
by

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Dedication

To my grandparents- no matter how many times I say thank you it will never describe how much love and gratitude I truly have.

To my mom- thanks for all the life lessons and unconditional love through them. Your love, laughs, and support have got me to where I am today. More importantly, thanks for being my best friend.

To my partner- thanks for the endless support, unremitting love, and drive to push myself harder. You never stopped believing in me, and even got me to believe in myself.
Abstract
The rapid increase in dementia rates will only continue rising as Canada’s population ages. Unfortunately, there is currently no cure. One important implication is therefore providing effective treatment to decrease or prevent cognitive decline. The Montessori Methods for Dementia (MMFD) is a novelty approach, rooted in the principles developed by Maria Montessori, that has been shown to increase engagement and reduce symptoms associated with dementia. MMFD is being utilized in many long-term care facilities (LTCFs) across Canada. Currently, the Life Enrichment Aide (LEA) team has been working on creating a cultural change for putting the MMFD approach into practice; however, opposing staff perceptions have been an importunate barrier. LEA staff are responsible for developing and implementing activities that meet the individual needs of residents. Therefore, the purpose of this study was to develop a manual that highlights the benefits and practicality of the approach. The student researcher hypothesized that developing a manual that provides information on MMFD would educate staff members, and advocate for the use of Montessori in the facility. The manual consisted of four sections that focused on the development, rationale, guidelines, and resources for an MMFD intervention. In particular, the guidelines were a summarized and condensed version of the manual to facilitate to the staff members. Due to time constraints, the manual could not be implemented; however, a Satisfaction Survey was used to obtain feedback. The Satisfaction Survey was completed by 4 LEA team members, as a 50% response rate was demonstrated. Positive feedback was received, as all survey’s indicated that the LEA team was completely satisfied with the manual. Despite providing guidelines and resources to implement the MMFD intervention being a major strength, a major recommendation for future research is to not only determine the validity of the manual, but for staff members to directly see the results of Montessori.
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Chapter I: Introduction

In today’s society, cognitive impairments and dementia are one of the leading health concerns (Ford & Almeida, 2005). With the increase in the aging population, it is estimated that by 2025 48 million people will be diagnosed with dementia; that is an average of one person being diagnosed every 7 seconds (Ferri et al., 2005). Dementia encompasses a variety of neurological disorders that cause a loss of memory and overall cognitive functioning (Winblad et al., 2016). The cognitive impairment contributes to the development of behavioural and psychological symptoms of dementia (BPSD; Azermai, 2015). BPSD is also associated with a greater rapid decline in cognitive functioning; reflecting a bidirectional relationship. Some of the most common BPSD include physical and verbal aggression, ambulation, irritability, agitation, anxiety, and depression (Kales, Gitlin, & Lyketos, 2015; Seitz, Purandare, & Conn, 2010). The development of BPSD is one of the main reasons that an older adult enters a long-term care facility, as the family members find it difficult to manage those symptoms (Finkel, 2000; Krishnamoorthy & Anderson, 2011). Admission into a long-term care facility imposes the challenge to an individual with dementia, as they lose their autonomy, as he or she is no longer capable of taking part of their own self-care (Beerens et al., 2015). With this said, the Omnibus Reconciliation Act in 1987 was developed in order to shift a focus towards long-term care facilities focusing on the residents’ quality of life (Martin & Smith, 1993). This involved the mandate of activities to be used in long-term care that would meet the needs of each resident (Martin & Smith, 1993). Despite the availability of activities in long-term care facilities, residents in long-term care facilities spend approximately 65% of time in isolation (Wolinksy et al., 2013). Numerous studies have found that this may be due to the activities not providing adequate stimulation, active participation, and the lack of a variety of activities to choose from (Port, Barrett, Gurland, Peerez, & Riti, 2011; Mansbach, Mace, Clark, & Firth, 2015). As a consequence, the residents are not engaged in an activity that has meaning to them. Not participating in meaningful activities can influence the increase in challenging behaviours, as the residents are understimulated (Port et al., 2011). Challenging behaviours are often used to describe BPSD (Krishnamoorthy & Anderson, 2011). Without change, residents may continue to be bored and exacerbate the cognitive decline, compromising the overall quality of life of the residents (Ford & Almeida, 2015). This kind of change requires a culture change in long-term care. A cultural change in long-term care is the transition from the traditional model to a person-centered approach aimed at providing a supportive and home-based environment for the residents (Shura, Siders, & Dannefer, 2011). This is accomplished by obtaining the commitment of all staff members in the long-term care facility (Bourgeois, Brush, Elliot, & Kelly, 2015).

Currently, both pharmacological and non-pharmacological interventions are being used to manage the behavioural and psychological symptoms related to dementia (Noguchi, Kawano, & Yamanaka, 2013). Despite the fact that medications can relieve the symptoms of depression, comorbidity of other medical conditions in elderly individuals is high (Brahma, Wahlang, Marak, & Sangma, 2013). Comorbidities require the use of other pharmaceuticals, and increase the likelihood and risks for drug-to-drug interactions (Brahma et al., 2013). Eady, Courtenay, and Strydom (2015) state that the negative outcomes with medications can further comprise an individual’s quality of life. Alternative approaches should be highlighted before resorting to medications (Seitz et al., 2012). There is an abundance of literature that indicates interventions are effective when tailored to the individual (Cohen-Mansfield, 2001). Furthermore, research has indicated that it is important to individualize a resident’s experience in the long-term care facility, by providing the opportunity to engage in meaningful activity (Port et al., 2011;
Mansbach et al., 2015). Therefore, an intervention that may be worth further developing is Montessori Methods for Dementia (MMFD).

The Montessori Methods for Dementia (MMFD) is a relatively novel non-pharmacological intervention derived from Maria Montessori (Camp, 2010). Maria Montessori initially developed Montessori in order to accelerate both the independence and engagement levels for children who engaged in challenging behaviours (Moretti, 2013). Montessori activities involve teaching social, cognitive, and functional skills to individuals by dividing tasks into easy and progressive steps (Dreher, 1997). Not only has this been effective on children, but also recent studies have found this efficacious in the older adult population, specifically, dementia (Camp, 2011). There is an abundance of literature to support that MMFD has the ability to increase engagement and decrease symptoms associated with dementia (Camp, 2010; Elliot, 2012; O’Carroll, 2012). Moreover, MMFD has the ability to empower a resident with a sense of accomplishment, as it is individualized to the resident (Camp, 2010). The focus of this project is to provide knowledge and guidelines to aid the implementation of a MMFD intervention.

**Purpose of the Project**

The current study involved the development of a manual for the Life Enrichment Aide (LEA) team. The LEA team is a group of individuals that work together to implement programs for residents in a long-term care facility. The programs are designed to meet the physical, social, cognitive, cultural, and spiritual needs of each resident with the main goal of increasing each resident’s quality of life. The LEA team also collaborates with other disciplines in order to carry out each program. Currently, the LEA team has been developing a plan to get every staff member to work together in order to increase the use of Montessori throughout the facility; however, the LEA team has found this task has its difficulties. In other words, the LEA team has been making efforts towards a cultural change within the facility. The LEA team believes both the lack of information the staff members have of the benefits of Montessori for dementia, and their negative attitudes are barriers to implementation of Montessori programs in the facility. Therefore, the purpose of this project is to provide a manual with information and resources regarding Montessori Methods for Dementia. The manual provides user-friendly information on the development, rationale, and guidelines to the implementation of a MMFD intervention.

Overall, the main objective was to develop a manual that provides information on a Montessori Methods for Dementia intervention. It was further anticipated that the manual would educate staff members and aid in the process of creating the culture change in the facility. In order to determine the effects, the student research collected feedback from various staff members who read the manual. The student researcher then incorporated feedback in order to improve the manual; however, due to time constraints the effects of the manual could not be objectively tested.

**Chapter Overview**

This thesis is comprised of several different chapters. The chapters include an introduction, literature review, methodology, results, and discussion. The introduction includes the topic and the focus of the study. It begins by background information on dementia and BPSD, and the rationale for the development of a manual. Following the introduction, the literature review focuses on topics and studies that are relevant to the validation on the manual. This is completed by reviewing, summarizing, and analyzing peer-reviewed articles that relate to dementia, BPSD, cognitive impairment, Montessori, Montessori in older adults, Montessori
Methods for dementia, and staff perception on the use of Montessori in long-term care. The methodology section entails a description of the development of the manual. This includes information on the setting, client population, facilitators, procedure, structure, and evaluation. The results section will contain the findings from the evaluation and the final product. Lastly, the discussion chapter consists of the summary, strengths, limitations, contributions to the field of Behavioural Psychology, and recommendations for future research.
BPSD in Long-Term Care Facilities

A high percentage of individuals diagnosed with dementia will experience behavioural and psychological symptoms of dementia (BPSD) during the duration of the disease (Devshi et al., 2015; Savva et al., 2009). A meta-analysis conducted by Seitz et al. (2010) found that approximately 76% of residents in a long-term care facility (LTCF) exhibit BPSD. Many studies have found that different types of dementia produce more common BPSD (Yahya, Chandra, Anand, & Garg, 2015). For example, apathy, ambulation, depression, agitation, and anxiety are the most common BPSD that occur during Alzheimer’s disease (Yahya et al., 2015). This is compared to delusions and hallucinations that are more commonly found in Lewy Body dementia (Yahya et al., 2015); however, the most frequent overall BPSD include apathy, verbal and physical aggression, agitation, and depression (Kales, Gitlin, & Lyketos, 2015; Seitz et al., 2010). Despite the frequency indicating that BPSD is a natural part of dementia, the consequences of BPSD are detrimental. The development of BPSD contributes to early entry into a LTCF, as they are a burden on caregivers (Kales et al., 2015). This may be due to the symptoms of BPSD resulting in challenging behaviours (Krishnamoorthy & Anderson, 2011). Furthermore, this may be due to the association of BPSD and an increase in cognitive decline, as the cognitive decline leads to the impairment in participating in activities of daily living (Hersch & Falzgraf, 2007; Fiske et al., 2009). A decrease in activities of daily living has a negative outcome on the individual with dementia, as it has been correlated to rapid disease progression (Potter & Steffens, 2007). Consequently, the individual with dementia will experience a decrease quality of life (Wiese, 2011; Kitching, 2015; Fiske, Wetherell, & Gatz, 2009; Beerens et al., 2015).

Relationship of BPSD and Cognitive Impairment

Numerous studies have indicated that the development of BPSD precedes cognitive impairment (Yahya, Chandra, Anand, Garg, 2015; Borroni, Agosti & Padovani, 2008; Poletti, Nut, Cipriani, & Bonuccelli, 2013; Lövheim, Sandman, Karlsson, & Gustafson, 2008; Bhalla & Butter, 2011). This has allowed BPSD to be used as a form of measurement of one’s cognitive level, as the more severe symptoms correlate to the degree of cognitive impairment (Cerejerira, Largarto, & Muketova Ladinska, 2012). With this said, cognitive impairment also precedes the development of BPSD. Many studies indicated that cognitive impairment increases one’s risk to developing dementia (Dillon et al., 2013; Modrego & Ferrandez, 2004; Palmer et al., 2010). Majority of these studies have found that individuals with Mild Cognitive Impairment (MCI) experience symptoms of depression (Modrego & Ferrandez, 2004). Depression is the most frequent mental health illness in the geriatric population (Huang & Carpenter, 2011). Depression is also one of the most frequent individual symptoms of BPSD (Seitz et al., 2010; Kales et al., 2015). There is an abundance of literature that states that depression is a risk factor, prodrome, and consequence for dementia (Ganguli, 2009; Muliyala & Varghese, 2010; Tsuno & Homma, 2009). A longitudinal study conducted by Leinonen et al. (2004) found that six out of 24 patients diagnosed with major depression at an earlier stage in life developed organic dementia. Therefore, the authors concluded that early onset of depression may contribute to the risk for developing dementia (Leinonen et al., 2004). In comparison, another study found that depression symptoms were present following the onset of dementia, as 16.42% of subjects with dementia had symptoms of depression compared to 3.2% of subjects without dementia displayed.
symptoms of depression (Chen, Ganguli, Mulsant, & Dekosky, 1999). Chen et al. (1999) stated that late life symptoms of depression were related to early manifestation of dementia rather than a risk factor. The symptoms of depression may also be a psychological response to the cognitive impairment associated with dementia (Muliyala & Varghese, 2010). Nevertheless, it is evident that there is a relationship between cognitive impairment and BPSD, and both play an integral part in dementia. Therefore, effective management and treatment of BPSD, like depression, is a critical to prevent the adverse outcomes.

**Pharmacological Treatment of BPSD**

The treatment of BPSD for individuals with dementia has involved antipsychotics, antidepressants, anxiolytics, NDMA receptor modulators, and anticonvulsants (Hersch & Falzgraf, 2007; Van Marwijk & Spiegel, 2009); however, the efficacy of these medications are weak (Hersch & Falzgraf, 2007). The use of all these medications in the elderly requires specific considerations (Potter & Steffens, 2007). Medications can impose pharmacokinetic challenges due to old age (Brahman, Wahlang, Marak, & Sangma, 2013). For example, decreased excretion of drugs in one of the major concerns in the elderly (Brahman et al., 2013). Furthermore, many individuals with dementia in a LTCF, experience other medical conditions (Azermai, 2015). This increases the risk of drug-to-drug interactions, and adverse side effects (Potter & Steffens, 2014). The pharmacological approach has been extensively researched; however, the contrary and inconclusive results remain a concern for relying on pharmaceuticals. Therefore, non-pharmacological interventions are highlighted to use first.

**Non-Pharmacological Treatment of BPSD**

There are numerous evidenced-based non-pharmacological approaches for the treatment of BPSD (Hersch & Falzgraf, 2007; O’Neil et al., 2011). A systematic review conducted by O’Neil et al. (2011) found the most common non-pharmacological treatments included behavioural therapy, music therapy, aromatherapy, reminiscence therapy, simulated presence therapy, education to caregivers, brief psychodynamic therapy, and occupational therapy. Moreover, Zaudig (2000) found that environmental changes are commonly used first to treat BPSD. O’Neil et al. (2011) concluded that despite the variety of evidenced-based interventions, there is a need for interventions to be tailored to each individual. A critical component to an individualized treatment is modifying the intervention to meet the needs and circumstances of each resident (O’Neil et al., 2011). For example, a study conducted by Gitlin et al. (2008) created a tailored activity program (TAP) for each resident with dementia in long-term care facilities. Each intervention was individualized based on the resident’s previous occupation, hobbies, habits, and capabilities (Gitlin et al., 2008). The authors found that TAP was able to enhance skills, decrease behavioural symptoms, increased engagement, and increased pleasure during the TAP activities (Gitlin et al., 2008). TAP activities included folding towels, washing windows, and having objects placed into the correctly labeled containers (Gitlin et al., 2008). Furthermore, many studies have indicated a need for residents to engage in meaningful activity (Genoe & Dupuis, 2012; Mansbach, Mace, Clark, & Firth, 2015). The TAP program has direct comparisons to a relatively novelty approach for individuals with dementia that can address the need for meaningful activities, Montessori Methods for Dementia (MMFD).
Montessori Methods for Dementia

The Montessori Methods for Dementia (MMFD) intervention is derived from the Montessori system of education created by Dr. Maria Montessori (Camp, 2010). Maria Montessori’s philosophy was geared at helping children learn through discovery, by encouraging them to follow what they were interested in (Dreher, 1997). Dr. David Camp then found that Montessori’s philosophy could work at both ends of the spectrum (Camp, 2010). Vance, Camp, Kabacoff, and Greenwalt (1996) state that individuals with dementia need structure, order in the environment, and activities. This statement draws a direct comparison to Maria Montessori’s thoughts about the children, and therefore the Montessori activities would involve structure and order for the children to focus their attention (Camp, 2010). The activities would provide a greater opportunity for success, provide immediate feedback, and allow for repetition (Camp, 2010). The principles around Montessori activities would involve breaking down tasks into smaller steps, advancing the task from simple to complex, and guided repetition (Camp, 2010). The distinctive feature of Montessori is that a numerous amount of activities are created to facilitate learning through action (Lillard, 2012). Montessori also described a phenomenon in children known as unconscious learning, as she said the absorbent mind in children allow them to learn basic human functions and lead to optimal development (Vance et al., 1996). Likewise, individuals with dementia have the ability to learn through implicit memory (Vance et al., 1996). MMFD provides a resident an opportunity to engage in an activity that is meaningful to them, and is designed to meet individual differences (Malone & Camp, 2007). Skranjer (2007) states that a Montessori activity provides the resident with an opportunity to demonstrate their competence. Having a resident demonstrate their competence will allow for many changes in the long-term care beyond a culture change. Shura, Siders, and Dannefer (2011) conducted a study that advocated for the inclusion of the resident in a culture change; however, found that the view of a resident lacking expertise is a barrier that needs to be addressed. Therefore, the foundation of MMFD has the ability to change this perspective, by providing the resident with opportunities to engage in meaningful activities that show his or her capabilities. Such engagement will allow for the resident to showcase his or her competence. Recent studies have indicated that MMFD has been successful in the geriatric population with dementia by increasing engagement and decreasing challenging behaviours.

MMFD on Engagement Levels

The cognitive decline in depression and dementia affect an individual’s ability to communicate, and consequently results in low levels of engagement socially and within the community (Bourgeois, Dujkstra, & Hickey, 2005). O’Conner et al. (2007) state that this decreases an individual’s quality of life. In order to address this concern, long-term care facilities (LTCFs) and adult day cares are creating activities to foster social and active engagement (Orsulic-Jeras, Schneider, & Camp, 2000). One intervention that can address this barrier to quality of life is MMFD.

Jarrott, Gozail, and Gligliotti (2008) state that implementing activities that are meaningful to an individual with dementia can reduce boredom and create a positive effect. Atchley (1993) describes the importance of meaningful activities in order to positively adapt to aging; however, many programs in LTCFs fail to provide adequate activities for residents with dementia (Camp, 2010; Voelkl, Fries, & Galecki, 1995; Pruchno & Rose, 2002; Shakeel, Newhouse, Malik, & Heckman, 2015). A meta-analysis conducted by Voelkl, Fries, and Galecki (1995) found that among 1210 LTCFs, approximately 40% of individuals with dementia did not
participate in the activities offered within the facility. Buettner (as cited in Jarrott et al., 2008) stated that inactivity leads to boredom and a lower quality of life (Pruchno & Rose, 2002). Montessori programs provide a person-centered approach that supports an individual’s function and independence, and have been shown to increase engagement levels (Jarrott et al., 2008).

Jarrott et al. (2008) used the Montessori approach for 10 individuals with dementia at an adult day care center. The participants were randomly assigned to three groups that would all receive a Montessori activity three times a week (Jarrott et al., 2008). The authors then measured the engagement levels using the Menorah Park Engagement Scale (MPES) that allows the ability to distinguish between four types of engagement: constructive, passive, self-engagement, and non-engagement (Jarrott et al., 2008). The MPES is a scale that was developed in conjunction with MMFD (Volicer & van der Steen, 2014). Jarrott et al. demonstrated internal validity, by having clear and concise measurement procedures and inter-rater reliability; however, the study involved not only a small sample size, but lacked a control group. Furthermore, the statistical analysis yielded a small effect size. Nevertheless, the study found that the participants would engage in a higher amount of constructive engagement and less non-engagement during the Montessori activities.

The study conducted by Jarrott, Gozail, and Gligliotti (2008) used the same measurement for engagement that Judge, Camp, and Orsulic-Jeras (2000) used in their research. Similar to the study above, Judge et al. conducted a study to determine the levels of engagement of individuals in adult day care centers during Montessori activities and regular day care activities; however, this study involved the use of a control group which strengthens the validity of the research. The Over the nine-month study, 19 individuals with dementia were randomly assigned to the control group or treatment group. The control group consisted of taking part in regular activities offered at the day care, and the treatment group involved participating in Montessori-based activities. Regular activities included music programs, art therapy, movies, social group events, and exercise groups. Montessori-based activities included individualized activities, and memory bingo, and intergenerational programming. In order to determine levels of engagement the authors measured constructive engagement, passive engagement, non-engagement, and self-engagement. Overall, the authors found that the individuals in the treatment group displayed higher levels of engagement compared to individuals in the control group. Therefore, Montessori-based activities are more effective in increasing engagement levels for individuals with dementia. The authors then furthered their research by examining the engagement levels in a LTCF (Orsulic-Jeras, Schneider, & Camp, 2000).

Similar to the first study, Orsulic-Jeras, Schneider, and Camp (2000) compared the engagement levels in Montessori activities and regular activities, but this time in a LTCF. The authors used a sample population of 16 residents with advanced dementia; however, each resident acted as their own control (Orsulic-Jeras et al., 2000). Each resident had the opportunity to engage in regular activities on the unit in the long-term care facility and two types of Montessori-based programs (Orsulic-Jeras et al., 2000). The regular activities included storytelling, current events, trivia, exercise groups, movies, music programs that allowed each resident to play an instrument (Orsulic-Jeras et al., 2000). The facility also provided individualized activities, as they provided materials to each resident at a table (Orsulic-Jeras et al., 2000). The authors then used two different Montessori-based programs: individualized and group activities (Orsulic-Jeras et al., 2000). The individualized activities involved taking materials that are in the long-term care facility and creating an activity that is meaningful to each
resident (Orsulic-Jeras et al., 2000). The group activities consisted of memory bingo and group sorting where the residents would work together to sort pictures into the two categories presented (Orsulic-Jeras et al., 2000). The results of the study indicated that passive engagement levels decreased during all Montessori activities; however, a limitation of the study was due to different group sizes (Orsulic-Jeras et al., 2000). In the regular activities, there was a substantial amount of more residents (n=20-30) compared to Montessori activities (n=3-7) (Orsulic-Jeras et al., 2000). Furthermore, the authors indicated that the facility already had the opportunity for individualized activities to occur (Orsulic-Jeras et al., 2000). Orsulic-Jeras et al. concluded that LTCFs that conduct activities with large groups may have different findings, but should be furthered researched.

Another study completed by Schneider and Camp (2002) examined the use of visitors implementing Montessori-based activities during their visits. The study involved nine visitors who were each paired with one resident with dementia (Schneider & Camp, 2002). Prior to the study, the authors provided training on Montessori activities to each visitor (Schneider & Camp, 2002). Each Montessori-based activity was individualized to each resident (Schneider & Camp, 2002). The researchers then measured the amount of time the resident was engaged in the activity (Schneider & Camp, 2002). The authors compared the amount of time the resident was engaged in the Montessori activity to the length of time they spent in other activities (Schneider & Camp, 2002). Overall, the results showed that the resident was 40% more engaged during the Montessori activity compared to other activities (Schneider & Camp, 2002). Furthermore, each visitor observed and stated the positive effect on the resident throughout the duration of the activity. This study demonstrates that Montessori activities increase engagement levels, but also indicates positive social validity. However, a limitation is that the visitors all had well-established relationships with each resident prior to the study, and therefore this study may lack external validity. On the other hand, this study indicates that visitors should take the time to implement activities during their visit. The ability for visitors to use Montessori with residents is beneficial, as many staff members may find it difficult to find the time to conduct the activity; however, the authors noted that visitors must be willing to learn Montessori and devote an allotted amount of time with each resident (Schneider & Camp, 2002).

In comparison to Schneider and Camp (2002), Lee, Camp, and Melone (2007) conducted a study that involved the use of intergenerational programming. The intergeneration program brings both the elderly population and pre-school children together (Lee et al., 2007). In Schneider and Camp, the study involved volunteers who were family members or friends of the residents involved; however, in Lee et al.’s study the authors are introducing both the residents and the children to each other for the first time. The participants of the study included 14 residents with dementia and 15 young children (Lee et al., 2007). The 14 residents were divided into two groups. Each group would receive the control condition and treatment, but in a different sequence. The control condition consisted of regular activities provided throughout the long-term care facility, and the treatment was Montessori-based intergenerational programming. The first group would receive 6-months of a control condition and then 6-months of the intervention; group two was vice-versa. The Montessori-based intergenerational programming took place at the LTCF and consisted of a resident working with a child on Montessori-based activities. The results of this study found this approach successful, as the residents with dementia were actively engaged during the treatment condition; however, a limitation that exists in both studies is the inability to indicate whether engagement was related to the Montessori activities or the social interaction. The lack of control for confounding variable decreases the ability to demonstrate a
functional relationship between an increase in engagement and Montessori activities. Nonetheless this approach continues to show that this intervention engages residents more than standard activities in LTCFs (Lee et al., 2007; Camp, 1997), and even despite the fact the residents did not previously know the individual he or she was completing the activities with.

In contrast to the other studies above, Vance and Porter (2000) evaluated the engagement of Montessori-based activities on the cognitive functioning of 15 individuals with Alzheimer’s disease at a day care facility. The authors used 22 cognitive psychometric tests in order to determine the cognitive effect of engagement with Montessori compared to regular activities (Vance & Porter, 2000). Unlike the other studies, the use of psychometric tests increases the parallel forms reliability, as many tests were used to measure the same construct. Each participant received three months of Montessori-based activities, and three months of regular activities offered at the day care (Vance & Porter, 2000). Overall, the study found that Montessori had a positive outcome on cognitions in the participants (Vance & Porter, 2000). Vance & Johns (2003) further evaluated this effect on 14 individuals with Alzheimer’s disease. The authors used a within subject design in order to determine if Montessori activities could slow the progression of cognitive decline (Vance & Johns, 2003). Each participant engaged in the two conditions of Montessori activities for three months and three months of regular activities (Vance & Johns, 2003). Some of the Montessori-based activities consisted of screwing nuts and bolts together, knitting, and caring for a baby doll; however, each activity was individualized to the resident (Vance & Johns, 2003). The Montessori-based intervention indicated positive results for memory recall, attention, social behaviours, and thoughts (Vance & Johns, 2003). Both the results of the studies showed that a resident would engage in the Montessori-based activity for a longer interval of time compared regular activities (Vance & Porter, 2000; Vance & Johns, 2003). A limitation to both studies is the lack of follow up on the cognitive functioning and whether or not residents were still engaging meaningful activities after the study (Vance & Porter, 2000; Vance & Johns, 2003). These studies also demonstrated how the Montessori philosophy could allow individuals with dementia to remain independent for as long as possible, by enabling the individual to use the skills they still posses (Camp, 2010).

Bowlby Sifton (as cited in Harmer & Orrell, 2008) states that using the abilities the individual with dementia still has may not only slow the progression of cognitive decline, but may enhance the individual’s functioning.

**MMFD on Decreasing Challenging Behaviours**

Studies have indicated that there is a high prevalence of behavioral and psychological symptoms associated with dementia (BPSD), and these symptoms become even more prominent as the dementia progresses (Chen, 2006; Seitz, Purandare, & Conn, 2010; Kales, Gitlin, & Lyketos, 2015; Jackson, Templeton, & Whyte, 1999; Lövheim, Sandman, Karlsson, & Gustafson, 2008). A meta-analysis found that 76% of residents with dementia in a LTCF in BPSD (Seitz et al., 2010). BPSD symptoms include physical and verbal aggression, anxiety, ambulation, delusions and hallucination, and depression (Seitz et al., 2010; Kales et al., 2015; Hashimoto et al., 2015). The development of BPSD is correlated with more rapid cognitive impairment (Hashimoto et al., 2015). As stated previously, individuals with dementia in long-term care homes are not likely to engage in activities offered throughout the facility. Not participating in activities lead to boredom and accelerated the loss of cognitive impairment. As a result, Chow et al. (2012) state that challenging behaviours stem from the boredom. The increase in engagement with Montessori-based activities would allow for a decrease in boredom, and
therefore decrease the BPSD. Lin et al. (2009) also state that when a resident is engaging with a meaningful Montessori activity, he or she will not be simultaneously engaging in the challenging behaviours.

Lin et al. (2009) evaluated the use of acupressure in conjunction with Montessori-based activities to decrease agitated behaviors associated with dementia. Unlike other research above, this study used a double-blind, and randomized cross-over design on 133 residents who had a diagnosis of dementia and challenging behaviours (Lin et al., 2009). The combination of the double-blind and randomization is known as the ‘gold standard’ for research that involves an intervention, as this method prevents bias in the results (Mirsa, 2012). The 133 residents were randomized into three groups that received the same treatment, but in a different order (Lin et al., 2009). All three groups would receive individualized Montessori-based activities, acupressure, and a control condition that consisted of the residents following their own typical routine and activities (Lin et al., 2009). The researchers used the Cohen-Mansfeld Agitation Inventory, Ease-of Care, and the Apparent Affect Rating Scale (Lin et al., 2009). Each of these measures were not only explained and evaluated, but also demonstrated modest to high reliability and validity (Lin et al., 2009). Overall, this study demonstrated that Montessori is capable of decreasing agitated behaviours while producing positive emotions compared to typical activities (Lin et al., 2009). This may be related to the fact Montessori-based activities are individualized and therefore are meaningful to the resident.

Similarly, Van Der Ploeg, Eppingstall, Camp, Rundi, & O’Connor (2014) examined the use of Montessori to decrease agitated behaviours. In comparison to Lin et al. (2009) this study did not involve randomization, as each group was based on level of engagement in activities and frequency of agitated behaviours. These groups were known as non-responders and responders. The non-responders consisted of 10 individuals with dementia who frequently engaged in agitated behaviours, and were not likely to participate in activities. The responders involved 34 individuals with dementia who were less likely to exhibit agitated behaviours, but would more likely engage in activities. Using a repeated measures crossover design, the participants were divided into two groups that would receive treatment and control, but in a different sequence from one another. The treatment involved using a one-on-one Montessori activity. The activities included looking and sorting pictures, arranging flowers, singing and dancing to favourite music, planting seeds, and folding towels (Van Der Ploeg et al., 2014). The control condition consisted of one-to-one interaction that was not personalized. For example, conversation would surround topic around newspaper articles and pictures (Van Der Ploeg, 2014). If the resident was not engaged during the control condition, then the individual would just be kept company (Van Der Ploeg et al., 2014). Both the Montessori activities and control conditions were delivered for 30 minutes twice a week; however, for two weeks the Montessori intervention would be used and then the next two weeks the control conditions would occur. The authors found that both responders and non-responders were more engaged during the Montessori activities; however, the authors believe each Montessori activity could have been further individualized. Furthermore, the authors did not find a significance of a decrease in agitated behaviours between groups. This can be due to the lack of randomization, small group sizes, and that the non-responders may have needed more time due to not participating in activities prior to the study.

Wu and Lin (2013) conducted a study to determine if Spaced Retrieval (SR) and Montessori-based activities would improve nutritional status and decrease symptoms of depression in residents with dementia that were residing in Veteran homes. Reed et al. (as cited in Wu & Lin, 2013) state that difficulty with eating results in a low amount of food intake for
individuals with dementia. Spaccavento et al. (as cited in Wu & Lin, 2013) further suggested that a decrease in food intake correlated with those individuals having a larger amount of depressive symptoms. The results of the study conducted by Wu and Lin demonstrated that combination of SR and Montessori resulted in an increase on the individuals Body Mass Index, as eating abilities increased. The authors also noted that a decrease in depressive symptoms occurred both during the intervention and after a one-month follow up (Wu & Lin, 2013). The outcome of both these studies illustrate that Montessori activities have the potential of increasing independence, as the residents with dementia are able to be self-sufficient in a life skill. Providing the opportunity for individual’s independence may also foster one’s quality of life, and therefore decrease the BPSD.

**Staff Perception on Montessori**

In majority of the studies mentioned above, the implementation of Montessori activities were administered by individuals who had training prior to the study or received training by the researchers of the study. Training involved the use lectures and videotapes on Montessori education, direct observation of a professional implementing a Montessori activity, supervised practice, and role-playing. The individuals included volunteers, friends and family of the participants, behaviour therapists, teachers, teachers’ assistants, daycare staff, and long-term care staff members. Research has indicated that in order to implement a person-centered approach like a MMFD intervention in long-term care, the organization as a whole must provide support in order to create the change necessary for the approach to flourish and become established (McCormack et al., 2010; McCormack & McCanoe, 2006). Creating change in quality of life within long-term care is known as a culture change (Port et al., 2011). Port et al. (2011) state that in the U.S there is a culture change to increase the quality and variety of activities to choose from in a long-term care facility. There are numerous factors that impact a shift in culture change. A research study conducted by Ducak (2012) found that staff perceptions play a critical role in the implementation of a MMFD intervention, as all staff members are involved in creating the culture change. Ducak found that staff members involved in the recreation activities for the residents are ready and wanting to shift to more individualized activities for each resident; however, the recreation staff experienced resistance to culture change from other staff members. The barriers that were found were due to negative perceptions on MMFD, as many staff members indicated the need to directly see the benefits of Montessori (Ducak, 2012). Fortunately, it was found that increasing education and the rationale for Montessori changed the perspective of staff members to see the validity of MMFD (Ducak, 2012).

**Summary and Relationship between Literature Review and Current Thesis**

After reviewing the literature, it is evident that the prevalence of BPSD in the geriatric population remains a concern. BPSD is shown to be a risk factor for cognitive impairment and indication for the onset of dementia. On the other hand, dementia and the cognitive impairment have also been indicated to be a risk factor for BPSD. Nevertheless, left untreated, both BPSD and cognitive impairment have detrimental consequences on an individual’s quality of life. One important implication is the need to provide effective treatment to decrease or prevent cognitive decline. The Montessori Methods for Dementia (MMFD) may be the solution, as the research demonstrates that MMFD focuses on the resident’s strengths, abilities, and interests. Montessori provides the opportunity to engage in activities that they would have done in the past, and activities the individual can be successful in. Studies have shown that an individual with dementia is more likely to engage in a meaningful and individualized activity. The increase in
engagement levels has also lead to improvement in cognitive functioning. Due to the link between cognitive impairment and BPSD, increasing engagement should have a positive result on decreasing both factors. Montessori has also been shown to decrease boredom that resulted in a decrease of BPSD; however, in order for MMFD to be implemented in the facility culture change must occur. The development of the manual aids in the process of culture change, as it is able to provide information and education to staff members. Therefore, the manual was designed to address the resistance from staff members in the facility, as resistance is a barrier that the Life Enrichment Aide team has encountered.

Word Count: 4855
Chapter III: Method

Setting
This manual was developed to be used in the long-term care facility. The facility is a 132-bed residence for older adults and elderly who are under 24-hour supervision by an interdisciplinary team of health care workers. The facility has four units, known as neighborhoods, and contains one locked unit for individuals with severe dementia and challenging behaviours.

Client Population
This manual was designed to be for the residents in the long-term care facility, as every resident should be provided the opportunity to engage in meaningful activities that are individualized to meet their needs. However, benefits of the MMFD intervention may be accentuated for residents in the secured unit. Due to time constraints, the student researcher was unable to implement the manual with residents in the long-term care facility.

Facilitators
This manual was developed for use by the Life Enrichment Aide (LEA) team to provide information and education to other staff members in the long-term care facility. The research and guide in the manual was intended to allow staff members to understand the rationale for the use of Montessori with residents in the facility, and the process for developing the Montessori activities for a resident. The facilitators of the manual were intended to be all staff members in the facility; however, the manual is not limited to only staff members. Family members and volunteers of the long-term care facility can also implement Montessori for residents in the facility, and ultimately improve a resident’s quality of life. The overall purpose was to aid the LEA team in the process for getting staff members to engage residents in Montessori.

Design
The manual was developed by a fourth-year Bachelor of Honours in Behavioral Psychology student, as a necessary component in the advanced practicum course. The focus of the manual was to provide information on the development, rationale, and guidelines to the implementation of a Montessori Methods for Dementia (MMFD) intervention. Within the manual, a guide was created to provide a condensed and easier to read booklet to distribute to staff on Montessori. Moreover, the principles of Montessori for dementia are presented in the guide to introduce not only the topic Montessori, but also the practicality of the approach. The manual will also allow facilitators access to a principles checklist and indirect assessments to conduct during the development of individualized Montessori activities. The format was based on the assumption that the reader had no prior knowledge to Montessori, and progresses to the guide to implement Montessori.

With respect to the implementation of MMFD, it is unrealistic and impractical to expect caregivers to constantly provide their attention during the MMFD intervention. Therefore, the guide within the manual is more specific on how to incorporate MMFD into activities of daily living for each resident and a caregiver’s daily routine.
Consent
No formal consent was developed or required for the use of this manual, as the manual did not require collecting data or changing human behaviour. With this said, every long-term care facility, in Ontario, complies with the Long-Term Care Homes Act, which includes the Resident’s Bill of Rights. Therefore, it is assumed the facilitators are aware and adhere to the resident’s rights accordingly.

Procedure
The student researcher initially developed a Montessori Methods for Dementia intervention for two residents in the long-term care facility to decrease symptoms of depression. The research study aimed to allow staff to see direct benefits of Montessori in their own long-term care facility however, due to time constraints the LEA team requested a manual that provided the same effects. Moreover, a member specifically requested for the manual to include the rationale and practicality of Montessori to be used with the residents. From this, the student researcher gathered information from the literature on the use of Montessori with dementia. Due to the study involving the same topic of Montessori, the student researcher used the studies involved in the literature review of this report for the development of the manual. The manual begins with a preface that uses anecdotes to draw the reader into the topic, but more makes the reader question what can be done about the stories that were written. Following the preface, the introduction contains the purpose of the manual and a summary of what the manual contains. The rest of the manual then comprised of four sections. The first section, The Development of Montessori, was further divided into subsections on the development and rationale of the use of Montessori in the elderly and individuals with dementia population. The second section, The Rationale for Montessori, provided a literature review of the studies for the benefits of Montessori, and furthered supported the rationale for Montessori within the long-term care facility. Next, a guide to the implementation of MMFD was provided in section three. This section was a condensed, summarized, and easier to read guide of the first two sections of the manual. Section three was created to allow the LEA team easier access to disperse a condensed booklet to staff members throughout the facility. In order to develop section three, the student researcher used online sources and educational booklets from seminars on Montessori that were provide by the LEA team. The final section contains assessments and resources for the implementation of Montessori.

Structure
The original manual was kept in a coil binding, and contained a laminated colour cover. Each section was separated using dividers to allow for easy navigation. Furthermore, a copy of the guide was provided in a booklet for the LEA team to provide the opportunity to make copies. With this said, due to the need for every staff member to have a copy, the student researcher also provided an electronic copy to the LEA team.

Evaluation
Due to time constraints, the manual was not implemented; therefore, no evaluation could be completed to assess the direct effects on both the staff members’ perception and impact on the residents. With this said, A Satisfaction Survey (Appendix A) was developed to evaluate the social validity of the manual. The satisfaction survey was a 5-point rating scale comprised of 9 questions that were used to obtain feedback on the appearance, organization, contents, and
validity of the manual. Each staff member was to respond on a scale from a rating of 1 being *completely dissatisfied* to a rating of 5 being *completely satisfied*. Furthermore, the survey also allowed the LEA team feedback on the staff members’ perception and willingness to use Montessori. Lastly, feedback was obtained in the survey to allow for the future changes to and improvement of the manual. The student researcher provided copies of the survey to every member on the Life Enrichment Aide team to see if the manual met the needs of the LEA team.
Chapter IV: Results

Final Product

The final product that the student researcher developed was a Manual (Appendix B). The manual provided information on the implementation of Montessori Methods for Dementia (MMFD). This process involved background information on Montessori, the rationale for the development and implementation of MMFD, and guidelines to the development and use of MMFD. The manual was designed for the Life Enrichment Aide (LEA) team, specifically to introduce the topic of MMFD to staff members throughout the facility. In order to assist this goal, the student researcher designed the guidelines to act as a supplement of the manual. This allows a condensed version of the manual to be distributed to staff members throughout the facility.

After reviewing information on MMFD, it became apparent that MMFD uses techniques of Applied Behaviour Analysis (ABA); however, there is a gap in how to directly incorporate ABA into the MMFD intervention. Therefore, the student researcher incorporated ABA in the last section of manual, as Applied Behaviour Analysis (ABA) is able to assist in the development of MMFD being used to decelerate a challenging behaviour. ABA is also able to not only determine if the resident is engaging in the MMFD activity, but if the MMFD intervention is having an effect on the challenging behaviour.

Satisfaction Survey

The satisfaction survey was used to obtain both the social validity and feedback on the manual. Four surveys were completed and returned to the student researcher; however, the manual and survey was sent to eight staff members. Members of the Life Enrichment Aide team completed all the four surveys that were returned. This indicates a 50% response rate on the satisfaction survey. Table 1 shows the frequency of responses obtained from the satisfaction surveys. A table describing the raw data of the individual responses can be found in Appendix C.

<table>
<thead>
<tr>
<th>Item</th>
<th>Completely Dissatisfied</th>
<th>Somewhat Dissatisfied</th>
<th>Neutral</th>
<th>Somewhat Satisfied</th>
<th>Completely Satisfied</th>
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<tbody>
<tr>
<td>The manual was well organized (easy to navigate).</td>
<td>4</td>
<td></td>
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<tr>
<td>The manual was easy to understand.</td>
<td>4</td>
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</tr>
<tr>
<td>The manual meets its intended purpose.</td>
<td>4</td>
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<tr>
<td>The manual was visually appealing.</td>
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</tr>
<tr>
<td>The resources provided in the manual are relevant.</td>
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</tr>
<tr>
<td>The resources provided in the manual are useful.</td>
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<tr>
<td>The rationale of Montessori in long-term care is understood.</td>
<td>4</td>
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<tr>
<td>The manual provides guidelines that are easy to understand in order to develop a Montessori-based intervention for a resident.</td>
<td>4</td>
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</tr>
<tr>
<td>Overall, my satisfaction with the manual is:</td>
<td>4</td>
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The results of the surveys indicate that 100% of the staff members that completed the satisfaction survey were completely satisfied with the manual, as no staff members endorsed dissatisfaction with the manual. Staff members were also provided the option to give feedback and suggestions for the manual. The feedback received was positive and constructive, as 50% of the staff members provided positive comments on the manual; however, one staff member provided areas for improvement. The positive comments stated that the manual was very easy to follow, visually appealing, and provided thorough information on Montessori. The one staff member provided feedback on the grammar of the manual, as spelling mistakes and incomplete sentences were found; however, this may be due to the staff members receiving a rough draft of the manual.

Overall, the results indicate that the manual met its intended purpose for the Life Enrichment Aide team. This product has the ability to educate for the use of Montessori within a long-term care facility.

Changes to the Manual

Based on the comments and feedback described above, the manual required a limited amount of changes. The minor changes made regarded grammatical errors, sentence structure, and typographical errors. These changes improved the presentation of the manual and hopefully facilitated its comprehension by future users.
Chapter V: Discussion

Summary

This thesis attempted to begin the onset of a *culture change* in a long-term care facility by developing a manual that facilitated education on the practicality and use of MMFD for the geriatric population. The research has indicated that dementia is correlated with Behavioral and Psychological Symptoms of Dementia (BPSD) and cognitive decline. An unfortunate truth is that there is currently no cure for this disease, but MMFD has the potential to decrease the BPSD and slow the progression of the disease.

The Life Enrichment Aide (LEA) team has made prior attempts to put the MMFD approach into practice; however, the LEA has found it difficult without the support of other staff members within the facility. The purpose of this project was to provide the LEA team with the background information, rationale, and guidelines to develop a MMFD intervention. The manual, *Making it Meaningful: Montessori Methods for Dementia*, was developed to meet this need. It was hypothesized that the manual would provide staff members with education on the use of Montessori, and therefore increase their understanding of the practicality and feasibility of the intervention. Consequently, the staff members would have a better attitude towards the intervention, as this was a barrier the LEA team was having difficulties addressing. This allows for a culture change within the facility towards using MMFD. Due to time constraints, this hypothesis could not be tested directly; however, a Satisfaction Survey was developed to obtain feedback on the manual from staff members within the facility. Overall, each response from the surveys signified that the LEA team was highly satisfied with the manual. This indicated that the manual was able to demonstrate social validity, as no LEA staff member expressed any concerns or dissatisfaction with the manual.

Strengths

A major strength of this project is that the manual provides the LEA team with background information, rationale, guidelines, and resources for the development of a MMFD intervention. Research has found that residents in long-term care facilities often do not participate or engage in the activities offered at the facility (Mansbach, Mace, Clark, & Firth, 2016; James, Wilson, Barnes, & Bennett, 2011). This has been correlated with an increase in challenging behaviours and accelerated loss of cognitive impairment (Dillon et al., 2013; Savva et al., 2009). Challenging behaviours have been used interchangeably with BPSD, as majority of BPSD accounts for most frequent behaviour concerns. (Kales, Gitlin, & Lyketos, 2015). These BPSD are most frequently treated with pharmacological interventions; however, the literature indicates that the use of medications in the elderly population pose many pharmacokinetic and pharmacodynamic risks (Kales et al., 2015; Potter & Steffens, 2007). Non-pharmacological treatments pose fewer side effects and have promising potential for the management of challenging behaviours in this population while increasing a resident’s quality of life (Kales et al., 2015), and Montessori is no exception. Moreover, the guidelines found in section III of the manual are to be distributed to staff members throughout the facility. The guidelines are a summarized and condensed version of the entire manual, but are more tailored to show the practicality of the approach. A further strength was that the manual provided a variety of resources for developing an MMFD intervention to decrease a challenging behaviour.
This included providing education and tools from Applied Behaviour Analysis for observing and recording behaviour. This would allow the agency to conduct a MMFD intervention to further strengthen the validity for the use of Montessori within the facility. Due to providing both a hard and electronic copy of the manual, the guidelines, tools, and resources can be easily accessed and distributed.

**Limitations**

Despite the strengths indicated above, there are several limitations that must be taken into account. First, due to time constraints the manual could not be implemented. This means it is not known whether the manual is effective in creating a culture change with the use of Montessori in the facility or in changing client behaviour or BPSD. Secondly, it is unknown if guidelines are clear enough to allow staff members to develop an appropriate MMFD intervention. Furthermore, there is also a lack of empirical research or accessible literature on the guidelines for developing a MMFD intervention, as the use of Montessori is typically offered through training workshops. With this said, the student researcher has not been trained on the use of Montessori; however, she was able to access some resources that the LEA staff obtained at training workshops. This may impact the content validity of the manual, as the manual is not completely comprised from peer-reviewed sources. The external validity of the manual was also not assessed, as only the LEA team completed the satisfaction surveys. With this said, only 50% of the LEA team provided feedback. As a consequence, it cannot be concluded that all staff members can use the manual to develop a MMFD intervention. This is another limitation, as the guidelines provided to the staff do not provide the adequate or equivalent training compared to Montessori workshops.

**Multilevel Challenges**

**Client Level.** Many individuals in a long-term care facility are diagnosed with dementia; however, the symptoms and progression of dementia varies from one individual to another. With this said, the most common symptoms of dementia include memory loss, communication difficulties, confusion, frequent changes in mood, functional decline, and apathy. These symptoms may impact a lot of factors that are necessary for a Montessori intervention to be effective. First, motivating an individual with dementia may be difficult, as the loss of interest in participating in activities is a common symptom that accompanies dementia. Second, the interaction that one has while implementing Montessori with an individual with dementia is crucial. The behaviours and cognitive decline, that is a hallmark of dementia, may impact this interaction. For example, the inability to communicate concisely imposes challenges for the resident to express his or her wants. Therefore, it may be difficult for the resident to provide feedback on the Montessori activity, express which activity he or she would like to participate in, or challenging behaviours may increase due to frustration the resident is unable to communicate. Moreover caregivers for the resident with dementia may be use to completing tasks for the resident, and as a result complete the Montessori task or activity for the individual with dementia. This hinders the opportunity for the possible benefits that Montessori has to offer.
Program Level. There are numerous challenges that arise when it comes to implementing a non-pharmacological approach in a long-term care facility, but more an approach that tailors individualized activities to each resident. There is a limited amount of LEA team staff members in a long-term care facility. Therefore, majority of long-term care facilities tend to have the residents participating in group activities, but most residents are not actively engaging in these activities. With this being said, having one-on-one Montessori activities makes it difficult to have enough staff available to implement these activities. Moreover some residents may need to be monitored during the entire Montessori activity. This imposes the challenge of having enough staff available to support the resident. The inability to spend time may also impose the challenge to implement a Montessori intervention in order to see the true validity of the activities, as observing and recording behaviour play a critical role in determining the efficacy of an intervention.

Organizational Level. Within the long-term care facility, there is an interdisciplinary team working towards providing the best care to each resident. Each member of the team has different roles and responsibilities. For example, a PSW is used to meeting the primary needs of the resident, and often view activities not part of a resident’s activity of daily living. This makes implementing activities not a primary concern for the PSW, as they view this as a responsibility for the recreation team. Therefore, it is important to change the view of Montessori activities within the organization. Furthermore, staff members have mentioned the lack of time to implement activities with each resident; however, this may be due to lack of knowledge on the delivery of each a Montessori program and the implementation of activities. With this said, the first step to innovation is education.

Societal Level. In today’s society, the stigma surrounding dementia has been an ongoing and intractable issue. Many people tend to view an individual with dementia as “completely gone,” or “no longer themselves, and more heart-rending “the living dead.” It has been noted that when family members hear the diagnoses of dementia, they react as if the person has passed away. Moreover, family members, along with society, begin to see the disease and leave the individual behind. When individuals no longer see the person behind the disease then assumptions that the person is incapable of doing anything begins to take over. Rather, society needs to see the person instead of the label. It is time to focus on what the person is capable of doing, and MMFD has the ability to change society’s perspective.

Contributions to the Behavioural Psychology Field

The development of this manual contributes to the field of behavioural psychology by providing literature and guidelines on the development of relatively novel non-pharmacological approach for individual with dementia. The field of Behavioural Psychology is interested in studying and changing overt behaviours (Mayer, Sulzer-Azaroff, & Wallace, 2014). Incorporating Applied Behavioural Analysis would allow one to see the functional relationship between increasing the resident’s engagement with MMFD intervention on changing an overt behaviour that the resident is engaging in. MMFD also has the ability to increase a resident’s overall quality of life, a goal that every professional strives to complete in the field of behavioural psychology.
Recommendations for Future Research

As stated above, the student research was unable to directly implement the manual due to time constraints. Moreover, the student research did not obtain feedback from other staff members other than some of the individuals from the LEA team. Therefore, it is highly recommended that the product be used in a pilot study to test the validity of the manual, by determining if staff members can use it to develop an effective MMFD intervention. Such a study would use pre-post and daily data collection in order to formally assess change in the clients’ BPSD. This would also allow staff members the opportunity to directly see the positive effects that Montessori has the potential to offer. It is also suggested to determine the perceptions of staff member’s in the facility on the use of Montessori, and the factors that will allow the LEA team to successfully implement the MMFD. Additionally, it is recommended that future research focuses on using Montessori for residents with dementia who do not engage in challenging behaviours and residents with dementia who do engage in challenging behaviours to see if it can both a preventative measure and intervention. More research will allow the opportunity to see the benefits on cognitive functioning and decelerating the progression of the disease. The characteristics of both the residents with dementia and the environment of a long-term care facility create challenges to conducting research. Consequently, this population is frequently understudied.

Overall Thesis Word Count: 9721
Literature Review Word Count: 4855
References


Appendix A
Satisfaction Survey

Dear Agency Staff Members,
The following questions on this survey are intended to gather your feedback on the Making it Meaningful: A Manual on Montessori Methods for Dementia. I would appreciate it if you could please take a few minutes to complete this survey, as your answers will be used to improve the quality of the manual. The information you provide will remain confidential, and therefore your name is not necessary or required to complete the survey. I am asking you to rate your experience with the manual by circling your level of satisfaction. Thank you for your time and feedback.

Sincerely,
Hailee Carrigg, Placement Student.

Directions:
Please circle the number that accurately reflects your satisfaction with the manual.
1: Completely Dissatisfied, 2: Somewhat Dissatisfied, 3: Neutral, 4: Somewhat Satisfied, 5: Completely Satisfied

<table>
<thead>
<tr>
<th></th>
<th>Completely Dissatisfied (1)</th>
<th>Somewhat Dissatisfied (2)</th>
<th>Neutral (3)</th>
<th>Somewhat Satisfied (4)</th>
<th>Completely Satisfied (5)</th>
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<td>The manual was well organized (easy to navigate).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The manual was easy to understand.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The manual meets its intended purpose.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The manual was visually appealing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The resources provided in the manual are relevant.</td>
<td>1</td>
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</tr>
<tr>
<td>The resources provided in the manual are useful.</td>
<td>1</td>
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<tr>
<td>The rationale of Montessori in long-term care is understood</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tr>
<tr>
<td>The manual provides guidelines that are easy to understand to develop a Montessori-based intervention for a resident.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Overall, my satisfaction with the manual is:</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Check all that apply:
1. Improvements should be made on these sections of the manual:
   - [ ] Introduction
   - [ ] The Development of Montessori Methods for Dementia
   - [ ] Literature on the Benefits of Montessori
   - [ ] Guidelines
   - [ ] Resources and Examples
2. I see myself able to implement a Montessori Method for Dementia activity for a resident
   □ Yes
   □ No

3. I believe Montessori Methods for Dementia activities should occur in the facility
   □ Yes
   □ No

4. I would recommend this manual to other staff in long-term care facilities
   □ Yes
   □ No

Optional:
Please use the following space to provide your comments and/or suggestions that could improve your satisfaction of this manual.

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Making it Meaningful: Montessori Methods for Dementia

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2016

“The greatest source of discouragement is the conviction that one is unable to do something” - Maria Montessori
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Preface

Mary was a nurse for 34 years, spending the majority of her time helping those in need. Her caregiving did not stop there, as she was actively involved in her community and caring for her family of four. Around the age of 72 Mary was diagnosed with Alzheimer’s disease; she now spends her time being cared for by individuals who are a younger version of herself. Her family claims that “Mary is not herself anymore,” and “she cannot take care of her own needs.” Mary now spends her day staying in her room and sitting in her chair. Occasionally, Mary will read and write.

Jack is 78 years old living in a long-term care home. Jack was a plumber who owned his own business for years on end. His wife says, “Jack could fix anything,” and “solve any problems.” Not only was Jack a handyman, but Jack was a caring father. Jack’s family witnessed him beginning to forget things. As the years went on and his symptoms began to worsen; Jack became confused and paranoid. The family tried everything while keeping the difficulties to themselves. Over time, the family felt they could no longer provide Jack with the necessary care needed. Jack is now residing in a long-term care home and has been diagnosed with Alzheimer’s disease. He is no longer able to walk, and has a hard time communicating his thoughts.

Mabel used to work in long-term care as a house keeper. She spent her days cleaning tables, washing floors, and folding laundry. Mabel has now been living in a long-term care home for 6 years. She spends her day wandering around the unit looking at everything. When she walks by papers that are out of place, she will organize them to make them look neat. Her ability to communicate changes from day to day; sometimes she is able to construct full sentences, while other days she just mumbles random phrases. Occasionally, Mable will go to some activities but will eventually get up and wander back to her unit. On her way back, she will stop at a laundry cart and begin to fold the towels. Mabel demonstrates that her past remains in her memory.

Eileen is a new resident in a long-term care home. For years, she has had the help of a personal support worker visiting and taking care of her at her own home. After a bad fall, Eileen’s family decided it was time for a care home. Eileen has been adjusting to the new place, but spends her day yelling out for help while being confused. She is used to always having familiar faces by her side, and doing things she loves with those individuals. The facility offers activities, but Eileen does not have the desire to engage in them. Eileen then continues to spend her day yelling out for help.

These are stories that many family members, friends, and long-term care staff can relate to; loved ones losing the sense of meaningfulness that they once had.

“There is a difference between success and purposefulness. Success is what happens to you. Purpose is what happens through you. Meaningfulness is what you give away to others.”

- Bob DeMarco, Alzheimer's Reading Room
In today’s society, cognitive impairments and dementia are one of the leading health concerns. With the increase in the aging population, it is estimated that by 2025, 48 million people will be diagnosed with dementia; that is an average of one new story losing meaningfulness every seven seconds.¹

Dementia encompasses a variety of neurological disorders that cause a loss of memory and overall cognitive functioning. Behavioural and psychological symptoms of dementia (BPSD) are a natural part of the dementia. Some of the most common BPSD include physical and verbal aggression, ambulation, irritability, agitation, anxiety, and depression. Furthermore, the more severe BPSD has been correlated to a rapid decrease in cognitive functioning. The decline in cognitive functioning may result in an individual not being able to participate in activities of daily living. A decrease in activities of daily living have a negative outcome on the individual with dementia, as it has been correlated to rapid disease progression. Consequently, the individual with dementia will experience a decrease quality of life. Dementia and the BPSD have been associated with an increase in health care costs, institutionalization into a long-term care facility, and barriers to an individual’s quality of life. In fact, BPSD have been found to be one of the leading causes for an individual to enter a long-term care facility. These consequences increase the burden not only on the caregivers, but also the individual with dementia. Thus, effective management and treatment of symptoms of depression is a critical to prevent the adverse outcomes.

Both pharmacological and non-pharmacological interventions are being utilized to manage and decrease BPSD; however, there is an increased risk of pharmacological treatments within the elderly population. Multiple medications are often prescribed to residents in long-term care, and this results in an increased likelihood for drug interactions. Lastly, studies have indicated that medications in the elderly pose the potential for adverse side effects. Alternative approaches should be considered before relying on a pharmacological approach to manage BPSD.

Currently, there is not a set protocol that must be followed for managing and decreasing BPSD; however, there is literature regarding the need and increase in non-pharmacological interventions. Changes have been occurring in long-term care facilities across the world and the caregiving community. The realization that individuals with cognitive impairments need to be encouraged to remain engaged in meaningful activities has created the novelty program of Montessori Methods for Dementia.

¹ Ferri et al. 2005
Introduction

Purpose of the Manual
The purpose of this manual is to provide facilitators with knowledge and skills to implement a Montessori Methods for Dementia intervention (MMFD) with residents in a long-term care facility. This manual is a user-friendly guide that provides staff with not only information on the novelty approach, but the rationale behind the intervention.

Summary of Contents
This manual was divided into four sections. Section I provides information on the development and rationale on MMFD, as this leads into section II that provides current studies and results of MMFD interventions in the literature. Guidelines to implementing a MMFD intervention is provided in section III. Lastly, section IV of the manual provides resources on the implementation of MMFD.

Use of the Manual
This manual was designed for all staff members and volunteers in the long-term care facility in order to develop a MMFD intervention for each resident. Specialized training is not a fundamental requirement, as the information within the manual will provide further knowledge for the implementation of a MMFD intervention.
Section I: The Development of Montessori Methods for Dementia

What is Montessori?

Montessori Methods for Dementia derive from the principles created by Maria Montessori. Montessori initially developed the Montessori activities to help children with disabilities learn skills and concepts. Furthermore, Montessori wanted to accelerate both engagement and independence in children who exhibited behavioural problems. Montessori believed that the activities available to an individual reflect that individual’s quality of life. This was accomplished by creating a prepared environment. This includes individualizing the activities in the environment to match a child’s personality traits and skills, and providing a variety of activities to choose form to engage in. A substantial amount of time and effort goes into creating the Montessori prepared environment to meet the needs of every individual. For example, in a Montessori classroom one child may be engaging in sorting buttons to match the colours on the sheet, and another child may be composing words with large alphabetical letters to match the word on the paper. Overall, the environment is prepared to allow the children to work on activities independently of their choice.

Montessori Philosophy

The foundation of the philosophy for Montessori is to treat each child with respect and dignity as a whole individual. The child is viewed as whole by making his or her emotional, spiritual, physical, social, and cognitive need highly important in the approach. This is carried out by allowing the child to be as independent as possible, and provide the opportunity for self-discovery. Therefore the Montessori approach has an environment that is prepared with materials and activities that not only the child is interested in, but allocates for the child to use and develop his or her senses. A child would learn by manipulating the materials and engaging in the activities. Together, Montessori’s goal is to foster a child’s competence, independence, and responsibility.

How does Montessori Apply to Dementia?

Montessori’s philosophy was geared at helping children learn through discovery. Discovery was encouraged by allowing the children to follow what they were interested in. Dr. David Camp then found that Montessori’s philosophy could work at both ends of the spectrum\(^3\). More importantly, Montessori can help individuals who have cognitive impairment. Camp realized

\(^2\) Maria Montessori. Image found of Google Images with permission to use, share, and adapt; on January 24, 2017 from https://commons.wikimedia.org/wiki/File:Prof_Maria_Montessori.jpg

\(^3\) Camp, 2010
majority of the principles of Montessori met the criteria for best care practice for individuals with dementia.

Individuals with dementia need structure, order in the environment, and activities. This statement draws a direct comparison to Maria Montessori’s thoughts about the children, and therefore the Montessori activities would involve structure and order for the children to focus their attention on. Structure and order meant that the environment was set up in a way to allow for easy accessibility to these activities. The activities would provide a high opportunity for success, provide immediate feedback, and allow for repetition. The principles around Montessori activities would involve breaking down tasks into smaller steps, advancing the task from simple to complex, and guided repetition.

Memory in Dementia

It is highly known that Dementia affects one’s memory⁴; however, it has been noted that not all forms of memory are impacted during the disease. With this said, the decrease in explicit memory is one of the first symptoms that indicates the onset of Alzheimer’s Disease (AD). Explicit memory is the ability to recognize or recall information. For example, being able to remember the names of items or remembering someone’s name. Explicit memory is a part of long-term memory, and can impair an individual’s ability to create new memories. Implicit memory is also a type of long-term memory; however, this is the ability for an individual to complete a task. While the explicit memory requires conscious thinking, the implicit memory does not. Research has found that implicit memory is often not impaired by dementia. Montessori described a phenomenon in children known as unconscious learning, as she said the absorbent mind in children allow them to learn basic human functions and lead to optimal development. Likewise, individuals with dementia have the ability to learn through implicit memory. Therefore, Montessori for dementia focuses on the “how” part of the memory, by having activities rely more on task procedure compared to recalling. Dr. Camp said this is done by focusing on the capabilities, interests, and past of the individual. With this said, the task should be challenging, but set up in a way that allows for the individual to be successful. This goes with the distinctive feature of Montessori, which is the provision of numerous activities in order to facilitate learning through action.

Cognitive Decline in Dementia

A slight decline in cognitive abilities is a normal part of aging; however, a misconception is that nothing can be done to prevent or slow the progression.

Dementia is not normal part of the aging process, but with the prevalence of dementia being on the rise it may become a new normal part of the process. Dementia is highly known for the impact it has on one’s cognitive

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⁴ Machado et al. 2009
⁵ Image found on Google Images and used with permission to use; on January 24, 2017 from https://pixabay.com/en/brain-business-credit-intelligence-1294854/
abilities, as the disease affects one’s cognitive domains. These cognitive domains include: learning, memory, problem solving, attention span, motor functioning, and communication. The decline in cognitive abilities interferes with one’s daily functioning and ability to remain independent. As the progression of cognitive decline continues, it can become challenging for the individual to complete every day tasks and live on his or her own. The individual who once had an active role moves to a passive role, and as a consequence loses his or her autonomy. The losses experienced in old age and dementia have been associated with the development of depression. Depression is also one of the behavioural and psychological symptoms of dementia (BPSD). The development of BPSD is one of the main reasons an individual with dementia enters a long-term care facility. Left untreated, depression and other BPSD may exacerbate cognitive decline and compromise the overall quality of life of the residents. In return, the cognitive decline may continue to increase the severity of BPSD; resulting in a vicious cycle. The focus should then be to enhance and maintain one’s cognitive functioning, by preventing the cognitive decline. Changes have been occurring in long-term care facilities to address this concern. One program that can address this change is Montessori Method for Dementia.

Engagement and Dementia

As stated above, cognitive decline and dementia impact an individual’s daily functioning, as he or she loses the ability to provide care for him or herself; however, a major risk factor to further cognitive decline is loss of engagement. Conditions in long-term care facilities have been found to further increase the likelihood of an individual to decline in his or her everyday functioning. For example, an individual who still has the capability to iron his or her clothes is not allowed due safety concerns. Rather, staff members carry out this task in the facility. Another example is that an individual has the ability to walk; however, staff members have the resident use a wheelchair for convenience.

In order to address this concern, long-term care facilities and adult day cares are creating activities to foster social and active engagement. With this said, studies have indicated that residents spend majority of time not engaged in meaningful activity; many do not even leave their room.

Montessori for Dementia

With the realization that Montessori can be adapted for an older individual with dementia, Dr. Camp began to create an approach to use Montessori for individuals with Alzheimer’s disease. His approach became known as the Montessori Programing for Dementia (MPD). MPD involves a numerous amount of principles outlined in Montessori including: breakdown of tasks from simple to complex, guided repetition of tasks, the providing of immediate feedback, and errorless learning. Errorless learning involves prompting the correct response, by setting up the activity that would promote success. MPD activities would involve the use of implicit memory and provide external cues for explicit memory. Dr. Camp, along with other researchers, conducted studies to determine and demonstrate the benefits of this method throughout the elderly population. These studies are summarized in the following section.
Section II: Benefits of Montessori for Dementia

What are the benefits of Montessori for residents with dementia?

The Montessori Methods for Dementia has been proven to be effective in the geriatric population. There have been a numerous amounts of studies conducted both in an adult daycare and within long-term care facilities. The purpose of this section is to provide a literature on the research by summarizing the studies that were reviewed. This allows the opportunity to see the rationale behind the approach, as it has positive benefits on the participants involved in each study.

BPSD in Long-Term Care Facilities

A high percentage of individuals diagnosed with dementia will experience behavioural and psychological symptoms of dementia (BPSD) during the duration of the disease. A meta-analysis found that approximately 76% of residents in a long-term care facility (LTCF) engage in BPSD. The most common BPSD include apathy, verbal and physical aggression, agitation, and depression. Despite the frequency indicating that BPSD is a natural part of dementia, the consequences of BPSD are detrimental. The development of BPSD contributes to early entry into a LTCF, as they are a burden on caregivers. This may be due to the symptoms of BPSD resulting in challenging behaviours, as challenging behaviours is interchangeably used with BPSD. Furthermore, this may be due to the association of BPSD and an increase in cognitive decline, as the cognitive decline leads to the impairment in participating in activities of daily living. A decrease in activities of daily living have a negative outcome on the individual with dementia, as it has been correlated to rapid disease progression. Consequently, the individual with dementia will experience a decrease in quality of life.

Relationship of BPSD and Cognitive Impairment

Numerous studies have indicated that the development of BPSD precedes cognitive impairment. With this said, cognitive impairment also precedes the development of BPSD. Many studies indicated that cognitive impairment increases one’s risk to developing dementia. Most of these studies have found that individuals with Mild Cognitive Impairment (MCI) experience symptoms of depression. Depression is one of the most frequent individual symptoms of BPSD. There is an abundance of literature that states that depression is a risk factor, prodrome, and a consequence for dementia. A longitudinal study found that six out of 24 patients diagnosed with major depression at an earlier stage in life developed organic dementia. The authors concluded that early onset of depression may contribute to the risk for developing dementia. In comparison, another longitudinal study found that depression symptoms were present following the onset of dementia, as 16.42% of subjects with dementia had symptoms of depression compared to the 3.2% of subjects without dementia displayed symptoms of depression. The symptoms of depression may also be a psychological response to the cognitive impairment associated with dementia. Nevertheless, it is evident that there is a relationship between cognitive impairment and BPSD, and both play an integral part in dementia. Therefore, effective management and treatment of BPSD, like depression, is a critical to prevent the adverse outcomes.
Pharmacological Treatment of BPSD

The treatment of BPSD for individuals with dementia has involved administration of antipsychotics, antidepressants, anxiolytics, NDMA receptor modulators, and anticonvulsants; however, the efficacy of these medications is weak. The use of all these medications in the elderly requires specific considerations. Medications can impose pharmacokinetic challenges due to old age. For example, decreased excretion of drugs in one of the major concerns in the elderly. Furthermore many individuals with dementia, in long-term care, experience other medical conditions. This increases the risk of drug-to-drug interactions, and adverse side effects. The pharmacological approach has been extensively researched; however, the contrary and inconclusive results remain a concern for relying on pharmaceuticals. Therefore, non-pharmacological interventions are highlighted to use first.

Non-Pharmacological Treatment of BPSD

There are a numerous amount of evidenced-based non-pharmacological approaches for the treatment of BPSD. A systematic review found the most common non-pharmacological treatments included behavioural therapy, music therapy, aromatherapy, reminiscence therapy, simulated presence therapy, education to caregivers, brief psychodynamic therapy, and occupational therapy. Despite the variety of evidenced-based interventions, there is a need for interventions to be tailored to each individual. A critical component to an individualize treatment is modifying the intervention to meet the needs and circumstances of each resident. For example, a study created a tailored activity program (TAP) for each resident with dementia in long-term care facilities. Each intervention was individualized based off the resident’s previous occupation, hobbies, habits, and capabilities. The authors found that TAP was able to enhance skills, decrease behavioural symptoms, increased engagement, and increased pleasure during the TAP activities. Many studies have also indicated a need for residents to engage in meaningful activity. The TAP program has direct comparisons to a relatively novelty approach for individuals with dementia that can address the need for meaningful activities, Montessori Methods for Dementia (MMFD).

Montessori Methods for Dementia

The Montessori Methods for Dementia (MMFD) intervention is derived from the Montessori system of education created by Dr. Maria Montessori. Maria Montessori’s philosophy was geared at helping children learn through discovery, by encouraging them to follow what they were interested in. Dr. David Camp then found that Montessori’s philosophy could work at both ends of the spectrum. It has been found that individuals with dementia need structure, order in the environment, and activities. Structure and order meant that the environment was set up in a way to allow for easy accessibility to these activities. The activities would provide a high opportunity for success, provide immediate feedback, and allow for repetition. The principles around Montessori activities would involve breaking down tasks into smaller steps, advancing the task from simple to complex, and guided repetition. The distinctive feature of Montessori is that a numerous amount of activities are created to facilitate learning through action. MMFD provides a resident an opportunity to engage in an activity that is meaningful to them, and is designed to meet individual differences. A Montessori activity provides the resident with an
opportunity to demonstrate their competence. Therefore, the foundation of MMFD is to use the skills and strengths that the resident still posses, and a past occupation or hobby. Recent studies have indicated that MMFD has been successful in the geriatric population with dementia by increasing engagement and decreasing challenging behaviours.

**MMFD on Engagement Levels**

The cognitive decline in depression and dementia affect an individual’s ability to communicate, and consequently results in low levels of engagement socially and within the community. This decreases an individual’s quality of life. In order to address this concern, LTCFs and adult day cares are creating activities to foster social and active engagement. One intervention that can address this barrier to quality of life is MMFD.

Implementing activities that are meaningful to an individual with dementia can reduce boredom and create a positive affect. A meta-analysis found that among 1210 LTCFs, approximately 40% of individuals with dementia did not participate in the activities offered within the facility. Inactivity leads to boredom and a lower quality of life. Prolonged lack of engagement has shown to lead to cognitive decline. Cognitive decline has been shown to accelerate the prognosis of dementia, and the BPSD. Fortunately, several studies have shown that Montessori is able to increase levels of engagement, and therefore prevent cognitive decline.

Judge et al. (2000) conducted a study to determine the levels of engagement of individuals in adult day care centers during Montessori activities and regular day care activities. Over the nine-month study, 19 individuals with dementia were randomly assigned to the control group or treatment group. The control group consisted of taking part in regular activities offered at the day care, and the treatment group involved participating in Montessori-based activities. Regular activities included music programs, art therapy, movies, social group events, and exercise groups. Montessori-based activities included individualized activities, memory bingo, and intergenerational programming. In order to determine levels of engagement the authors measured constructive engagement, passive engagement, non-engagement, and self-engagement. Overall, the authors found that the individuals in the treatment group displayed higher levels of engagement compared to individuals in the control group. Therefore, Montessori-based activities are more effective in increasing engagement levels for individuals with dementia.

The same authors as above then furthered their research in a LTCF. The study included 16 residents with advanced dementia. Each resident had the opportunity to engage in regular activities on the unit in the long-term care facility and two types of Montessori-based programs. The regular activities included story telling, current events, trivia, exercise groups, movies, music programs that allowed each resident to play an instrument. The facility also provided individualized activities, as they provided materials to each resident at a table. The authors then used two different Montessori-based programs: individualized and group activities. The individualized activities involved taking materials that are in the long-term care facility and creating an activity that is meaningful to each resident. The group activities consisted of memory bingo and group sorting where the residents would work together to sort pictures into the two categories presented. The results of the study indicated that passive engagement levels decreased during all Montessori activities.
Another study examined the use of visitors implementing Montessori-based activities during their visits. The study involved nine visitors who were each paired with one resident with dementia. Each Montessori-based activity was individualized to each resident. The authors compared the amount of time the resident was engaged in the Montessori activity to the length of time they spent in other activities. Overall, the results showed that the resident was 40% more engaged during the Montessori activity compared to other activities. Furthermore, each visitor observed and stated the positive effect on the resident throughout the duration of the activity.

In contrast to the other studies above, Vance and Porter (2000) evaluated the engagement of Montessori-based activities on the cognitive functioning of 15 individuals with Alzheimer’s disease at a day care facility. The authors used 22 cognitive psychometric tests in order to determine the cognitive effect of engagement with Montessori compared to regular activities. Each participant received three months of Montessori-based activities, and three months of regular activities offered at the day care. Overall, the study found that Montessori had a positive outcome on cognitions in the participants. Using the abilities the individual with dementia still has may not only slow the progression of cognitive decline, but may enhance the individual’s functioning.

**MMFD on Decreasing Challenging Behaviours**

As stated previously, individuals with dementia in long-term care homes are not likely to engage in activities offered throughout the facility. Not participating in activities often leads to boredom and accelerates the loss of cognitive abilities. As a result, challenging behaviours stem from this boredom. The increase in engagement with Montessori-based activities would allow for a decrease in boredom, and therefore decrease the BPSD. When a resident is engaging with a meaningful Montessori activity, he or she will not be simultaneously engaging in the challenging behaviours.

Lin et al. (2009) evaluated the use of acupressure in conjunction with Montessori-based activities to decrease agitated behaviors associated with dementia. The study involved 133 residents who had a diagnosis of dementia and challenging behaviours. The 133 residents were randomized into three groups that received the same treatment, but in a different order. All three groups would receive individualized Montessori-based activities, acupressure, and a control condition that consisted of the residents following their own typical routine and activities. Overall, this study demonstrated that Montessori is capable of decreasing agitated behaviours while producing positive emotions compared to typical activities. This may be related to the fact Montessori-based activities are individualized and therefore are meaningful to the resident.

Wu and Lin (2013) conducted a study to determine if Spaced Retrieval (SR) and Montessori-based activities would improve nutritional status and decrease symptoms of depression in residents with dementia that were residing in Veteran homes. The results of the study conducted by Wu and Lin demonstrated that combination of SR and Montessori resulted in an increase on the individuals Body Mass Index, as eating abilities increased. The authors also noted that a decrease in depressive symptoms occurred both during the intervention and after a one-month follow up. The outcome of both these studies illustrate that Montessori activities have the potential of increasing independence, as the residents with dementia are able to be self-sufficient.
in a life skill. Providing the opportunity for individual’s independence that may also foster one’s quality of life, and therefore decrease the BPSD.

“The Montessori Way provides an outlet for meeting the needs of a person with dementia in your care through activities that expose the abilities of the person living with dementia.” - Kate Grainger
References for Literature Review


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Section III: A Guide to the Implementation of Montessori Methods for Dementia

Making it Meaningful:
A Guide to the Implementation of a Montessori Method for Dementia

This Guideline is to introduce you to the novelty approach of Montessori within the geriatric population.

Developed by Hailee Carrigg

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December 2016.

This guide was made from the use of peer reviewed articles, online sources, and handouts from educational seminars on Montessori for Dementia.

All images used were retrieved from https://pixabay.com/, with permission to adapt and use them for commercial purposes without attributing the original author or source; however, permission was still obtained from each author.
DISCLAIMER
This guide is intended to provide information for educational purpose only. It is not to replace or interfere with any policies within the organization or recommendations and instructions from a Behavioural Therapist or any other professional healthcare practitioner. This guideline is to provide education on the practically of Montessori. This guide is based off the principles on Montessori for Dementia, as there are no empirical frameworks on how to implement this approach. The student has conducted extensive research on the topic; however, the student is not trained on this approach. Contact the lead LEA or responsive behaviour team if you have any questions or concerns.
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INTRODUCTION

The Montessori Methods for Dementia is a novelty approach that has been introduced into long-term care facilities across the world. This approach is based off the philosophy from Dr. Maria Montessori, as she first used this approach to foster independence and increase engagement in children who exhibited behavioural problems. Montessori’s philosophy was geared at helping children learn through discovery, by encouraging them to follow what they were interested in. Dr. David Camp then found that Montessori’s philosophy could work at both ends of the spectrum. More importantly, Montessori can help individuals who have cognitive impairment. Camp realized majority of the principles of Montessori met the criteria for best care practice for individuals with dementia.

What is Montessori?
There is not an exact definition of what exactly Montessori is, but rather the principles and philosophy are more of an approach than a clear-cut intervention. Montessori focuses on supporting the residents, by increasing self-esteem. Montessori believed that the activities available to an individual reflect that individual’s quality of life. This was accomplished by creating a prepared environment.

What is the Prepared Environment?
The prepared environment is an environment that includes:

- Activities that provide the opportunity for learning, discovery, and stimulation of the senses.
- Encouragement of fostering independence
- Provides choices
- Activities that are individualized to each person
- Provides support and order
What is the Montessori Philosophy?
Going back to the question of “What is Montessori?” it is more of a philosophy that Maria Montessori developed. First, the foundation is to treat every person with respect and dignity. Second, provide the opportunity for the individual to be as independent as possible. This was known as “following the child” in the Montessori approach. Third, respect individual differences, as no one is the same.

How does Montessori Apply to Dementia?
With everything that has been said above, the basic principles and philosophy of Montessori can be extended into the long-term care facilities. The Montessori approach creates individual activities for each person that fosters independence and engagement. Similarly, this approach with the geriatric population focuses on finding the person behind the dementia by creating activities that have meaning and purpose to that person. These activities can be based on the individual’s past occupation, hobbies, or interests. The Montessori approach also allows the resident to engage his or her senses, and therefore reconnects the person to the environment around them. The approach also provides the opportunity for the resident to increase his or her independence and self-esteem by providing activities that he or she used to engage in. Of course support is offered to help foster the independence, but this involves more demonstrating and encouraging. This was another part of the philosophy of “Help me do it myself.”

Key Points
• Focus on the resident not their disease.
• Get to know a resident’s interests, abilities, needs, current and past hobbies, and past occupations.
• Create activities that focus on what you learn about the resident.
• Adapt the activities to meet the needs of each resident.
• Engage the resident.
• Provide a purpose.
• Foster independence.
• MAKE IT MEANINGFUL.
What are the benefits of Montessori?
There has been a numerous amount of benefits that have made headways into the incorporation of Montessori in long-term care facilities, but before knowing the benefits it is important to understand about the effects of dementia.

Dementia does not affect every person in the same manner; however, there are common changes that occur due to the onset of the disease. Most people understand that the clinical hallmark of dementia is a decline in cognitive functioning. For majority of individuals diagnosed with dementia this is noticed by the impairment in memory, but what people may not understand is that different types of memory are affected. In dementia, an individual preserves some of his or her memory while some forms of memory are impaired. The different forms of memory are short-term and long-term; however, long-term memory can be further divided into Implicit and Explicit. Explicit memory is the ability to recall and recognize information that has been previously processed. This would be being able to state a fact, remembering a specific event, recalling who came to that specific event, etc. This type of memory is severely impaired in individuals with dementia. On the other hand, it has been found that implicit memory remains intact for individuals with dementia. Implicit memory is the ability to perform a task, but does not require one to be consciously aware. Implicit also involves priming. Priming is when one has heard or experienced something a numerous amount of times that it becomes easier to recall it.

![Memory Diagram]

- Short-Term (Working) Memory
- Long-Term Memory
  - Explicit (conscious)
  - Implicit (unconscious)
  - Priming
  - Procedural Memory

- Episodic Memory (specific personal events and their context)
- Semantic Memory (general knowledge about the world)
Montessori on Memory
Montessori for dementia focuses on the “how” part of the memory, by having activities rely more on task procedure compared to recalling. This allows the person to re-engage this type of memory, and this allows the individual to keep learning or re-learning motor skills. With this said, the task is to be challenging, but set up in a way that allows for the individual to be successful. This goes with a distinctive feature of Montessori that is a numerous amount of activities are created to facilitate learning through action. It has also been found that increasing engagement has positive effects on cognitive functioning for the individual.

Here is a list of other benefits

- Reduce anxiety
- Decrease in Behavioural and Psychological Symptoms of Dementia
- Provide a sense of accomplishment
- Provide a sense of purpose
- Eliminates boredom
- Fosters concentration
- Increase Independence
- Increase motor skills
- Increase self-esteem
- Provides stimulation of the senses
- IMPROVES QUALITY OF LIFE

Who is implementing this approach?

Grandview Lodge- Dunnville, Ontario          Cedarvale Terrace- Toronto, Ontario
Helen Henderson- Amherstview, Ontario        Berkshire Care Centre- Windsor, Ontario
Ontario                                      
Providence Manor- Kingston, Ontario          Hawthorne place- North York, Ontario
Ontario                                      
Country lane- Chatsworth, Ontario            Montfort- Ottawa, Ontario

MANY MORE
Who can be involved?

Montessori seems simple, doesn’t it? However, adapting to this philosophy and approach takes an understanding and the knowledge on how to facilitate the Montessori Method for Dementia. The rest of the guidelines focus on how to prepare and develop a Montessori environment by focusing on each of the principles of Montessori.
PRINCIPLES
What are the Montessori Principles?
The principles of the Montessori Method for Dementia have been adapted from the principles of the Montessori philosophy. These principles produce a framework that should be adhered to while working with residents in the long-term care facility.
Upon looking at the principles, similar to the approach it looks simple, but is it necessary to learn each of the principles individually.

Principle: Independence
How many times have you entered into the long-term care facility and have seen a resident sitting there with their head down or up against his or her wheelchair asleep? How many times have you seen a resident staring with a blank look at the TV? The point is the resident is no longer engaged with the environment around them. It has been shown that less and passive engagement contributes to an increase in cognitive decline, and as a consequence advances the progression in dementia. When an individual is diagnosed with dementia, he or she may lose the ability to participate in his or her own self-care. What becomes common is to take over all aspects of care for the individual, as this is an easy and more time efficient answer.
However, it is important to focus on what he or she can do, by providing them with opportunities to remain as independent for as long as possible. For example, a resident is still able to feed him or self, but makes a mess every time. It is more important to encourage the resident to remain feeding him or her self, as they still posses the motor skills to complete the task, then to take over.

Montessori Principles for Activities

1. Independence
2. Choice
3. Demonstrate
4. Familiar materials
5. Meaningful
6. Adapted Environment
7. Sequence
8. Simple to Complex
9. Procedural Memory
10. Error Free

“When you do for me, you steal from me”- Gail Elliot
**Principle: Choice**

An important aspect to remember is that an individual with dementia once had an active role not only in his or her own lives, but also contributing to society. He or she had full control of the choices that were made throughout his or her own life. Unfortunately, as dementia and Alzheimer’s progresses the ability to make decisions become difficult for the resident; however, this is where getting to know the individual plays a critical role. For example, one individual may be able to answer verbally with a yes or no. On the other hand, another individual may only be able make a gesture. Regardless, it is important to still present and offer choices, but to make it easier on the resident. The focus is to make the answer simple on the resident. For example, rather than asking, “What would you like to wear?” ask “Would you rather wear the pink shirt or blue shirt?” This is a hallmark of Montessori, as the resident should always be asked and invited to engage in activities. It is important to encourage the resident, but still allow the resident the choice to say no. Offering choices gives the resident not only a sense of control, but also enables them opportunities to choose which activity he or she would like to complete. When inviting the resident to the activity a visual cue should be provided of the activity to the resident. Also while inviting to an activity, it may help by introducing yourself to the resident every time followed by your relation to the resident. For example, “Hello, I am your caretaker, would you like to help me fold this laundry today?”

**Principle: Demonstrate**

Another important aspect to Montessori is to demonstrate the activity for the resident. This does not mean telling the resident how to do it, but rather showing them how to do it. Furthermore, each step of the task or activity should be demonstrated one step at a time. For example, if the task is to have the resident set a table then start it by putting the napkin on the table and let the resident complete that step before showing the next step. The steps may need repeated until the resident is able to complete the activity or task. It is critical to match the speed with the resident you are completing the activity with. If the resident is becoming frustrated or has lost interest then the activity should be re-evaluated, modified, or changed to a new activity.

**Principle: Familiar Materials**

The concept of familiarity goes hand-in-hand with making it meaningful for the individual, as using materials from the resident’s past allow for an activity to be developed that would be meaningful. For example, using flowers to create a bouquet with a resident who loved to garden or using yarn for a resident who loves to knit.
Principle: Meaningful

Montessori is about making it meaningful for the resident, by focusing on tasks, activities, and roles that are individualized to each resident. This is where it is important to get to know the person behind the dementia, by assessing the resident’s past occupations, hobbies, likes, dislikes, and abilities.

Principle: Adapted Environment

The prepared environment is a cornerstone of the Montessori approach, as having cues and activities in the resident’s environment provides the opportunity for meaningful engagement. Adapted means to modify, by changing the activities or materials to ensure the resident can be successful and have the opportunity to engage in activities. For example, if the resident is completing an activity on a table then ensure the table is clean, so the resident is not focused on the distractions on the table. The materials being used should also be adapted to match the abilities of the resident. For example, using templates to assist the resident throughout the activity. This can be used for an activity such as having a resident place the shapes on the matching piece of paper. The concept is to not use materials and activities as they are, but rather adapt and individualize them to meet the needs of the resident.

Principle: Sequence

This principle was mentioned in the principle of demonstration, as sequence means to break down tasks and activities into simple steps. The resident should focus on one step at a time until the task or activity is completed. This may result in a resident completing only one step at a time, but over and over again until the resident is successful in that one step. Every tasks and activity can be broken down into smaller components, and this is known as task analysis. This can even be used to teach a new skill or a skill the resident still has the ability to perform. Assessments should be completed to find out what abilities and skills the resident still has to perform the task and activities before providing a step-by-step procedure. It is important to provide clear and detailed step-by-step procedures for each task or activity. This may take time, observing, and demonstrating each step until the resident is able to complete the task analysis or activity. For example, setting the table is a task that can be broken down into smaller components. The individual leading the task or activity should demonstrate these steps to the resident.
These steps can also be provided visually to the resident using pictures. Again, all of this is to be individualized to meet the resident’s needs. For example, one resident may be able to set the table with minimal guidance; however, another resident may need more cueing and prompting to be successful. The goal is to provide the amount of guidance needed to ensure success.

**Principle: Simple to Complex**

Similar to the principle above, the goal is to move from simple steps, tasks, and activities to gradually more complex. This also means moving from concrete to abstract. For example, if a resident has an interest or past hobby of gardening then a simple activity would be to take flowers and place them into a vase. As the resident becomes successful, then the task may then to be name the flowers being put into the vase. The point is to determine and find a task that matches the level of the resident, but still provides a challenge. As the resident is efficient and successful in the task or activity then difficulty may be increased, but allows the resident to still be successful. This can also be applied when trying to reintroduce a past occupation, hobby, or skill the resident would have engaged in. For example, if the resident used to knit then the resident can be presented with different colour of yarn to match to the correct colour group before jumping right into the skill of knitting.

**Principle: Focusing on Procedural Memory**

As stated prior, the memory that remains sustaining in dementia is the procedural memory. Therefore, the focus should be on presenting activities and tasks that rely on the “how” part of the memory. This means targeting activities and tasks that are based on procedures. Some example include the following: how to get dress, reading, putting flowers together, throwing a ball, playing an instrument, brushing one’s teeth, and washing the dishes. Research has shown that the procedural memory is the foundation of a person’s character. Therefore, the activities and tasks should be individualized to each resident, as his or her procedural memory will remember familiar activities that have occurred throughout the resident’s life. With this said, it does not just have to be the activities or tasks that use this principle. This principle can be used on the questions that are asked to...
the resident. Questions should not focus on declarative memory, as this part of the memory is affected due to dementia. Questions should therefore not be directed towards answers that require facts. Rather, two choices should be provided to the resident when asking a question or in a way where the answer is in the question. Cues and prompting can be used to aid and trigger this part of the memory. For example, signs can be provided around the facility that indicates what area the resident is in or a sign in the resident’s room that inform the resident of an appointment. The point is to provide information and support in the environment that helps the resident as much as possible.

**Principle: Error Free**

The principle *Error Free* is to ensure the resident is successful completing each task, activity, or skill, by making certain there is no right or wrong way. More, that there is no winner or loser during the activities. The activity or task should be set up in a way that controls for error, or rather limits the opportunity for error. Rather, the point of the activity or task should focus on engagement. This means ensuring the resident is actively participating in the task or activity, by providing stimulation and activities that challenge them to an extent. For example, a task may be to sort blocks into the correct box for that shape. The activity should be set up in a way that allows the shapes to only fit into the correct box. For example, if the resident went to place a square shape into the triangle box then the square would not fit. This would cue the resident to try another box until the shape fits accordingly. Again, this activity can be demonstrated and broken down into smaller components until the resident is completely successful. Overall, activities and tasks should include a “no-fail” method.
Summary

The principles of the Montessori Methods for Dementia are the cornerstone into the philosophy of care, as these principles have the potential to allow the resident to remain independent, increase self-autonomy, and provide care that treats the resident with respect and dignity. Together, these principles allow the resident to be considered as a whole. That is the physical, social, emotional, spiritual, and cognitive needs are inextricable. The principles may seem like common sense or simple, but the importance of using these principles cannot be emphasized enough. Any treatment can incorporate the Montessori principles into the method being used. These principles allow for a meaningful connection to each resident, and provide a meaningful connection for the resident. It is crucial to apply all of these principles:

- Find the resident behind the dementia- interests, past occupations, hobbies, and skills
- Focus on what the resident can do
- Provide choices as much as possible
- Always offer the resident the choice to participate
- Focus on procedural memory
- Break down tasks into a step-by-step procedure
- Gradually go from simple to complex
- Error-free. Engagement is more important
- **MAKE IT MEANINGFUL**

The next section will focus on putting the principles into practice, by creating and developing activities, tasks, and/or roles for a resident. A case study is provided at the end of the booklet that allows the ability to see the development of a Montessori activity.
PUTTING THE PRINCIPLES INTO PRACTICE
WOW Formula
A model for the Montessori Method for Dementia was developed by Gail Elliot. The formula in the model is known as WOW.

Who: The first step is to the Montessori Methods for Dementia is to get to know the resident. This can be done by completing intake assessments (please see LEA for more information) that focus on finding the person behind the dementia. These assessments will focus on learning the resident’s interests, hobbies, past occupation, abilities, and other personal information about the resident.

Observations: This requires observing the resident’s behaviour. If the resident is displaying or engaging in any challenging behaviours then this would require observing and writing down what occurred before the behaviour, the behaviour itself, and what happened after the resident engaged in the behaviour. The observations would also allow one to note when the behaviour is more likely to occur and when the behaviour is less likely to occur. This would allow the Montessori Method for Dementia to be implemented at times the behaviour would likely occur.

What: This entails what is going to be done for the resident using the Montessori Method for Dementia. Finding where the task, activity, or role can be completed. More importantly, what activity, task, or role the resident is going to complete.
Creating the Activities

CREATE

When it comes to creating the activities it is important to focus on the principles of Montessori, as the principles are able to act as a checklist to the development and implementation of the activities. The focus is to make activities that will provide the opportunity for the resident to be engaged as much as possible, by ensuring the activities have meaning and purpose. Gail Elliot developed the following acronym to assist in adhering to the principles.

C - Consider matching the skills, abilities, and preferences of the activity to the resident.

R - Remove anything in the environment that will distract the resident where the activity is to be completed.

E - Error-free & think engagement. Make sure the activity controls for lack of opportunities for error. The focus is engagement.

A - All materials. Make sure all materials for the activity are available and provided to the resident.

T - Templates & Manipulate. Provide guidelines in the form of templates and change the activity and materials to meet the needs of the residents.

E - Evaluate. Was the resident engaged in the activity? Is the activity helping decrease any challenging behaviour?
Examples of Activities
Activities should be individualized to meet the needs and interest of the resident. Below are examples of Montessori activities that are broken up into interest and hobbies. Moreover different versions of activities are provided, as some are simplified and others more complex.

**Interest: Colouring**
- Sorting pencil crayons by colour
- Colouring a large image
- Colouring a page that is of interest to the resident and reminiscing about the image (city used to live in, favourite type of animal, a vacation destination from the past, etc).

**Household task: Laundry**
- Folding towels
- Clipping clothespins to buckets or a line
- Sorting clothing into piles based on articles of clothing
- Folding and matching socks
- Having resident help in the process of putting laundry into washing machine and dryer

**Gardening**
- Matching the picture of a vegetable to the corresponding word
- Placing coloured flower in the same coloured vase
- Creating a bouquet of flowers
- Planting seeds
- Picking or smelling flowers from garden
- Having resident water the flowers in the unit

**Knitting**
- Feeling of different textured fabric
- Sorting different patterned fabrics, coloured fabrics, types of fabrics, etc.
- Having the resident plan future knitting projects (what colour of fabrics, what type of wool, what would they knit, etc).
- Knitting with the resident
• Knitting with the resident and reminiscing (asking questions on what the resident used to knit in the past)

Household: Dishes
• Sorting dishes and cutlery
• Re-teaching how to turn on tap
• Having resident assist on washing dishes and/or drying

Music
• Listening to music
• Matching the song by title, to the artist, or year
• Singing to the music with lyrics provided
• Incorporating the use of an instrument (bell, drums, chimes, etc)
• Playing an instrument alone or with group

Other Activities
• Have resident dust
• Have resident sweep
• Play resident’s favourite game (board game, card game, word searches, etc)
• Puzzles based on interest
• Setting the table

Summary
These are just examples of some activities, as the list could go on and on. The point is to get creative in the activities, by meeting the resident’s interests and needs. Ensure the activity, task, or role has purpose and meaning for the resident.

The purpose of life is a life of purpose— Robert Byrne

Thanks for reading.
Together we can MAKE IT MEANINGFUL.
The Resident

Mr. Jackson has been a resident in the facility for six months now. He is a 67-year old male who has been diagnosed with early stages of Alzheimer’s disease. Mr. Jackson’s moved into the facility after his two daughters reported their concerns with Mr. Jackson’s depression. His daughter’s report that he is no longer interested in any activities and has a hard time remembering these days. Mr. Jackson spends most of the days inside his room, and has not shown any interest in the activities offered by the facility.

Find the Person Behind the Dementia

The first step is to get to know Mr. Jackson. This can be done by interviewing his daughters or asking Mr. Jackson himself. The goal is to get to learn about his hobbies, interests, abilities, and past occupations.

What you Learn about Mr. Jackson

- Mr. Jackson was an accountant for over 30 years of his life.
- Mr. Jackson loved teaching people how to budget their money.
- Mr. Jackson is still able to read, but needs the print to be larger than 26-size font.
- Mr. Jackson likes to complete puzzles during his spare time.
- Mr. Jackson used to have his own office in his room at home where he could sort his client’s papers.
- Mr. Jackson has the ability to use and move his hands.
- Mr. Jackson has a hard time recalling his appointments, dates, and times.

- After assessing Mr. Jackson’s abilities, past occupations, hobbies, and interests the next step is to focus on engaging Mr. Jackson in an individualized activity and/or giving Mr. Jackson a role within the facility.
- In terms of a role, the ultimate goal was to have Mr. Jackson help out with counting the cash register at the Café after lunch.
- An activity schedule was created that involved staff members presenting activities for Mr. Jackson to choose from, and engage in once a day for 30-minutes. These activities included: a puzzle that relates to money or his family, sorting money, counting money, adding and subtracting money, and helping a staff member budget his or her earnings.
- The Montessori principles were applied each time, as the staff members set up a desk in Mr. Jackson’s room to represent his office where he can engage in the activity he chooses.
- The staff members ensured preparing the environment by only having the necessary materials on his desk during the activity.
- They also placed a big sign near his digital clock in his room that allowed him to know what time the activity was going to occur.
- Mr. Jackson was always presented activities to choose from, asked to participate, and thanked after for participating.
- Staff members ensured demonstrating the activity using minimal words, as the focus was to show what to do not tell.
- Eventually, Mr. Jackson began helping out at the café collecting and counting the cash.
References


Section IV: Resources for MMFD

The WOW Formula

Gail Elliot developed a formula known as WOW. Gail Elliot is a gerontologist who specializes in dementia who furthered researched Montessori for dementia. This formula is part of the DementiaAbility Methods: The Montessori Way (DMMW) that is based off the principles of Montessori and research by Dr. Camp. Together, the information collected from the WOW formula can be used to develop Montessori activities and tasks for the resident to engage in. It is important to note that this will involve communication and decisions between staff members when developing a Montessori Methods for Dementia intervention.

<table>
<thead>
<tr>
<th>W- Who</th>
<th>O- Observations</th>
<th>W- What</th>
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</thead>
<tbody>
<tr>
<td>Who is the resident? What information do we know about the resident?</td>
<td>What behaviour is happening? What observations were made?</td>
<td>What is the plan? What activities, tasks, or roles can the resident do? What type of cues should we have in the environment for the resident’s support?</td>
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Who

The first step to a behavioural intervention is to collect indirect assessments. Indirect assessments take the form of checklists, structured interviews, rating scales, and questionnaires. The point of these assessments is to gather information about the client and the behaviour of concern. Indirect assessments are conducted to determine when the behaviour is likely to occur and under what circumstances. Montessori Methods for Dementia uses indirect assessment to get to know the resident by conducting intake assessments. Intake assessments focus on the resident’s interests, hobbies, likes and dislikes, past occupations, abilities, and health information. For example, try to find out what the resident did for a living, family members, where the resident used to live or if they used to travel, and if the resident has any current pain. The intake assessments want to collect information on the resident’s past and present. These assessments are essential in determining Montessori activities and tasks for the resident. The goal would be to find out what is reinforcing for the resident. In other words, the assessments should aid in determining what the resident will engage in the most.
Examples of Intake Assessments

**Sight and Reading Ability Assessment**

Resident Name: _______________________
Phone: ______________________________
Address/Room Number: _______________________

**INSTRUCTIONS:**
First of all, you should try to find out the following before you begin:

- Could this person read prior to being diagnosed with dementia?
  - Yes
  - No

- What language(s) did he/she read?
  - English
  - French
  - Other ______________________________

- Does he/she need glasses?
  - Yes
  - No
  - For distance
  - For reading

- Are his/her glasses clean? If not, please clean them before you begin?

Ask this person if he/she would help you determine the best size of print needed for people to see. Point to one sentence at a time, starting at the top of the page, with the largest size font. Use only the sheet with the six statements (see following page). Record your findings after you have completed the assessment.

<table>
<thead>
<tr>
<th>Size of Font</th>
<th>Check if he/she read full sentence</th>
<th>If he/she didn't read full sentence, circle which words were seen.</th>
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</thead>
<tbody>
<tr>
<td>72 point</td>
<td>I am fine.</td>
<td>I am fine.</td>
</tr>
<tr>
<td>48 point</td>
<td>How are you?</td>
<td>How are you?</td>
</tr>
<tr>
<td>36 point</td>
<td>What a nice day.</td>
<td>What a nice day.</td>
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<tr>
<td>24 point</td>
<td>Tried and true.</td>
<td>Tried and true.</td>
</tr>
<tr>
<td>16 point</td>
<td>Live, laugh, and learn.</td>
<td>Live, laugh, and learn.</td>
</tr>
<tr>
<td>12 point</td>
<td>Smile and the world smiles with you.</td>
<td>Smile and the world smiles with you.</td>
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( ) Could not read these sentences.
Form completed by: ___________________________
Date: ___________________________

*If this is a re-test:* Form completed by: ___________________________
Date: ___________________________

Gail Elliot, Gerontologist and Dementia Specialist
Dementiability Enterprise Inc.
I am fine.

How are you?

What a nice day.

Tried and true.

Live, laugh, and learn.
Program Participant Profile
A focus on Knowing the Person Behind the Dementia

Date: ___________________________
Form Completed by: ____________________________
Resident Name: _____________________________
Address: __________________________________________________________
Date of Birth: _______________________________
Place of Birth: _______________________________
Where has he/she lived and for approximately how long?
______________________________________________________________________________
______________________________________________________________________________

Martial Status: (   ) Married             (   ) Widowed             (   ) Divorced             (   ) Single

Name(s) of Partner(s):

Employment/Volunteer History:

Languages spoken:
(   ) English             (   ) French             (   ) Spanish             (   ) Other: _______________

Children/ Grandchildren (if you need more space, attach a separate page).

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Where do they live?</th>
<th>Details about their relationship. (Do they visit of phone? How often? When? Etc.)</th>
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Important Friends and Extended Family:
Identify important friends/family members that continue to be involved in this resident’s life. If there are friends/family members that this person likes to remember and talk about, include that information too.

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### Health Status:

#### Cognitive

- □ Dementia
  - □ Alzheimer's
  - □ Vascular
  - □ Frontal Lobe
  - □ Lewy Body
  - □ Other:

- □ Stage
  - □ Mild
  - □ Moderate
  - □ Advanced

#### Physical

- Abilities:
  - Note: Check off the appropriate column
  - • Not applicable (NA)
  - • Independently (I)
  - • With Assistance (WA)
  - • Total Assistance Required (TA)

<table>
<thead>
<tr>
<th>Ability</th>
<th>NA</th>
<th>I</th>
<th>W.A</th>
<th>T.A</th>
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<tbody>
<tr>
<td>Uses a Walker</td>
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<tr>
<td>Walking: ( ) needs cane</td>
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<tr>
<td>Gets into Wheelchair</td>
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<td>Toileting</td>
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<td>Needs help eating</td>
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<td>Dressing</td>
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<td>Bathing</td>
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<td>Grooming: Hair</td>
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</tr>
<tr>
<td>Grooming: Face &amp; hands/nails</td>
<td></td>
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</tr>
<tr>
<td>Transfers (to chair or bed)</td>
<td></td>
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</tr>
<tr>
<td>Brushing Teeth</td>
<td></td>
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</tr>
<tr>
<td>General neatness/hygiene</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Knows what to do with objects</td>
<td></td>
<td></td>
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<tr>
<td>Can handle own finances</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Use a phone</td>
<td></td>
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</tr>
<tr>
<td>Uses a computer</td>
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</tbody>
</table>

#### Other:

- □ Memory Cueing recommended
  - Including:
    - ( ) Wayfinding ( e.g.- arrows, pictures)
    - ( ) Daily agenda
    - ( ) Activities that support memory loss
    - ( ) Tasks need to be broken down
    - ( ) Sequencing required ( e.g. – clothes laid out in order that they are to be used).

- □ Depression
  - □ None
  - □ Some
  - □ Significant

#### Orientation to time, place & person:

- □ Fully oriented
- □ Oriented in familiar surroundings
- □ Needs some orienting
- □ Needs orienting information most or all of the time

**Are there any situations that create heightened levels of anxiety? If yes, elaborate.**

- □ Depression
  - □ None
  - □ Some
  - □ Significant

**Arthritis**

Identify limitations & describe what needs to be done to ensure that function is maintained.

**Other/ Comments:**

Does this resident like to be helped?

Identify daily routines from the past that might be useful to know about in the present.
to ensure a delium has been treated.
Follow up:

**Pain:**
- Often in pain. Where
- Sometimes in pain.
- Seldom shows signs of being in pain

Note: Always observe to make sure that the pain is being treated. Pain may be contributing to behaviour- make sure it is reported.

**Motivation**
- Usually wants to be involved in activities
- Sometimes interested
- Sometimes interested but needs encouragement
- Never interested in activities but will observe
- Just wants to be left alone

**Comments:**

**Vision & Hearing**
- Sight & Reading Assessment completed: Date __________
  - Needs glasses to read
  - Needs glasses always
  - Size of font required: __________
- Needs hearing aid
  - Date batteries last checked:_________

**Communication Skills**
- Able to hold a conversation
- Some ability to hold a conversation
- Minimal ability to hold a conversation

**Enjoys talking about:**

**Interests:**
Identify the things that this person enjoys/enjoyed.

### Household tasks:
- Cooking
- Laundry
- Cleaning
- Shopping
- Doing dishes
- Decorating home
- Home repairs
- Other:

### Social
- Visiting family
- Visiting friends
- Planning social functions
- Entertaining
- Reminiscing: Are there any topics of preference/enjoys most?

### Reading:
What does/did he/she like to read?

### Games
- Cards
- Board games
- Puzzles
- Mahjong

### Leisure Activities
- Travel

### Sports/exercise:
- Hockey
- Football
- Soccer
- Curling
- Other:
**Culture, Religion & Spirituality**

Does he/she like to participate in:
- ☐ A religious service
- ☐ Quiet prayer
- ☐ Guided prayer
- ☐ Singing hymns
- ☐ Other

**Music:**
- ☐ Likes to listen to music
- ☐ Likes to play music

What kind of music?

Did he/she play an instrument?

**Crafts:**
- ☐ Knitting
- ☐ Sewing
- ☐ Woodworking
- ☐ Painting
- ☐ Sculpting
- ☐ Ceramics
- ☐ Other

**Pets**

Does he/she have a pet now?
- ☐ Yes
- ☐ No

Did he/she have a family pet?
Elaborate.

**General interests & needs not included elsewhere:**
- ☐ Fashion
- ☐ Giving back to the community
- ☐ Being busy
- ☐ Doing thing for self
- ☐ Volunteering
- ☐ Helping family
- ☐ Other

**Room Environment:**
- ☐ Room feels like home
- ☐ Room reflects former self
- ☐ Phone is usable
- ☐ Tv available (if interested)
- ☐ Radio (if interested)
- ☐ Orientating info available

**Routines:**

Identify routines & consider what can be done to add routine to this person’s day. An important part of this is to ensure that the routine is communicated and understood by the resident, with the objective of adding meaning to life. Did this person have any routines that would be important to know about now?

**Fear, losses, and tragic events.** These can be important to know about. This information may need to be taken into consideration when selecting activities. The purpose is to be aware— not to necessarily address these issues— unless you are qualified to do so.

Ask, “Is there anything you would like me to know?” or “Is there anything you would like me to know about you?” This is a very open-ended question. There may be something important that he/she wants to share with you. This can be about life, health, work, and/or family.

**Needs:** Describe this resident’s needs (including social (e.g.- loneliness); cognitive stimulation; sensory (to touch and feel); and practical life (having things to do). Are boredom and loneliness concerns and in need of being addressed?
Information collected from
☐ Client/ Resident
☐ Family member(s). Please elaborate:____________________
☐ Friends
☐ Work or volunteer colleagues
☐ Client files
☐ Other:____________________________

Form updated:
Date: _____________________________ By: ________________________________
Date: _____________________________ By: ________________________________
Date: _____________________________ By: ________________________________

Additional Notes:
<table>
<thead>
<tr>
<th>Resident Name: ________________________________</th>
<th>Date: ____________________________</th>
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</thead>
</table>

### Interests

<table>
<thead>
<tr>
<th>Interests</th>
<th>Past</th>
<th>Present</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Gardening</td>
<td></td>
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<tr>
<td>Playing cards</td>
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<tr>
<td>Cooking</td>
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<tr>
<td>Baking</td>
<td></td>
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<td></td>
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<tr>
<td>Animals</td>
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<td></td>
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<tr>
<td>Children</td>
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<tr>
<td>Volunteering</td>
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<tr>
<td>Helping others</td>
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<tr>
<td>Listening to Music (what type?)</td>
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<td></td>
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<tr>
<td>Reading (what does he/she like to read?)</td>
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<tr>
<td>Swimming</td>
<td></td>
<td></td>
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<tr>
<td>Browsing the internet</td>
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<tr>
<td>Yoga</td>
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<tr>
<td>Crafts (Favourite types?)</td>
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<td></td>
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<tr>
<td>Dancing (Favourite types?)</td>
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<tr>
<td>Wood working (what types of projects?)</td>
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<tr>
<td>Nature (specify)</td>
<td></td>
<td></td>
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<tr>
<td>Collecting (stamps, coins, etc.)</td>
<td></td>
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<tr>
<td>Watching movies (what types?)</td>
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<tr>
<td>Travelling (favourite destinations?)</td>
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<tr>
<td>Fishing</td>
<td></td>
<td></td>
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<tr>
<td>Knitting</td>
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<tr>
<td>Hockey (playing or watching)</td>
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<tr>
<td>Bowling</td>
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<td></td>
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<tr>
<td>Planning parties</td>
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<td></td>
<td></td>
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<tr>
<td>Attending parties</td>
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<td></td>
<td></td>
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<tr>
<td>Outer space/ astronomy</td>
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<td></td>
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<tr>
<td>Scrapbooking</td>
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<tr>
<td>Nutrition and health</td>
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<tr>
<td>Wine tasting</td>
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<tr>
<td>Playing an instrument (what kind?)</td>
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<tr>
<td>Camping</td>
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<tr>
<td>Riding a motorcycle</td>
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<tr>
<td>Working out (specify)</td>
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<tr>
<td>Golfing</td>
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<tr>
<td>Fashion (hair and makeup)</td>
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<tr>
<td>Shopping (for what?)</td>
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<td></td>
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<tr>
<td>Celebrity news</td>
<td></td>
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<tr>
<td>Bingo</td>
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<td></td>
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<tr>
<td>Comedy (elaborate)</td>
<td></td>
<td></td>
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<tr>
<td>Going to the cottage</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Collecting the cottage</td>
<td></td>
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</tbody>
</table>

Elliot, 2014
<table>
<thead>
<tr>
<th>Keeping my brain active</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Talking on the phone</td>
<td></td>
</tr>
<tr>
<td>Doing email</td>
<td></td>
</tr>
<tr>
<td>Surfing on the computer</td>
<td></td>
</tr>
<tr>
<td>Using a tablet/iPad</td>
<td></td>
</tr>
<tr>
<td>Sending text messages</td>
<td></td>
</tr>
<tr>
<td>Trivia</td>
<td></td>
</tr>
<tr>
<td>Singing</td>
<td></td>
</tr>
</tbody>
</table>

**Other:**

**Top 5-10 Interests:** (List, circle, or rate 1-5 or 1-10 interests in order from greatest to least).
**Pleasant Events Schedule**

**Instructions:** This schedule contains a list of events or activities that people sometimes enjoy. It is designed to find out about things your relative has enjoyed during the past month. Please rate each item twice. The first time, rate each item on how many times it happened in the past month, (frequency); the second time, rate each event on how much your relative enjoys the activity.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency</th>
<th>Enjoy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>1 to 6 Times</td>
</tr>
<tr>
<td>1. Being outside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Shopping, buying things</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Reading or listening to stories, magazines, newspapers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Listening to music</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Watching T.V.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Laughing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Having meals with friends or family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Making or eating snacks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Helping around the house</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Being with family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Wearing favorite clothes</td>
<td></td>
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</tr>
<tr>
<td>12. Listening to the sounds of nature (birdsong, wind, surf)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Getting/sending letters, cards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Going on outings (to the park, a picnic, etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Having coffee, tea, etc. with friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Being complimented</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Exercising (walking, dancing, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Going for a ride in the car</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Grooming (wearing make up, shaving, having hair cut)</td>
<td></td>
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</tbody>
</table>
Observations

The second step in a behavioural intervention is to conduct direct assessments. Direct assessments are used to observe behaviours and the conditions that occur before and after the behaviour. These include scatterplots, ABC charts, and recording of the behaviour. Similarly, Montessori uses direct measures to indicate the resident’s behaviour. This can be if the resident is engaging in challenging behaviours. The direct assessments allow for specific patterns to emerge of when the behaviour is most and least likely to occur. It also allows for the indication of the reason behind the behaviour, as what occurs before and after the behaviour is recorded. Montessori can use these direct measures to create an activity, task, or role that would serve the same function behind the behaviour or to use the Montessori activity, task, or role during a time the behaviour is most likely to occur. This would allow the resident to be occupied with activity, task, or role during that high period of time the behaviour occurs. It is important note that direct assessments occur over a period of time until clear patterns emerge on what occurs before and after the behaviour. This should take approximately two to five days to occur.

* Note- Montessori can be used for residents not engaging in challenging behaviours; however, the use of direct assessments allow for an effective use of Montessori when the resident is engaging in challenging behaviours.

Why Observe

As stated before, many residents or individuals diagnosed with dementia engage in Behavioural and Psychological Symptoms of Dementia (BPSD). Many caretakers and family members begin to notice personality changes in the resident. Despite this being part of the dementia, it is important to note that there may be other factors influencing the BPSD. The questions then becomes, “Why is this behaviour occurring?” Therefore, it is important to determine what may be causing the behaviour to occur. For example, a resident may be yelling out for help due to feelings of lonesomeness. Observing the behaviour would allow one to see that the resident may be yelling out for help when there is no one around, as the resident is trying to get the attention of staff. This would allow for a Montessori Method of Dementia intervention to target having the resident complete a task or activity with a volunteer or staff member to provide socialization.

How to Directly Measure Behaviour

The first step is to identify and define the target behaviour. The target behaviour would be the challenging behaviour the resident is engaging in. This is known as operationally defining the behaviour. The definition of the behaviour should be described in objective and observable terms, as another individual should be able to read the definition and agree on if the behaviour is occurring or not occurring. The use of operational definitions allows for minimization of using subjective terms and labels. For example, “dramatic” is a label. Every individual would have a different definition of what “dramatic” is. One resident may be consistently complaining and another resident may cry when staff approach, but still both behaviours are labelled “dramatic.” Each operational definition should be individualized to the resident and the behaviour that the resident is engaging in.
<table>
<thead>
<tr>
<th>Target Behaviour</th>
<th>Operational Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complaining</td>
<td>Jill is defined as complaining when she verbally expresses the feeling of pain or of feeling sick.</td>
</tr>
</tbody>
</table>

The second step is to determine who will recording the behaviours, as the individual should be in close proximity with the resident, has the time to record the behaviour, and received training. Training would consist of the observer being able to identify the behaviour and being able to use the recording method accordingly.

*Note* - Collecting data on the resident’s behaviour implies collecting human data. Therefore, before gathering data consent must be obtained from the resident or the substitute decision maker.

**Recording methods:** Various types of behaviour require the use of different data collection methods. In order to decide on the recording method, the dimension of the behaviour should be determined. For example, a resident may be vocally asking for help. This behaviour would have a multitude of dimensions. The resident may be frequently yelling for help, may be yelling extremely loud, or may yell for a short period or long period of time. These recording methods allow one to also track whether the intervention is having an effect, as one can compare the data sheets before and after the intervention.

**Dimensions of Behaviour**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>The amount of times the behaviour occurs</td>
</tr>
<tr>
<td>Duration</td>
<td>How long the behaviour is engaged in from the beginning to end</td>
</tr>
<tr>
<td>Intensity</td>
<td>Amount of energy or force to engage in the behaviour</td>
</tr>
<tr>
<td>Latency</td>
<td>The time it takes for onset of the behaviour to occur after an environmental cue.</td>
</tr>
<tr>
<td>Fluency</td>
<td>The amount of times a behaviour is performed correctly.</td>
</tr>
</tbody>
</table>
Examples of Recording methods

Event Recording Data Sheet

Resident: ________________________  Date: ______________

Operational Definition of Target Behaviour:

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

(Use tally marks to record the number of occurrences of the target behaviour)

<table>
<thead>
<tr>
<th>Time</th>
<th>Behaviour</th>
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<tbody>
<tr>
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</table>

The Event Recording data sheet is used to collect every occurrence of the behaviour during the time the behaviour is being recorded. This is best used when the behaviour is easy to identify; however, do not use this method if the behaviour occurs very frequently. If the behaviour has a high frequency then the observer may lose track of the amount of times the behaviour was exhibited.

Instructions: To use the Event Recording data sheet, the observer will write down the time of the observation period. This includes the entire length the behaviour was observed for. The observer will then record every time the behaviour occurs during the observation period, as a tally can be used in the behaviour column. At the end of the day or observation period the number of tally marks will be added up to get a total. Taking the total number of tally marks and dividing by the total number of observation periods can calculate a percentage. For example, if a resident engages in a specific behaviour 9 times out of 12 observation periods then the behaviour occurred 75% of the time during those observation periods.
Frequency Data Sheet

Resident: ___________________  Observer: ___________________

Operational Definition of Target Behaviour:
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Date  Frequency  Daily Total

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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</table>

The frequency recording is similar to event recording, as the amount of times the behaviour occurs is recorded.

**Instructions:** To use this data sheet mark a “X” in the box when the behaviour occurs. If the behaviour is engaged in more than 8 times then continue to the next line; however, make sure to indicate the date. The total number of times the behaviour occurs can be compared from day-to-day when the behaviour is observed. From this an average amount of time the behaviour occurs can be taken. For example, if the resident engaged in the behaviour 54 times over the duration of 4 days then the behaviour occurred an average of 13.5 times a day.
Duration Recording Data Sheet

Resident: ___________________  Observer: ___________________

Operational Definition of Target Behaviour:
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Date  Duration  Total Duration

<table>
<thead>
<tr>
<th>Onset</th>
<th>Offset</th>
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</table>

The duration recording sheet allows the percentage of the time or the total amount of time that the behaviour occurred during the observation period. This is best used for behaviours that have a clear beginning and end; however, the behaviour should last longer than a short period time. If the behaviour occurs frequently, but does not occur for a long duration then frequency recording should be considered.

**Instructions:** The onset of the behaviour should be recorded, by recording the time the resident begins engaging in the behaviour. Once the resident is no longer engaging in the behaviour then the time should be recorded. If the behaviour occurs more than four times then continue to the next line, but ensure to mark the date. It may be best to use a stopwatch that tracks the time and seconds. For example, 10:30. 15s.

**Naturalistic Observation Recording (ABC):** This direct assessment allows for the antecedents and consequences of the behaviour to be observed. Antecedents (A) are the events or cue that occur before the resident engages in the behaviour. Consequences (C) are events or situations that occur after the resident engages in the behaviour. The consequences are what maintain the contingency of the behaviour. In other words, the consequences cause the behaviour to keep occurring. The resident is to be observed in the natural setting. In this case, the resident should be observed in the facility. Prior to observing, an operational definition of the behaviour should be determined.
Naturalistic Observation Recording (ABC) Form

<table>
<thead>
<tr>
<th>Time</th>
<th>Antecedent</th>
<th>Behaviour</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

**Instructions:** The observer should begin marking the time and date of the observation period into the first column. The observer should then continue to mark the time as the behaviour continues to occur. Events and triggers that occur before the behaviour should be recorded into the second column, and the behaviour should follow the antecedent in the third column. The behaviour should include what the resident did or said, as this allows for a clearer description of the behaviour to emerge. The consequences column should then consist of what occurred after the resident engaged in the behaviour.

**Summary**
Montessori can make use of direct assessments when a resident is engaging in challenging behaviours. These assessments allow for not only specific patterns of the behaviour to emerge, but also can determine if the Montessori is having an effect on the challenging behaviour. The assessments also allow for consideration of the time that a Montessori intervention may occur, and may allow for a type of activity or task to be used. For example, if a resident is engaging in behaviour of pinching other residents then an activity can involve the use objects for the resident to hold. In a behavioural intervention this would be known as a differential reinforcement of incompatible behaviour (DRI), as pinching could not occur at the same the resident was engaging in an activity that involved the use of his or her hands.

**What**
The last step is to develop the plan for the Montessori Methods for Dementia intervention. The focus of this step is devise activities, tasks, or roles that the resident is still able to do. It is crucial to use the intake assessments to determine not only the resident’s current abilities, but also the resident’s preferences. Always take the resident’s past occupations, interests, hobbies, abilities, and likes and dislikes into account when choosing the Montessori activity. The activity should also use the Montessori principles (refer to Section III).
How to Create Montessori Activities (CREATE)

Once one understands the principles of Montessori then activities will be easier to create. When it comes to deciding the plan, the key component to keep in mind is to think engagement. In other words, what activity will the resident want to actively engage in? The focus is to make the activity meaningful to the resident, by giving them a sense of purpose. Gail Elliot developed the acronym CREATE to aid in this process. The following acronym is an adapted and summarized version.

<table>
<thead>
<tr>
<th>C</th>
<th>Consider matching the skills, abilities, and preferences of the activity to the resident. Capitalize on what the resident can do.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>Remove distractions from the environment where the activity is to be completed.</td>
</tr>
<tr>
<td>E</td>
<td>Error-free. Make sure the activity controls for lack of opportunities for error. The focus is engagement.</td>
</tr>
<tr>
<td>A</td>
<td>All materials. Make sure all relevant and necessarily materials are available and provided to the resident.</td>
</tr>
<tr>
<td>T</td>
<td>Templates &amp; Manipulate. Provide guidelines in the form of templates and change the activity and materials to meet the needs of the residents.</td>
</tr>
<tr>
<td>E</td>
<td>Evaluate whether the resident is engaged in the activity or whether the activity is decreasing the challenging behaviour.</td>
</tr>
</tbody>
</table>

How to Present Activities (PRESENT)

After the activity is developed it is time to implement the activity. Similar to the acronym CREATE, Gail Elliot developed another acronym PRESENT. Both acronyms incorporate the principles of Montessori and act as a guide to follow for the implementation of the Montessori Methods for Dementia intervention. The following acronym is an adapted and summarized version.

<table>
<thead>
<tr>
<th>P</th>
<th>Prepare the environment and provide choice. Ensure the resident can access the activities and has choices in activities and the choice to participate.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>Room set-up. Prepare the environment by ensuring no distractions, and everything needed for the activity is there for the resident.</td>
</tr>
<tr>
<td>E</td>
<td>Extend Invitation. Ensure the resident is invited to participate in the activity, by asking if the resident would like to join or help. This provides a form of assent, as the resident has the opportunity to say yes or no.</td>
</tr>
<tr>
<td>S</td>
<td>Show what to do. Demonstrate the activity or each step to the activity. Make sure to simplify and gradually increase the difficulty.</td>
</tr>
<tr>
<td>E</td>
<td>Error Free. Think engagement and provide assistance when needed.</td>
</tr>
<tr>
<td>N</td>
<td>Needs. Modify and adjust when necessarily to match to the ability and needs of the resident.</td>
</tr>
<tr>
<td>T</td>
<td>Thank you. At the end of the activity make sure to thank the resident for completing the activity, and ask if the resident if he or she would be willing to help or join you again.</td>
</tr>
</tbody>
</table>
Examples of Activities

- Sorting coins by kind, colour, or size.
- Sorting items by category. For example, items for baking vs items that are used for sewing
- Sorting fabrics based on colour.
- Using a magazine to do a scavenger hunt.
- Memory bingo
- Setting the table
- Washing dishes
- Baking
- Scooping items with a spoon from a bowl
- Sorting knives, forks, and spoons.
- Folding laundry
- Sorting pencil crayons by colour
- Completing word searches, puzzles, jigsaws, and connect the dots.

* The list can go on, but the point is to get creative and use the principles of Montessori. The goal is to engage the resident.

How to Measure Engagement

As stated before, engagement is the main focus for Montessori activities. Engagement has been proven to increase many of the benefits that Montessori has to offer, and these benefits could not occur if the resident is not engaged in the Montessori activity. Therefore, it is important to evaluate how engaged the resident is with the activity. Measuring engagement provides the ability to see if the resident is interested in the activity or if the activity needs to be modified. The use of measuring engagement would also allow for the determination of what Montessori activity the resident is more engaged in. There are many ways to assess engagement, as recording methods can be used to measure the behaviour of engagement. Similar to recording behaviour, the behaviour of engagement needs to be defined.

Engagement: Engagement is defined as looking at the activity, listening to the staff member or volunteer leading the activity, and working on the activity. Engagement does not occur when the resident is looking around the room for more than 10 seconds, not working on the activity, and attending to materials not related to the activity. Exceptions will be made when the volunteer or staff member is talking to the resident, if the resident is in the washroom, if the resident is getting medications or personal care from staff members, and if the resident takes her eyes off the activity but returns to working on the activity within 10 seconds.

* Note- This is an example of an operational definition of engagement, but can be modified and should be individualized to each resident and situation.
Examples of Measures for Engagement

**Momentary Time Sampling**

Resident: ___________________________  Interval Length: ____________

Operational Definition of Behaviour:

______________________________________________________________________________________________

______________________________________________________________________________________________

Date/Time | Interval (X=Engagement) | Percentage of Behaviour
---|---|---

<table>
<thead>
<tr>
<th>Date</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
</table>

Momentary time sampling involves breaking an observation period into intervals. For example, if the resident is engaging in the activity for 20-minutes then this can be broken up into 2-minute intervals. A stopwatch would be set for 2-minutes. At the end of the 2-minutes the observer would look to see if the resident is engaging in the activity. The average can then be calculated to determine the percentage of engagement throughout the entire activity. For example, if the resident was engaged in 8 out of the 10 minute intervals then the resident was engaging in the activity 80% of the time.

**Instructions:** To use this form the observer would place an “X” every time the behaviour occurred during the interval allotted.
Rating Scale for Engagement

Resident: ___________________________ Date: ________________

How engaged was the Resident?

<table>
<thead>
<tr>
<th>NON- ENGAGEMENT</th>
<th>PARTIAL ENGAGEMENT</th>
<th>COMPLETE ENGAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

**Non-Engagement:** Non-engagement is defined as leaving the activity before it begins, attending to materials not related to the activity, not attending the activity, and not completing any of the activity during the session.

**Partial Engagement:** Partial engagement is defined as looking at the activity, or listening to the person running the activity.

**Complete Engagement:** Complete engagement is defined as any physical, verbal, or emotional response that is directly related to the activity.

**Instructions:** The observer would watch the resident engaging in the activity throughout the observation period, or the entire duration of the Montessori activity, and would rate on a scale of 0-2 how engaged the resident was. The observer can circle the level of engagement accordingly.

What to do if the Resident is not Engaging?

If the resident is not engaging it does not mean to give up on the use of Montessori, but rather try another activity or modify the current one. The activity may be too difficult for the resident or the resident may have no interest. For residents that can communicate it is best to ask if the activity is too challenging, but if they were interested in trying it in a different manner. There are also many solutions that can be done if the resident is not engaging during the activity.

- Go for a walk with the resident and then re-invite them to the activity.
- Provide another choice of an activity.
- Use verbal and gestural prompts to guide the resident back to the activity. This can be done by using gentle tone of voice and gentle touch of the arm.
- * Note- find out if the resident is okay with gentle touch before using.
References


### Appendix C

**Raw Data of Satisfaction Survey**

<table>
<thead>
<tr>
<th>Question</th>
<th>n</th>
<th>Completely Dissatisfied</th>
<th>Somewhat Dissatisfied</th>
<th>Neutral</th>
<th>Somewhat Satisfied</th>
<th>Completely Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>4</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Q2</td>
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<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
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<td>0%</td>
<td>0%</td>
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<tr>
<td>Q4</td>
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<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Q5</td>
<td>4</td>
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<tr>
<td>Q6</td>
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<tr>
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<td>0%</td>
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<tr>
<td>Q8</td>
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<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Q9</td>
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<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
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**Additional Comments**

<table>
<thead>
<tr>
<th>Staff Member 1</th>
<th>Manual is very appealing to the eye, so it will intrigue its audience. This will encourage staff and others to read what is in the contents of the manual. The manual is also easy to follow which will allow readers to grasp the concepts and ideas written in the manual so that they can understand them and start to implement them in their workplace.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Member 2</td>
<td></td>
</tr>
<tr>
<td>Staff Member 3</td>
<td></td>
</tr>
<tr>
<td>Staff Member 4</td>
<td>This was very informative and would definitely benefit people that are interested in learning why Montessori is important for seniors.</td>
</tr>
</tbody>
</table>
Appendix D

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1. Guidelines (Making it Meaningful: Montessori Methods for Dementia, Section III)

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