciences (SPSS) which was used for final analysis using ANOVA and Paired T-Test statistics. Questionnaires that had more than 3 questions unfilled were discarded during final computation.

Plan

PROTECTION OF HUMAN SUBJECTS

Since this is not a research study but a quality improvement study specific to two particular facilities as they strive to remain in compliance with the guidelines of CMS, IRB is not required. There was no requirement for the staff/subjects to reveal their identity in any form at any point of the implementation process except signing attendance forms provided by each facility's staff educator which was going to be used to assign attendees education points at each facility per their policies. The sessions were not made mandatory to staff and no resident's name was collected from the chart reviews. Each individual participant was represented anonymously in the general number used for analysis.

Budget

Since no overtime was procured by the staff and since the teaching/intervention, pre & post tests were scheduled within their normal working hours, no expense was incurred. The student was in charge of this study and being part of the graduation requirement, expenses were for stationary which includes copying expenses as student was not reimbursed for time. There

was also expense for food used on days of intervention implementations especially as lunch, coffee and snacks were provided by the student. Each facility also received a form of appreciation for their participation and cooperation with the project. The supervising Psych NP also incurs no expense since a contract to precept the DNP student, already exists with the DNP's school/program directors but a thank you gift will be provided by the student.

	Item Description	Student	Contributed	Project Total
1	Personnel	\$0	\$0	\$0
2	Materials/Stationary	\$300.00	\$0	\$300.00
3	Appreciation gifts	\$200.00	\$0	\$200.00
4	Food	\$500.00	\$0	\$500.00
5	Total costs	\$600.00	\$0	\$1000.00

Timeline work Plan:

Task	Sept – Dec 2013	Jan 2014	Feb	March	April	May
Plan/Notify Administration	X	X				
Pre-test & pre assessment of common BPSD		X	X			
Intervention/Staff Education (power point)			X	X		
Post test 1			X	X		
One month post test				X	X	
Conclusion & result dissemination					X	X

The first week (week of 1/22/14), a list of BPSD was distributed to nurses and NAs (appendix 6) to indicate challenging behaviors they encounter while providing care to residents. From this list, sexually inappropriate behavior was picked and its management was included in the intervention PowerPoint.

Week of 2/4/14 to 2/14/14, pre test (appendix 1) and competence (appendix 7) questionnaires were administered to staff in both facilities, collected and scored. During same time pre- test period chart reviews was on-going in both facilities. DNP student met with Staff Educators in both facilities to set up date(s) for intervention. Each facility stated, the intervention sessions will not be made mandatory for their staff and preferred one day with multiple 30minutes sessions and both agreed that after 3:30pm, it will be impossible to guarantee any more turn outs. Sessions were set to run from 6am to 7:30am then from 1pm to 3:30pm to avoid as much disruption in residents' care as possible. The staff educators went about creating and posting poster announcements of the sessions. DNP students provided food, snacks and drinks for each session.

Week of 2/17/14 to 2/21/14: Intervention sessions were held as planned in both facilities. Power point print outs were given to attendees as well as a post test (appendix 1) to fill out at the end of each session. Information on the PowerPoint was reviewed with focus on the adverse effects of pharmacological interventions and the urgent need to change the focus of care to non-pharmacological management, the CMS initiative, the Ma OASIS and the importance of knowing the personal story of each resident to effectively create a plan of care specific to each resident. In all, there were only 7 attendees from home A and none was from the dementia unit. The staff educator tried to increase attendance by announcing the start of each session. Home B

had 18 attendees in all; the director of nursing was instrumental in staggering staff attendance from each floor/unit of the facility.

Home A: The unit manager for the dementia unit as well as some of the staff expressed their regret for not attending explaining they couldn't leave the floor due to safety of the residents ultimately. They agreed with the DNP student to come in another day for the intervention on their floor. This was accomplished on 3/12/14 in a 6:30 am to 7:30am session after several attempts, 7 people were present but only 3 post tests were completed that day. The DNP student requested the others put theirs in the provided envelope when done for collection and was collected at a later date.

Second post tests were administered the weekends of 3/30/14 and 4/6/14 as well as second chart reviews. Then computation of results started.

Results, Findings, Data Analysis

Statistics

		competence	pretest	posttest1	posttest2
N	Valid	25	25	29	25
	Missing	100	100	96	100
Mean		53.0800	26.2800	24.6552	27.1600
Median		57.0000	28.0000	22.0000	27.0000
Mode		51.00	32.00	16.00 ^a	31.00
Std. Deviation		13.59510	8.29920	11.81185	8.70670
Variance		184.827	68.877	139.520	75.807
Skewness		-2.667	-1.363	.054	.116
Std. Error of Skewness		.464	.464	.434	.464
Sum		1327.00	657.00	715.00	679.00

a. Multiple modes exist. The smallest value is shown

In all ANOVA and T-Tests run, no significant difference was found between any groups with $P < 0.05$ meaning that no significant difference exists between the pre-intervention

antipsychotic use and the post-intervention use. Also no significant difference was found between the pretest and post tests 1 & 2 from the knowledge and attitude towards dementia questionnaires when both homes are analyzed together.

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Above 25 For pretest	Between Groups	1.833	7	.262	.967	.511
	Within Groups	2.167	8	.271		
	Total	4.000	15			
P1upto15to2 5 For Post 1	Between Groups	2.045	7	.292	1.753	.348
	Within Groups	.500	3	.167		
	Total	2.545	10			
P2upto15to2 5	Between Groups	1.045	7	.149	.299	.915
	Within Groups	1.500	3	.500		
	Total	2.545	10			
P2above25	Between Groups	2.048	9	.228	.780	.654
	Within Groups	1.167	4	.292		
	Total	3.214	13			

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
pretest	Between Groups	1281.873	14	91.562	2.467	.078
	Within Groups	371.167	10	37.117		
	Total	1653.040	24			
posttest1	Between Groups	2203.943	14	157.425	1.880	.159
	Within Groups	837.417	10	83.742		
	Total	3041.360	24			
posttest2	Between Groups	685.893	14	48.992	.432	.926
	Within Groups	1133.467	10	113.347		
	Total	1819.360	24			

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	21.0000	7	2.16025	.81650
	upto15to25	1.0000	7	.00000	.00000
Pair 2	posttest1	18.8182	11	2.56196	.77246
	P1upto15to25	1.0000	11	.00000	.00000
Pair 3	posttest2	21.8182	11	4.89527	1.47598
	P2upto15to25	1.0000	11	.00000	.00000

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Apretest	Between Groups	430.733	9	47.859	1.486	.345
	Within Groups	161.000	5	32.200		
	Total	591.733	14			
Apost1	Between Groups	506.970	6	84.495	1.754	.305
	Within Groups	192.667	4	48.167		
	Total	699.636	10			
Aposttest2	Between Groups	250.933	5	50.187	.391	.834
	Within Groups	513.167	4	128.292		
	Total	764.100	9			
Bpretest	Between Groups	837.900	5	167.580	3.184	.142
	Within Groups	210.500	4	52.625		
	Total	1048.400	9			
Bpost1	Between Groups	982.433	9	109.159	.418	.879
	Within Groups	1306.500	5	261.300		
	Total	2288.933	14			
Bposttest2	Between Groups	254.350	9	28.261	.190	.984
	Within Groups	743.250	5	148.650		
	Total	997.600	14			

Outcomes:

Antipsychotic use: Home A had 23 residents (26.4%) on antipsychotics at pre-intervention review and at post review had been cut down to 19 (21.8%) with a total of 87 out of whom 70 are diagnosed with dementia. Home B had 11 residents (9.6%) on anti-psychotics at pre-intervention chart review and had gone up to 14 (12.3%) at post review with 59 residents out of

114 residents diagnosed with dementia. The fluctuation in the numbers can be related to discontinuation of the medication, discharge of the resident from the facility, newly arriving resident, transition into hospice care and in some cases death of the residents. Similar fluctuations were noted with anti-anxiety and anti-depressant medications which most of the residents are on a minimum of two at the same time.

Pre & Post tests: There was no significant difference found at any level of comparison of the data among the groups and between the two homes.

Discussion

This was somewhat a challenging project to implement and various changes had to be quickly made to accommodate reality. Turnout was poor to the intervention sessions and it was difficult to administer sporadic sessions as planned due to the unpredictable nature of every shift/day occurrences at the facilities. Caregivers due to amount of work load and limited time, do not consider participation crucial especially since it was not mandatory and some viewed it as beneficial to the student DNP not them.

Home A had cut staffing down during implementation of this project, which together with other internal dynamics going on under the new ownership contributed immensely to very low employee enthusiasm for this project. Not a single staff from the dementia unit showed up for any of the intervention sessions and the special session implemented with them was not warmly accepted by the few that attended who were very unhappy and did not hide their frustrations.

The completion of the OASIS program in one home made it much easier to implement this project in that home than the other where it is yet to be implemented and there is little confidence on the part of the staff educator that staff will show up for this mandatory education especially now that they will not be paid for attending in-services on their off days.

Lower percentage anti-psychotic use by Home B despite having a higher resident census can be attributed to the daily consistent activities schedule implemented in this home giving residents little time to be bored.

There is also the question of language barrier, as some staff members who attended the intervention sessions asked for help in understanding the questions, it raises the question of how many did not understand the questions and did not ask for help. This can explain the post test scores below 15.

Completion of the OASIS seems to have made a huge difference in how both homes viewed this intervention, while one home has already completed all the modules (total of 4 modules) and now ready for a re-run, the other home has not made it a priority and is yet to implement the first module, which has been frustrating for the staff educator.

Finally, a one-time 30 minute education session is too short for change to happen in such an important aspect of care-giving especially as it calls for a significant change in practice. There has to be multiple 30 minute sessions or at least one hr sessions to ensure retention and then continuous follow-up sessions/in-services.

Proposed solutions:

Further studies are needed in this area to continue to highlight the dangers of heavy antipsychotic use with dementia patients/residents.

It is crucial to take care of the caregivers in the facilities since families are supposed to entrust the care of their loved ones into their care. Frustrated caregivers cannot provide the optimal care that is required of them and the residents tend to get the shortest end of the stick.

It is very crucial that facility administrators find other ways to manage costs than jeopardizing the care of the dementia population by inadequately staffing shifts. Currently, there

is no national legislation to staffing guidelines but some states have such legislature (Harrington, 2010), maybe it is time for a national legislature to try to standardize healthcare facilities staffing problems. Multiple studies have demonstrated the positive relationship between nurse staffing levels and the quality of nursing home care (Ning, Lynn, Rong, & Thomas, 2006). However, no established evidence-based minimum staffing ratios plausible for nursing homes to go by as they try to control cost and improve efficiency exists currently (Ning et al., 2006).

Better assessment instruments especially at a language level that could be understood by the majority of care-givers in facilities need to be produced.

The proposed OASIS training programs sounds like a very good place to start with changing the culture of sub-standard care to residents in nursing homes especially those with dementia. It will be a great idea for facilities to make its implementation a priority.

Healthcare providers with prescribing authority need to be re-educated as well as to the dangers of anti-psychotic medications as well as non-pharmacological dementia management to avoid incessant and unnecessary prescribing.

Collaboration among all providers especially those with prescribing rights is of optimal importance to ensure unified care. Inconsistent care delivery, in this case which could be represented by erratic change in medication prescription especially anti-psychotics may lead to adverse circumstances for these residents.

Limitations:

Include language barrier/educational limitations. This was noted during the intervention process as the language of the questionnaires seems to have been on a level too high for most of the Nursing Assistants to comprehend. This might be the biggest reason the results are as reported.

Assessment instruments were not easy to find for this project implementation and despite attempt to adapt it to the sample population, language problems still surfaced. Administering the questionnaires was not problem-free and the numbers returned were much below the number distributed.

A project with the level of importance and implications like this one definitely needs more time longer than 3 months to implement and to ensure retention. It will also require consistent collaborative effort from all providers – Physicians, Nurse Practitioners, all specialties including all nursing home employees to ensure better quality for long-term care residents especially with dementia.

Conclusions:

As the numbers of people needing various levels of long-term care continue to grow, families, communities, state and federal government face new realities about finances. Quality improvement in long-term care has been and continue to be an age old challenge. As (Jackson, 2010, p. 177) put it, “the provider industry is committed to delivering high quality services and needs the money to hire adequate staff to maintain efficient and effective care. The public is adamant about wanting safe, adequately staffed, and compassionate long-term care – but at an affordable cost. That is the rub”. The challenge is how to reach a compromised safe solution acceptable to all sides and affordable to families as well as all levels of government (Jackson, 2010). This has become a passion of mine and I hope to engage in or champion this cause as I become a DNP and have better access to other providers especially. It is truly a huge problem that needs all hands on deck to solve.

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Appendix 1

Please circle your role: CNA RN LPN

Statement	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
Medications should be used more often than currently used						
Medications should be used before trying other interventions						
Agitated behaviors should be treated, not the illness causing the behaviors						
Psychotropic medication is the treatment of last resort for persons with dementia and agitation						
For many agitated behaviors, there are no medications for treatment						
Medications work well for behavior problems						
Most behaviors cannot be handled by behavioral or no medication interventions						
Drug treatment is far more important than no medication intervention						
Nurses wait too long before requesting medications from the providers						
There are insufficient resources/staff to use non-pharmacological interventions						
I am frustrated that the Providers do not order higher dose of medications until the behavior gets out of control						
The staff members do not know how to intervene without medications						
Many agitated behaviors stem from the staff not paying attention to the residents' request						

Dementia patients will remain disruptive even after their needs are met						
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Knowledge of and Attitudes towards Non-pharmacological Interventions for Treatment of Behavior Symptoms Associated with Dementia: Adapted from A comparison study of Physicians, Psychologists and Nurse practitioners

Appendix 2

Non-pharmacological interventions: Please try these before Psychotropic medication

Physiological needs:

1. Toileting need
2. Sleep/rest need
3. Hungry/Thirsty - ? mouth problems, Need dentures? Dentures fit?
4. Pain/discomfort
5. Hearing deficit - hearing aids needed?
6. Visual changes/deficits – sight/reading glasses or magnifying glasses needed?

Social needs:

1. Bored – need activities, e.g. music, games, etc
2. Socialization needs e.g. Needs to come out of room
3. Just needs to take a short walk
4. Need companionship/someone to talk to or just an innocent hug or needs a toy to play with.
5. Clear communication, gentle redirection
6. Re-orientation especially if mistaken someone to be someone in his/her past

Appendix 3

Review of Literature Matrix

<i>Citation</i>	<i>Sample & Location research/study was performed</i>	<i>Design</i>	<i>Outcomes/Results of the intervention &/or objectives of the study</i>	<i>Strength(s) & weaknesses</i>	<i>Evidence Level Class</i>
Robinson et al	11 studies(8 RCTs & 3 non-RCT crossover) in UK & USA	Systematic review	Effectiveness and acceptability of non-pharmacological interventions to reduce wandering in dementia	Weaknesses: 1)only carers' views & proxies none from the patients/residents 2) The exclusion criteria excluded new & potentially beneficial interventions tested only by observation or single case studies.	II (Stetler)
James, Mackenzie & Mukaetova-Ladinska	34 residents of an Elderly mentally home	Descriptive study	Use of doll/reminiscence to stimulate memories of a rewarding life role to help with developing a therapeutic bond, influence pro-social behaviors, provide sensory stimulation and enhance	Weaknesses: the staff reporting their observations were not blinded to which residents had a doll or not, this could have led to bias in their reporting. There was also no instruction to staff or family members on how to respond to residents with dolls.	III (Stetler)

			communication.		
Colombo, Buono, Smania, Raviola & De Leo	144 cognitively unimpaired institutionalized elderly residents from 7 elderly rest homes in Italy.	RCT	To assess whether a pet therapy program had a favorable effect on psychopathological status & perception of quality of life in cognitively unimpaired institutionalized elderly.	Weakness: Only 8 out of the 43 residents that received a plant were males. Strength: the groups were matched based on age & educational level & the psychologists were blinded as to who received what.	II (Stetler)
Kong, Evans & Guevara	14 RCT studies (up to 2004)	Systematic review & Meta analysis	Effectiveness of non-pharmacological interventions for agitation in dementia	Weakness: only 4 studied the long term effects of the interventions	I (Stetler)
Deudon et al	16 France Nursing homes	RCT	Effect of non-pharmacological intervention like care giver Education in BPSD (behavioral & psychological symptoms of dementia)	Strength: the effect of the study was evaluated 3months post. Weakness: Patients were still receiving their pharmacological treatment during the study (though both groups in the study received their usual pharmacological treatment)	II (Stetler)
Kovach, Cashin & Sauer	7 nursing homes in Midwest USA	RCT	Using components of Serial Trial Intervention (STI) to	Weakness: risk of nursing assessment becoming rote & instinctual missing out some normal findings. Complexity of needs	II (Stetler)

			address problems of physical & affective discomfort in people with late stage dementia	was not measured. No data to examine the association of the delivery of STI to Nursing education, organizational factors or staffing ratios.	
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Appendix 4

September 11, 2013

To The Director of Nursing (DON)

REQUEST TO IMPLEMENT A CAPSTONE STUDY IN YOUR FACILITY

My name is Chito Uyanwune a current student of Umass Amherst in the DNP/FNP program. I wish to use this opportunity to thank you and your staff for the support you have given me this far as I work with Jeanne McCluskey NP as my preceptor in your facility as well as request your permission to enable me implement a research study with your staff.

The major requirement for graduation from the DNP/FNP track program is a capstone project which can be the implementation of a research study or conduction of a research study. My project will not require any intervention directly with the residents of your facility but with the staff and is a research implementation study. My study information includes:

Topic: Non-Pharmacological Interventions in Dementia Management with focus on Caregiver education/training.

Plan: Educational intervention will be provided to nurses and nursing assistants (NAs) after first assessing their knowledge of dementia management. There will also be a one and two months possibly third month of post assessment to compare scores and judge learning/retention.

Outcome measures:

1. Change in knowledge: compare scores from NAs pre and post tests to see if learning occurred, do same for nurses and then compare the two groups.
2. Compare the % of residents on anti-psychotics before and after study, possibly compare dosage reductions or increases.
3. Compare the % of calls to providers requesting medications to handle a behavior before and after the intervention.

Jeanne will also be my non-faculty advisor/mentor through this process as well as Dr. Cynthia Jacelon from Umass Amherst who is the chair person on my advisory team.

Thank you.

Sincerely yours,
Chito Uyanwune

Appendix 5

November 20, 2013

To The Director of Nursing (DON)

REQUEST TO IMPLEMENT A CAPSTONE STUDY IN YOUR FACILITY

My name is Chito Uyanwune a current student of Umass Amherst in the Doctor of Nursing Practice/Family Nurse Practitioner track (DNP/FNP) program. Jeanne McCluskey NP has been my preceptor for a couple of semesters now. I wish to ask for your permission to conduct my final project in your facility.

The major requirement for graduation from the DNP/FNP track program is a capstone project which can be the implementation of a research study or conduction of a research study. My project will not require any intervention directly with the residents of your facility but with the staff and is a research implementation study. There will be no HIPPA violation risk as it's more

of an educational intervention for the nursing staff (CNAs & Nurses) in direct care with residents, their names will not be required either or any identifying data. My study information includes:

Topic: Non-Pharmacological Interventions in Dementia Management with focus on Caregiver education/training.

Plan: Educational intervention will be provided to nurses and nursing assistants (NAs) after first assessing their knowledge of dementia management. There will also be a one and two months possibly third month of post assessment to compare scores and judge learning/retention.

Outcome measures:

1. Change in knowledge: compare scores from NAs pre and post tests to see if learning occurred, do same for nurses and then compare the two groups.
2. Compare the % of residents on anti-psychotics before and after study, possibly compare dosage reductions or increases.
3. Compare the % of calls to providers requesting medications to handle a behavior before and after the intervention.

Jeanne will also be my non-faculty advisor/mentor through this process as well as Dr. Cynthia Jacelon and Dr. Regina Kowal from Umass Amherst. Please don't hesitate to inform me of any questions you may have.

Thank you.

Sincerely yours,
Chito Uyanwune

Appendix 6

An assessment of BPSD (Behavioral and Psychological Symptoms of Dementia)

Please select one that best indicates your current position:

CNA LPN RN

Please check off all below that you encounter that is challenging to your job performance

Some forms of BPSD:	
1. Aggression	
2. Agitation or restlessness; screaming	
3. Anxiety	
4. Depression	
5. Psychosis, delusions, hallucinations	
6. Repetitive vocalization, cursing and swearing	
7. Sleep disturbance	
8. Shadowing (following caregiver closely)	
9. Sun downing (behavior worsens after 5pm)	
10. Wandering	
11. Non-specific behavior disturbance e.g hoarding	

Please write down any other challenging behaviors you encounter daily in your job performance that are not listed above, thank you.

- 12.
- 13.
- 14.
- 15.
- 16.

Appendix 7**Please circle your role: CNA LPN RN**

How well do you feel you can.....	Not at all	A Little bit	Quite a lot	Very much
1. Understand the feelings of a person with dementia?				
2. Understand the way a person with dementia interacts with the people and things around them?				
3. Engage a person with dementia in a conversation?				
4. Balance the needs of the person with dementia with their relative's wishes and the service's limitations?				
5. Use information about their past (such as what they used to do and their interests), when talking to a person with dementia?				
6. Change your work to match the changing needs of a person with dementia?				
7. Keep up a positive attitude towards the people you care for?				
8. Keep up a positive attitude towards the relatives of a person with dementia?				
9. Keep yourself motivated during a working day?				
10. Play an active role in your staff team?				
11. Protect the dignity of a person with dementia in your work?				
12. Deal with personal care, such as incontinence in a person with dementia?				
13. Deal with behavior that challenges in a person with dementia?				
14. Decide what to do about risk (such as harm to self or others) in a person with dementia?				
15. Offer stimulation (for the mind, the senses and the body) to a person with dementia in your daily work?				
16. Offer choice to a person with dementia in everyday care (such as what to wear, or what to do)?				
17. Engage a person with dementia in creative activities during your normal				

working days?				
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