

LIFE HISTORY, NURSE EMPATHY, AND AGGRESSIVE BEHAVIOURS IN
INDIVIDUALS WITH DEMENTIA

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Abstract

Dementia is common among long term care (LTC) residents and has many implications for their quality of life. Individuals with dementia often present with behavioural disturbances such as aggression (e.g., destructive actions toward persons, objects, or the self) that negatively affect their quality of life and may result from unmet needs (Whall et al., 2008). Egan et al. (2007), using a very small patient sample ($N = 4$; no control group), successfully piloted an intervention intended to influence professional caregivers' behaviour toward residents, and thus decrease aggressive behaviours by presenting staff members with life histories of the residents. The goal of these life histories was to increase staff perceptions of patient personhood with the outcome of improving person-centered care. The current study was designed to replicate the intervention designed by Egan et al. (2007) with a larger number of participants and a control group. Within a framework of the Functional Analytic (FA) model (Fisher, Drossel, Ferguson, Cherup, & Sylvester, 2008), it was expected that changes in nurse behaviour toward the residents would lead to changes in behavioural disturbance and specifically decreases in aggressive behaviour and increases in quality of life for the residents. It was also expected that these changes in nurse behaviour would stem from increases in empathy and personhood perception. As such, perceptions of empathy and personhood would serve as mediators for the expected changes in aggressive behaviours and quality of life. Significant differences between the experimental and control groups were found following the intervention. These changes were reflected in aggressive

behaviours, personhood perception, and quality of life. Mediation analyses found a significant mediated effect, with personhood perception serving as a mediator for quality of life. Additional analyses revealed a significant negative relationship between patient cognitive impairment and staff personhood perception prior to the intervention, at intervention, and at follow-up. Finally, qualitative analyses explored the attitudes staff members have toward residents and their perceptions of resident personhood. The implications of these findings are discussed.

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Dedication

The participation of the staff and residents of the long term care facilities in the Regina Qu'Appelle Health Region, along with their family members, was crucial for the completion of this project. I dedicate this work to them and thank them for their warm welcomes, positive attitudes, and kind offers of coffee as I spent many long days in their facilities.

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Life History, Nurse Empathy, and Aggressive Behaviours in Individuals with Dementia

Overview

Dementia is common among long term care (LTC) residents and has many implications for the quality of their lives. Individuals with dementia often present with behavioural disturbances such as aggression (e.g., destructive actions toward persons, objects, or the self), which negatively affect their quality of life and may result from residents' unmet needs (Whall et al., 2008). Fisher, Drossel, Ferguson, Cherup, and Sylvester (2008) suggest, in their Functional Analytic (FA) model, that the context of the relationship between the caregiver and resident may have a profound effect on behavioural disturbance such that as professional caregivers change their behaviour toward the resident (i.e., to reflect increased empathy toward and a better understanding of the resident), residents' aggressive behaviour will also change. Egan et al. (2007) piloted an intervention intended to influence professional caregivers' behaviour toward residents. Caregivers were provided with information to increase their knowledge about residents with dementia (e.g., their history, preferences, personality traits), thus possibly increasing their empathy toward the resident and their perception of that resident's personhood (i.e., the status bestowed upon one by others of being a "person") and individuality. The results of Egan et al.'s (2007) study showed that the intervention was successful in decreasing aggressive behaviours; however, the study did not include a control group and involved a small number of participants (i.e., $n = 4$).

The goal of the current research was to replicate the intervention designed by Egan et al. (2007) with a larger number of participants and a control group. As suggested in the FA model, changes in nurse behaviour toward the residents were expected to produce changes in behavioural disturbance; specifically, decreases in aggressive behaviour and increases in quality of life for the residents. These changes in nurse behaviour were expected to stem from increases in empathy and personhood perception. This research contributes important information to the empathy and personhood literature, as well as testing a relatively simple intervention to decrease aggressive behaviours and increase quality of life among individuals with dementia residing in LTC.

Dementia and Long Term Care

The study of older adults has become an especially important area of research because of Canada's aging population (Statistics Canada, 2007). The study of dementia is also important as dementia affects as many as one in every 13 Canadians over age 65 (Canadian Study of Health and Aging Working Group, 1994; 2000). Moreover, dementia rates are projected to rise, with the Alzheimer Society of Canada predicting that by 2038 2.8% of the Canadian population will be living with dementia and with approximately 258,000 new cases of dementia diagnosed each year. Dementia is a large classification of conditions, including Alzheimer's disease, vascular dementia, fronto-temporal dementia, and Lewy-body dementia, that result in progressive deterioration as brain damage increases (Alzheimer Society of Canada, 2010). It is characterized by increasing cognitive deficits reflected in language, memory, and executive functioning, as well as impairment in motor ability (American Psychiatric Association, 2000).

The Canadian Study of Health and Aging was designed to collect information about a variety of topics related to the health and well-being of older adults and their caregivers. One such topic was the prevalence of dementia in older adults residing in Canada, including risk factors for dementia and patterns of cognitive decline. Increasing age is associated with cognitive decline, with the oldest people experiencing the greatest cognitive decline. Healthier, younger individuals exhibit virtually stable cognitive ability. For those individuals already experiencing cognitive decline, advancing age is no longer associated with greater cognitive decline (McDowell, Xi, Lindsay, & Tuokko, 2004). Education appears to be protective against the onset of cognitive decline; however, once an individual experiences cognitive impairment, education is no longer associated with the rate or severity of cognitive decline. No sex differences in rate of decline appear to exist (McDowell et al., 2004). Since residents of LTC are typically older and less healthy than their community counterparts, the study of cognitive impairment, or the presence of dementia, is especially relevant to this population. Moreover, with no cure for progressive dementias in sight, the goal of increasing quality of life among these residents should be at the forefront of current research in LTC.

Behavioural Disturbance and Dementia

While cognitive impairment is the hallmark of a dementia diagnosis, behavioural disturbance is a common occurrence during the progression of the condition (Cohen-Mansfield, Marx, & Rosenthal, 1989). The term “behavioural disturbance” can describe a variety of specific behaviours commonly exhibited in dementia. Also referred to as agitation, researchers (e.g., Cohen-Mansfield & Libin, 2005; Kong, 2005) have provided

definitions of behavioural disturbance to include the specific behaviours included in the disturbance. For example, Kong (2005) examined the literature on agitation in an attempt to define the construct. She found common themes within the literature, that agitation was an activity (motor or vocal) that is excessive, inappropriate, repetitive, non-specific, and observable. “Excessive” can refer to frequency, duration, and/or intensity. “Inappropriate” can be defined as abusive or aggressive toward the self or others, or in terms of at inappropriate frequency given situational demands. Many definitions of agitation focus on the physical components of agitation; however there may also be an emotional component. Aggression, restlessness, and resistance to care are often included in definitions of agitation (Kong, 2005). This definition of agitation encompasses aggressive behaviour, which is the behaviour under examination in this project; however, agitation may also include non-aggressive behaviours such as pacing (Cohen-Mansfield & Libin, 2005). Finally, agitated behaviours or behavioural disturbance may also be considered as “responsive” behaviour. That is, the behaviour occurs in response to something in the environment or some unmet need of the resident (Dupuis, Wiersma, & Loiselle, 2004).

Following from Kong’s (2005) definition of agitated behaviour, agitated behaviours in dementia may be divided along two dimensions. The first is aggressive vs. non-aggressive, and the second is physical vs. verbal/vocal. Thus, there may be physically or verbally aggressive or non-aggressive behaviours exhibited by individuals with dementia. Each category of symptoms may have a different etiology or be more common among different sub-populations of individuals with dementia (Cohen-

Mansfield, 2009). Verbal agitation may consist of requests for attention, complaining, repetition of sentences or questions, and screaming. Non-aggressive agitation may include pacing or wandering, handling objects inappropriately, repetitious mannerisms, general restlessness, and fidgeting (Cohen-Mansfield & Libin, 2005). Using direct observation, Cohen-Mansfield, and Libin (2005) examined agitated behaviours. They found that verbal agitation, consistent with previous research, was associated with being female, cognitive decline, poor performance of activities of daily living (ADLs), impaired social functioning, and depressed affect. Physically non-aggressive behaviours were found to be associated with cognitive impairment and better physical health.

Cohen-Mansfield (2009) examined the different types of agitation, with interest in both the frequency of the behaviours and the disruptiveness of the behaviours. She found that verbally non-aggressive behaviours were the most common and least disruptive. Verbally aggressive behaviours were the most disruptive at low levels of frequency, while physically non-aggressive behaviours were least disruptive at high frequency. Generally, aggressive behaviours are more disruptive than non-aggressive behaviours, even if these behaviours are exhibited infrequently (Cohen-Mansfield, 2009).

Agitated behaviours have been related to various characteristics of the resident, the environment, and the context. For example, Lin et al. (2008) examined whether functional ability and restraint use is related to agitation. They observed 375 nursing home residents with dementia for two weeks using the Cohen-Mansfield Agitation Inventory (CMAI; Cohen-Mansfield et al., 1989). They found that cognitive impairment was most strongly related to agitation. Individuals exhibiting agitated behaviours also

tended to have lower functional ability when controlling for other variables; however, functional ability was not predictive of agitation. Better walking ability was the greatest predictor of agitation. They suggest that individuals with better walking ability have more opportunities to interact with others, which is one of the greatest precursors of agitation. When these individuals are also experiencing cognitive impairment, agitation becomes difficult to control in nursing homes (Lin et al., 2008).

Not all agitated behaviours are exhibited by all individuals with dementia. In fact, certain behaviours appear to be more common in one sex rather than the other. According to Lovheim, Sandman, Karlsson, and Gustafson (2009), aggressive behaviours seem to be more common in men, while depressive symptoms appear to be more common in women. Women are also more likely to exhibit attention-seeking behaviours (i.e., seeking help, complaining, seeking staff attention) while men exhibit greater inappropriate behaviours (i.e., sexually inappropriate behaviour; Lovheim et al., 2009). However, when women exhibit agitated behaviours they are more likely to exhibit verbal agitation than men (Cohen-Mansfield & Libin, 2005). These tendencies do not imply that women do not also exhibit physically aggressive behaviours, or that men do not exhibit verbally agitated behaviours, they just tend to exhibit these behaviours to a lesser extent.

Studies of agitated behaviours may focus on only one type of behaviour. For example, wandering is a frequently studied agitated behaviour that usually falls in the physically non-aggressive behaviour category. Wandering is undesirable because it interferes with activities of daily living, disrupts other residents, or puts the resident at risk. Residents who exhibit wandering may be restrained physically or pharmacologically

for their and other resident's safety (Fisher & Carstensen, 1990); however, the use of restraints can be problematic because wandering behaviour can change spontaneously. For example, King-Kallimanis et al. (2010) examined wandering in a longitudinal study using the minimum data set (MDS; Morris, Fries, Mehr, & Hawes, 1991) to collect information about the resident. They found that 51% of residents classified as wanderers at the beginning of the study were not wanderers at the end of the study (approximately four years later). This change in wandering status was likely due to changes in mobility and physical ability over time for those individuals. Individuals with cognitive impairment, exhibiting socially inappropriate behaviours at admission, or who required assistance with personal care at the beginning of the study were less likely to change in status from wanderers to non-wanderers. Those residents who were not wanderers were more likely to become wanderers if they experienced cognitive impairment, were older, more socially inappropriate behaviour, resisting care, easy distractibility, and needing some assistance with personal hygiene during the course of the study. The current study examined both aggressive and non-aggressive agitated behaviours in residents of both sexes.

Agitated behaviours may appear, at times, random and purposeless; however, research into agitation has identified associations between behaviours and the environment or context in which they occur, which indicates a pattern in agitated behaviours may be found with assessment. Commonly cited potential causes of agitated behaviours include discomfort, boredom, and social interaction. Individuals with dementia who have difficulty communicating may, in fact, be using agitated behaviours

as a form of communication. The intervention under investigation was intended to assist staff in knowing each individual resident better, thus increasing their empathy. It was hypothesized that, with increased empathy, staff would be more patient and more willing to explore reasons behind agitation. Kolanowski and Litaker (2006) examined the interaction of social activity and agitated behaviours in dementia. Residents were videotaped for 20 minutes a day over 12 days during times identified by staff as being peak times for behavioural symptoms. They found that the residents were primarily videotaped while unoccupied (or “doing nothing”), and that the majority of residents exhibited agitated behaviour at some point. They found that, when social interaction was observed, it was related to higher levels of agitation in residents. Premorbid personality also appeared to have some effect on agitation. When social interaction was low intensity, extroverted residents tended to be less agitated, while introverted residents were similarly agitated regardless of intensity (Kolanowski & Litaker, 2006).

Lemay and Landreville (2010) examined the precursor of verbal agitation specifically. Verbal agitation is commonly observed in people with dementia and, when untreated, can increase to the point that it becomes destructive, occupying large amounts of time during the individual’s day. Discomfort of varying types is commonly cited as underlying verbal agitation. Discomfort may result from many different factors (i.e., pain, social interaction, daily activities) which may initiate negative affect or a negative physical state. Older adults with dementia are likely to have a number of conditions contributing to discomfort, including musculoskeletal disorders, cancers, cardiovascular disease, and depression (Lemay & Landreville, 2010). Verbal agitation may be a way

individuals with dementia can meet their needs when they cannot otherwise communicate; therefore, meeting needs for comfort and nutrition can help minimize verbal agitation. In the current intervention, knowing the resident's life history was intended to assist staff in understanding a person's history, personality and possibly likes and dislikes with regard to care. Also, by increasing empathy toward the resident, through a better understanding of the person, it was hypothesized that staff may be more motivated to identify and reduce discomfort when it was present. Lemay and Landreville (2010) recommend that, if discomfort appears to be contributing to verbal agitation, further assessment may be warranted to determine the cause of the discomfort (i.e., pain vs. depression).

Dementia and Aggressive Behaviour

Aggressive behaviour is included in definitions of agitated behaviour and is the primary behaviour of interest in the proposed study. Zeller et al. (2009) define aggression as “a nonaccidental overt act involving the delivery of noxious stimuli to (but not necessarily aimed at) an object or toward the self or others” (pp. 175). Aggressive behaviours in LTC tend to be underreported but common occurrences. These behaviours may be underreported due to staff feelings of a lack of competence, a feeling of failure, or the notion that aggressive behaviours are to be expected among the older adult population who are experiencing dementia. Prevalence of aggressive behaviours in LTC can also be difficult to determine in research studies, as studies define and measure aggressive behaviours differently (Zeller et al., 2009).

Aggressive behaviour may be verbal or physical, and may include a variety of specific manifestation. Verbal aggression may consist of shouting, insults, threats of violence, swearing, verbal sexual harassment, and verbal aggressiveness or agitation. Physical aggression includes behaviours such as swinging and missing, grabbing at clothes, bruising, striking, kicking, pulling hair, spitting, and throwing things (Zeller et al., 2009). Staff in LTC may use the term “sundowning syndrome” to describe increased agitation, restlessness, and confusion in the late afternoon. This might suggest that circadian rhythms are related to aggressive behaviours; however, there is little empirical evidence on the way circadian rhythms play in aggressive behaviour (Hall & O’Connor, 2004).

As Zeller et al. (2009) described, aggressive behaviours may be directed toward an object, the self, or another person. In LTC aggressive behaviours may be directed toward staff or loved ones, but can also be directed toward other residents. Resident-to-resident aggression (RRA) is less commonly researched than resident-to-staff aggression. Aggression between residents similarly includes unwanted or harmful physical and verbal behaviours. While few studies have examined RRA, some relationships have been found. Those residents who have experienced RRA are more likely to be male, exhibit behavioural disturbance such as wandering as well as experience moderate functional dependence and cognitive impairment. Residents may be injured by RRA, including lacerations, bruises, and fractures. Common locations of RRA include the residents’ rooms, hallways, and dining rooms (Rosen, Pillemer, & Lachs, 2008a). Rosen et al. (2008b) used focus groups to further examine RRA using nursing home staff as

informants. Verbally aggressive behaviour was described more frequent than physically aggressive behaviour. Staff also described many triggers of RRA, citing communication difficulties as most common, as well as territoriality and challenges of communal living. This might include sitting in another resident's chair, or difficulty agreeing on environmental factors such as changes in lighting or temperature. Staff also described the possibility of a chain reaction occurring, when one resident cries out or yells, triggering other residents to also yell or cry out, even at one another (Rosen et al., 2008b).

Aggressive behaviours, like agitated behaviours, are associated with several resident, caregiver, and environmental characteristics. Hall and O'Connor (2004) reviewed the literature regarding aggressive behaviours in older adults with dementia. They suggest a number of biopsychosocial factors that may contribute to aggressive behaviours in this population. Cognitive changes may contribute to aggressive behaviours in that individuals may become frustrated when they are unable to perform cognitive tasks as they used to. Aggression that is influenced by cognitive changes may occur during cognitive testing and often begins with anxiety and frustration. Aggressive behaviours seem to be correlated with severity of cognitive impairment. Some evidence may exist for increased severity being related to increased impairment; however, some investigators have found that moderate impairment is most strongly correlated with aggressive behaviours (Hall & O'Connor, 2004). Dementia and aggressive behaviours often co-occur and aggressive behaviours may be associated to a greater degree with certain types of dementia. Specifically, degeneration of the anterior frontal and temporal lobes (i.e., frontotemporal dementia) may be associated with aggressive behaviours. This

is in contrast to degeneration of other areas of the brain, such as the dorsolateral region, which may lead to passivity and apathy (Hall & O'Connor, 2004). Orengo et al. (2008) examined aggressive behaviours in individuals newly diagnosed with dementia residing in the community. Caregivers were asked about the presence of aggressive behaviours, including both physical and verbal aggression. Aggressive behaviours have been exhibited by 20% of individuals newly diagnosed with dementia (Orengo et al., 2008).

Verbal communication is often impaired in dementia. Language impairment may be correlated with aggressive behaviours (Welsh, Corrigan, & Scott, 1996). When people have difficulty communicating, either expressively or receptively, or when individuals with dementia do not understand the intent of the caregiver or cannot make their wishes known, aggressive behaviours may be the result (Hall & O'Connor, 2004). Sensory impairment, such as hearing deficits or impaired vision may be related to aggressive behaviours in individuals with dementia as well. Sensory impairment can cause confusion in the individual with dementia, especially when routines are interrupted. Hearing loss may also be associated with communication difficulties, which can contribute to increased aggressive behaviours. When an individual with dementia experiences vision loss, he or she may interpret the caregiver entering his or her personal space to provide care as a threat (Hall & O'Connor, 2004). It was hypothesized that the current intervention would lead to an increase in nurse empathy, and this increase in empathy would contribute to an increased desire to understand a patient's needs perhaps with more effective communication with the resident. In turn, this enhanced communication would

allow the resident with dementia to understand the intent of the caregiver, and thus decrease aggressive behaviour.

Aggressive personality traits may be related to later aggressive behaviours in individuals with dementia (Hall & O'Connor, 2004). Whall et al. (2008) found that past personality characteristics, as determined by family informants, were predictive of aggressive behaviours. Specifically, a history of nonagreeableness significantly predicted current aggressive behaviours. These findings suggest that personality prior to the onset of dementia can be one factor influencing the display of aggressive behaviours by individuals with dementia. Emotional state can also contribute to aggressive behaviour; researchers have found that aggressive behaviours are associated with depression in individuals with dementia. Older adults with dementia are less able to express their emotions verbally, or in other socially acceptable ways; therefore, they may express agitation or irritability instead (Hall & O'Connor, 2004).

Finally, certain types of interactions between staff and residents are associated with increased aggressive behaviours. Whall et al. (2008) videotaped residents with dementia during routine care, including shower baths, meals, dressing, and undressing. Resident aggressive behaviours and negative caregiver behaviours were coded. Aggressive behaviours were correlated with negative caregiver behaviours, especially during the shower bath when staff appeared to be hurried. Increased empathy with the residents may improve nurse interactions with them (i.e., more positive caregiver behaviours), thus benefiting the residents. The current intervention was expected to increase nurse empathy.

There are many precursors for aggressive behaviours. The situations which seem to prompt aggressive behaviours frequently include entering the resident's personal space, as often happens during routine care. Situations including bathing or showering, oral hygiene, dressing, toileting, feeding, or transfers (e.g., assisting a move from bed to chair or vice versa) were most commonly identified as inducing aggressive behaviour. Psychosocial factors, such as the death of a spouse or family member moving away, may also contribute to aggressive behaviours (Zeller et al., 2009).

Environmental factors are also important to consider. Older adults with dementia can be sensitive to changes in the environment, including changes in lighting, noise, relocation to unfamiliar areas, and the use of physical restraints. Individuals with dementia may also react to the behaviours of other residents or caregivers (Hall & O'Connor, 2004). Interactions between staff and residents, such as disregarding resident preferences, as well as staff being rushed or understaffed may also contribute to aggressive behaviours. Increased knowledge of resident preferences, as will be provided in the proposed intervention, is hoped to contribute to a reduction of these aggressive behaviours. When residents do not understand care or interpret care as threatening or dangerous, residents may react with aggression in the belief that they must protect themselves (Zeller et al., 2009).

Physically unmet needs may also contribute to aggressive behaviours. When individuals with dementia are experiencing physical illness coupled with an inability to communicate with their caregiver, aggressive behaviour may result. Discomfort such as

pain, constipation, dental caries, and skin rashes may all contribute to aggressive behaviours (Hall & O'Connor, 2004).

Consistent with the idea that discomfort contributes to agitation, Nguyen, Love, and Kunik (2008) suggest that unrecognized depression contributes to aggressive behaviours by individuals with dementia. That being said, assessing depression in individuals with cognitive impairment can be difficult due to communication difficulties. In these cases, caregivers are an important source of information, as changes in sleep, appetite, and activity level may all indicate the presence of depression.

Interventions for aggressive behaviours. The American Geriatric Society recommends identifying problem behaviours and attempting non-pharmacological treatments (an example of which is the intervention associated with this investigation), prior to the use of medications. Zeller et al. (2009) conducted a systematic review of the literature and found five categories of strategies caregivers use as intervention for aggressive behaviour. These strategies may be implemented in LTC to regulate aggressive behaviours by the residents.

Staff should first attempt to prevent aggressive behaviour or detect it at an early stage. Safety should also be assessed early. If the resident or caregiver is at risk for harm, immediate steps should be taken, such as removing the resident from the situation (Dettmore, Kolanowski, & Boustani, 2009). Other prevention strategies may include checking the resident's mood before entering their room, waiting for the patient to invite care or action, watching for warning signs, and preserving the residents' dignity (including supporting their rights and ability to make decisions).

Second, strategies to calm or deescalate aggressive behaviour once signs appear should be used. This may involve talking to the resident, considering the residents' wants and needs, being friendly, joking with the resident and working calmly and systematically. Staff may then use interventions to repress or sanction aggressive behaviour (e.g., isolation, and ignoring protests against care). Medical treatments, such as medications, may be used to reduce aggressive behaviour next.

Finally, policy-based strategies may be used. These may include staff job descriptions, resident care plans, and interventions such as behaviour monitoring (Zeller et al., 2009). When an aggressive behaviour occurs, the behaviour should be recorded and assessed to determine future treatment. Once aggression is identified, unmet needs, or triggers, should be considered. Behavioural logs can be helpful in identifying precipitating factors of aggressive behaviours (Dettmore et al., 2009). The first two types of the interventions (i.e., preserving dignity and de-escalation of aggression) may be easier to implement when staff show enhanced empathy toward the patient.

Pharmacological interventions are often used to control aggressive behaviour. When pharmacological interventions are warranted in preventing or reducing aggressive behaviours, cholinesterase inhibitors (ChEIs) (i.e., Aricept), memantine (i.e., Ebixa), anticonvulsants (i.e., Lorazepam), selective serotonin reuptake inhibitors (SSRIs; i.e., Citalopram), typical (i.e., Olanzapine) and atypical antipsychotics (i.e., Risperidone) may be prescribed. Antipsychotics are the most commonly used medications for the management and prevention of aggressive behaviours (Dettmore et al., 2009). There are, however, a number of risks associated with the use of antipsychotic medications in older

adults with dementia including increased mortality (Ballard et al., 2009; Kales et al., 2007), increased risk of cerebrovascular events (Kleijer et al., 2009), and increased risk of falls (Woolcott et al., 2009). Antipsychotic medication use in LTC will be reviewed below.

Antipsychotic Medications

Antipsychotic medications have been used to treat behavioural disturbances in LTC, despite many serious side effects. Antipsychotics generally work by blocking dopamine receptors in the brain (Kapur et al., 2000). There are few studies devoted to antipsychotic use in Canadian LTC facilities. Hagen et al. (2005) tracked the use of antipsychotics in Canadian LTC facilities over one year. They found that approximately 30% of LTC residents in Canada are prescribed antipsychotic medications. The most commonly prescribed antipsychotics included risperidone (42.4%), loxapine (28.0%), olanzapine (20.4%) and quetiapine (10.6%). The rates of prescribed antipsychotic medications observed in Hagen et al. (2005) were much higher than the approximately 8% found in Japan; however, the Canadian rates are similar to those found in Australia. Feng et al. (2009) compared antipsychotic prescription rates in LTC internationally, including Canada, Finland, Hong Kong, Switzerland, and the United States. Finland's antipsychotic use was highest (38%), and Hong Kong was the lowest (11%). Switzerland fell in the middle (34%) along with Canada and the United States (26-27%). No factors were found to explain the variance between countries in the use of antipsychotics; however, since this study is being conducted in Canadian LTC facilities, rates of antipsychotic use are expected to fall around 30%. Feng et al. (2009) also note that there

was substantial variability within countries and across participating facilities within the same country. The authors suggest that there may be underlying or unmeasured factors, such as nursing philosophy that may contribute to different rates of antipsychotic prescription.

Lovheim, Sandman, Kallin, Karlsson, and Gustafson (2006) examined the factors leading to prescription of antipsychotic medication. Men were more likely to be prescribed antipsychotics than women. Also, those residents who were able to rise from a chair unassisted and those in group dwellings were more likely to be prescribed antipsychotics. Mental workload, ability to complete ADL's unassisted, and age were also significantly associated with antipsychotic prescriptions. Those individuals exhibiting aggressive behaviours, verbally disruptive or attention seeking behaviours, and wandering behaviours were more likely to be prescribed antipsychotics. As expected, hallucinations were associated with antipsychotic prescription. Depression was also associated with antipsychotic prescription. Other investigations led to the conclusion that relocation can also lead to antipsychotic prescription. Hagan et al. (2005) found that, relative to residents who were not relocated, the rate of antipsychotic use rose by approximately 10% immediately after residents were relocated. Even six months following the relocation, antipsychotic prescriptions continued to rise. They concluded that once residents are placed on antipsychotic medications, there is a tendency to continue a regular prescription of antipsychotic medications (Hagen et al., 2005). Antipsychotic medications are often used because behavioural disturbance is not well understood. Antipsychotic medications can be prescribed *pro re nata* (PRN, or "as

needed”); therefore, as behavioural disturbance changes, the amount of PRN antipsychotics administered may also change. Baker et al. (2010) examined PRN antipsychotic use in older adults specifically. They found that 56% of older patients with dementia had been prescribed at least one antipsychotic medication PRN ($M = 1.6$), and that over a one week period, 30% of those with prescriptions were administered at least one dose of an antipsychotic PRN ($M = 2.9$). Hagen et al. (2005) found, in a sample of Canadian LTC facilities, that 24.5% of prescriptions for antipsychotic medications were PRN, with the average number of doses over a one month period at only 2.1. These results are lower than Baker et al. (2010). In the current study, antipsychotic PRN use was recorded. It was expected that with increased empathy toward the resident, behavioural disturbance would be better understood and PRN antipsychotic medication use would decrease. Rates of PRN antipsychotic medication were studied in the present investigation.

The consequences of antipsychotic medications in LTC can be great. Atypical antipsychotics have been associated with increased risk of death in older adults with dementia in randomized controlled trials. Typical antipsychotics have also been associated with increased mortality (Pratt, Roughead, Ryan, & Salter, 2010). Ballard et al. (2009) randomly assigned participants to either continue with the previously prescribed antipsychotic medications, or switch to a placebo for the next 12 months. They followed up again after 24 months and after 36 months. The results indicated that patients who remained on antipsychotics were more likely to die during the 12-month period. The probability of survival for those remaining on antipsychotics was 70%, while the

probability of survival for those switched to placebo was 77%, which was a significant difference. This difference increased after 24 months (46% vs. 71%) and 36 months (30% vs. 59%).

Increased risk of mortality is related to the risk of cerebrovascular events in older adults receiving antipsychotic medications. Kleijer et al. (2009) examined this risk in a large study of 26,157 community dwelling older adults prescribed at least one antipsychotic medication. These authors found that current antipsychotic use nearly doubled the incidence of cerebrovascular events, within the first three months of use. The risk of cerebrovascular events decreased over time and was comparable to non-users after three months (Kleijer et al., 2009). Mittal, Kurup, Williamson, Muralee, and Tampi (2011) conducted a systematic review of the literature examining the risk of cerebrovascular events for those using antipsychotic medication. The risk for cerebrovascular events was found to be 1.3 to 2 times higher for those using antipsychotic medication, and no one drug has been found to be safer than any other. The risk of cerebrovascular events remains elevated for up to 20 months after treatment begins (Mittal et al., 2011).

Increased mortality is perhaps the most dramatic consequence of antipsychotic medications; however, there are other consequences. Woolcott et al. (2009) conducted a meta-analysis to examine the contribution of certain medications to falls in older adults residing in LTC. Many different factors may contribute to falls, but certain medications have been identified to increase the risk for falls. They found that psychotropic drugs were associated with increased falls. Sedatives and hypnotics, antidepressants, and

benzodiazepines also increased the chance of falls. Falls can have serious consequences for older adults in LTC, including death.

There is also a possibility that antipsychotic medications contribute to cognitive impairment. Byerly et al. (2001) reviewed the literature regarding the effects of antipsychotics on older adults. Antipsychotic medications all affect the dopamine systems of the brain to varying degrees. Traditional antipsychotics tend to decrease dopamine systems in the brain, which can lead to impaired cognitive performance. Since older adults often experience a decrease in dopamine activity as a normal part of aging, they may be particularly sensitive to dopamine effects. Newer antipsychotics do not have the same effect on the dopamine systems, thus they should not impair cognition in the same way as traditional antipsychotics; however, new antipsychotics affect other areas of the brain, which may still lead to impaired cognition. Since the consequences of antipsychotic use can be so negative, interventions aimed at reducing problematic behaviours without pharmacological intervention, such as the current intervention, are important.

Functional Analytic Model

The Functional Analytic (FA) model describes the mechanism through which changes in aggressive behaviours may occur, which is important to the current study. Since the current study focuses on an intervention intended to change aggressive behaviours, an understanding of the potential mechanisms at work in the change is warranted. Fisher et al. (2008) explain that the FA model posits that behaviours are influenced by an individual's physiological and psychological history, as well as the

current social and physical context. These factors interact to produce behaviour. As such, when behavioural disturbance occurs, it may be precipitated by the interaction of the context and the individual. Since the caregiver is part of the context, the caregiver becomes important in the FA model.

Similar principles of interaction between the environment and individual can be seen in the Need-driven Dementia-compromised Behaviour (NDB) model, which was developed specifically to describe residents of LTC and assist in explaining aggressive behaviours (Dettmore et al., 2009). The NDB model describes aggression as a response to unmet physical and psychosocial needs. Individuals with dementia are not able to express their needs in the same way as cognitively intact individuals, thus aggressive behaviours are the individuals' way of communicating. For example, aggressive behaviours may be the individual's way of communicating pain, social isolation, boredom, or the presence of untreated medical conditions. In the NDB model, the caregiver must correctly identify the needs of the resident to improve aggressive behaviours.

One example of an intervention based specifically on the NDB model was developed by Kolanowski, Litaker, and Baumann (2002). The goal of the intervention was to predict unmet needs and meet them before the disruptive behaviour occurred. The intervention involved individual recreational programs designed to account for the residents' strengths and meet the residents' needs. If recreational activities are tailored to meet the needs of the residents, the authors suggested that disruptive behaviours would likely decrease. The authors implemented the intervention with a 79-year-old male, comparing problematic behaviours from a period when the participant was exposed to

only recreational activities that matched his skill level to a period when activities matched both his skill level and interests (the individualized recreational program). They found that the activities matched to both interest and skill level resulted in improved behavioural outcomes to a greater extent than those matched on skill level alone (Kolanowski et al., 2002). Interventions focused on person-centred care, with similar importance placed on the needs of the individual, have been implemented in other studies. The current intervention is not based strictly on the NDB model; however, the purpose of the current intervention is to reduce or prevent aggressive behaviours. As such, there is an assumption in the current study that care would change in some way to contribute to a change in aggression. This change may have included increased awareness of unmet needs in individual residents.

When implementing the FA model to modify behaviour in LTC, three core strategies are employed. The first is to modify the antecedents of the behaviour in order to change that behaviour. Over time, behaviours are reinforced when certain consequences predictably follow the behaviour. The antecedent may be anything in the environment, such as a noise, inactivity, or a particular interaction. Second, the consequences that maintain the problem behaviour may be modified. Third, socially acceptable behaviours should be reinforced. Also, noncontingent reinforcement (NCR) may be an effective strategy to reduce problem behaviours. This includes selecting a reinforcer specific to the individual and delivering it on a time-based schedule and not related to any particular behaviour. Distraction is another effective strategy to change behaviour. It involves quickly changing the situation to another situation preferred by the

resident (Fisher et al., 2008). In a case study, Buchanan and Fisher (2002) found that NCR and the use of detailed assessment and FA intervention was effective in reducing problem behaviours. Dwyer-Moore and Dixon (2007) also implemented a functional analysis and behavioural intervention with three older adults residing in LTC. The intervention was successful in decreasing problem behaviours for all three participants (Dwyer-Moore & Dixon, 2007).

The conceptualization of the current study lies in the principle of the model that all behaviours have a function, and therefore, by changing the situation behaviours may also change. In the FA model, the environment and behaviour are related by contingencies, that is, a linear pattern of antecedents, behaviours, and consequences will be observable over time. Interventions may include altering the situation so that acceptable behaviours are encouraged, thus decreasing problem behaviours. The current study did not involve training staff in functional analysis of behaviour, but involved the implementation of an intervention designed to change the care provided by nurses and other staff members (by enhancing empathy), thus changing the situation in which problematic behaviours occur with the aim of a change in the behaviours themselves.

Treatment goals should include preserving functional behaviours and improving Quality of Life (QOL) among those with dementia when developing an intervention using the FA model. One of the purposes of the current intervention was to improve QOL while changing problematic behaviours. When developing an intervention it is important to first define the behaviour, specify how the behaviour should change, identify in which setting the change should occur, as well as whose behaviour should change (i.e., the

resident or the staff; Fisher et al., 2008). In the current study, the behaviour of interest was any aggressive behaviour. The goal was to decrease aggressive behaviours in the LTC setting using an intervention designed to change staff behaviours.

Quality of Life in Long Term Care

Behavioural disturbance, whether it is aggressive behaviour, agitation, or wandering, impacts the quality of the lives of individuals with dementia. Quality of life (QOL) is a concept that is difficult to define but frequently used as an outcome measure in studies of LTC. As a construct, QOL encompasses aspects of physical, mental, and social well-being, and may also be referred to as health-related quality of life (HRQL) in the LTC research (Drageset et al., 2009). In the current study, QOL was one outcome that was measured, and increasing QOL by decreasing aggressive behaviours was one of the hypothesized outcomes of the current study.

Definitions of QOL vary from one study to the next, and researchers have attempted to study what residents of LTC and their caregivers believe is important for QOL. Hjaltadottir and Gustafsdottir (2007) found that residents cite feeling safe and cared for, being at home and comfortable to be themselves, and being recognized as persons and allowed to continue to develop relationships as important to QOL. The participants in the study exhibited physical rather than cognitive impairment (Hjaltadottir & Gustafsdottir, 2007). When an individual is experiencing dementia, it can be especially challenging to determine QOL due to the subjective nature of the concept and the difficulty individuals with dementia face with communication, especially in the later stages of the disease (Gessert et al., 2005).

Quality of life in dementia cannot be defined by simply referring to physical aspects of the disease (Murray & Boyd, 2008). Biopsychosocial factors play a role, leading to a multidimensional definition of what comprises QOL. Happiness, enjoyment of life, and health factors are all important in a multidimensional conceptualization of QOL. When considering the QOL of individuals with severe dementia, caregiver ratings become the criteria on which we measure QOL due to the difficulty these patients have communicating; however, caregivers and residents sometimes differ on their perceptions of QOL (Murray & Boyd, 2008). Gessert et al. (2005) examined caregiver perceptions of various aspects of QOL as related to dementia. They asked professional caregivers to rate the importance of 19 different aspects of QOL with two different LTC residents in mind. The first was a resident with physical impairment but no cognitive impairment, and the second a resident with cognitive impairment but no physical impairment. Examples of aspects of QOL included being free from pain, being allowed to be as independent as possible, engaging in activities that give them pleasure, and feeling that they are treated with dignity. Gessert et al. (2005) found that cognitive impairment was associated with lower expectations about QOL, especially when caregivers were asked about their ability to influence the QOL of those with cognitive impairment. Caregivers reported significant differences in importance for those with cognitive impairment for only the items regarding making choices about things that affect their life and care, knowing and understanding rules, expectations, and routines in the nursing home, and their religious and spiritual needs being fulfilled. They also found that aspects of QOL rated more important also tended to be rated as being more subject to influence. The Gessert et al.

(2005) study illustrates the different perspectives caregivers may have about QOL in individuals with dementia when compared to other residents without cognitive impairment.

There are also caregiver factors influencing the assessments. When proxies assess QOL, they may be inaccurate due to caregiver depression, the caregiver's assessment of the individual's mental status, the relationship between the caregiver and the individual with dementia, the level of stress involved in caregiving, and whether or not the individual resides with the caregiver. Family caregivers may also rate QOL lower than the individuals with dementia themselves because they fail to account for the adaptability (i.e., coping) of the individual despite cognitive decline (Murray & Boyd, 2008).

Since QOL is difficult to assess in people with dementia who are not able to communicate, measures of QOL completed by caregivers must consist of observable behaviours. This may pose a problem, as observers may not always be objective raters, and some observable behaviour (such as enjoyment) may include a subjective quality (Gonzalez-Salvador et al., 2000). The Alzheimer Disease Related Quality of Life (ADRQL, Rabins, Kasper, Kleinman, Black, & Patrick, 1999) is one measure that attempts to assess observable, external behaviours. The ADRQL has been recently revised (Kasper, Black, Shore, & Rabins, 2009), and it is the revision that was used in the current study. Gonzalez-Salvador et al. (2000) examined QOL of LTC residents with dementia using the original ADRQL. They found that QOL was correlated with cognitive impairment, as well as severity of impairment, physical symptoms, and depression. There was also a small correlation with behavioural symptoms, length of time at the nursing

home, and length of time spend on care. QOL was not correlated with demographic variables (Gonzalez-Salvador et al., 2000). Missotten et al. (2008) similarly found an association between QOL and cognitive ability. They compared individuals with dementia to those with mild cognitive impairment (MCI) and healthy controls, also using the ADRQL. They found that individuals with dementia had significantly lower QOL than those with MCI and healthy controls. They did not find a significant difference in QOL between those with MCI and healthy controls. They noted that the individuals in the dementia group also tended to be in more advanced stages of dementia.

Quality of life in individuals with dementia may be related to cognitive ability, but it does not appear to be related to demographic characteristics, such as sex. In a literature review of health-related quality of life (HRQL), Banerjee et al. (2009) examined the demographic characteristics associated with HRQL in dementia. Like Missotten et al. (2008) and Gonzalez-Salvador et al. (2000), a positive association was found between dementia severity and decreased HRQL, but no association was found between HRQL and age or sex (Banerjee et al., 2009). This lack of association was also evidenced in Missotten et al.'s (2008) study.

Along with resident and caregiver characteristics, Banerjee et al. (2009) also found many aspects of the caregiving environment may contribute to QOL in older adults with dementia. Higher levels of caregiver burden tend to be associated with lower HRQL. Higher staffing levels and more specialized staff apparently contribute to higher HRQL as well. Higher levels of behavioural disturbance are consistently found to contribute to decreased HRQL (Banerjee et al., 2009). The amount of control residents feel they have

over their own experiences can also contribute to QOL, as evidenced in a study by Carrier, West, and Ouellet (2009) who), which examined how the ability to make choices about meals contributed to QOL of individuals in LTC. Residents with cognitive impairment were included in the study, although staff members completed the measure of QOL on their behalf. Carrier et al. (2009) found that the number of dining companions was associated with better QOL. This was not surprising given the relationship between social interaction and QOL. Having a choice of foods and times to eat was also positively associated with QOL. There was also a relationship between QOL and ability to eat independently for those residents with cognitive impairment (Carrier et al., 2009).

Quality of life in LTC has been found to be associated with cognitive functioning, caregiver characteristics, and the quality of the environment, but it does not appear to be related to demographic characteristics such as age and sex. Since dementia progresses over time, one would expect QOL will also change over time. Missotten et al. (2007) and Hoe et al. (2009) examined whether QOL changes over time in individuals experiencing dementia. In fact, they found that QOL tended to decrease over time. These results were related to mood and cognitive decline, in that lower mood at baseline predicted a greater reduction in QOL at follow up. This differed from Missotten et al. (2007) who did not find a significant change in scores on the ADRQL over two years, despite changes in cognitive or physical functioning. Missotten et al. (2007) also found no age or gender differences in ADRQL scores over time. These inconsistencies may be due to differences in study populations and environments.

Nurse Empathy

Empathy was an important construct in the current study, as it was expected to be a mediator between the intervention and the outcome (i.e., decreased aggressive behaviours, decreased agitation, increased quality of life). The definition of empathy in the literature can be ambiguous, which contributes to difficulty in empathy research. These difficulties arise from the subjective nature of empathy, as well as the complexity of the concept of empathy (Kunyk & Olson, 2001).

Despite the difficulty defining empathy, nurses are constantly interacting with patient; and it can be argued that empathy is required for all nursing interactions (Kunyk & Olson, 2001). Nurse empathy can be described as either a basic trait or a trained skill. As a basic trait, empathy is an innate or natural ability. As a trained skill, empathy can be taught as a form of communication, or a cognitive response to a situation (Kunyk & Olson, 2001). Morse, Bottorff, Anderson, O'Brien, and Solberg (2006) similarly describe first-level and second-level empathic responses specific to the nursing environment. First-level responses are reflexive, emotional, and nearly automatic responses that have been culturally conditioned and will provide comfort to the sufferer. According to Morse et al. (2006) these responses require that the caregiver be engaged with the sufferer and can lead to emotional exhaustion in the nursing context. Second-level responding involves pseudo-engagement rather than actual engagement, in which the individual imagines the sufferers' experience rather than experiencing it directly. This allows the caregiver to remain detached, therefore preserving his or her energy. Nurses can be trained to use second-level responding (Morse et al., 2006). While the literature is

consistent in distinguishing between a more natural form of empathy and a trained form of empathy, empirical evidence to support this division is lacking.

The response of empathy is dependent on the relationship between individuals. The closer the relationships, the more the observer is likely to pay attention to the event occurring, identify with the individual, and respond appropriately. There are two types of reactions, a response “with” the person, where the observer matches his or her reaction, such as distress with distress, and response “to” the person, where the observer reacts instrumentally with consolation. These different responses are measurable by physiological determinates, such as heart rate and hormonal response, and neurological determinates, such as prefrontal cortex activation (Preston & de Waal, 2002). By increasing staff knowledge of each resident, the current intervention was intended to contribute to an increased relationship and increased empathy for each resident. Empathy was psychometrically assessed in the current study to determine whether increased knowledge of a resident’s background and life did, in fact, increase empathy toward him or her.

The complexity of empathy has led to difficulty with the measurement of the construct. Many measures of empathy have been developed, some specifically for the nursing context, others for the general population. Yu and Kirk (2008) reviewed 20 measures of empathy. The methods of measurement varied from self-report to patient ratings and third party ratings. Most measures of nurse empathy are based on self-report. As such, this study includes residents of LTC, and as such, measures of empathy will be completed by healthcare professionals. Specifically, a self-report measure of empathy

developed specifically for use in the healthcare population was used (The Jefferson Scale of Physician Empathy; Hojat et al., 2002). This measure is better suited to the current study because it is specific to the patient-healthcare professional interaction. This measure has been found to be reliable and valid with various healthcare professionals, including nurses and physicians (Fields et al., 2004).

Despite the obvious importance of empathy in any relationship involving caring for another person, there remains a perception that professional caregivers occasionally do not offer much empathy, despite the helping nature of the nursing profession. Reynolds and Scott (2000) reviewed the literature regarding the display of empathy by nurses. Since professional empathy is related to positive outcomes, a lack of empathy can result in poor outcomes. Nursing involves the interaction between the nurse and a variety of people, including family members, patients, and other staff. Empathy is crucial for nurses to determine patients' needs and provide appropriate care. If patients do not perceive the nurse as understanding them individually, they are unlikely to trust that nurse. It becomes more difficult for the nurse to predict the needs of the patient and the care of the patient suffers as a result. While the health outcomes of nurse empathy have not been examined greatly, improvements in patient depression and agitation has been found in previous research (Reynolds & Scott, 2000). For example, Hollinger-Samson and Pearson (2000) examined the relationship between nurse-aide empathy and depressive symptoms in older adults residing in LTC. Residents were assessed for depressive symptoms, and both staff and residents were asked to complete measures of empathy. The staff completed a self-report measure, and the residents completed a

measure about the empathy they perceived from the staff. The results indicated that when residents perceived empathy to be low, depressive symptoms increased. This is important to the current study because it was hypothesized that the intervention would influence nurse empathy and this change in nurse empathy would act as a mediator to change agitated behaviour in residents with dementia. Hollinger-Samson and Pearson (2000) have illustrated one way a change in empathy may influence residents. Also, they have illustrated that the way residents perceive empathy can influence outcomes.

Nurses working in LTC must display an understanding of the residents to provide the best care to residents. Displaying empathy toward individuals with dementia may be difficult because of a limitation in ability to communicate and cognitive impairment that take place with the progression of the disease. Moreover, nurses may be unable to display empathy if their attitudes regarding that resident's personhood include the belief that an individual with dementia is less of a "person" than he or she once was. This interplay among empathy, personhood perception, and nursing behaviours was examined in the current study.

Since empathy is important to the caregiver-resident relationship and can affect resident outcomes, training can be provided to healthcare professionals. Models of nurse empathy include the conceptualization of trained empathy, or empathy that can be learned consisting of the cognitive skills necessary to react appropriately to situations while keeping enough detachment from the patient to prevent exhaustion. As an example, Braun, Cheang, and Shigeta (2005) implemented an active-learning model to increase empathy skills. They developed a program specifically for nursing aides, who typically

only receive training that emphasizes safety and clinical concerns. The program was developed to target nursing aides who work with older adults to improve their knowledge, skills, and empathy toward older adults. Modules were developed to provide training in specific topics, such as healthy aging, skills, such as assessing problems, and behaviours, such as treating older adults with respect. Other topics were included on communication, interpersonal skills, and self-care. Activities used during the program included experiential exercises, role playing, debate, self-assessment, video viewing, demonstrations, writing assignments, case studies, group work, storytelling, and discussion. This wide variety of activities was incorporated to account for differences in learning style. Participants were tested on each module to determine the level of retention. Participants reported changing their methods, although no objective measures of burnout or stress was used.

While studies implementing empathy training programs are helpful in understanding how empathy may be taught, the lack of standardized assessment of the outcome of these programs is problematic. It is difficult to tell how nurses' behaviours change as a response to the training. Brunero, Lamont, and Coates (2010) examined the literature regarding empathy education in nursing. They found that a wide variety of assessment tools were used to measure change in empathy, suggesting a standardized approach to measuring empathy may be helpful. While the studies measured changes in empathy over time, they frequently did not account for the many factors that may contribute to empathy. The majority of studies involved an experiential learning style. This experiential component to learning was used in an attempt to prevent the

information from only being learned superficially rather than being learned and implemented. Future programs should examine nurses' behaviour following training programs to determine the effectiveness of such training. The current intervention was intended to change nurse empathy by providing information about each resident as a person to the nurse. By knowing the resident better, it was expected that the nurse would be better able to identify needs and form a relationship with the resident, thus contributing to a change in behaviour toward the resident.

Personhood

Personhood perception is a relatively new area of study in dementia research, and one that is important for the current study. It was expected that personhood perception would act as a mediator, along with empathy, to contribute to the expected outcome (decreased aggressive behaviours). Previously, dementia care had been approached from a biomedical perspective, which tends to neglect personhood (Kitwood, 1993).

Personhood refers to all of the elements that contribute to a person being a person.

Personhood begins before birth or shortly after and continues to develop until a point near the end of life. The point at which personhood ceases has caused debate within the literature and is of interest in the dementia literature. For example, persons on life support without consciousness may or may not be perceived as retaining personhood (Burton, 2008). A person with dementia may be perceived as being less of a person, or a different person than he or she used to be.

Kitwood (1993) explains five aspects of the person that contribute to personhood and are important when considering personhood in dementia; personality, biography,

neurology, physical health, and social functioning. Personality has already been developed by the time of dementia onset. During the progress of dementia, the personality will change as a result of the disease. As such, in the current intervention, the resident participants have already experienced many life events that have shaped who they are and contribute to their personhood. By sharing these experiences with LTC staff, the staff will become more aware of each resident as a person. Neurological impairments are present and advance during dementia. There are no known ways of stopping or reversing any damage that occurs. Physical health may be improved over the course of dementia, thus improving mental health as well. The social component is the final aspect of the person that had not been examined in great detail with reference to the onset of dementia (Kitwood, 1993).

Buron (2008) similarly suggests that there are various aspects of personhood that are important in dementia care, although he describes them as levels of personhood. These three levels of personhood include biological, individual, and sociological personhood. At the biological level of personhood there is little debate that individuals with dementia retain a physical body and are able to experience physical sensations. The level of individual personhood involves the personality, values, self-worth, past roles, and spirituality of the person. This is a higher level of personhood that is thought to involve self-awareness and the ability to communicate. Many aspects of individual personhood erode with the progression of dementia. As persons with dementia lose the ability to communicate and remember themselves continually, it is more likely that staff perceptions of that individual's personhood will also be affected. The third level of

personhood, sociological personhood, includes the perceptions of society and others. Aspects of sociological personhood include social relationships, culture, responsibility, moral agency, and membership in social and professional groups. This is often the first level of personhood affected by cognitive decline.

This sociological personhood described by Buron (2008) is of further interest when considering the relationship between LTC residents with dementia and their professional caregivers. Kitwood (1993) identified elements of social psychology used in dementia care that disregard the individual as a person with value (and the individual's sociological personhood). It is unfortunate, but common, to see these behaviours in LTC settings. Treachery involves using dishonesty to gain compliance. Disempowerment involves doing something for the individual with dementia that he or she can do his or herself, although perhaps slower or more clumsily. Infantilization includes treating the individual as though he or she has the mental capacity of a child. The use of condemnation may include blaming. Intimidation includes using threats, commands, physical assault, or abuse of power. Stigmatization includes turning the individual with dementia into a diseased object and labelling him or her as such. Outpacing includes providing the individual information at a rate beyond the pace they are able to understand. Invalidation includes ignoring or discounting the individual's subjective states, such as that of distress or confusion. Banishment includes the removal of the person with dementia from other people, either physically or psychologically. Finally, objectification includes treating the person like a "lump" to be pushed around, poked, measured, dumped, or filled. It was expected that the current intervention would

contribute to the reduction of some of these negative behaviours toward the individual with dementia, thus contributing to a change in that individuals' aggressive behaviours as a result of unmet needs or discomfort.

The consequences of insufficient regard for the personhood of individuals with dementia can be great. Malloy and Hadjistavropoulos (2004) discuss the implications of attitudes about personhood with regard to individuals with dementia experiencing pain. People who care for persons with dementia often see the personality and identity of that person eroding to the point when they believe that person is no longer a "person". Once the individual with dementia is no longer regarded as a "person," the relationship between that person and his or her caregiver will also shift. This change in relationship can be supported by the institutional organization of nursing homes. Within this institutional organization, relationships between individuals with dementia and caregivers become impersonal, and the persons with dementia become the "objects of care". The unique patterns of individuals are also ignored. No extra effort is put forth to understand the person or his or her needs. As an object of care, physical health is maintained without regard for emotion, behaviour, expression, or pain. For the caregiver, this mechanized and institutional relationship is a source of stress. Encouraging authentic relationships between the caregiver and resident gives the role of caregiver meaning. Finally, with increased perception of personhood, the caregiver will become more sensitive to communication of pain from the resident. For the patient, an authentic relationship will contribute to renewed attention by the caregiver to their needs and improved pain outcomes (Malloy & Hadjistavropoulos, 2004).

Kitwood (1993) emphasizes that dementia involves interpersonal relationships with caregivers and family members, as well as the structure of everyday lives that dementia does not necessarily fit within. As dementia progresses, memory and judgement may disappear, but this does not mean the person disappears as well. Personhood shifts from being provided by the self to being provided by others. The challenge is that the need to sustain and replenish personhood for another person will require a greater effort on the behalf of others. Without knowledge of that person, this task is not possible. This intervention provided the background information required to understand the person in the past, as well as in the present. Changes in personhood perceptions were assessed in this study.

Person-Centred Care

The study of personhood in dementia has led to the concept of person-centred care. In LTC, the care provided has been institutional; it emphasizes organizational routine, staff needs, and concern about the regulation of resident behaviours. This neglects the resident's individual needs and can be depersonalizing (White, Newton-Curtis, & Lyons, 2008). This model of care cannot allow for individuality because doing so would be inefficient. As such, knowledge of the each resident as a person is limited. The current intervention is aimed to improve the knowledge staff has of each resident participant. Person-centred care has emerged with increased awareness of personhood and the individuality of each resident. Person-centred care emphasizes the importance of the individual in care, and reflects the unique needs of each resident of LTC.

White et al. (2008) identified five basic concepts in person-centred care: personhood, knowing the person, autonomy and choice, comfort care, and nurturing relationship. Personhood acknowledges the uniqueness and value of each individual. Knowing the person includes knowing the history, personality, and routines of the person. This is the area the current investigation was intended to target. Autonomy and choice acknowledges the right of the individual to direct his or her own care and environment. Comfort care includes attention for both the physical and emotional needs of the resident. Nurturing relationship includes promoting social relationships between the resident and family and friends, as well as between the resident and staff (White et al., 2008). Knowledge, and action based on that knowledge, of each of these categories is required to provide person-centred care. As such, empathy is also important in providing person-centred care (Buron, 2008).

Person-centred care involves individualized treatment of the whole person, and is considered best practice in dementia care. As dementia progresses, individuals increasingly need assistance with physical needs; however, psychosocial needs should not be forgotten. Some of these needs include feeling safe, having a sense of belonging and acceptance, maintaining social contacts, feeling respected, and experiencing a sense of contribution. These needs should be cared for as much as physical needs as the disease progresses; however, caring for the physical needs of the person can overshadow psychosocial needs.

As previously discussed, personhood is an important construct in person-centred care, and caregiver attitudes about personhood in dementia can influence care. If

caregivers believe the person is “no longer there”, care may be reduced to meeting basic physical needs rather than maintaining a relationship with the individual. The relationship between caregiver and individual is crucial for positive outcomes in dementia care.

Person-centred care focuses on the whole person, and includes the acknowledgement that the individual is a person and can experience relationships, offering and respecting choices, including the person’s past and life history in their care, and focusing on what the person can do rather than the skills he or she has lost. Like the NDB model, in person-centred care, behaviours that may be considered problematic are seen as a way of communicating basic unmet needs. If these behaviours are interpreted as only symptoms of dementia, strategies to eliminate the behaviour through the use of pharmacology are often employed. As part of the current investigation, medications were tracked for the entire study period, including antipsychotic PRNs which are commonly used for behavioural disturbance. If the behaviour is seen as communication of unmet needs, the focus will be on interpreting the behaviour and adjusting the environment to meet the needs of the individual (Edvardsson, Winblad, & Sandman, 2008).

Life History as Intervention

One approach to person-centred care involves the use of biographical information in care. Knowing about the person’s history, routines, and occupation can help staff interpret the behaviours, needs, and wishes of the individual (Edvardsson et al., 2008). In the current investigation, life histories, or biographies, were used as intervention. While studies of biography as intervention are relatively uncommon, they do exist with regard to certain areas of resident functioning. Moos and Bjorn (2006) reviewed studies that

utilize residents with dementia's life stories as intervention. They found three major categories of intervention in which life histories are implemented; to raise self esteem and a sense of identity, to improve quality of life, and to change behaviour. The use of life histories stems from the idea that the self should be incorporated in care, despite failing memory for those individuals with dementia. Moos and Bjorn (2006) found that all studies had positive results. That is, improvements were noted in residents' self esteem and identity, quality of life, and behaviour when interventions were intended to improve those areas. Some of the interventions implemented to increase self-esteem included groups focused on sharing photographs and stories, the use of art and music and role playing. Self esteem outcomes were primarily determined qualitatively; only three of eight studies reviewed included a quantitative measure of self esteem. Of particular interest to the current study, the use of life histories was found to influence behaviour. Behaviours that were noted to improve included interactive communication, participation, satisfaction, agitation, and withdrawal. While these changes are promising, the current study focuses on changes in nurse behaviour primarily (Moos & Bjorn, 2006).

Clarke, Hanson, and Ross (2003) examined whether using biographies encouraged person-centred care in LTC for people with dementia. Using qualitative methods, they found that nurses and practitioners felt that using a biographical approach helped them to see the person behind the resident as well as build and strengthen the relationships with the residents and their caregivers. This allowed the health professionals to understand resident needs and behaviour, as well as see each resident as a whole person rather than a medical condition. In the current investigation, changes in attitude

(i.e., empathy and personhood perception) were measured. As in Clarke et al. (2003), attitudes toward individual residents were expected to change; however, the current study also examined changes in behaviour to determine whether biographical (i.e., life history) interventions, influenced care provided by healthcare professionals.

Egan et al. (2007) piloted an intervention that appears to have affected care provided by healthcare professionals, as evidenced by changes in aggressive behaviours of the residents. Four residents were included in their study. These researchers interviewed family members about residents' life histories, and these life histories were then shared with staff members. Aggressive behaviours were tracked 14 days prior to the presentation of the life histories and for 21 days following. Moderately positive results were found indicating a trend toward a reduction of aggressive behaviours; however, one participant was in failing health, and two residents exhibited very low aggressive behaviour at baseline. Staff noted small behavioural changes among two of the four resident participants. When ten staff members were interviewed, half reported changing the way they provided care as a result of learning the life histories. All staff members indicated they felt learning the life histories was helpful, although not all of them provided examples of how it was helpful. These results are promising; however, they are not generalizable due to the small sample size. Moreover, the outcome of Egan et al.'s work cannot be unequivocally attributed to the intervention because participants were not compared to a control group.

The current investigation aimed to replicate and extend Egan et al.'s (2007) study with a greater number of participants and a control group. The current intervention

involved the writing and sharing of each participating resident's life history. By providing this information to staff, it was expected that staff would be influenced to increase their empathy toward the resident and increase their perception of that resident's personhood. With those changes in empathy and personhood perception, it was expected that staff would change their behaviour toward the residents, thus influencing the behaviour of the residents (as explained by the FA model). Increasing personhood perception was one of the goals of the current intervention. There are consequences if personhood is not maintained, including depersonalization, resident depression, and increased disruptive behaviours (Buron, 2008). Another goal was to contribute to the literature about personhood and the benefits of encouraging person-centred care. Despite Egan et al.'s (2007) promising results, there are few studies of person-centred care using rigorous methodologies including the use of large sample sizes, control groups, and control of confounding variables, and outcome studies are lacking (Edvardsson et al., 2008). The current study examined the influence of life history on nurse empathy and personhood perception in relation to behavioural disturbance and quality of life in individuals with dementia residing in LTC.

Purpose

Research in the area of personhood is relatively new in the dementia literature. As such, very few investigators have attempted to increase nurses' perceptions of personhood through interventions. One study that involved implementation of an intervention designed to inform staff of the personhood of individual residents is Egan et al. (2007). The primary purpose of the current study was to replicate Egan et al.'s (2007)

promising results, which suggested that life histories may be used an intervention to reduce aggressive behaviours. Egan et al. included only four participants and did not use a control group. The current study included a larger number of participants to ensure sufficient power, as well as a control group for comparison purposes. The rationale for a successful intervention using life histories lies in the previous literature examining person-centred care, nurse empathy, and the FA model. By learning the life histories of the residents, it was expected nurse empathy would increase as a function of changing attitudes toward that residents' personhood. Along with the change in empathy, nurses would change their behaviours toward the residents. This change in behaviours would be evident by a reduction in aggressive behaviours (presumably because the residents would be experiencing greater met needs) and an increase in QOL for the residents. As such, a secondary purpose of the current study is to examine the relationship among empathy, personhood perception, and QOL in individuals with dementia. Since antipsychotic medication use is so prevalent in Canadian LTC facilities, a final purpose of the study was to examine whether the intervention influenced PRN use of these medications, which are often used to manage behavioural disturbance but have been found to increase risk of death (Ballard et al., 2009).

Hypotheses

The following hypotheses were tested:

- I. The experimental and control groups will exhibit significantly different levels of aggressive behaviours following the intervention, with the experimental

group exhibiting a decrease in aggressive behaviour following the intervention.

- II. Nurse empathy and personhood perception will change (increase) from pre- to post- intervention in the experimental group but not the control group.
- III. PRN Antipsychotic medication use will decrease following the intervention in the experimental group but not the control group.
- IV. The experimental and control groups will exhibit significantly different outcomes on the Alzheimer's Disease Related Quality of Life (ADRQL) scale, with those in the experimental group exhibiting higher scores than those in the control group following the intervention.
- V. Empathy and perception of patient personhood will serve as mediators between the life histories intervention and aggressive behaviours and quality of life. It was hypothesized that the intervention will change empathy and personhood perception, which will in turn influence the way caregivers provide care to residents, thus changing resident behaviours.

Hybrid analysis using inductive and deductive methods were used to analyze the nurse's responses to an open-ended questionnaire (identifying attitudes toward the residents and ways in which learning about residents' histories might have changed their interaction with the resident).

Method

Participants

Participants were 88 residents over the age of 65 with a diagnosis of dementia recruited via proxy from six LTC facilities within the Regina Qu'Appelle Health Region. The LTC facilities are described in Table 1. Proxy consent was obtained from a close relative or legal guardian of each resident participant. Consent forms and information about the study was provided to each LTC facility to mail to the proxies of potential participants. The consent packages included all procedural details involved in the construction of the life histories and the data collection. Less than 15% of proxies informed of the study consented to participate. Once proxies consented to the study, resident participants were randomly assigned by the flip of a coin to either the Life History group ($n = 38, 52.05\%$) or the Medical History group ($n = 35, 47.95\%$). Assent was obtained from the residents upon visiting the LTC facility in which they resided. Each proxy participated in an interview about their loved one, with the majority of proxies consisting of adult children ($n = 49, 67.12\%$) and spouses ($n = 16, 21.92\%$) of the residents. The remaining proxies included grandchildren, nieces or nephews, siblings, and others (such as friends). Proxies were primarily female ($n = 50, 68.49\%$).

Table 1

Facility information				
Facility	Resident participants <i>n</i> (%)	Staff participants <i>n</i> (%)	Number of LTC Beds	Level of Care
Facility 1	3 (4.11)	5 (5.05)	34	2
Facility 2	5 (6.85)	7 (7.07)	50	3-4
Facility 3	34 (46.58)	58 (58.59)	377	3-4
Facility 4	18 (24.66)	13 (13.13)	143	3-4
Facility 5	9 (12.33)	9 (9.10)	216	3-4
Facility 6	4 (5.48)	7 (7.10)	53	3-4

Resident characteristics. A total of 73 resident participants completed the study. Resident participants had an average age of 85.98 years ($SD = 7.49$) and the majority were female ($n = 56, 75.7\%$). The majority of residents were either widowed or married (widowed $n = 37, 50.0\%$; married $n = 19, 25.7\%$) and had an average of 10.87 years of education ($n = 39, SD = 3.254$). The majority of residents had a formal diagnosis of a dementia on their chart ($n = 59, 80.82\%$). The average CPS score was 4.17 ($n = 71, SD = 1.567$), which indicates a moderately severe level of cognitive impairment. Over the entire study period, resident participants experienced an average of .82 aggressive incidents per resident ($SD = 2.92$). Over the course of the study, 7% of the residents were given at least one dose of PRN antipsychotic medication. Demographic information for the Life and Medical History groups, as well as the sample overall, is presented in Tables 2 and 3.

Staff characteristics. A total of 99 staff members completed the study. This included 70 SCAs (70.70%), 22 RNs (22.22%), 3 LPNs (3.03%), 3 RPNs (3.03%), and 1 RCC (1.01%). The staff participants consisted of 91 women (92.92%) and 7 men (7.07%), with an average age of 45.13 ($SD = 10.45$). The average number of years of experience was 15.12 years ($SD = 10.54$), and the average number of years at the facility was 10.74 ($SD = 9.12$). Staff members were recruited from each facility and asked to complete measures about the resident participants at their facility that they knew well. By design, each resident participant had measures completed by both SCAs and nurses (RNs, RPNs, LPNs). The greatest number of staff member participants was from Facility 3

Table 2

Means and standard deviations of resident demographics by group			
	<i>n</i>	<i>M (SD)</i>	Range
Age of resident at start date			
Life History Group	35	85.65 (7.51)	66.71-99.09
Medical History Group	34	86.32 (7.56)	65.32-97.08
Total	69	85.98 (7.49)	63.32-99.09
Cognitive Performance Scale Scores			
Life History Group	37	4.32 (1.62)	1-6
Medical History Group	34	4.00 (1.52)	0-6
Total	71	4.17 (1.57)	0-6
Number of diagnoses			
Life History Group	34	6.32 (2.67)	1-14
Medical History Group	33	5.88 (2.87)	1-11
Total	67	6.10 (2.76)	1-14
Total number of aggressive incidents			
Life History Group	38	.47 (1.29)	0-6
Medical History Group	35	1.20 (3.99)	0-20
Total	73	.82 (2.92)	0-20
Total number of falls			
Life History Group	34	.29 (.91)	0-5
Medical History Group	31	.68 (1.49)	0-7
Total	65	.48 (1.23)	0-7
Level of Education (in years)			
Life History Group	21	11.00 (3.01)	6-16
Medical History Group	18	10.72 (3.59)	5-16
Total	39	10.87 (3.25)	5-16

Table 3

Frequencies of resident demographics by group

	Life History <i>n</i> (%)	Medical History <i>n</i> (%)	Total <i>n</i> (%)
Facility			
Facility 1	1 (2.63)	2 (5.71)	3 (4.11)
Facility 2	2 (5.26)	3 (8.57)	5 (6.85)
Facility 3	19 (50.00)	15 (42.86)	34 (46.58)
Facility 4	9 (23.68)	9 (25.71)	18 (24.66)
Facility 5	4 (10.53)	5 (14.29)	9 (12.33)
Facility 6	3 (7.89)	1 (2.86)	4 (5.48)
Sex			
Male	5 (13.16)	8 (22.86)	13 (17.81)
Female	30 (78.95)	26 (74.29)	56 (76.71)
Marital Status			
Widowed	19 (50.00)	18 (51.43)	37 (50.68)
Married	10 (26.32)	9 (25.71)	19 (26.03)
Divorced	0 (0.00)	3 (8.57)	3 (4.11)
Single	2 (5.26)	0 (0.00)	2 (2.74)
Separated	1 (2.63)	0 (0.00)	1 (1.37)
Dementia Diagnosis			
Yes	31 (81.58)	28 (80.00)	59 (80.82)
No	3 (7.89)	5 (14.29)	8 (10.96)

($n = 58$, 58.6%), the same facility as the greatest number of resident participants (see Table 1). Staff members completed measures for an average of 3.46 residents each ($SD = 2.41$), including measures for 1.83 residents in the Life History group ($SD = 1.47$) and for 1.64 residents in the Medical History group ($SD = 1.47$). The majority of staff members completed measures for residents in both the Life History and Medical History groups ($n = 60$, 60.6%); however, there were nearly equal numbers of staff members who completed measures for only residents in the Life History group ($n = 18$, 18.2%) or only residents in the Medical History group ($n = 17$, 17.2%). This design introduces non-independence of ratings, which is controlled for through methods of mixed effects modeling.

Procedure

Once consent was received from each resident's proxy (participants were expected to be unable to provide informed consent due to severe cognitive impairment), participants were randomly assigned to the experimental (Life History) or control (Medical History) group by coin flip. Assent from the resident was sought upon visiting the LTC facility. Close relatives of the Life History group participants were contacted and invited to participate in an interview about their relative, for which written consent had been provided in conjunction with proxy consent for the resident to participate in the study. These interviews were conducted by the primary researcher or trained research assistants and took place in the family members' home, in the LTC facility, in an office at the University of Regina campus, or by telephone, depending on the comfort and convenience of the interviewee. Interviews were audio recorded for later review. Due to

aggressive behaviours, severe agitation, poor health of the resident, and location of the family member, the resident was not typically present during the interview process; however, when possible, the resident did attend. A semi-structured interview guide (see Appendix A) was used including questions regarding the residents' childhood, family and friends, personality, contributions, and important life events. Family members were encouraged to submit photographs of the resident from the past to be included in the life history as well as artefacts from the resident's life (e.g., war medals, handwritten notes, hand-made crafts) to be presented to the LTC staff. All original photographs and artefacts were returned to the family following the intervention. Using the information collected from the family, the residents' life histories were written by the primary researcher or a research assistant. Histories were approximately two pages in length, including one page of photographs. Histories differed from resident to resident depending on life circumstances, but all histories included information about the resident's past life events, personality characteristics, and preferences. All histories were edited by the primary researcher to ensure consistency in style and content type. Once the life histories were complete, they were presented to the family members for review, and any changes or corrections requested were made. A similar process was completed for those residents assigned to the Medical History group, except the semi-structured interview consisted of questions of medical and health history (see Appendix A). Medical histories were written by the primary researcher or a research assistant, and all histories were edited by the primary researcher to ensure consistency. Each medical history was limited to one page

of text. Family members were asked to review the histories and any corrections requested were made by the researcher.

For each resident (Life History and Medical History groups), at least five staff members were chosen who worked regularly with the resident to complete all measures. Staff members were recommended by the facility's Resident Care Coordinator or Director of Care based on familiarity with the resident. These staff members were then approached and provided consent forms and information about the study and were invited to participate in the study if they chose to do so. This resulted in an average of 4.92 ($SD = .98$) staff members per resident completing the first phase of questionnaires, with an average of 4.60 ($SD = 1.06$) staff members per resident completing all of the phases of the study. All staff member participants were informed that they would be asked to complete questionnaires at three points in time, and therefore it was always the same staff members who completed the measures for each resident participant. There were no significant differences between the Life History and Medical History groups in terms of number of staff members completing the study.

Measures were completed at three times: baseline, approximately 30 days following baseline (at intervention), and approximately 30 days following intervention (at follow-up) for both the experimental and control groups. All data collection was completed by the primary researcher or trained research assistants. During the baseline period, residents were assessed for aggressive and agitated behaviours by nursing staff (i.e., RN, LPN, RPN) completing the CMAI (Cohen-Mansfield et al., 1989) as well as the Aggression Behaviour Scale (ABS; Perlman & Hirdes, 2008). The ADRQL (Kasper et

al., 2009) was also completed at baseline to determine quality of life prior to the intervention. Finally, all staff members (including RN, LPN, RPN, SCA, RCC) were asked to complete measures of empathy (JSPE-HP) and attitudes regarding personhood (PDQ). These measures of empathy and personhood were completed specifically about each resident participant. Staff members were reassured of the confidentiality of all of their responses. Medications, aggressive incidents, and falls were tracked beginning at baseline and for the entire study period for all resident participants. Demographic information was also obtained from a chart review. The baseline period was intended to be approximately 30 days, in actuality, the baseline period was an average of 38.63 ($SD = 12.97$) days.

At intervention, staff members were presented with either the medical histories or the life histories of the resident participants with whom they worked. The intervention period was considered to be the date the first staff member intervention and questionnaires were completed to the date the last staff member intervention and questionnaires were completed. The average number of days for the intervention period was 19.62 ($SD = 18.42$). All histories were presented to staff members verbally, in an interactive format presented by the primary researcher or a research assistant allowing for questions and discussion between the staff member and the researcher. This approach was highly personalized, beginning by asking the staff member what he or she already knew about the resident. Based on the response, a dialogue was pursued to provide all of the additional information about the resident's history. All histories were also placed in the residents' rooms and on the residents' charts, and staff participants were encouraged

to review the histories as needed. Staff members who completed the study were also encouraged to speak with other staff members about what they had learned and direct other staff to the histories as posted. Immediately following presentation of the histories, staff members who were nurses (RN, LPN, RPN) were asked to again complete the measures of QOL (ADRQL), agitation (both the CMAI and ABS), empathy (JSPE-HP), and attitudes regarding personhood (PDQ). Special Care Aides were asked to complete the measures of empathy (JSPE-HP) and personhood perception (PDQ). All staff members were asked to complete open-ended questions regarding their intention to change behaviour in response to the life histories only and points of similarity between themselves and the resident (see Appendix B). These questions were not presented about residents in the Medical History group.

The post-intervention follow-up period was intended to be 30 days after the intervention was completed. In actuality, the follow-up period was an average of 46.17 ($SD = 20.91$) days. At follow-up nurses (RN, LPN, RPN) completed the CMAI (Cohen-Mansfield et al., 1989), ABS (Pearlman & Hirdes, 2008), and ADRQL (Kasper et al., 2009) for all participants again. All staff members also completed the measure of empathy (JSPE-HP) and attitudes regarding personhood (PDQ). For the Life History group only, staff members were asked to complete open-ended questions regarding their experiences with the life histories (see Appendix B). All staff participants were asked to comment on their understanding of the study and were encouraged to provide general feedback about participating in the study.

Measures

Chart review. Demographic information was collected from the participants' charts. Information collected included date of birth, marital status, level of education, and diagnoses. Medication information was also collected from the participants' charts at baseline and for 30 days following the intervention; moreover, information on all medications was collected, including beta blockers, non-steroidal anti-inflammatory medications, antipsychotics, antidepressants, and all medications prescribed on a PRN schedule. Finally, incident reports for any falls that occurred during the baseline and follow up period were collected from the participants' charts.

Aggressive incident report. Nurses and other staff were asked to complete a brief measure following each aggressive incident witnessed. These reports included information similar to what nurses would include in each resident's chart. Researchers visited each facility on a regular basis to help ensure that aggressive incidents were recorded. See Appendix B for the incident report. Although the intent was to have staff members complete the incident reports, these reports were not completed. This was likely because staff members are required to chart incidents and the study forms became time consuming (as this was essentially charting the same incident twice). Instead, the researchers recorded the dates and circumstances of each aggressive incident from the chart notes.

Cognitive Performance Scale (CPS; Morris, Fries, Mehr, & Hawes, 1994). The CPS is a 5-item instrument that measures short and long-term memory, decision-making skills, communication and independence in eating. Scores on the CPS will be

used for sample description purposes. The CPS results in a total score ranging from 0 to 6 with each score representing a level of cognitive impairment (0 = intact, 1 = borderline intact, 2 = mild impairment, 3 = moderate impairment, 4, 5 = severe impairment, and 6 = very severe impairment). The CPS is administered as part of the minimum data set (MDS; Morris et al., 1991) protocol, typically on admission, on discharge, upon a change in functional level, and quarterly. The most recent CPS scores were obtained to determine the level of cognitive functioning for each participating resident. A cut off score of 3 or more points on the CPS was considered to be indicative of moderate to severe cognitive impairment. This cut off has been shown to result in a sensitivity of .75 and a specificity of .86 (Paquay et al., 2007). Scores on the CPS have been shown to have acceptable inter-rater reliability and to be correlated with scores on the Mini-Mental Status Examination (Morris et al., 1994). The CPS has been found to have .94 sensitivity and specificity using MMSE scores as a criterion (Hartmaier et al., 1995). Only total CPS scores were made available by the facility and, as such, specific psychometrics (e.g., internal consistency) for this study could not be reported.

The Medication Quantification Scale Version III (MQS III; Harden et al., 2005). The MQS was designed to assist researchers in quantifying medications of various classes and doses with respect to toxicity, drug interactions, and adverse events. The MQS takes into account the number of medications taken, the dosage level, and the pharmacological class of medication. MQS scores are calculated using a detriment weight assigned for each class of medication (Steedman et al., 1992). The MQS III separates medications into 22 drug classes, each with an associated detriment weight (Harden et al.,

2005). Detriment weights account for the potential detrimental effects for long term use of the medication, including tolerance, addiction or physical dependence, abuse, insomnia, and increased pain perception (Steedman et al., 1992). In this study, MQS III scores were calculated for antipsychotic medications and other psychotropic medications only to facilitate quantification of the effects of antipsychotic medication use. To determine the MQS III score for each participant, a daily total was calculated including both regularly prescribed antipsychotic medication and PRN antipsychotic medication. To calculate the MQS III score, dosage levels were considered with 1 = subtherapeutic dose, 2 = lower 50% of the therapeutic dose range, 3 = upper 50% of the therapeutic dose range, 4 = suprathreshold dose. Doses were calculated specifically for a geriatric population using the 2011 Lexicomp geriatric dosage handbook (Semla, Beizer, & Higbee, 2011). This was multiplied by the detriment weight. The detriment weight for antipsychotics is 3.6 (Harden et al., 2005). Daily totals were calculated by adding each resulting score.

The Jefferson Scale of Physician Empathy – Health Professional Version

(JSPE-HP; Hojat et al., 2002). Empathy is an important aspect of the caregiver – patient relationship. Hojat et al. (2001) define empathy as an understanding of the patient’s inner feelings and experiences. Hojat et al. (2001) developed a measure of health professional empathy to measure this state in caregivers. Previous measures had been developed to measure empathy in the general population, but the caregiver – patient relationship is a unique situation with unique challenges for measuring empathy. The measure was revised

with some wording changes to be more applicable to all healthcare professionals (Hojat et al., 2002).

The JSPE-HP is a 20-item scale scored from 1 (strongly disagree) to 7 (strongly agree). Seventeen of the items are positively scored (e.g., A physician who is able to view things from another person's perspective can render better care), three are reverse scored (e.g., Emotion has no place in the treatment of medical illness). This scale was personalized to refer to each individual resident participant and were reworded to be consistent with the professional titles in this study (e.g., "physician" will be changed to "LTC staff member"). Nursing staff completed the scale separately for each participant. For example, the item "I try to imagine myself in my patients' shoes when providing care to them" was modified to read "I try to imagine myself in Mr. A's shoes when providing care to him." All items were personalized in a similar manner. Other items that were also modified include "I try to understand what is going on in my patients' minds by paying attention to their nonverbal cues and body language", "Attentiveness to my patients' personal experiences is irrelevant to treatment effectiveness", and "my patients feel better when I understand their feelings".

Hojat et al. (2001) examined the factor structure of the JSPE and found a four factor solution. The first factor encompasses items that represent a construct of physician's view from the patient's perspective. The second factor is understanding patients' experiences, feelings, and clues. The third is ignoring emotions in patient care, and the fourth factor is thinking like the patient. Reliability was also good, with alphas ranging from .87 in medical residents to .89 in medical students. The JSPE was

moderately correlated (.40) with the empathic concern scale of the Interpersonal Reactivity Index (Davis, 1980). Women scored higher than men, a consistent finding in the empathy literature. The mean item response ranges from 4.8 to 6.5, indicating a tendency toward the higher end of the scale (Hojat et al, 2002). Inter-item correlations ranged from .3 to .6. Men and women differed significantly, with women scoring higher.

Fields et al. (2004) compared physician scores on the JSPE to nurse scores. They found similar reliability for nurses (.87) and physicians (.89). They also found that nurse and physician total scores did not differ significantly; however, nurses and physicians differed on responses for 5 of 20 items. Nurses were more likely than physicians to be able to view things from their patient's perspectives, to stand in their patients' shoes, and to believe in the therapeutic effect of empathy. In contrast, nurses were less likely than physicians to enjoy literature and the arts (thought to be related to understanding the human condition) and to believe that patients and their families can influence medical treatment. The current study was the first to use the JSPE-HP with health professionals requiring less training than Registered Nurses or Physicians, such as Continuing Care Aides or Special Care Aides. The resulting Cronbach's alphas for the JSPE-HP in the current study were low: .30 at baseline, .52 immediately following the intervention, and .27 at follow-up.

The Personhood in Dementia Questionnaire (PDQ; Hunter & Hadjistavropoulos, 2011). The PDQ was developed to reflect staff perceptions of dementia patient personhood. The PDQ consists of 32 items, with responses ranging from 0 (disagree extremely) to 6 (agree extremely). Initial analyses suggest reliability of the

PDQ is good, with Cronbach's Alpha at .90. The PDQ has also been found to have good convergent validity (Hunter & Hadjistavropoulos, 2011). The PDQ was adapted for use in this study. To minimize staff burden, items were selected to be administered using the available item-total correlations (Hunter & Hadjistavropoulos, 2011). A cut off of .59 resulted in 10 items. See Appendix C for version of the PDQ used in this study. These items were personalized for each individual resident, for example "Mr. A can have important roles in life at the LTC facility" and "Mr. A no longer experiences basic feeling such as pleasure as his dementia advances." The modified PDQ used in the current study showed excellent internal consistency. Cronbach's alpha was .82 at baseline, .85 immediately following the intervention, and .86 at follow-up.

Aggression Behaviour Scale (ABS; Perlman & Hirdes, 2008). The ABS is a 4-item measure of aggressive behaviour. The ABS results in a total score ranging from 0 to 12, with higher scores indicating greater frequency of aggressive behaviours. Items include verbal abusive (e.g., screaming at others), physical abusive (e.g., hitting others), socially inappropriate or disruptive (e.g., throwing food), and resisting care (e.g., pushing caregiver during activities of daily living assistance). These items are coded by frequency over a 7 day period; not exhibited (0), behaviour occurred 1 to 3 days in past 7 days (1), behaviour occurred 4 to 6 days in past 7 days but less than daily (2), or behaviour occurred daily (3). The ABS is administered as part of the minimum data set (MDS; Morris et al., 1991) protocol, typically on admission, on discharge, upon a change in functional level, and quarterly. In this study, the ABS was completed by the staff at baseline, intervention, and follow up. Scores on the ABS have been found to be highly

correlated with the Cohen Mansfield Agitation Inventory (Cohen-Mansfield et al., 1989) aggression subscale. Cronbach's alpha for the ABS was found to be acceptable (.80; Perlman & Hirdes, 2008). In the current study, Cronbach's alphas were also found to be acceptable, falling at .78 at baseline, .70 immediately following the intervention, and at .80 at follow-up.

Cohen-Mansfield Agitation Inventory (CMAI; Cohen-Mansfield et al., 1989).

The CMAI was developed to assess agitated behaviours in older adults with cognitive impairment. It consists of 29 behaviours which are rated by nurses from 1 (never engages in behaviour) to 7 (engages in the behaviour several times per hour). Nurses are asked to complete the CMAI recalling the frequency of occurrence over the past two weeks. Examples of behaviours include cursing, hitting, pushing, scratching, repetitive sentences or questions, and screaming. Factor analyses revealed a four factor structure for the CMAI; aggressive behaviour, physically nonaggressive behaviour, verbally agitated behaviour, and hiding/hoarding (Cohen-Mansfield et al., 1989). Reliability and validity for the CMAI have been found to be good, with Cronbach's Alpha ranging from 0.86, 0.91, and 0.87, for day, evening, and night staff respectively. In the current study, Cronbach's alpha was .91 at baseline, .89 immediately following the intervention, and .90 at follow-up. The CMAI has also been found to correlate significantly with other measures of behavioural disturbance, including the Behavioural Pathology in Alzheimer's Disease ($r = 0.43$; Reisberg et al., 1987) and the Behavioural Syndromes Scale for Dementia ($r = 0.52$; Devanand et al., 1992) when administered during the day shift (Finkel, Lyons, & Anderson, 1992).

Alzheimer's Disease-Related Quality of Life (ADRQL; Kasper et al., 2009).

The ADRQL consists of 40 observable behaviours, designed to be completed by caregivers. Items are intended to measure health-related quality of life in individuals with Alzheimer's disease. The version that will be used in the proposed study has been revised from the original version to include fewer items and to reassign items to different domains based on findings from a factor analysis. The original ADRQL consisted of items on 5 different domains: social interaction, awareness of self, feelings and mood, enjoyment of activities, and response to surroundings, and these domains remain in the revised version. The authors noted that cognitive and physical domains were not included on the original ADRQL because of the inevitable cognitive decline in Alzheimer's disease, as well as concern that including physical concerns would overshadow other aspects of quality of life (Rabins et al., 1999). Respondents are asked to rate whether items describe the care-recipient over the last two weeks, responses are limited to either "agree" or "disagree". Internal item consistency coefficients for the revised scales ranged from 0.23 to 0.68. The majority of items met the 0.40 standard for supporting internal consistency, which is in contrast to the original scale. Reliability coefficients also exceeded minimum standards, with subscales ranging from 0.56 to 0.83, and an overall reliability coefficient of 0.86. Cronbach's alphas for the ADRQL-R in the current study were excellent: .90 at baseline, .90 immediately following the intervention, and .92 at follow-up. The ADRQL-R was found to have improved psychometric properties when compared to the ADRQL and has been recommended for use in future studies (Kasper et al., 2009).

Staff Member Questionnaire. A brief questionnaire was administered to each staff member participant. The questionnaire consisted of open-ended questions about the impact of the life history intervention on patient-staff interactions at both intervention and follow-up. See Appendix D for the open ended questions.

Quantitative Analysis

Data Cleaning

The data were checked by hand for incorrect data entry for 25% of cases, selected through the use of a random number generator. No errors were found. Missing values were assessed and values were replaced with the mean. When considering missing values against the entire data set, this accounted for less than 1% of the data. Rubin, Witkiewitz, St. Andre, and Reilly (2007) suggested that when less than 5% of a data set is missing, mean substitution is an acceptable method of handling missing data. Outliers were detected using the method suggested by Field (2000). This included converting mean scores of each measure to z-scores and determining whether scores fell outside 95% of the normal curve. Outliers were discovered for the ABS and CMAI. These were determined to be actual values not an error in data entry. Moreover, the participant who exhibited these scores appeared to be consistently extreme in aggressive and agitated behaviours across measures and reported by multiple staff members. Lin et al. (2008) explained that agitated behaviours tend to increase with cognitive impairment. Given the severity of the cognitive impairment in the sample, this extreme agitation is not surprising. Since these outliers are the result of actual variance in the population, it was decided the values would not be altered for analysis. Orr, Sackett, and Dubois (1991)

argue that removal of outliers that are true values within the sample population may result in errors estimating the variance within that population.

Hypothesis Testing

Given the lack of independence within the data, mixed effects modeling were selected to test the hypotheses. Mixed effects modeling allows the hypotheses to be tested while controlling for the random effects of interdependence between the responders. Sample size estimations for multi-level modeling place the greatest importance on the sample size at the second level, which is the number of resident participants in this study. Maas and Hox (2004) suggest a sample size of at least 50 at level two to obtain adequate power (i.e. $\alpha = .08$). The sample size of the current study, $n = 73$, is therefore deemed to be adequate for the following analyses.

Hypothesis I. In Hypothesis I, it was expected that a significant difference between the experimental (Life History, LH) group and the control (Medical History, MH) group in aggressive behaviours would emerge following the intervention, with those in the LH group decreasing at a greater rate than those in the MH group. Aggressive behaviours were measured by both the ABS and the CMAI. These measures were completed at baseline, immediately post intervention, and at follow up by nurses who worked regularly with the residents.

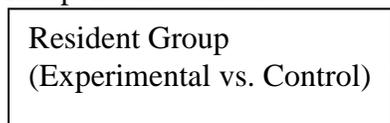
Three mixed effects models were tested for this hypothesis using the ABS as the outcome, as well as three models using the CMAI as the outcome resulting in a total of six models tested. Using mixed effects models allowed both fixed (variables measured) and random (variables not measured) effects to influence the outcomes. This was used to

decrease the impact of the unmeasured effects of, for example, nurse responses when nurses had answered questionnaires about residents in both conditions. The first model applied to the data used the change in scores between baseline and post intervention as the dependent variable and the resident group (MH vs. LH) as the independent variable (See Figures 1 and 2). The second model applied to the data used the change in scores between post intervention and follow up as the dependent variable and the resident group as the independent variable (See Figures 3 and 4). The third model applied to the data used the change in scores between post intervention and follow up as the dependent variable, the resident group as the independent variable, and the scores of the measure at baseline as a covariate (See Figures 5 and 6). Models 2 and 3 were compared for fit, given that both models included the change between post intervention and follow up as the dependent variable. Model fit was evaluated using the Akaike Information Criterion (AIC) or the Bayesian-Schwarz Information Criterion (BIC). When main effects were found, post-hoc independent t-tests were also conducted.

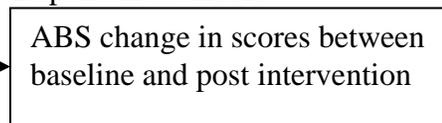
Figure 1

ABS Model 1

Independent Variable



Dependent Variable

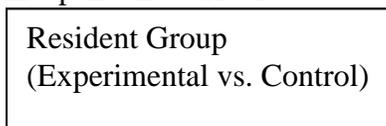


ABS = Aggression Behavior Scale

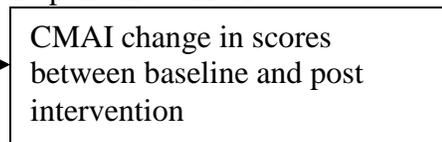
Figure 2

CMAI Model 1

Independent Variable



Dependent Variable



CMAI = Cohen Mansfield Agitation Inventory

Figure 3

ABS Model 2

Independent Variable

Resident Group
(Experimental vs. Control)



Dependent Variable

ABS change in scores between
post intervention and follow
up

ABS = Aggression Behavior Scale

Figure 4

CMAI Model 2

Independent Variable

Resident Group
(Experimental vs. Control)



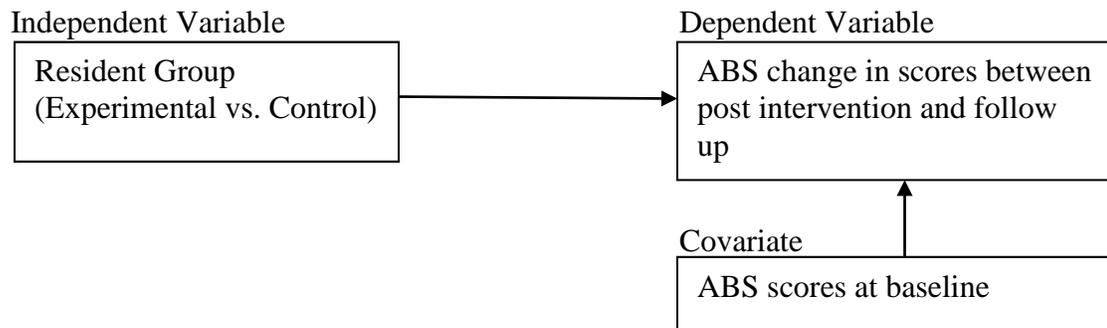
Dependent Variable

CMAI change in scores
between post intervention and
follow up

CMAI = Cohen Mansfield Agitation Inventory

Figure 5

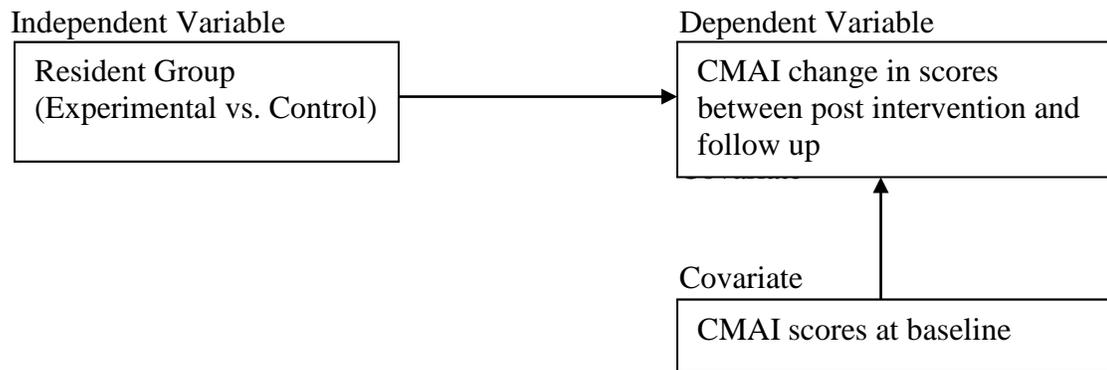
ABS Model 3



ABS = Aggression Behavior Scale

Figure 6

CMAI Model 3



CMAI = Cohen Mansfield Agitation Inventory

ABS. Means and standard deviations of ABS scores at baseline, post intervention, and follow up are presented in Table 4. Model 1 (Figure 1) was applied to the data with the change in ABS between baseline and post intervention as the dependent variable and the resident group (MH vs. LH) as the independent variable. A random intercept was included to allow for potential clustering within patients (i.e., to account for the random effects of nurses answering questions about residents in both conditions). The interclass correlation (ICC) was calculated to be 0, indicating that nurse responses were independent, or that each nurse responded independently when answering questions about the same resident. The test of the difference between the LH group and MH group was statistically significant, $F(2,39) = 8.59, p < .00, d = 0.70$, with ABS scores decreasing at a greater rate post intervention for the LH group than for the MH group. The t -tests were then used to determine whether these changes were significantly different from zero. The changes in the LH group, $t(39) = -3.53, p < .00, d = 0.84$, and the MH group, $t(39) = -2.17, p < .05, d = 0.52$, were both significantly different from zero. These results are presented in Table 5.

Model 2 (Figure 3) was applied to the data with the change in ABS between post intervention and follow up as the dependent variable and the resident group (LH vs. MH) as the independent variable. A random intercept was again included to allow for potential clustering within patients. Again, the ICC (0) indicated that the nurse responses were independent from one another. ABS scores increased for the LH group and decreased for the MH group. The test of the difference between the LH group and MH group was not

statistically significant, $F(2,37) = 1.77, p > .05, d = 0.32$. Results are presented in Table

5.

Table 4

Means and standard deviations of measures

Measure	Baseline		Post Intervention		Follow Up	
	LH <i>M (SD)</i>	MH <i>M (SD)</i>	LH <i>M (SD)</i>	MH <i>M (SD)</i>	LH <i>M (SD)</i>	MH <i>M (SD)</i>
ABS	1.45 (2.72)	1.32 (2.09)	1.04 (1.04)	0.92 (1.67)	1.25 (2.52)	0.87 (1.47)
CMAI	42.47 (20.48)	39.72 (13.21)	40.69 (16.85)	39.01 (10.84)	40.03 (40.03)	36.32 (8.80)
JSPE-HP	95.04 (8.84)	94.98 (8.40)	93.96 (8.81)	93.02 (8.95)	92.05 (7.36)	92.76 (8.38)
PDQ	46.54 (9.56)	47.83 (8.83)	48.01 (8.48)	47.34 (9.02)	46.34 (10.15)	47.39 (8.87)
PRN	0.30 (0.62)	0.51 (1.29)	0.22 (0.65)	0.48 (1.17)	0.30 (0.69)	0.49 (1.27)
ADRQL	338.48 (86.48)	344.15 (77.91)	362.48 (80.99)	346.2 (79.82)	348.06 (91.11)	349.30 (83.01)

LH = Life History Group; MH = Medical History Group; ABS = Aggression Behavior Scale; CMAI = Cohen-Mansfield Agitation Inventory; JSPE-HP = Jefferson Scale of Physician Empathy – Health Professional Version; PDQ = Personhood in Dementia Questionnaire; PRN = Pro Re Nata or “as needed”; ADRQL = Alzheimer’s Disease-Related Quality of Life Scale

Table 5

Results for Hypothesis I

	ICC	(<i>df</i>) <i>F</i>	<i>t</i> (<i>df</i>) LH	<i>t</i> (<i>df</i>) MH	AIC	BIC
ABS						
Model 1	0	(2,39) 8.59**	-3.53** (39)	-2.17* (39)		
Model 2	0	(2,37) 1.77	1.82 (37)	-0.48 (37)	320.11	322.39
Model 3	0	(2,36) 2.26	2.09 (36)	-0.06 (36)	325.36	329.92
CMAI						
Model 1	0	(2,37) .98	-1.31 (37)	0.49 (37)		
Model 2	0	(2,36) 3.18	-.65 (36)	-2.44 (36)	621.11	623.38
Model 3	0	(2,34) 1.10	0.00 (34)	-0.34 (34)	620.21	622.48

* $p < .05$ ** $p < .01$

Model 1 = DV, change in scores from baseline to post intervention; IV, resident group

Model 2 = DV, change in scores from post intervention to follow up; IV, resident group

Model 3 = DV, change in scores from post intervention to follow up; IV, resident group; Covariate, scores at baseline

DV = Dependent Variable; IV = Independent Variable; LH = Life History Group; MH = Medical History Group; ABS = Aggression Behavior Scale; CMAI = Cohen-Mansfield Agitation Inventory; ICC = Interclass Correlations; AIC = Akaike Information Criterion; BIC = Bayesian-Schwarz Information Criterion

Model 3 (Figure 5) was not considered to be a better fit for the data¹. See Table 5 for the AIC and BIC of each model tested.

CMAI. The CMAI was measured at baseline, post intervention and follow up. Nurses were asked to complete the CMAI about a specific resident over the past week. Means and standard deviations are reported in Table 4. Model 1 (Figure 2) was applied to the data with the change in CMAI between baseline and post intervention as the dependent variable and the resident group (MH vs. LH) as the independent variable. A random intercept was included to allow for potential clustering within patients (i.e., to account for the random effects of nurses answering questions about residents in both conditions). The interclass correlation (ICC) was calculated to be 0, indicating that nurse responses were independent, or that each nurse responded independently when answering questions about the same resident. CMAI scores decreased at post intervention for both groups. The test of the difference between the LH group and MH group was not statistically significant, $F(2,37) = .98, p > .05, d = 0.24$.

Model 2 (Figure 4) was applied to the data with the change in CMAI between post intervention and follow up as the dependent variable and the resident group (LH vs. MH) as the independent variable. A random intercept was again included to allow for potential clustering within patients. Again, the ICC (0) indicated that the nurse responses were independent. Scores on the CMAI decreased for both groups. The test of the difference between the LH group and MH group was not statistically significant, $F(2, 36)$

¹ The test of the difference between the LH and MH groups continued to be not significant, $F(2,36) = 2.26, p > .05, d = 0.36$.

= 3.18, $p > .05$, $d = 0.42$. Model 3 (Figure 6) was not a substantially better fit for the data². These results are presented in Table 5. See Table 5 for the AIC and BIC of each model tested.

Hypothesis I was supported only when considering aggressive behaviours measured by the ABS, and only immediately following the intervention. At follow-up, significant differences between groups did not remain.

Hypothesis II. In Hypothesis II, it was expected that a significant difference between the experimental (Life History, LH) group and the control (Medical History, MH) group in empathy and personhood perception would emerge following the intervention, with those in the LH group increasing at a greater rate than those in the MH group. Empathy was measured by the JSPE-HP and personhood perception was measured by the PDQ. These measures were completed at baseline, immediately post intervention, and at follow up by nurses who worked regularly with the residents. Means and standard deviations are presented in Table 4. Five mixed effects models were tested for this hypothesis using the JSPE-HP as the outcome, as well as five models using the PDQ as the outcome resulting in a total of ten tested models. Mixed effects models were used to decrease the impact of the unmeasured effects of, for example, nurse responses when nurses had answered questionnaires about residents in both conditions. The first model applied to the data used the change in scores between baseline and post intervention as the dependent variable and the resident group (MH vs. LH) as the independent variable

² The test of the difference between the LH and MH groups continued to be not significant, $F(2,34) = 1.10$, $p > .05$, $d = 0.25$.

(Figures 7 and 8). The second model applied to the data used the change in scores between baseline and post intervention as the dependent variable, the resident group as the independent variable, and the nurse group (i.e., nurses answered questions about residents in only the LH group, only the MH group, or both groups) as a covariate (Figures 9 and 10). Model 1 and 2 were compared for fit using the AIC and BIC. The third model applied to the data used the change in scores between post intervention and follow up as the dependent variable and the resident group as the independent variable (Figures 11 and 12). The fourth model applied to the data used the change in scores between post intervention and follow up as the dependent variable, the resident group as the independent variable, and the nurse group as a covariate (Figures 13 and 14). The fifth model applied to the data used the change in scores between post intervention and follow up as the dependent variable, the resident group as the independent variable, and the nurse group and scores of the measure at baseline as covariates (Figures 15 and 16). Models 3, 4, and 5 were compared for fit using the AIC and BIC. See Table 6 for the AIC and BIC for each model tested. When main effects were found, post-hoc independent t-tests were also conducted.

Figure 7

JSPE-HP Model 1

Independent Variable

Resident Group
(Experimental vs. Control)

Dependent Variable

JSPE-HP change in scores
between baseline and post
intervention

JSPE-HP = Jefferson Scale of Physician Empathy – Health Professional Version

Figure 8

PDQ Model 1

Independent Variable

Resident Group
(Experimental vs. Control)

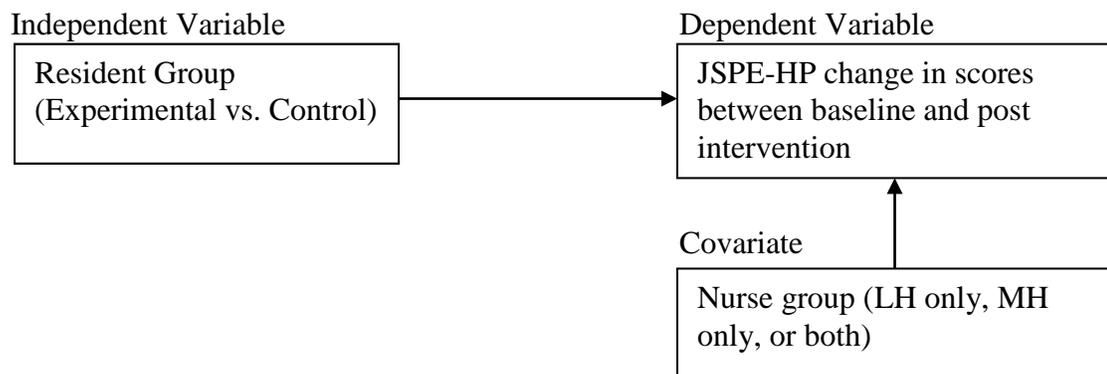
Dependent Variable

PDQ change in scores between
baseline and post intervention

PDQ = Personhood in Dementia Questionnaire

Figure 9

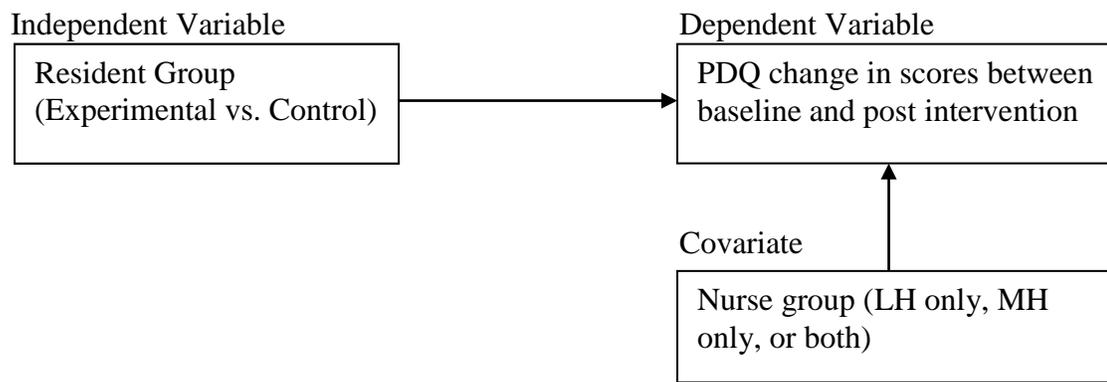
JSPE-HP Model 2



JSPE-HP = Jefferson Scale of Physician Empathy – Health Professional Version; LH = Life History; MH = Medical History

Figure 10

PDQ Model 2



PDQ = Personhood in Dementia Questionnaire; LH = Life History; MH = Medical

History

Figure 11

JSPE-HP Model 3

Independent Variable

Resident Group
(Experimental vs. Control)

Dependent Variable

JSPE-HP change in scores
between post intervention and
follow up

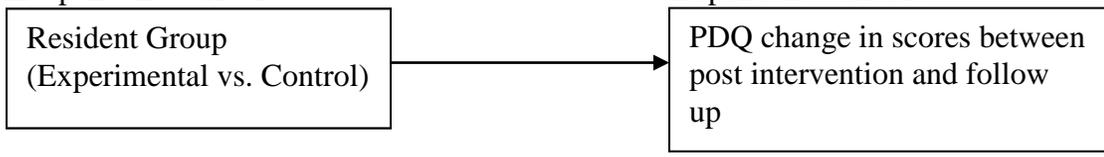
JSPE-HP = Jefferson Scale of Physician Empathy – Health Professional Version

Figure 12

PDQ Model 3

Independent Variable

Resident Group
(Experimental vs. Control)



```
graph LR; A[Resident Group (Experimental vs. Control)] --> B[PDQ change in scores between post intervention and follow up]
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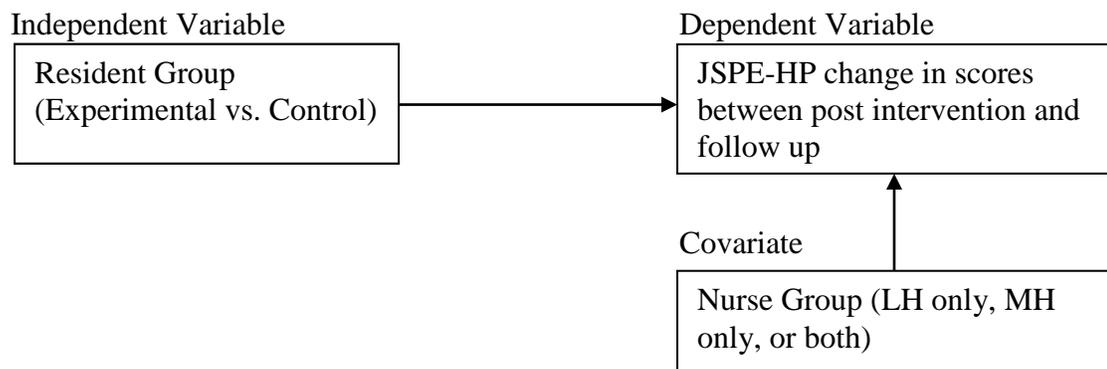
Dependent Variable

PDQ change in scores between
post intervention and follow
up

PDQ = Personhood in Dementia Questionnaire

Figure 13

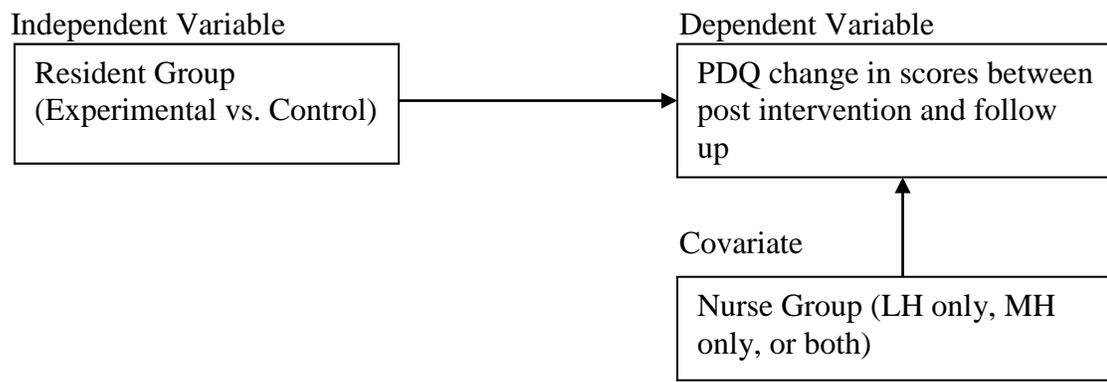
JSPE-HP Model 4



JSPE-HP = Jefferson Scale of Physician Empathy – Health Professional Version; LH = Life History; MH = Medical History

Figure 14

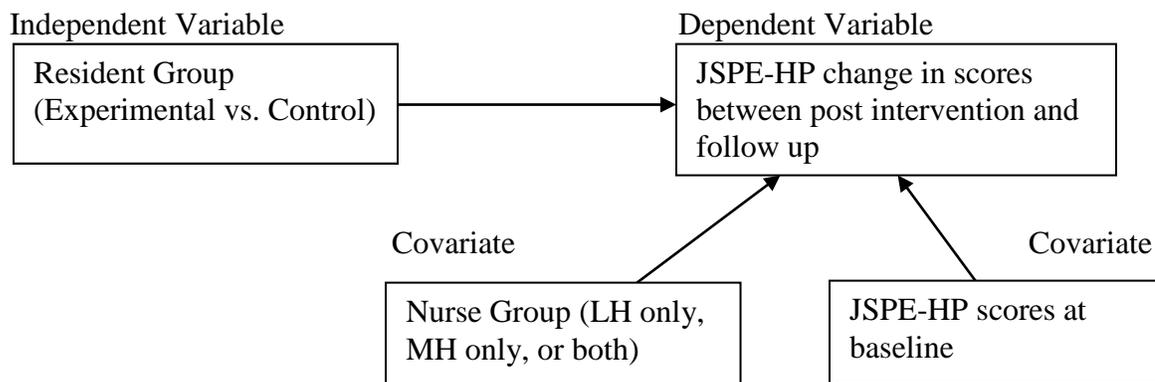
PDQ Model 4



PDQ = Personhood in Dementia Questionnaire; LH = Life History; MH = Medical History

Figure 15

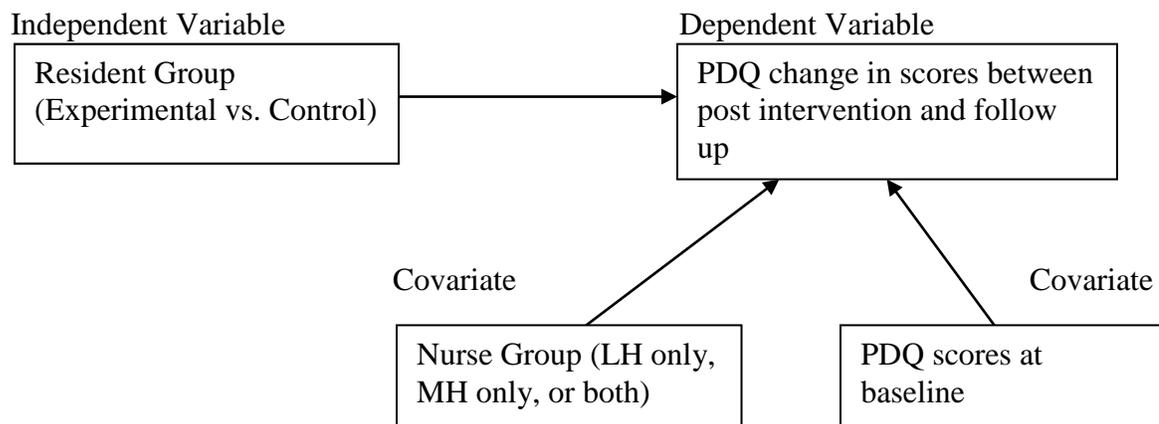
JSPE-HP Model 5



JSPE-HP = Jefferson Scale of Physician Empathy – Health Professional Version; LH = Life History; MH = Medical History

Figure 16

PDQ Model 5



PDQ = Personhood in Dementia Questionnaire; LH = Life History; MH = Medical History

JSPE-HP. The JSPE-HP was measured at baseline, post intervention and follow up. Means and standard deviations are reported in Table 4. Model 1 (Figure 7) was applied to the data with the change in JSPE-HP between baseline and post intervention as the dependent variable and the resident group (MH vs. LH) as the independent variable. A random intercept was included to allow for potential clustering within patients (i.e., to account for the random effects of nurses answering questions about residents in both conditions). The interclass correlation (ICC) was calculated to be 0, indicating that nurse responses were independent, or that each nurse responded independently when answering questions about the same resident. Scores on the JSPE-HP decreased for both groups. The test of the difference between the LH group and MH group was statistically significant, $F(2, 221) = 5.76, p < .01, d = 0.57$, with JSPE-HP scores decreasing at a greater rate for the MH group post intervention. T-tests were then used to determine whether these changes were significantly different from zero. The LH group was found to not be significantly different from zero, $t(221) = -1.64, p > .05, d = 0.39$, while the MH group was, $t(221) = -2.97, p < .01, d = 0.71$. Model 2 (Figure 9) was not considered to be a substantially better fit for the data³.

When considering the data examining the change between post intervention and follow up, Model 5 (Figure 15) was the best fit for the data. Model 5 was a mixed effects model with the change in JSPE-HP between post intervention and follow up as the dependent variable, the resident group as the independent variable, and the nurse group

³ The difference between the LH and MH groups was not significant, $F(2,220) = 1.88, p > .05, d = 0.33$.

and JSPE-HP scores at baseline as covariates. The test of the difference between the LH and MH groups was not significant, $F(2,202) = 1.63, p >.05, d = 0.30$. Models 3 (Figure 11) and 4 (Figure 13) were also tested, but were not considered to be as good a fit as model five^{4,5}. Results for all models are reported in Table 6.

⁴ The test of the difference between the LH group and MH group was statistically significant, $F(2, 205) = 4.05, p < .05, d = 0.48$, with JSPE-HP scores decreasing at a greater rate for the LH group at follow up. The t -tests indicated that this change in scores was not significantly different from zero for the LH group, $t(205) = -2.77, p > .05, d = 0.66$, nor for the MH group, $t(205) = -.65, p > .05, d = 0.15$.

⁵ The test of the difference between the LH and MH groups was not significant, $F(2,204) = 2.10, p >.05, d = 0.34$.

Table 6

Results for Hypothesis II

	ICC	(df) <i>F</i>	<i>t</i> (df) LH	<i>t</i> (df) MH	AIC	BIC
JSPE-HP						
Model 1	0	(2,221) 5.76**	-1.64 (221)	-2.97** (221)	2150.91	2155.48
Model 2	0	(2,220) 1.88	-1.26 (220)	-1.93 (220)	2147.95	2152.45
Model 3	0	(2,205) 4.05*	-2.77** (205)	-.65 (205)	1900.51	1902.81
Model 4	0	(2,204) 2.10	-1.80 (204)	-.62 (204)	1898.05	1900.30
Model 5	0	(2,202) 1.63	0.95 (202)	1.18 (202)	1894.00	1896.25
PDQ						
Model 1	0	(2,227) 8.51**	4.03** (227)	-0.86 (227)	2003.95	2006.25
Model 2	0	(2,226) 6.20**	1.62 (226)	-0.98 (226)	2001.49	2003.74
Model 3	0	(2,211) 5.78**	-3.38** (211)	0.36 (211)	1834.52	1836.81
Model 4	0	(2,210) 3.93*	-1.64 (210)	0.41 (210)	1832.51	1834.76
Model 5	0	(2,208) 4.35*	-1.63 (208)	-0.66 (208)	1830.44	1832.68

* $p < .05$ ** $p < .01$

Model 1 = DV, change in scores from baseline to post intervention; IV, resident group

Model 2 = DV, change in scores from baseline to post intervention; IV, resident group; Covariate, nurse group

Model 3 = DV, change in scores from post intervention to follow up; IV, resident group

Model 4 = DV, change in scores from post intervention to follow up; IV, resident group; Covariate, nurse group

Model 5 = DV, change in scores from post intervention to follow up; IV, resident group; Covariates, nurse group and scores at baseline

DV = Dependent Variable; IV = Independent Variable; LH = Life History Group; MH = Medical History Group; JSPE-HP = Jefferson Scale of Physician Empathy – Health Professional Version; PDQ = Personhood in Dementia Questionnaire; ICC = Interclass Correlations; AIC = Akaike Information Criterion; BIC = Bayesian-Schwarz Information Criterion

PDQ. The PDQ was measured at baseline, post intervention and follow up. Means and standard deviations are reported in Table 4. Model 1 (Figure 8) was applied to the data with the change in PDQ between baseline and post intervention as the dependent variable and the resident group (MH vs. LH) as the independent variable. A random intercept was included to allow for potential clustering within patients (i.e., to account for the random effects of nurses answering questions about residents in both conditions). The interclass correlation (ICC) was calculated to be 0, indicating that nurse responses were independent, or that each nurse responded independently when answering questions about the same resident. The test of the difference between the LH group and MH group was statistically significant, $F(2, 227) = 8.51, p < .00, d = 0.69$, with PDQ scores increasing at post intervention for the LH group and decreasing for the MH group. T-tests were then used to determine whether these changes were significantly different from zero. The LH group was found to be significantly different from zero, $t(227) = 4.03, p < .00, d = 0.96$, while the MH group was not, $t(227) = -.86, p < .05, d = 0.20$. Model 2 (Figure 10) was not found to be a better fit for the data than the first⁶.

Model 3 (Figure 12) was applied to the data using the change in PDQ between post intervention and follow up as the dependent variable and the resident group (LH vs. MH) as the independent variable. A random intercept was again included to allow for potential clustering within patients. Again, the ICC (0) indicated that the nurse responses

⁶ The difference between the LH and MH groups remained significant, $F(2, 226) = 6.20, p < .05, d = 0.59$. However, t-tests indicated that neither the LH group, $t(226) = 1.62, p > .05, d = 0.38$, nor the MH group, $t(226) = -.98, p > .05, d = 0.23$, differed significantly from zero.

were independent. The test of the difference between the LH group and MH group was statistically significant, $F(2, 211) = 5.78, p < .05, d = 0.57$, with PDQ scores decreasing at follow up for the LH group and increasing for the MH group. T-tests indicated that this change in scores was significantly different from zero for the LH group, $t(211) = -3.38, p < .00, d = 0.80$, but not for the MH group, $t(211) = .36, p > .05, d = 0.09$. Model 4 (Figure 14) and 5 (Figure 16) were not considered to be a substantially better fit for the data^{7, 8}. Results are presented in Table 6.

Hypothesis II was supported only when considering personhood perception as measured by the PDQ, and only immediately following the intervention. At follow-up, the increase in scores seen immediately following the intervention for the LH group was not maintained. Caution should be exercised when considering analyses related to the JSPE-HP, given the limited internal consistency of the tool. Nonetheless, significant differences were found between the LH and MH groups immediately following the intervention on JSPE-HP scores, but this was true because JSPE-HP scores were maintained for those in the LH group but dropped for those in the MH group. This finding does not support Hypothesis II.

Hypothesis III. In Hypothesis III, it was expected that PRN medications would decrease for the LH group but not for the MH group following the intervention. Three

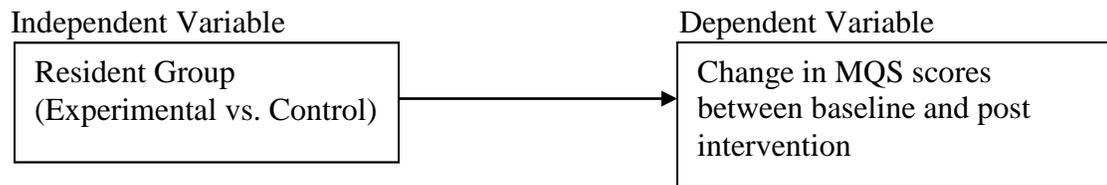
⁷ The test of the difference between the LH and MH groups remained significant, $F(2, 210) = 3.93, p < .05, d = 0.47$. However, t-tests indicated that neither the LH group, $t(210) = -1.64, p > .05, d = 0.39$, nor the MH group, $t(210) = .41, p > .05, d = 0.10$, differed significantly from zero.

⁸ The test of the difference between the LH and MH groups remained significant, $F(2, 208) = 4.35, p < .05, d = 0.50$. However, t-tests indicated that neither the LH group, $t(208) = -1.63, p > .05, d = 0.39$, nor the MH group, $t(208) = .66, p > .05, d = 0.16$, differed significantly from zero.

general linear models were tested. Model 1 (Figure 17) tested for a significant change in PRN from baseline to immediate post intervention with resident group as the only independent variable. Model 2 (Figure 18) tested for a significant change in PRN from post intervention to follow up with resident group as the only independent variable. Model 3 (Figure 19) tested for a significant change in PRN from post intervention to follow up with resident group as the only independent variable and PRN at baseline as a covariate. PRN medications were recorded for each resident at baseline, post intervention, and follow up. Means and standard deviations are presented in Table 4. This information was collected from the resident's charts. Change scores were calculated by subtracting PRN scores at immediate post intervention from baseline and scores at follow up from immediate post intervention.

Figure 17

PRN Model 1



PRN = *pro re nata*; MQS = Medication Quantification Scale

Figure 18

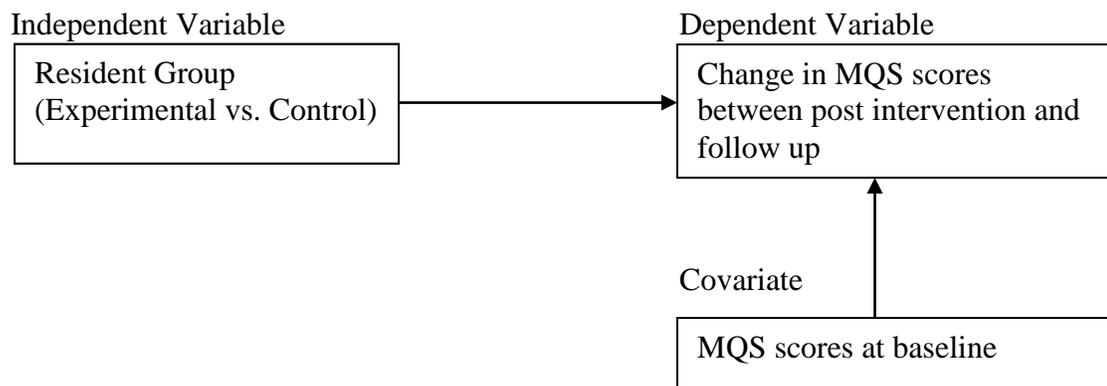
PRN Model 2



PRN = *pro re nata*; MQS = Medication Quantification Scale

Figure 19

PRN Model 3



PRN = *pro re nata*; MQS = Medication Quantification Scale

PRN medication. Model 1 (Figure 17) was a general linear model used to test for a significant change in PRN from baseline to immediate post intervention with resident group as the only independent variable. The proportion of explained variation was small ($R^2 = .00$), indicating there was only a small linear relationship between the two variables. PRN medications decreased at post intervention for both the LH and MH groups. The difference between the groups was found to be non-significant $F(2,67) = .45$, $p > .05$, $d = 0.16$.

Model 2 (Figure 18) was conducted using a general linear model to test for a significant change in PRN from immediate post intervention to follow up with resident group as the only independent variable. The proportion of explained variation was again small ($R^2 = .00$), indicating there was only a small linear relationship between the two variables. PRN medications increased at follow up for both the LH and MH groups. The difference between the groups was found to be non-significant $F(2,67) = .28$, $p > .05$, $d = 0.13$.

Finally, Model 3 (Figure 19) was tested for a significant change in PRN from immediate post intervention to follow up with resident group as the only independent variable and PRN at baseline held constant. The proportion of explained variation was again small ($R^2 = .02$), indicating there was only a small linear relationship between the two variables. The difference between the groups was found to be non-significant $F(2,66) = .18$, $p > .05$, $d = 0.10$. These results are presented in Table 7. These results indicated that Hypothesis III is not supported.

Table 7

Results for Hypothesis III

	R^2	(df) F	$t(df)$ LH	$t(df)$ MH
PRN				
Medication				
Model 1	0.00	(2,67) 0.45	-0.90 (67)	-0.29 (67)
Model 2	0.00	(2,67) 0.28	0.75 (67)	0.09 (67)
Model 3	0.02	(3,66) 0.18	0.54 (66)	-0.23 (66)

* $p < .05$ ** $p < .01$

Model 1 = DV, change in scores from baseline to post intervention; IV, resident group

Model 2 = DV, change in scores from post intervention to follow up; IV, resident group

Model 3 = DV, change in scores from post intervention to follow up; IV, resident group;

Covariate, scores at baseline

DV = Dependent Variable; IV = Independent Variable; LH = Life History Group; MH = Medical History Group; PRN = Pro Re Nata or "as needed"

Hypothesis IV. In Hypothesis IV, it was expected that a significant difference between the experimental (Life History, LH) group and the control (Medical History, MH) group in quality of life would emerge following the intervention, with those in the LH group increasing at a greater rate than those in the MH group. Quality of life was measured by the ADRQL. This measure was completed at baseline, immediately post intervention, and at follow up by nurses who worked regularly with the residents. Three mixed effects models were tested for this hypothesis. Using mixed effects models allowed both fixed (variables measured) and random (variables not measured) effects to influence the outcomes. This was used to decrease the impact of the unmeasured effects of, for example, nurse responses when nurses had answered questionnaires about residents in both conditions. The first model applied to the data used the change in scores between baseline and post intervention as the dependent variable and the resident group (MH vs. LH) as the independent variable (Figure 20). The second model applied to the data used the change in scores between post intervention and follow up as the dependent variable and the resident group as the independent variable (Figure 21). The third model applied to the data used the change in scores between post intervention and follow up as the dependent variable, the resident group as the independent variable, and the scores of the measure at baseline as a covariate (Figure 22). Model 2 and 3 were compared for fit, given that the change between post intervention and follow up was the dependent variable in both models. Model fit was evaluated using the Akaike Information Criterion (AIC) or the Bayesian-Schwarz Information Criterion (BIC). See Table 8 for the AIC and

BIC for each model tested. When main effects were found, post-hoc independent t-tests were also conducted.

Figure 20

ADRQL Model 1



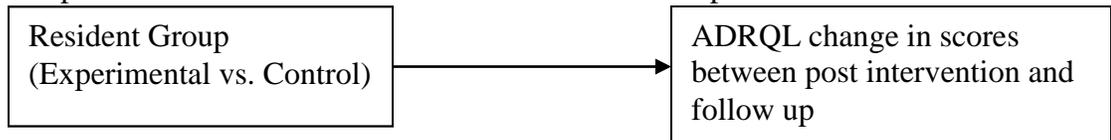
ADRQL = Alzheimer's Disease Related Quality of Life

Figure 21

ADRQL Model 2

Independent Variable

Resident Group
(Experimental vs. Control)



```
graph LR; IV[Resident Group (Experimental vs. Control)] --> DV[ADRQL change in scores between post intervention and follow up]
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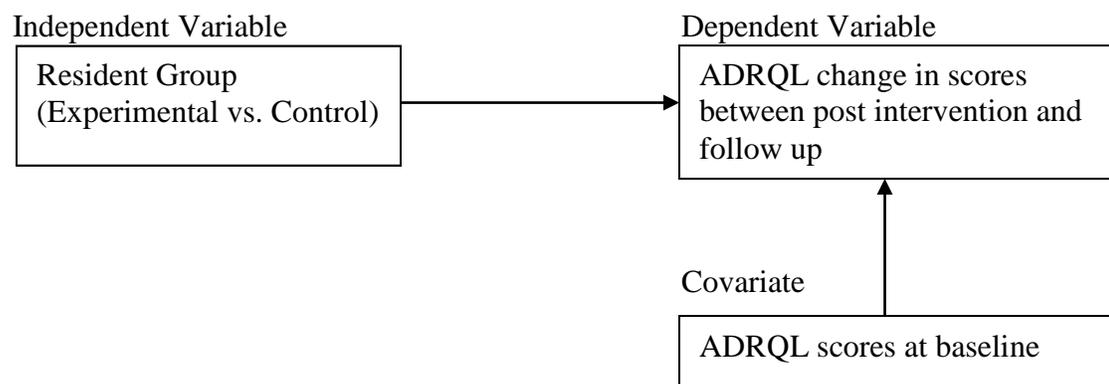
Dependent Variable

ADRQL change in scores
between post intervention and
follow up

ADRQL = Alzheimer's Disease Related Quality of Life

Figure 22

ADRQL Model 3



ADRQL = Alzheimer's Disease Related Quality of Life

ADRQL. The ADRQL was measured at baseline, post intervention and follow up. Means and standard deviations are reported in Table 4. Model 1 (Figure 20) was applied to the data with the change in ADRQL between baseline and post intervention as the dependent variable and the resident group (MH vs. LH) as the independent variable. A random intercept was included to allow for potential clustering within patients (i.e., to account for the random effects of nurses answering questions about residents in both conditions). The interclass correlation (ICC) was calculated to be .01, indicating that nurse responses were independent, or that each nurse responded independently when answering questions about the same resident. Scores on the ADRQL increased at post intervention for both the LH and MH groups. The test of the difference between the LH group and MH group was statistically significant, $F(2, 35) = 7.31, p < .01, d = 0.64$, with ADRQL scores increasing at a greater rate for the LH group at post intervention. T-tests were then used to determine whether these changes were significantly different from zero. The LH group was found to be significantly different from zero, $t(35) = 3.78, p = .00, d = 0.90$, while the MH group was not, $t(35) = -.57, p < .05, d = 0.14$.

Model 3 (Figure 22) was found to be a better fit for the data than model 2⁹ (Figure 21), by comparing the AIC and BIC. Model 3 applied a mixed effects model to the data with the change in ADRQL between post intervention and follow up as the dependent variable, the resident group as the independent variable, and the ADRQL score at

⁹ The test of the difference between the LH group and MH group was not statistically significant, $F(2, 37) = 1.09, p > .05, d = 0.25$.

baseline as a covariate. The ICC was calculated to be .53 indicating that the nurse responses were moderately independent. The test of the difference between the LH and MH groups was not significant, $F(2,34) = 1.40, p > .05, d = 0.28$. Results are presented in Table 8. Hypothesis IV was supported only when considering quality of life as measured by the ADRQL immediately following the intervention. This result was not maintained at follow-up.

Table 8

Results for Hypothesis IV

	ICC	(<i>df</i>) <i>F</i>	<i>t</i> (<i>df</i>) LH	<i>t</i> (<i>df</i>) MH	AIC	BIC
ADRQL						
Model 1	0.01	(2,35) 7.31**	3.78** (35)	-0.57 (35)		
Model 2	0.53	(2,37) 1.09	-1.47 (37)	0.03 (37)	1240.01	1244.56
Model 3	0.55	(2,34) 1.40	-1.51 (34)	-0.96 (34)	1218.83	1223.38

* $p < .05$ ** $p < .01$

Model 1 = DV, change in scores from baseline to post intervention; IV, resident group

Model 2 = DV, change in scores from post intervention to follow up; IV, resident group

Model 3 = DV, change in scores from post intervention to follow up; IV, resident group; Covariate, scores at baseline

DV = Dependent Variable; IV = Independent Variable; LH = Life History Group; MH = Medical History Group;

ADRQL = Alzheimer's Disease-Related Quality of Life Scale; ICC = Interclass Correlations; AIC = Akaike Information Criterion; BIC = Bayesian-Schwarz Information Criterion

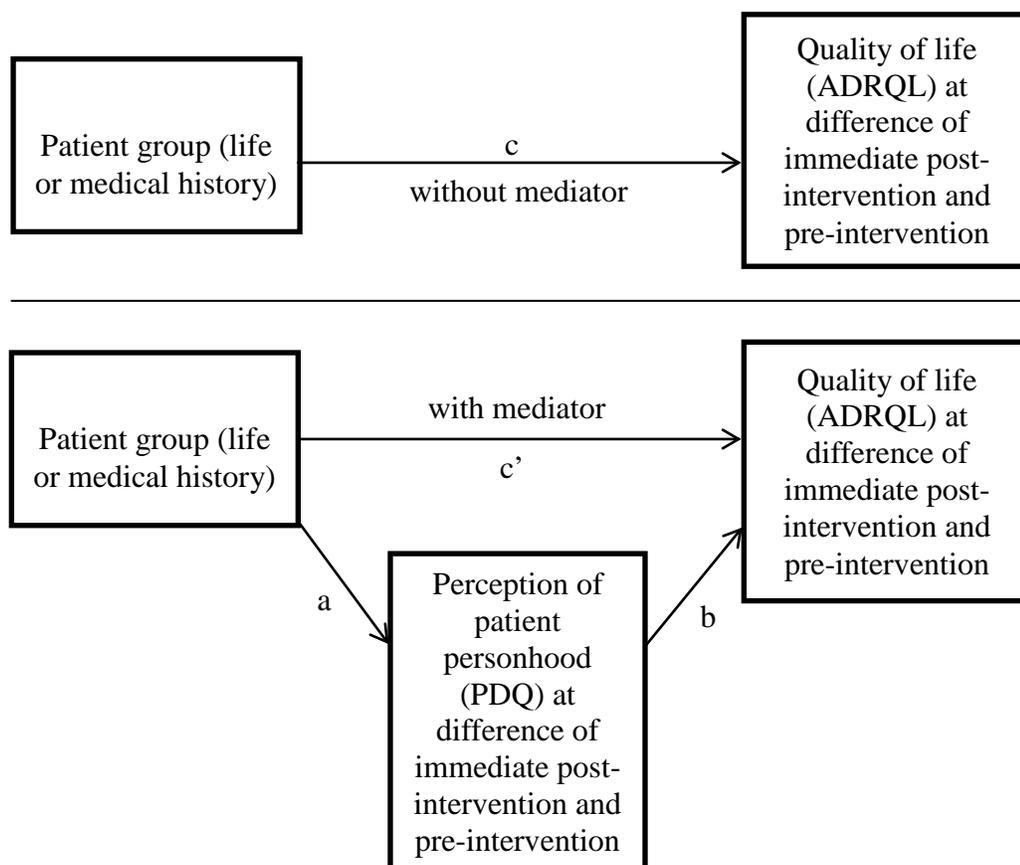
Hypothesis V. Given the findings in hypotheses one to four, it was decided that two mediation models required further exploration. The first mediation model examined the difference between the experimental (life history) group and control (medical history) groups on the outcome of the change in quality of life (ADRQL) from pre intervention to immediately post intervention including the mediator of the change in personhood perception (PDQ) from pre intervention to immediately post intervention (Figure 23).

The method used to test this mediation model is described by Bauer, Preacher, and Gill (2006). In this method, three separate models are tested. The first model tested was a mixed effects model with the change in ADRQL as the dependent variable and the resident group (life vs. medical history) as the independent variable (i.e., arrow c in Figure 23). Then a mixed effects model was tested with the change in PDQ as the dependent variable and the resident group as the independent variable (i.e., arrow a in Figure 23). Finally, a mixed effects model was tested with the change in ADRQL as the dependent variable, and the resident group and change in PDQ as the independent variable (i.e., arrow c' in Figure 23). This allows a comparison to be made between the models to determine whether the mediator contributes to the effect of the independent variable on the dependent variable. An additional mixed effects model was tested to calculate the fixed effects estimates and their variances and covariances as well as the variances and covariances for the random effects, while accounting for potential clustering because the data cannot be assumed to be independent. This required restructuring the data so that the dependent variable and the mediator become a single

stacked response variable, which then allows a mixed effects model to be applied to the data.

Figure 23

ADRQL mediation models



PDQ = Personhood in Dementia Questionnaire; ADRQL = Alzheimer's Disease-Related Quality of Life Scale

Once the data is fit to these models, a formula is used to calculate the average indirect effect and the average total effect and their standard errors (Bauer et al., 2006). The average indirect effect, if significant, provides evidence for a mediation relationship between the variables. For the model described above, the test of the indirect effect was found to be statistically significant, with a test statistic of -2.91 , $p < .05$, $d = 0.69$, indicating a mediated relationship. The estimate of the total effect was also found to be statistically significant, with a test statistic of -3.54 , $p < .05$, $d = 0.84$. See Table 9 for results of the indirect and total effects.

The second mediation model examined the difference between the experimental (life history) group and control (medical history) groups on the outcome of the change in aggressive behaviours (ABS) from pre intervention to immediately post intervention including the mediator of the change in personhood perception (PDQ) from pre intervention to immediately post intervention. The method used to test this mediation model was the same as that described above (Bauer et al., 2006). Three separate models were tested. The first model tested was a mixed effects model with the change in ABS as the dependent variable and the resident group (life vs. medical history) as the independent variable (i.e., arrow c in Figure 24). Then a mixed effects model was tested with the change in PDQ as the dependent variable and the resident group as the independent variable (i.e., arrow a in Figure 24). Finally, a mixed effects model was tested with the change in ABS as the dependent variable, and the resident group and change in PDQ as the independent variable (i.e., arrow c' in Figure 24). This allows a comparison to be

made between the models to determine whether the mediator contributes to the effect of the independent variable on the dependent variable.

Table 9

Results for Hypothesis V:

Indirect and total effects for mediation models			
	Effect	Variance	Test Statistic
Model 1			
Indirect	-10.80	13.83	-2.91*
Total	-31.57	79.42	-3.54*
Model 2			
Indirect	0.01	0.00	0.12
Total	-0.45	0.03	-2.57*

* $p < .05$

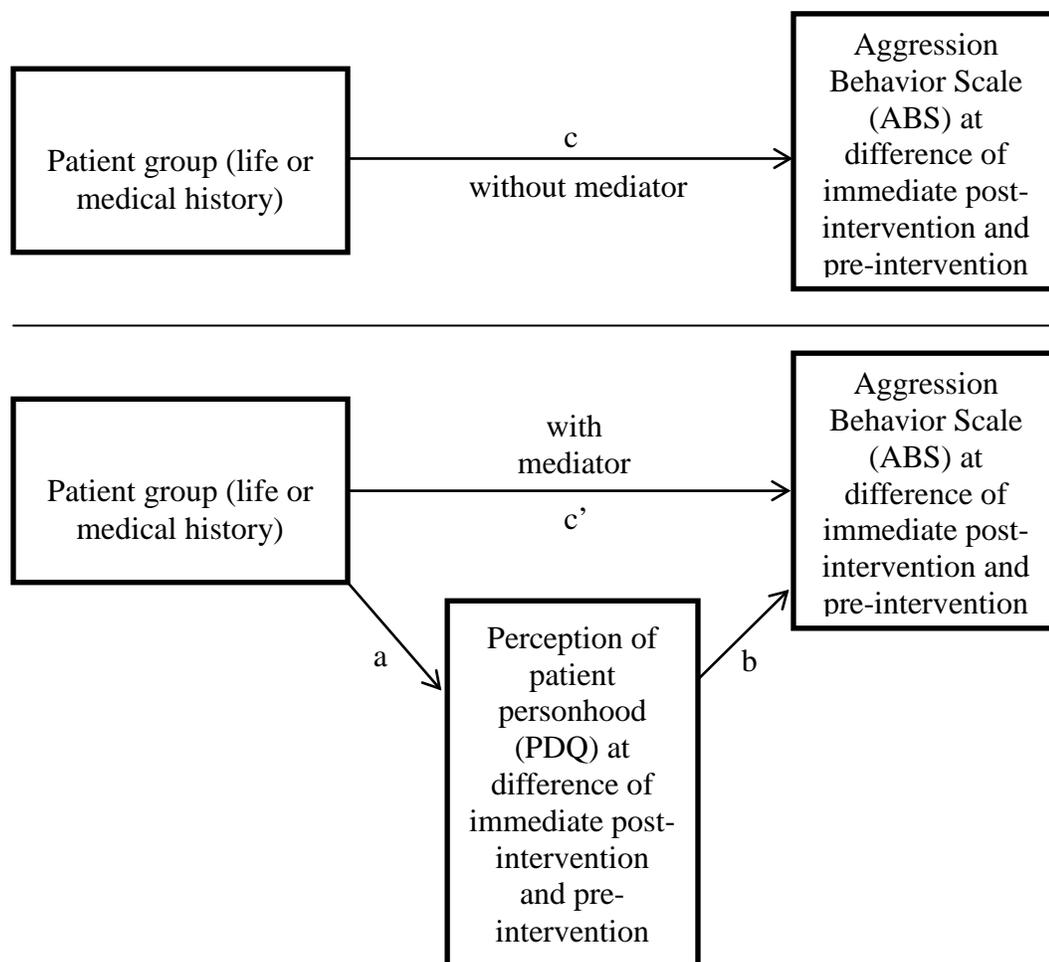
Model 1 = DV, change in ADRQL scores from baseline to post intervention; IV, resident group; Mediator, change in PDQ scores from baseline to post intervention

Model 2 = DV, change in ABS scores from post intervention to follow up; IV, resident group; Mediator, change in PDQ scores from baseline to post intervention

DV = Dependent Variable; IV = Independent Variable; ABS = Aggression Behavior Scale; PDQ = Personhood in Dementia Questionnaire; ADRQL = Alzheimer's Disease-Related Quality of Life Scale

Figure 24

ABS mediation models



ABS = Aggression Behavior Scale; PDQ = Personhood in Dementia Questionnaire

To account for potential clustering, because the data cannot be assumed to be independent, an additional mixed effects model was tested to determine the indirect and total effects of the group (life vs. medical history) on the outcome, while simultaneously accounting for the effects of the mediator. This requires restructuring the data so that the dependent variable and the mediator become a single stacked response variable, which then allows a mixed effects model to be applied to the data.

Once the data was fit to these models, a formula was used to calculate the average indirect effect and the average total effect and their standard errors (Bauer et al., 2006). The average indirect effect, if significant, provides evidence for a mediation relationship between the variables. For the model described above, the test of the indirect effect was not found to be statistically significant, with a test statistic of 0.12, $p > .05$, $d = 0.03$, indicating a relationship that is not mediated. The estimate of the total effect was found to be statistically significant, with a test statistic of -0.45 , $p < .05$, $d = 0.11$. See Table 9 for results of the indirect and total effects. A mediated effect was found between the LH and MH groups, with personhood perception mediating the change in quality of life immediately following the intervention. This provides support for Hypothesis V, indicating that the increase in personhood perception mediates the increase in quality of life.

Additional Correlations

In addition to the primary hypotheses, relationships were expected between the level of cognitive impairment of the resident and nurse reported outcomes, with higher levels of cognitive impairment as measured by the CPS (regardless of life history vs.

medical history group) related to poor outcomes. Significant negative correlations were found between the CPS and the ADRQL at baseline, $r(71) = -.48, p < .01$, intervention, $r(66) = -.42, p < .01$, and follow-up, $r(67) = -.44, p < .01$ indicating that with worsening cognitive impairment, staff reported quality of life of the resident decreases. This pattern of significance was repeated when the CPS was correlated with the PDQ at baseline, $r(71) = -.49, p < .01$, intervention, $r(69) = -.62, p < .01$, and follow-up, $r(69) = -.64, p < .01$, indicating that as cognitive impairment worsens, staff perception of that resident's personhood also decreases. All correlations with CPS scores are presented in Table 10. This result is further examined in the analyses of open-ended data through the nurses' comments about the study.

Table 10

CPS score correlations

Measure	Baseline		Post Intervention		Follow Up	
	<i>n</i>	<i>R</i>	<i>n</i>	<i>R</i>	<i>n</i>	<i>R</i>
ABS	71	0.22	66	0.15	68	0.08
CMAI	71	0.02	66	-0.01	68	0.02
JSPE-HP	71	-0.06	69	-0.19	69	-0.16
PDQ	71	-0.49**	69	-0.62**	69	-0.64**
ADRQL	71	-0.48**	66	-0.42**	67	-0.44**

** $p < .01$

ABS = Aggression Behavior Scale; CMAI = Cohen-Mansfield Agitation Inventory; JSPE-HP = Jefferson Scale of Physician Empathy – Health Professional Version; PDQ = Personhood in Dementia Questionnaire; ADRQL = Alzheimer’s Disease-Related Quality of Life Scale

Analysis of Open-Ended Data

The analysis of open-ended data was completed to elaborate on staff feelings and intended behaviours toward residents, as well as to explore the meaning of the quantitative findings. In preparation for the analysis of open-ended data all question responses were typed into a Word document, with the Staff ID number and Resident ID number still connected to the statements. The statements were imported to NVIVO 8.0 and were separated by question, by staff member, and by resident. These statements were further divided into staff members who had answered for residents in the Life History group only, the Medical History group only, and “both” groups. The purpose of dividing responses in this manner was to determine whether there were differences between groups on the way staff members responded to the open-ended questions. The more similar these responses, the more likely it is that the manipulation in the study (i.e., presenting the life histories and medical histories to staff) was ineffective.

The staff statements about each resident were also separated into residents with mild (CPS = 1,2), moderate (CPS = 3,4), or severe (CPS = 5,6) dementia. The purpose of examining the data in terms of cognitive impairment arose from the results of the additional correlations, in which an increase in cognitive impairment was correlated to a decrease in personhood perception, a trend which persisted over time. By examining the narrative data, the researchers hoped to determine whether staff talked about the residents in terms of personhood or empathy in different ways based on the resident’s level of cognitive impairment. Interest in this analysis was also reinforced by the researcher’s experience collecting the life history information from the family members of the resident

participants. The varied and rich information provided by families about each individual resident was fascinating, and allowed the interviewer to get to know the people participating in the study, rather than just a number of “participants”. This experience may have been similar to the experience of staff participating in the study. Staff members were getting to know the people they see every day, but who cannot communicate their own histories.

Informed by the method suggested by Braun and Clarke (2006), the transcripts were first read and re-read during data entry (entering responses into a Microsoft Word document). Data were then coded using meaning units, which can be defined as the smallest unit of text that conveys meaning (Miles & Huberman, 1994). The analysis approach taken in the current study was data-driven and inductive along with using a deductive method and a codebook, similar to the methodology described by Fereday and Muir-Cochrane (2006). That is, the narratives were read and organized in such a way that meaning could be derived. Then, a template, or codebook, was applied as a means of organizing the text for interpretation. The codebook was defined prior to any in-depth analysis of the data and was derived based on the theoretical frameworks found in the literature. This allows the data to add to the current literature by using the same language (Tuckett, 2005). However, the analysis was not bound by themes in the codebook. For example, while coding into the framework an additional theme of “improved care” was derived inductively and was included in the interpretation.

Previous experiences working with a population of individuals in LTC inspired this deeper analysis of staff member feedback about the current study. Although my

personal experience with individuals residing in LTC was limited prior to my research experience, I was raised in a multi-generational family that valued our older generations and their stories. While completing other research projects in LTC, I found one of the most enjoyable aspects of the research was sitting down with residents and their family members and hearing their stories to learn about their lives, despite each of the other research projects focusing on areas other than personhood. I was able to get to know each person as an individual outside the context of a caregiving relationship, something that a busy staff member in LTC may not experience to the same extent. Prior to learning about each resident, I often felt that the residents were unknown or unknowable because of difficulty communicating. The desire to know the residents as persons was present, but the method of getting to know them was not well defined prior to the current study. Because learning about the residents' histories in the current study was such a positive experience for me, and one that has been personally experienced to increase personhood perception, it is possible that the analyses were biased toward a positive reading of the narrative data.

I recognize that analysis of narrative, open-ended data is a developing and emerging area of interest for me. This might have been a limitation for this study. To reduce the impact of researcher bias on the analyses, a code book was utilized (derived in consultation with a second researcher). Moreover, all narrative data was read and the coding was reviewed by another researcher.

Analysis Broken Down by Staff Members

The analyses broken down by staff members was completed as a manipulation check because some staff members had been provided information about residents in only the Life History group, so in only the Medical History group, and some staff members received information about residents in both groups. The first item of interest was to determine whether any group of staff members had significantly greater numbers of non-responders to open-ended questions. The expectation was that those in the “both” group (staff members had received information about residents in both the LH and MH groups) would have more information about the study and therefore be more likely to answer questions about the purpose of the study and leave comments about the study. The “both” group had the least number of non-responders when asked about the purpose of the study (1.9%, as compared to 7.7% in the “Life History only” group and 12.5% in the “Medical History only” group). However, the number of total responses in each group has skewed this result slightly, and when absolute number of non-responses are compared, the groups do not differ (1 out of 53 in the “both” group, 1 out of 13 in the “Life History only” group, and 2 out of 16 in the “Medical History only” group).

Taking into account the number of non-responders, the data were further analyzed to determine whether any of the groups had a more positive perception of the study. It was expected that since the “both” group had more information about the study, they would understand and appreciate it more, therefore would provide more positive feedback about the study. This was not confirmed by an examination of the narrative data. In fact, 100% of both the “Life History only” group and the “Medical History only” group provided positive responses when asked to comment on the study. In the “both”

group, feedback was 92.5% positive (37 responses out of 40). Positive comments included statements that the study was good, nice, interesting, helpful, beneficial, excellent, enjoyable, or important. Also, staff commented that they learned a lot from the study, felt it made a difference, and felt that similar programs should be implemented in their facility.

The data were also examined to determine whether the groups differed in terms of articulation of the purpose. A number of statements were constructed that described the purpose, including “To increase staff knowledge of the resident life and medical histories”, “to improve care”, “to increase empathy and personhood”, “to increase quality of life of residents with dementia”, and “to decrease aggressive and agitated behaviours in residents.” The responses were examined by group. Poor articulation of the purpose was considered to be a response that did not touch on any of the above statements. Moderate articulation was considered to be a response that touched on one of the statements, and good articulation was considered to be a response that touched on two or more of the statements. There was also a category for those respondents that answered with “I don’t know”. A small percentage of responders in the “both” group and the “Medical History only” group said they did not know the purpose of the study (7.5% and 6.3% respectively). No one in the “Life History only” group responded that they did not know the purpose of the study. The number of responders who poorly articulated the purpose of the study was similar across groups (“both” 22.6%, “Life History only” 23.1%, “Medical History only” 18.8%). Numbers differed slightly between groups when considering responders who moderately articulated the purpose of the study, with the

greatest number of responders in the “Life History only” group (61.5%), followed by the “Medical History only” group (42.8%), and the “both” group (30.2%). The responders in the “both” group had the highest numbers of well-articulated responses (37.7%), followed by the “Medical History only” group (18.8%), and the “Life History only” group (7.7%). When the moderate and good articulation groups are combined, the percentage of respondents in each group is nearly identical (“both” 67.9%, “Life History only” 69.2%, “Medical History only” group 62.6%). Therefore, while the respondents in the “both” group were able to elaborate on the purpose of the study slightly better than the other groups, all groups had an equal basic understanding of the purpose of the study.

Finally, groups were compared on how they discussed the main issues of the study, including improved care, improved empathy, and improved personhood. An a priori framework for empathy (Hojat et al., 2001) and personhood (Hunter et al., 2013) was derived from the literature. Empathy was separated into four components, including viewing the world from the resident’s perspective (resident perspective), understanding the resident’s experiences, feelings, and behaviours (understanding), thinking like the resident (cognitive), and feeling like the resident (sympathy). Surprisingly, the “Medical History only” group responded most frequently with statements that referenced empathy (40%), followed by the “both” group (33.6%), and the “Life History only” group (19.2%). This is surprising because the “Medical History only” group had the least exposure to empathy inducing stimuli. The majority of respondents’ statements referenced understanding in some way (“both” 77.8%, “Life History only” 80%, “Medical History only” 75%). Given that the respondents are all healthcare professionals,

it is possible that being provided health related information evokes empathy to a greater degree than other information, based on the interest of the respondents.

A framework for examining personhood was also developed a priori from the literature (Hunter et al., 2013). Personhood was conceptualized as including statements about the Biological (having bodily continuity and being a physical human being), Moral (having the status of being a person and being treated as such), Psychological (having agency, cognitive capacity, emotional capacity, personality, and psychological continuity), and Social (having a social identity). Again surprisingly, the “Medical History only” group referenced personhood the most often (20%), followed by the “both” group (15%), and the “Life History only” group (11.5%). The majority of respondents referenced Morality (“both” 68.8%, “Life History only” 33.3%, “Medical History only” 50%). They also tended to reference personality (“both” 18.8%, “Life History only” 33.3%, “Medical History only” 16.7%). Improved care was also frequently referenced across all groups (“both” 37.4%, “Life History only” 23.1%, “Medical History only” 23.3%).

Analysis by Resident

As a follow-up to the significant correlations found in the quantitative analyses, residents were separated by cognitive ability on the CPS into mild, moderate, and severe impairment groups. Then each group was compared on aspects of personhood perception and empathy. The intent of this analysis was to shed light on staff member’s perceptions of the residents’ personhood in more detail and determine whether differences also exist in their descriptions of the residents. The personhood structure was derived from Hunter

et al. (2013) discussed in the “Personhood” section and separates aspects of personhood into four main categories, Biological, Psychological, Social, and Moral. These categories are then subdivided into more specific aspects of personhood, such as Personality, Agency, Cognitive Capacity Sentience, Emotional Capacity Sentience, and Psychological Continuity in the Psychological category.

Although significant correlations were not found between empathy and cognitive impairment, similar analyses were conducted using a framework for empathy. The empathy framework was also derived from the literature (Hojat et al., 2001) and was discussed in the “Nurse Empathy” section. This framework consists of three categories; resident’s perspective, understanding, and common thoughts. Sympathy (common feelings) was also included as a counterpoint to common thoughts.

Results. Mild, moderate and severe groups were first examined in terms of proportion of staff that did not respond to questions or responded without elaboration (i.e., “yes” or “no”). These were considered against the total number of statements made by staff. No systematic differences were found between the groups. In the mild group, 40.37% were non-responses, in the moderate group, 27.15% were non-responses, and in the severe 34.58% were non-responses.

Second, percentage of meaning units coded into the personhood, empathy, and improved care categories were compared among the mild, moderate, and severe groups. No differences were noted. For the mild group 26.05% of the meaning units were coded into the empathy structure, for the moderate group 18.45%, and for the severe group 21.07%. Of the subcategories, Understanding was the category most often coded into,

with 17.65% for the mild group (compared to the total number of meaning units), 13.10% for the moderate group, and 13.52% for the severe group. For meaning units coded into the Personhood structure, the mild group consisted of 72.27% of the total meaning units, the moderate group 76.19%, and the severe group 76.73%. Psychological aspects of personhood were coded into most often (mild 31.09%, moderate 38.10%, severe 34.28%) consisting mostly of comments about personality (mild 24.37%, moderate 29.76%, severe 22.33%). Social aspects of personhood followed (mild 26.89%, moderate 26.79%, severe 31.76%).

Since differences between groups were unremarkable, a more thorough examination of the content of the responses was completed. The content of each meaning unit was examined to determine whether there was a qualitative difference in how ideas were expressed between groups. The mild group was compared to the severe group to determine whether any qualitative differences emerged from the data in the ways in which staff members talked about residents based on their level of cognitive impairment.

Differences were noted when references to personhood were examined. Staff members tended to talk about residents in the severe group in the past tense more often.

For example:

“he was once a man who manifested courage and determination,”

“she always loved working hard,”

“she was a very nice lady.”

This is in contrast to the mild group, who made statements like:

“she is an easy lady to care for,”

“she is a spiritual person,”

“she has a sparkle.”

Staff members also seemed to learn more from hearing the histories of those residents in the severe group. For example:

“when I learned about her history I gained more respect for who she was as a person,”

“I viewed her as being anxious due to the dementia, but after finding out about her past I realize it’s more of a character trait,”

“I knew before his love of gardening and growing but I never knew his yearning to farm and unable to do so,”

“it gives me more ideas about the type of person I am looking after.”

When compared to the mild group, staff members tended to mention aspects of the person they already knew:

“resident expresses kindness and good behaviour towards me,”

“she shows a genuine interest in others well-being.”

Staff members seemed to have to work harder to try to relate to the residents in the severe group, seemingly indicating they did not know those residents as well. This was evident in the way they attempted to relate the residents to themselves or their families to find a connection. For example:

“His history reminds me a lot of my grandfather, hard working, strong but also soft-hearted,”

“I treat my nieces and nephews just as if they were my own children and their children consider me just like another Grandmother,”

“I too enjoy working with others but don’t like to be in the limelight.”

For residents in the mild group, comments tended to be about the resident themselves:

“hardworking,”

“family means everything,”

“her apparent interest in others, she shows interest in staff!”

These responses may indicate an increased familiarity with the residents in the mild group. The staff seems to be talking about the residents as people they know, whereas in the severe group they talk about the residents as people they have heard about rather than know personally and they have to work harder to figure out how to relate to these residents.

Finally, staff also tended to acknowledge there was room for improvement in their perceptions of those residents in the severe group by naming practical examples of how things could change in their interactions with the residents. For example:

“will offer bibs to fold since she always loved working hard,”

“to include in the care/recreation activities something she loved to do in the past like church service, sports, and being with people,”

“She always liked to joke around so I try to joke around with her to at least get a smile out of her.”

For the mild group, these examples were less frequent, tended to cite things the staff already knew, or were more general statements. For example:

“makes me understand her choices – like not having a bath a particular day,”

“I still view this resident as I always have,”

“I see her taking care of other residents at the table.”

The same in depth examination was conducted for the empathy category, in which there were a few notable differences. However, when compared to the differences noted in the personhood category there were more similarities in the comments than differences, with both the mild and severe groups tending to make comments about understanding or relating to the residents. The first difference noted was that staff members for the severe group acknowledged there was room for improvement in how they were empathic toward the resident. They seemed to acknowledge a need for change by citing examples of how they could or did change in response to learning the histories, for example:

“I began relating to her in a personal way and interpreting her histories in our conversation,”

“I became more empathic when rendering care to this resident.”

This was different that the staff answering about residents in the mild group, who tended to make statements like:

“I will continue to be personable and empathic,”

“knowing her history of nursing makes me understand her choices.”

There was also a difference in how often staff members made statements about having compassion for the residents with severe cognitive impairment, with staff

referencing compassion frequently in the severe group and hardly at all for the mild group. A typical response in the severe groups was:

“I hold the utmost respect and compassion for this lady,”

“I try to treat everyone with respect, compassion, and understanding.”

Discussion

As the Canadian population ages, research in the area of quality of life for older adults has become increasingly important. This study examined quality of life in LTC, with specific focus on aggressive behaviours, by implementing a relatively simple life history intervention with the staff members who frequently work with the residents. Following from the Functional Analytic (FA) model, the interactions between staff members and residents were expected affect the behaviours of the residents (Fisher et al., 2008). Therefore, it was hypothesised that changing staff member attitudes would then change resident behaviours. The intervention in this study was designed to increase empathy toward the resident and perceptions of that resident’s personhood by providing staff with information about that resident’s life and personality. The control group also received information about the resident, but it was only a medical history. Although not all of the tested models were supported, interesting results emerged when examining the effects of personhood perception on quality of life. That is, the life history intervention was found to increase personhood perception, and that increase in personhood perception acted as a mediator to increase resident quality of life.

Another interesting finding relates to the staff perception of resident personhood decreasing as cognitive impairment increases. As residents develop more severe

impairments, the staff members who care for them begin to describe the residents in different ways, such as in the past tense, and struggle more to relate to them rather than describing first-hand knowledge of the residents' personalities. This is especially concerning when considering the effects of personhood perception on quality of life as well as the high numbers of individuals experiencing severe cognitive impairment in LTC.

Aggressive and Agitated Behaviours

Aggressive and agitated behaviours tend to be underreported but common occurrences in LTC. A number of factors may contribute to aggressive behaviours in older adults experiencing dementia, including cognitive changes related to dementia, language impairment, sensory impairment, unmet physical needs, changes in environment, and physical discomfort (Hall & O'Connor, 2004). Agitated behaviours are also thought to be a method of communicating unmet needs by individuals with dementia who may not be able to communicate verbally (Kolanowski & Litaker, 2006; Lemay & Landreville, 2010). Researchers have recommended strategies staff may use to reduce aggressive and agitated behaviours. Many of these strategies are non-pharmacological (Zeller et al., 2009). All of the recommended strategies require knowledge of each resident and his or her habits.

Consistent with and supporting the functional analytic model (Fisher et al., 2008), the current study supports the provision of life history information to staff members as an intervention, given that a significant difference in aggressive behaviours was found between groups following the intervention; however, this change was not sustained over

time, suggesting that the intervention was effective in the short term but a maintenance component may be needed to extend the benefits to the long term.

Upon examination of the narrative data, no staff members commented on verbal or physical aggressive behaviours. Some staff members commented on having patience and understanding when residents displayed agitated behaviours. For example one staff member suggested, “[I] will remind staff to be patient when [the resident] is busy on the unit.” In fact, understanding was a common theme throughout the narrative data regarding empathy toward the resident. Although not specific to aggression, this attitude of patience and understanding from staff members may have influenced resident aggressive behaviours. The FA model (Fisher et al., 2008) would suggest that this attitude change, if it spurred a change in the way the staff member and resident interacted, may explain the observed change in aggressive behaviours. This finding also replicates and extends the findings of Egan et al. (2007). In that study, the researchers included four residents who experienced frequent aggressive behaviour. This study extended that number significantly and also included a control group. Egan et al. (2007) found a trend toward decreases in aggressive behaviours following the presentation of life histories. The current study, with increased statistical power, showed a significant decrease in aggressive behaviours for those residents in the experimental group.

Empathy and Personhood Perception

Empathy and personhood perception were important constructs in the present study. The constructs served as both outcomes and mediators in different tested models. Other researchers have found that increased staff empathy has been associated with

improvements in resident depression and agitation (Hollinger-Samson & Pearson, 2000; Reynolds & Scott, 2000). Very little empirical evidence has been collected about the relationship between staff members' perception of resident personhood with resident outcomes. No longer seeing the individual with dementia as a "person," but rather as an "object of care" may be detrimental to how residents are treated (Malloy & Hadjistavropoulos, 2004).

It was expected that the life history intervention in the current study would increase staff members' empathy toward the residents and staff perceptions of residents' personhood. The opposite was found, with empathy scores decreasing immediately following the intervention for both the life history and control groups, although at a greater rate for the control group, resulting in a significant decrease for the control group but not for the life history group. The significant difference was not maintained at follow-up. The measure of empathy in this study, the JSPE-HP, was not previously used with a population of primarily SCAs. The Cronbach's alphas calculated across time periods suggested that empathy was not measured optimally by the JSPE-HP in this population. It is possible that an internally consistent tool would have yielded different results.

Staff empathy may have also been influenced by the passage of time. Over time, residents' cognitive impairment is likely to increase which may have influenced staff members' empathy toward the residents. This may be an unfortunate reality, but it may be reversible with appropriate intervention. Given the limitations in the measurement of empathy, however, no firm conclusions about this issue can be reached through this study. It is, nonetheless, possible that a more intensive intervention, going beyond the

simple provision of a brief life history, could have more potent effects on staff empathy. These issues should be further explored in future research.

The results of the analysis of the change in personhood perception were positive. There was a significant increase in personhood perception immediately following the intervention for the life history group, while the control group saw a slight decrease, although not a significant one. At follow up, the significant increase in personhood perception was not maintained for the life history group. This immediate increase in personhood perception is a very promising finding, illustrating the importance of providing personal information about residents to the staff members who provide care. Although staff-resident interactions were not assessed directly, the FA model (Fisher et al., 2008) would suggest that the change in personhood perception resulted in an actual change in staff-resident interactions. The effect was not maintained over time; however this illustrates the importance of creating a culture within LTC facilities that encourages open discussion of the residents as people with a lifetime of history. At the same time, it is not sufficient to give staff increased access to residents' medical information, as it is the information about residents' histories, families, interests, and personalities that results in an increase in perception of personhood.

Quality of Life

Quality of life (QOL) is a frequently used outcome measure in dementia and LTC research. Quality of Life (QOL) includes aspects of physical, mental, and social well-being (Drageset et al., 2009) and is best thought of as a multidimensional construct (Murray & Boyd, 2008). It was expected that QOL would differ between groups, with the

life history group seeing an increase in QOL. This hypothesis was confirmed immediately following the intervention, with the life history group experiencing a significant increase in QOL while the control group did not change. This difference was not maintained at follow up. This is an important finding that suggests providing life history information to staff members may have an effect on how the residents experience life and may benefit the residents directly (probably because the life history information may have enhanced person-centered care).

According to the FA model (Fisher et al, 2008), a change in how staff members and residents interact, as a result of the intervention, may have contributed to the observed change in QOL; however, since this difference was not maintained over time it is important to encourage a continuing culture of person-centred care. Staff members indicated in the narrative data that the intervention gave them a better understanding of the resident; however, they did not specify how their understanding had changed. Likewise, a few staff members suggested that they would be more patient with the residents. Staff members provided limited examples for how they might change their behaviour toward the resident following the intervention. Several staff members said that they would suggest new topics of conversation during care, based on the history of the resident. The staff members did not follow up to confirm that they had, in fact, implemented that change. Personhood, along with knowing the person, autonomy and choice, comfort care, and nurturing relationships are basic concepts in person-centred care (White et al., 2008). It is possible that creating a culture of person-centred care will encourage staff members to keep the personhood of the residents' in mind as they provide

care. By keeping the personhood of the residents at the forefront, the positive benefits of the current intervention may contribute to increased personhood perception over time.

Antipsychotic Medication

Pharmacological interventions are often used to control aggressive behaviours in individuals with dementia in LTC (Dettmore et al., 2009); however, there are a number of risks associated with the use of antipsychotic medications including increased mortality (Ballard et al., 2009; Kales et al., 2007), increased risk of cerebrovascular events (Kleijer et al., 2009), and increased risk of falls (Woolcott et al., 2009). It was expected that antipsychotics given as PRNs to individuals in LTC would decrease as the result of the intervention, due to the expected decrease in aggressive and agitated behaviours.

Although a decrease in aggressive behaviours was observed, no change in PRN medication use was found. Only a small number of residents were given PRN antipsychotics (7%), thus decreasing the likelihood that significance could be detected in this study. Also, antipsychotic medications are frequently prescribed as regular medications, therefore decreasing the need to provide antipsychotics as PRN. Front-line staff such as Nurses and Special Care Aides have little control over medications given on a regular schedule, especially in the short term. The change in behaviour would likely need to be very significant and easily attributed to non-pharmalogical interventions to result in changes to regularly scheduled medications.

Personhood Perception as Mediator

Following from the finding that aggressive behaviours decreased following the intervention, as well as the observed increase in personhood perception and QOL for

residents in the life history group, a number of mediation models were investigated to determine whether the change in personhood perception acted as a mediator for the changes in aggressive behaviours and QOL. A mediated effect was not found for the outcome of aggressive behaviours. The significant benefit found for aggressive behaviours in the intervention group was not mediated by personhood perception, which suggests that another construct mediates the relationship. It is not possible to know what may have contributed to the reported change in aggressive behaviours; however, the FA model would suggest that a change in staff behaviours toward the resident may have played a role (Fisher et al., 2008). From the narrative data, staff members cited 'greater understanding' of the resident as a benefit of the intervention. Further research is needed to help explain the mechanism of change.

Perhaps the most important finding in the current study is that a change in personhood perception mediates a change in QOL. This mediated relationship was expected for the life history group. It was expected that both personhood perception and QOL would increase following the intervention, and personhood perception would serve as a mediator for QOL. This hypothesis was supported, with personhood perception partially mediating the relationship between the intervention versus the control group and the outcome of QOL. According to the FA model (Fisher et al., 2008), it is likely that this change in attitude led to a change in how staff members interacted with the residents. This is an important finding because the implication is clear – staff members should be provided with information about the residents' life, interests, and personality; however, significance was not maintained at follow-up which further underscores the importance

of creating a person-centred culture in LTC which encourages staff members to make personal connections with the residents and their families and to make information about the residents readily available and consistently discussed.

Cognitive Impairment, Empathy, Personhood Perception, and Quality of Life

Cognitive impairment tends to be positively correlated to aggressive behaviours (Hall & O'Connor, 2004), lower expectations for QOL (Gessert et al., 2005), and lower Health-Related QOL (Gonzalez-Salvador et al., 2000). As an additional exploratory analysis in the current study, cognitive impairment was correlated with all of the study outcomes. Significant negative correlations were found between cognitive impairment and QOL as well as cognitive impairment and personhood perception. While the association between cognitive impairment and QOL has been previously found in the literature, the association between cognitive impairment and personhood perception is a new, although not entirely unexpected, finding. Because the research in personhood perception is relatively new, this finding was also examined using the narrative data collected. While the correlation between cognitive impairment and empathy was not significant, this was also further examined using analysis of open-ended data. By separating comments made by staff members about the residents into categories of residents experiencing mild, moderate, and severe cognitive impairments, attitudes about residents' personhood and empathy toward the residents could be compared.

Differences were noted in how staff members spoke of the residents' personhood based on cognitive impairment. Staff members tended to talk about residents experiencing the most severe cognitive impairment in the past tense while they spoke of

those in the mild group in the present tense. For example, “she was a very nice lady” was used to describe a resident with severe cognitive impairment, compared to “she has a sparkle” to describe a resident with mild cognitive impairment. Staff members also seemed to learn more from the histories for those residents in the severe dementia group while just reiterating information they already knew about residents with mild cognitive impairment. For example, “it gives me more ideas about the type of person I am looking after” was used in reference to a resident with severe cognitive impairment compared to “she shows a genuine interest in others well-being” for a resident with mild cognitive impairment. Staff members tended to work harder to relate to the residents with severe cognitive impairment, while they spoke of characteristics they knew about residents in with mild cognitive impairment. For example, “his history reminds me a lot of my grandfather, hard working, strong but also soft-hearted” was used in reference to a resident with severe cognitive impairment compared to “hardworking” as a descriptor of a resident with mild cognitive impairment. Finally, staff members were more likely to admit there was room for improvement when it came to how much they knew about the residents with severe cognitive impairment. These narrative results support the negative correlation between cognitive impairment and personhood perception, and suggest that staff members are aware of their limited knowledge about the residents with more severe impairments. The staff members’ statements suggest that providing them with information about residents’ histories, interests, and personalities is especially important when residents are experiencing more severe cognitive impairments.

There were fewer notable differences in statements made by staff members when examining the construct of empathy. Like the statements about personhood, staff members acknowledged room for improvement more frequently for residents experiencing more severe cognitive impairment in how they experience empathy toward the resident. They also made statements about how important it was for them to have compassion for the residents experiencing severe cognitive impairment. These results highlight the desire staff members have to know more and do better for their residents, while also acknowledging the importance of compassion despite having little information about their residents' histories, interests, and personalities.

The Culture of Long Term Care

The results of the current study underscore the importance of a culture of person-centred care in LTC. Person-centred care includes five basic concepts: personhood, knowing the person, autonomy and choice, comfort care, and nurturing relationship (White et al., 2008). The life histories provided to staff members in this study were successful in increasing personhood and knowing the person. This increase, in turn, was associated with increased resident QOL. The FA model (Fisher et al., 2008) would also suggest that the changes in attitudes toward the resident resulted in a change in how staff members interacted with the residents. This is an important finding in and of itself; however, it is concerning that the effect was not sustained at follow-up. It is likely that without a highly supportive environment and a culture that promotes person-centred care, staff members found it difficult to maintain the effects of the intervention and fell into old patterns. The short-term benefits of the intervention are significant and cannot be ignored,

but if the culture of the LTC facility supported staff in maintaining personhood perception those short-term benefits may be translated into long-term benefits, increasing the QOL of residents.

Culture change in LTC has become a recent area of interest to researchers (e.g., Elliot, Cohen, Reed, Nolet, & Zimmerman, 2014; Grabowski, O'Malley, Afendulis, Caudry, Elliot, & Zimmerman, 2014). Challenges have been noted within the structure of LTC organization, including the high needs of the population, inadequate staffing levels, and inadequate resources. Because of these limitations, emphasis has been placed on the restructuring of LTC facilities to change the culture. A number of models of comprehensive culture change have been implemented in LTC, including the Wellspring Model, the Eden Alternative, and the Green House Model (Zimmerman, Shier, & Saliba, 2014). Shier et al. (2014), reviewed the literature on culture change in LTC. Research on culture change is difficult, examining multiple outcomes. As such, LTC facilities cannot rely on the current state of the research for specific guidance on how to implement culture change. Studies vary widely in the types of residents targeted, the types of culture change examined, and the types of outcomes measured. Moreover, studies do not detail how or to what extent culture change is implemented, which introduces problems interpreting studies that do not produce the desired outcomes. Because the level of implementation has not been effectively measured, failure to produce outcomes may actually be related to failure to implement culture change. Shier et al. (2014) emphasize that the face validity of culture change is undeniable, but the actual study of culture change is in its infancy and suffers from many methodological shortcomings.

Specific Recommendations for LTC Facilities

Given that positive findings were identified only in the short term, the following recommendation for LTC facilities may increase the probability of more sustained benefits:

a) A detailed interview with the resident and family member, upon admission, to obtain information useful for an understanding of the individual and his or her personal history. This information should be easy for all healthcare staff to access;

b) Regular in-service meetings to disseminate such personal information to as many staff members as possible;

c) Implementation during daily staff meetings (i.e., nurse report) of a “Resident of the Day” program to focus on personal strengths and histories of one resident at a time;

d) Management should encourage buy-in of personhood/life history programs by all staff.

Limitations and Future Directions

The current study required significant participation from family members of residents and staff members who worked regularly with the residents. Since most of the proxies who consented to participation were also the family member who completed the interview about the resident, it is possible that unmeasured differences existed between the residents who participated and those who did not. The amount of time required for families to participate may have also contributed to the low number of participants who were able to be recruited. The number of proxies who agreed to participate in the study was less than 15% of those informed of the study. This low number raises concern about

the practicality of an intervention like this being completed outside the confines of a research study. It seems that proxies felt the participation requirements were burdensome compared to the potential benefits of the study. Unlike the proxies, most of the staff members approached to participate in the study consented to participate; however, those who declined the study may have differed from the staff members who did participate in their pre-existing attitudes regarding empathy or personhood perception which may have influenced the results of the study. It is possible that those staff members who agreed to participate already had positive attitudes about personhood and were open and willing to learn about the residents. Whether or not significant differences existed cannot be known.

Another possible limitation may have arisen from the way the life and medical histories were constructed. While great care was taken to ensure the histories were accurate, and all families were provided a draft of the history to review and correct if necessary, the residents themselves could not always be included in the process due to severe cognitive impairment. All of the histories were approved by the residents' families, but had the residents themselves been able to read the histories or contribute to their construction more actively, it is possible the histories as they were written may have been more accurate and could have reflected more aspects of the residents' personhood, thus increasing the impact of the intervention.

It is difficult to measure how actual behaviours change in response to attitude change. In the FA model, as staff members begin to interact with residents in different ways, residents' behaviours change in response. In the current study, attitudes regarding personhood were changed by the intervention. Whether or not that change in attitude

translated into a change in behaviours for staff members was not measured quantitatively. However, the narrative results suggest that staff members gained a better understanding of the residents. Also, especially for residents with the most severe cognitive impairment, staff members intended to incorporate information they had learned into conversations with the residents to whom they provided care. The narrative data that were not detailed enough to shed light on whether or not staff members followed through on those intentions.

Aggressive behaviours of the residents were also affected by the intervention, but the mechanism by which the aggressive behaviours changed was not assessed directly. Again, staff members cited an intent to show greater patience and understanding when providing care to residents exhibiting agitated behaviours. In order to most effectively evaluate these types of changes, researchers would need to engage in extensive observation of staff-resident interactions, something that would be very labour intensive for any study including a large number of residents. Self-report of interactions by staff members and residents may be an alternative way of assessing change; however, there are also limitations to self-report measures.

The current study relied on self-report measures completed by staff members who know the residents well. While the measures of QOL, aggressive behaviours, and agitated behaviours were designed to be objective they could have been influenced by rater characteristics that were not measured directly. The measures of empathy and personhood perception were also based on self-report. They were intended to be subjective measures completed by staff members, and therefore may have been influenced by any number of

staff characteristics including staff members' own histories, personality traits, emotional state, etc. Moreover, the measure of empathy had limited internal consistency and use of a more internally consistent empathy tool may have yielded more meaningful results concerning empathy.

Inherent in the study design was a non-independence of raters. The majority of staff members who participated in the study answered questions about residents in both the medical history and life history groups. Nonetheless, this was addressed in the statistical analyses using mixed effects modelling. Moreover, the analysis of open-ended data revealed that those staff members who answered questions about residents in both groups had a more complete understanding of the purpose of the study. The study design introduced the possibility of random effects that were not measured, such as increasing empathy through one resident's life history which carried over to the next resident presented despite their membership in the medical history group. Although there are methods for replicating this study in a way that controls for non-independence of raters, such as randomly assigning residents to receive the life history intervention by facility rather than by resident, this was not a possibility in the current study because it introduces a nested study design. That is, there are not enough facilities in the entire local mid-sized metropolitan area health region to randomly assign residents by facility to experimental or control groups and obtain a robust sample size.

The analyses of responses to open-ended questions were conducted to supplement the quantitative findings. Since the data was collected in the form of written responses there was insufficient opportunity for follow up questions that would have shed more

light on the limited responses provided. As such, inferences about staff behaviour from the narrative data were quite limited. Future studies should be aimed in acquiring richer information from focus groups and interviews with the aim of acquiring a better understanding of the impact of the life history intervention on staff attitudes and behaviour.

The results of this study are promising and provide support for the idea that interventions targeted at increasing personhood perception may benefit residents in LTC by increasing their QOL. It also replicates and extends the findings of Egan et al. (2007) who suggested that a life history intervention may improve aggressive behaviours of individuals with dementia. In the future, this study should be replicated using a similar study design (a control and experimental group) with a larger sample size. Person-centred care is a topic of increasing importance in LTC. As awareness of the importance of personhood perception increases, policy makers have begun to initiate programming that focuses on increasing person-centred care. Several models to promote person-centred care have been implemented in LTC facilities around the world (Li & Porock, 2014). The current study supports programming that increases personhood perception in LTC. Future research should focus on longitudinal studies in facilities that have employed new programming to increase personhood perception. By tracking the changes in personhood perception over a long period of time while the culture of the facility changes toward increased person-centred care, the effects of interventions similar to the one in the current study may be sustainable. Because person-centred care is a new endeavour in many LTC facilities, at this time it is especially important to research the effects of the change in

attitudes by comparing facilities who have implemented changes to those that have not. The results of the current study are promising. They suggest an intervention that may be effective for increasing the QOL of residents in LTC. Future replication of these results would evaluate their generalizability to other settings.

Conclusions

The results of the current study have exciting implications for the residents of LTC and their families. Positive, although short-term, effects were found to suggest that a relatively simple intervention involving informing staff members of residents' histories, interests, and personalities significantly decreases aggressive behaviours while increasing staff members' perceptions of residents' personhood and increasing residents' QOL. These findings replicate and extend the preliminary findings of a previous study conducted by Egan et al. (2007). The goals of the current study, to decrease aggressive behaviours and increase QOL in LTC, were fulfilled (at least in the short-term). Implementation of similar interventions could be undertaken by facilities with support. More research is needed, but the future of person-centred care in LTC facilities is promising.

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Appendix A
Interview Guides
Life History Interview Guide

Name:

Birthdate:

What was he/she like?

What was his/her childhood like?

What were his/her greatest aspirations?

What is his/her greatest accomplishment?

What was he/she most proud of?

Who did he/she admire?

Did he/she live by any motto or philosophy?

What were his/her relationships with family members like?

Who were his/her closest friends?

What were his/her most difficult challenges?

What was his/her greatest fear?

What were his/her favourite things?

What would people be surprised to learn about him/her?

Does he/she have any regrets about past events?

In what way did he/she make a difference in the world?

Is there anything important we have missed about him/her?

Are there any stories about him/her that would help us get to know him/her better?

Medical History Interview Guide

To your knowledge what is your loved one diagnosed with currently?

- Approximately what age was your loved one when he or she was diagnosed?
- Do you recall what treatments have been undertaken for these diagnoses (please elaborate)?
- Have treatments been successful?

Has your loved one ever experienced a physical difficulty (e.g., vision , hearing, use of canes etc)?

To your knowledge, has your loved one ever had surgery (please elaborate)?

- Do you recall approximately when these surgeries occurred?
- Does your loved one still experience any effects from the surgery?

Do you recall your loved one ever experiencing a major illness (please elaborate)?

- Please explain the details of the illness to the best of your knowledge (i.e., how long did it last, are there any remaining effects?)

To your knowledge, has your loved one ever experienced any broken bones?

- Do you recall the circumstances surrounding the break?
- To your knowledge, are there any remaining effects from the break?

To your knowledge, has your loved one ever experienced a head injury?

- Do you recall the circumstances surrounding the head injury?
- To your knowledge, are there any remaining effects from the injury?

Is there any other important medical history information you feel should be included in your loved one's medical history?

Appendix B

Aggressive Incident Report

Please record all incidents of aggression.

Date of incident: _____

Time of incident: _____

Location of incident: _____

Please describe what occurred:

How severe was this incident? (Please circle the number that best describes the severity of the incident)

Not at
all
severe

Extremely
severe

1	2	3	4	5	6	7	8	9	10
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Appendix D

Staff Questionnaires

Questions presented at intervention

1. In what ways is your personal life history similar to the life history of the resident?
2. Are you inclined to change your behaviour toward the resident in response to learning his/her life history? If so, how?

Questions presented at follow-up

1. Did learning about patients' histories have an effect on how you view the resident?
 - a. If yes, please explain how it effected how you view the resident.
 - b. If no, please elaborate on how or why it did not effect how you view the resident.
2. Did learning about patients' histories have an effect on how you interact with the resident?
 - a. If yes, please explain how it effected how you interact with the resident.
 - b. If no, please explain how or why it did not effect how you interact with the resident.
3. Do you have any comments about the process of learning about residents' histories?

Appendix E



OFFICE OF RESEARCH SERVICES
MEMORANDUM

DATE: August 16, 2011

TO: Thomas Hadjistavropoulos and Heather Eritz
Psychology

FROM: Dr. Bruce Plouffe
Chair, Research Ethics Board

Re: **Research and Community Alliance for Quality of Life in Long Term Care (The QOL Team): Life History, Nurse Empathy and Aggressive Behaviours in Individuals with Dementia (File #17R1112)**

Please be advised that the University of Regina Research Ethics Board has reviewed your proposal and found it to be:

1. APPROVED AS SUBMITTED. Only applicants with this designation have ethical approval to proceed with their research as described in their applications. For research lasting more than one year (Section 1F). **ETHICAL APPROVAL MUST BE RENEWED BY SUBMITTING A BRIEF STATUS REPORT EVERY TWELVE MONTHS.** Approval will be revoked unless a satisfactory status report is received. Any substantive changes in methodology or instrumentation must also be approved prior to their implementation.
2. ACCEPTABLE SUBJECT TO MINOR CHANGES AND PRECAUTIONS (SEE ATTACHED). Changes must be submitted to the REB and approved prior to beginning research. Please submit a supplementary memo addressing the concerns to the Chair of the REB. **** Do not submit a new application.** Once changes are deemed acceptable, ethical approval will be granted.
3. ACCEPTABLE SUBJECT TO CHANGES AND PRECAUTIONS (SEE ATTACHED). Changes must be submitted to the REB and approved prior to beginning research. Please submit a supplementary memo addressing the concerns to the Chair of the REB. **** Do not submit a new application.** Once changes are deemed acceptable, ethical approval will be granted.
4. UNACCEPTABLE AS SUBMITTED. The proposal requires substantial additions or redesign. Please contact the Chair of the REB for advice on how the project proposal might be revised.


Dr. Bruce Plouffe

** supplementary memo should be forwarded to the Chair of the Research Ethics Board at the Office of Research Services (Research and Innovation Centre, Room 109) or by e-mail to research.ethics@uregina.ca

Phone: (306) 585-4775
Fax: (306) 585-4893
www.uregina.ca/research

Appendix F



Certificate of Approval Research Ethics Board

PRINCIPAL INVESTIGATOR	Dr. T. Hadjistavropoulos	Department of Psychology University of Regina 3737 Wascana Parkway Regina SK S4S 0A2
APPROVAL DATE	August 16, 2011	
RQHR PROJECT #	REB-11-40	
TITLE	Research and Community Alliance for Quality of Life in Long Term Care (The QOL Team): Life History, Nurse Empathy and Aggressive Behaviours in Individuals with Dementia	

APPROVED

CERTIFICATION

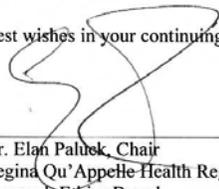
The protocol and consent form for the above named project have been reviewed by the Regina Qu'Appelle Health Region Research Ethics Board and the experimental procedures were found to be acceptable on ethical grounds for research involving human subjects.

The Regina Qu'Appelle Health Region Research Ethics Board meets the standards outlined by Canada's Tri-Council Policy Statement for Ethical Conduct for Research Involving Humans.

The Regina Qu'Appelle Health Region Research Ethics Board has met the criteria for purposes of Section 29 of the *Health Information Protection Act*.

Please note that all future correspondence regarding this project must include the RQHR project number.

Best wishes in your continuing research endeavours.



 Dr. Elan Paltek, Chair
 Regina Qu'Appelle Health Region
 Research Ethics Board

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This Certificate of Approval is valid provided there is no change in the experimental procedures. Any significant changes to the protocol must be reported to the Chair for the Board's consideration, in advance of implementation of such changes. You are required to provide a status report on an annual basis.