UNIVERSITY of INDIANAPOLIS®

*School of Occupational Therapy*

# Cognitive Based Social Groups for Guests at Independent Adult Day Care Center

Doctoral Capstone Project

Emily Hess

May 2021

A research project submitted in partial fulfillment for the requirements of the Doctor of Occupational Therapy degree from the University of Indianapolis, School of Occupational Therapy.

Under the direction of the research advisor:

Christine Kroll

**Abstract**

In adult day care settings, occupational therapists play a unique role in providing individuals with dementia opportunities to engage in occupations. This project aims to address the occupational engagement of guests with dementia at an adult day center using a cognitive-based approach to activity design. Twelve individuals at an adult day center with a formal diagnosis of dementia participated in the Allen Cognitive Level Screen (ACLS), and the individuals and their caregivers completed an interest checklist. The activity binder created considered the results of the ACLS and interest checklist. Due to staffing issues, only one staff member completed all training on how to facilitate group activities using the activity binder. I observed a staff member facilitating activities and assessed the engagement levels of the individuals with dementia using the Group Observational Measurement of Engagement (GOME). Average engagement scores in three activities ranged from 2.875 to 3.25 out of 4. Staff knowledge and confidence were also measured before and after training using a survey. The staff member improved from 25 points to 30 points. Additionally, staff satisfaction was also measured using a survey. The staff member scored each item on the survey as a 5 “very satisfied”. The present research study found that utilizing a cognitive-based approach to activity design allowed individuals at a day center to engage at a higher level in group activities; moreover, providing staff with adequate training materials improved confidence and knowledge.

## Introduction

Alzheimer's disease (AD) is a degenerative brain disease (Alzheimer's Association, 2019) that has a significant impact on an individual's ability to function in their day-to-day lives. According to the Centers for Disease Control and Prevention (CDC) (2019), AD is the most common form of dementia. As of 2014, more than five million people in America were living with AD, and researchers anticipate that this number will triple to about 14 million people by 2060 (CDC, 2019). According to the Alzheimer's Association (2019), as AD progresses, people are no longer able to participate in activities they feel define them as individuals. Eventually, AD progresses to the point where the person can no longer perform basic bodily functions (Alzheimer's Association, 2019).

AD impacts people's cognitive abilities substantially and subsequently causes cognitive disability. According to Claudia Allen, cognitive disability is a "global incapacity to do universal human activities. A biologically-determined lack of attention impairs awareness of environmental cues but may spare memories of prior knowledge" (Allen, 2002 as cited in Cole & Tufano, 2008, p.185). Allen's frame of reference, Allen's Cognitive Levels (ACL), focuses on how cognition impacts activity demands and the effects of physical and social contexts (Cole & Tufano, 2008). It is critical for occupational therapists working with this population to analyze how cognitive abilities impact occupational performance. When discussing AD and how it impacts people's occupational performance and engagement, it is also critical to consider the definitions of both cognition and functional cognition. Cognition includes abilities related to information-processing functions and skills related to attention, memory, and executive functions (American Occupational Therapy Association [AOTA], 2017b). Functional cognition is associated with thinking and processing skills that people need to "…accomplish complex

everyday activities such as household and financial management, medication management, volunteer activities, driving, and work" (AOTA, 2017b, p. 1). Therefore, occupational therapy interventions need to focus on the link between cognitive skills, functional performance, and the environment (AOTA, 2017b).

It is critical to consider the lifespan frame of reference (FOR) because of the impact AD has on an individual's later life development. This FOR is appropriate to use with AD, as it focuses on normal development throughout each stage of development across the lifespan(Cole & Tufano, 2008). The lifespan FOR allows occupational therapists to assess occupational performance relative to age-appropriate skills (Cole & Tufano, 2008). When applying the lifespan FOR, the definition of dysfunction and disability is important. In this FOR, disability is when a person fails to "develop age-appropriate skills or resolve the dilemmas, conflicts, or polarities appropriate for one's stage of life" (Cole & Tufano, 2008, p. 218). Due to cognitive and physical limitations, people with AD may not participate in activities they used to participate in previous life stages, including leisure, social participation activities, and activities of daily living (ADLs). According to the AOTA (2011), occupational therapists can create changes in the environment and focus on the individual's current abilities to achieve maximal occupational engagement.

The Model of Human Occupationa (MOHO) thoroughly addresses occupational engagement of those with AD. MOHO focuses on the actual person and how their "environment contributes to one's source of motivation patterns of behavior and performance." (Cole & Tufano, 2008, p. 95). When working with people who have AD, it is important to consider how their different environments—such as adult daycare or the home, and environmental factors such as social, economic, and cultural factors, impact their occupational performance. When

delivering any form of occupational therapy services with this model, it is also critical to consider habituation, volition, and performance capacity. People with AD may have limited occupational skills and performance because of cognitive limitations. Their occupational skills and performance may decline as the disease progresses. Additionally, people with AD may have a compromised occupational identity because of difficulties with conceptualizing their sense of self and what they wish to be as an occupational being, due to their cognitive abilities. Regarding occupational adaptation, people with AD may have problems constructing a positive occupational identity and achieving occupational competence in their environments due to their cognitive abilities. Additionally, occupational therapists can impact the environment of those with AD to improve their occupational engagement and participation using nine different therapeutic strategies outlined by Kielhofner (2009).

Being able to participate in enjoyable activities and being able to do activities with others is essential to the health and well-being of people across the lifespan (Berger et al., 2013). By encouraging social participation and leisure-based activities, individuals with AD can participate in enjoyable activities. Social participation involves the connection between occupations that support someone's wanting to engage in community and activities involving their families, peers, and friends (Gillen & Boyt Schell, 2014 as cited in AOTA, 2014). Leisure activities are nonobligatory activities that are "...intrinsically motivated and engaged in during discretionary time, that is, time not committed to obligations such as work, self-care, or sleep" (Parham & Fazio, 1997, p. 250 as cited in AOTA, 2014, S21). Individuals with AD need opportunities to participate in the occupations of social participation and leisure. Occupational therapists can accomplish this by developing programs that consider not only cognitive abilities but also personal interests.

Researchers have shown a link between leisure activities, social relationships, and health (Chang et al., 2014). Allowing individuals with dementia to successfully engage in meaningful activities, such as social and leisure activities, leads to positive health outcomes (Mansbach et al., 2016; Tak et al., 2014). Researchers have also shown that the provision of social activities has positive impacts on the quality of life of older adults (Amiri et al.,2017). Quality of life domains impacted most by successful engagement in leisure and social activities are physical health, mental health, overall health, and vitality (Horowitz & Vanner, 2010). Chen and Chippendale (2018) also argue that participating in leisure activities allows people to achieve occupational balance, which has a significant impact on the health and well-being of individuals. These researchers demonstrated a need for individuals with dementia to have opportunities to participate in meaningful activities because it directly impacts the health outcomes of these individuals. Allowing individuals with dementia to participate in meaningful occupations will allow them to achieve occupational balance, which will lead to positive health outcomes such as improved quality of life. For these activities to be meaningful to an individual, the individual's interests and abilities need consideration.

Gitlin et al. (2008) explain that one must tailor activities to the individual’s likes and dislikes and their cognitive abilities; when activities are interesting and appropriate, a reduction in depressive and agitated behaviors occurs. One method to support engagement in leisure and social participation activities while also considering an individual's cognitive abilities within this population is the Montessori method. In this approach, activities meet both the individual’s needs and capabilities using tailored activities utilizing everyday objects (Camp et al., 2017). Several researchers have found that using the Montessori method with people with dementia has a positive impact on affect and engagement in activities and the quality of life (Camp et al., 2017;

Wilks et al., 2019). The Montessori approach allows for full consideration of the capabilities and interests of individuals who have dementia. This approach allows occupational therapists to meet the needs and capabilities of individuals with dementia, and it allows these individuals to participate in desired occupations, such as social participation and leisure.

Activities offered to people need to be wide in variety, engaging, relevant, and meaningful (Tak et al., 2014). Additionally, to get people with AD to socialize, activities need to be cognitively stimulating (Smallfield & Heckenlaible, 2017). These researchers highlighted the importance of appropriate, meaningful, and engaging activities for individuals with dementia. Additionally, it is critical for occupational therapists and other medical professionals to consider the autonomy of people when offering activities and giving care (Berenbaum et al., 2017). One way to accomplish this is to gather information about the individual's past and current roles and routines and interests. According to Toit and Buchanan (2018), by listening to the stories of people with dementia, the care that clinicians give to them can be more client-centered. It is critical to listen to these clients' stories and understand the cultural differences among the population so that interventions are more engaging and relevant for the clients (Toit and Buchanan, 2018). In an adult day care setting, an occupational therapist plays a unique role in providing older adults with opportunities to engage in occupations such as leisure and social participation. This project aims to address the occupational engagement of guests with dementia at an adult day center using a cognitive-based approach to activity design**.**

## Methodology

### Participants

This program included twelve participants. All participants had a formal diagnosis of dementia and regularly attended the day center three times a week. I initially trained four staff

members on using the activities outlined in the activity binder I designed; the staff members also received education on the implications of ACLs. However, only one staff member remained during the time of data collection.

## Procedures

### *ACLS*

To develop appropriate activities for the guests at the day center, I assessed the cognition of tweleve guest using the Allen Cognitive Level Screen (ACLS). A licensed occupational therapy practitioner confirmed the ACLS results. The screening tool consists of learning three different leather lacing stitches that increase in difficulty (Allen et al., 2007). Additionally, the client has a choice to complete the screening by either using the ACLS-5 or the Large ACLS-5 (Allen et al., 2007). The completion of the three stitches requires the client to attend, understand, utilize sensory and motor cues given from the materials, and process feedback from the motor actions while completing the various stitches (Allen et al., 2007). The tool allows occupational therapists to measure the client's "...global cognitive processing capacities, learning potential, and performance abilities and to detect unrecognized or suspected problems related to functional cognition" (Allen et al., 2007, p.1). The levels range from zero to six, with six being the highest level of function and zero being the lowest (Cole & Tufano, 2008). The screening tool typically assesses adults with either psychiatric disorder or dementia (Allen et al., 2007). Researchers tested the construct validity of the Large ACLS-5 with a group of people with dementia who had MCI and mild dementia living in the community (Wesson et al., 2017). Researchers found that the evidence supports the tool's construct validity (Wesson et al., 2017). Therefore, this tool is appropriate to assess the cognitive abilities of individuals with AD. ACLS. The ACLS was used to assess the cognitive abilities of twelve individuals with dementia.

### *Interest Checklist*

One way to ensure that activities that are meaningful for a client are being chosen is using the Interest Checklist (Klyzec et al., 1997). Informal caregivers of the guests received a paper copy of an extensive interest checklist to fill out to supplement the brief one completed before my arrival. The interest checklist sent home with caregivers contained 34 different activities. The interest checklist that the adult day center completed with guests and their caregivers contained 14 activities.

### *Staff Training*

Bourgeois et al. (2015) found that when workers received training on how to encourage activity participation, individuals with dementia reported better quality of life. Staff participated in several educational opportunities to learn the implications of cognition and how to facilitate group activities. Before implementing the activity binder and assessment of the guests, I provided the staff members with a brief overview of ACLs and their implications and printed materials outlining the various cognitive levels. After assessing the guests, I provided the staff members with a brief PowerPoint presentation outlining the cognitive levels and where each guest fell according to the levels. Additionally, I provided general recommendations related to appropriate activities, the assistance level needed to complete activities, and communication strategies. During the first week of implementing the activity binder, the staff members observed me facilitate the activities. During the second week of implementation, the staff members chose an activity out of the binder to facilitate. I was present to provide immediate feedback and answer any questions during these sessions. During the third week of implementation, the day center staff members facilitated the activity while I provided no immediate feedback and instead performed a written performance review. The performance review's purpose was to provide staff

with areas of strength and growth areas regarding their facilitation skills. Each staff member was given at least three written performance reviews. These performance reviews were given to staff following completion of the activity they facilitated. During the fourth week of implementation, only one staff member was observed due to staff turnover. The staff member facilitated a session while I observed and collected guest engagement data.

### *Informal Caregiver Resources*

Researchers have found a direct link between caregiver stress and lack of confidence (DiZazzo-Miller et al., 2020). Caregiver stress improves when caregivers are offered educational opportunities to understand how to assist individuals with dementia with activities such as ADLs (DiZazzo-Miller et al., 2020). Several educational opportunities were created to provide informal caregivers with information regarding the implications of cognition. The first was the creation of articles regarding home safety, failure-free activities, and communication techniques. The second was an educational handout describing each of the ACLs and specific implications for each level. The third was a virtual presentation during which I explained the purpose of the ACLs, the specifics of the activity program that was designed for the guests at the day center, as well as how to engage with their loved ones in different activities at home.

### *Activity Binder*

The ability to participate in valued occupations diminishes as dementia and AD progress (Smith & D'Amico, 2020). To allow for increased participation in the occupations of leisure and social participation, I created an activity binder to assist staff in leading appropriate group activities with guests with dementia. While creating the activity binder, I considered interests and the guests' varying cognitive abilities and utilized Montessori principles to create an activity binder. By using the Montessori Method, "...meaningful, inclusive, failure-free activities to

enhance quality of life" are created (Jassen et al., 2020, p.1). There are several benefits to using the Montessori Method. Ducak et al., (2018) explain that Montessori principles decrease negative behaviors in individuals with dementia. Montessori programs are typically multisensory, and the program focuses on the individual's abilities rather than the deficits (Camp et al., 2017). Activities that are appropriate for a Montessori based approach include arts and crafts, music, simple games, sensory stimulation activities, dance, yoga, gardening, mealtime, social groups, and reading groups (Chan et al., 2021; DeVries et al., 2019; Smith & D'Amico, 2020) Activities included in the binder for this specific adult day center reflect the findings of these researchers.

## Outcome Measurements

### *Guest Engagement*

Dabelko-Schoeny and King (2010) explain that engagement and participation in activities improve the well-being of individuals who have dementia. According to researchers, the positive forms of engagement in individuals with dementia are elicited when Montessori-based activities are implemented (Judge et al., 2000). Engagement levels of guests at the day center were measured using the Group Observational Measurement of Engagement (GOME). Observational outcomes measured with this tool include engagement, mood, and sleep (Cohen-Mansfield, 2018). Engagement is constructed by three variables: engagement, active participation, and attitude towards the activity (Cohen-Mansfield, 2018). Cohen-Mansfield et al. (2017) found that the GOME had good inter-rater reliability and validity when used to measure group engagement in individuals with dementia. I completed this tool after staff observed me facilitate activities. The staff had three weeks of practice facilitating activities. The staff had

received feedback regarding their ability to facilitate activities and after staff had received all educational materials.

### *Staff Confidence and Knowledge*

Researchers have found that providing educational opportunities regarding dementia management to formal caregivers has a positive impact on knowledge, attitudes, and confidence (A. Scerri & C. Scerri, 2019). To measure staff confidence and knowledge related to working with guests with dementia, staff completed a pre-and-post survey. The staff was asked to rate six items related to perceived knowledge and confidence using a five-point Likert scale.

### *Staff Satisfaction*

Staff satisfaction with educational opportunities and the activity binder was assessed using a survey. The survey consisted of ten satisfaction-related questions, rated using a five-point Likert scale and two open-ended questions related to specific likes and dislikes of all materials provided. The survey was given to staff after attending the initial presentation of ACLS scores, implementing activities in the activity binder, and viewing a training video regarding how to lead group sessions with guests with dementia.

## Results

### Staff Confidence and Knowledge

Staff participated in training sessions I led. Training consisted of educational materials describing the ACLs and their implications, general recommendations related to appropriate activities and level of assistance, and communication strategies. Additionally, staff observed me facilitate activities for one week. After completing this training, the staff then facilitated activities while I observed. While observing the staff during the first week, I first offered immediate feedback during the activity session. During the second week, the I completed a

written performance review based on observations made during the facilitation of the activities outlined in the activity binder. Unfortunately, due to staff turnover, only one staff member could complete all the training and receive a written performance review. The main areas of growth noted in the performance reviews included music during activities, moving around the room to actively engage with each guest, modeling movements for guests to copy, and having guests take turns answering questions, voicing opinions, or reading. The main areas of strength noted in the performance reviews were introducing the activity, having a positive attitude towards every group member, appropriately re-directing guests, and encouraging guests to participate in some capacity.

To measure staff confidence and knowledge before and after receiving training and verbal and written feedback, staff completed a pre-and-post survey consisting of six questions to be rated using a five-point Likert scale. The staff member that completed the training and received feedback total score on the survey improved from 25 points to 30 points.

**Staff Satisfaction**

I created an activity binder and educational resources for staff use at the site. The activities included in the binder reflect the interests and cognitive levels of the guests at the day center. The educational resources provided by me included handouts outlining cognition, cueing and communication strategies, and tips for facilitating craft activities and reading activities. Additionally, I provided the staff member with a training presentation regarding the activities' facilitation. To measure staff satisfaction, the staff member completed a survey. The survey consisted of ten satisfaction-related questions rated using a five-point Likert scale and two open-ended questions related to specific likes and dislikes of all materials provided. The staff member scored each item as a 5, very satisfied. Regarding what the staff member enjoyed about the

activity binder and educational materials, the staff member indicated, “I liked how organized the binder was” and “I feel comfortable working with people with dementia after learning everything you taught me.” Regarding what the staff member would like to change about the activity binder and educational materials, they stated, “I wish I had more opportunities to watch you facilitate sessions” and “I wish I had more opportunities to receive feedback from you about how I am doing.”

**Guest Engagement**

I observed the staff member facilitate three different group activities with guests at the day center who had dementia; the guests in the groups scored between 2 and 3 on the ACLS. Due to staffing issues, I was not able to observe more activity sessions. The average group size was between four and eight guests. A total of twelve guests participated in the activities. The activities that the staff member led included an exercise activity, a virtual field trip, and a craft. The activity sessions lasted between 15 and 30 minutes. A staff member facilitated each session in a low-stimulation environment. While observing the staff member facilitate activity sessions, I completed the GOME for each guest who attended the activity session. Table 1 reports the results of the GOME.

Table 1

*Comparison of mean engagement, participation, attitude, positive mood, and sleep during various group activities.*

| Variable | Exercise | | Virtual Field Trip | | Craft | |
|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | Mean | SD |
| Engagement | 2.875 | 1.96 | 4.00 | 1.67 | 3.25 | 0.92 |
| Active Participation | 1.75 | 1.38 | 3.167 | 1.33 | 2.75 | 0.5 |
| Attitude | 4.5 | 1.19 | 5.167 | 1.17 | 5.75 | 0.5 |
| Positive Mood | 2.375 | 1.60 | 2.667 | 0.81 | 4.00 | 0 |
| Asleep | 0.625 | 1.41 | 0.5 | 1.22 | 0 | 0 |

*Note.* SD = standard deviation.

## Discussion

Researchers have shown that individuals with dementia benefit from being able to participate in a variety of engaging, relevant, and meaningful activities that provide cognitive stimulation and promote socialization (Smallfield & Heckenlaible, 2017; Tak et al., 2014). This project aimed to address the occupational engagement of guests with dementia during group activities with dementia at an adult day center using a cognitive-based approach to activity design. Additionally, researchers have also explained that education explicitly related to dementia care for formal caregivers has significant benefits in staff knowledge and confidence, and the effects of training on job satisfaction for formal caregivers is promising (A. Scerri & C.

Scerri, 2020; Vernooij-Dassen et al., 2009). The secondary aim of this project addressed staff confidence and knowledge as it relates to interacting with individuals with dementia and staff satisfaction with resources and educational materials provided to assist staff in facilitating group activities.

**Staff Confidence and Knowledge**

Continuous exposure to education regarding dementia and caregiving can benefit formal caregivers (A. Scerri & C. Scerri, 2019). In the present study, the staff member at the adult day center received multiple educational opportunities to learn how to facilitate group activities with individuals who have dementia, including a training presentation and multiple performance reviews. The staff member demonstrated an increase of five points on the post-survey given to measure staff confidence and knowledge. Employees who report higher levels of dementia knowledge are more likely to use evidence-based guidelines and external knowledge (Scerri et al., 2020). When observing the staff member facilitating group activities, then I noted that the staff member incorporated much of the information covered in the educational materials provided. Past researchers concluded there is a correlation between perceived staff attitude and better care practices (Scerri et al., 2020). When observing the staff member, I noted that the individual had a positive attitude, and the staff member could get all participants in the group activity to participate in some fashion. The staff member demonstrated a good ability to use various methods, depending on the guest, to get them to be more involved in the activity. According to researchers, training for formal caregivers should include educational materials on intellectual and interpersonal skills (Scerri et al., 2020). The training provided to the staff member addressed both areas. Based on both the performance reviews and the staff confidence and knowledge survey, the staff member demonstrated good intellectual and interpersonal skills.

**Staff Satisfaction**

Researchers argue that a correlation exists between the turnover rate of formal caregivers and job satisfaction (Coogle et al., 2006). Additionally, job satisfaction is positively related to improved quality of care and patient outcomes, such as improved quality of life (Coogle et al., 2006; Rajamohan et al., 2019). In the present study, the staff member reported a high level of satisfaction with the activity binder and the educational materials that I created. I created these materials to offer staff members support to facilitate meaningful activities with individuals who have dementia. According to researchers, factors such as a friendly environment and organizational support correlate to higher levels of job satisfaction among staff members working with older adults (Huang et al., 2020). I created a friendly and supportive environment for the staff member using educational opportunities and made changes to the activity binder and educational materials based on feedback from the staff member. By offering staff members at the adult day center multiple opportunities to receive education regarding cognition and its implications as well as education on how to properly facilitate group activities among individuals with dementia, I could offer the staff member support they needed to successfully engage with the individuals with dementia.

**Guest Engagement**

In the present study, guests had high scores on the GOME when participating in activities in the binder. Specifically, guests demonstrated higher scores on the GOME when participating in craft activities. When completing the interest checklist, all the guests and their caregivers reported interest in crafts, coloring, and art-based activities. Only four guests reported interest in exercise activities, and six guests reported interest in reading activities. However, guests still

demonstrated high scores on GOME, particularly in attitude and positive mood during all activities. Ducak et al. (2018) highlight the importance of meaningful activities that are tailored to the needs and abilities of individuals with dementia. The researchers argue that activities such as the ones I created, help increase participation in meaningful activities and increase enjoyment in everyday life (Ducak et al., 2018). The findings of the present study highlight the importance of social connection and engagement in meaningful activities.

Occupational therapists are well-suited to address health promotion and modification related to caring for individuals with dementia (AOTA, 2017a). When creating the activity binder, I focused on promoting the strengths of the guest so that staff could promote maximal engagement in preferred activities for individuals with dementia. Additionally, the educational materials I created addressed environmental modifications. These educational materials promoted maximum participation in preferred social and leisure activities. According to Eastham and Cox (2016), suitable environments to facilitate activities promote increased activity engagement, which increases health and well-being for individuals with dementia. By creating activities that focused on the strengths and abilities of the guests at the day center and making environmental changes at the day center, I impacted the engagement of individuals with dementia. Previous researchers explain that when individuals with dementia participate in higher levels of activities, these individuals reported better health status and functional abilities, as well as higher reports of engaging with friends and family (Fernadez-Matoralas et al., 2015). Additionally, researchers have shown that planned activities are beneficial to the health and wellbeing of older adults with dementia (Brooker & Duce, 2000).

**Limitations**

A few limitations exist for this study. The first limitation is related to staff turnover at the adult day center the study took place. At the start of the study, three staff members planned to participate in the study. However, only one staff member remained at the site during the time of data collection. Due to staff turnover, the sample size of the study was small. It is recommended that in future research, more staff members complete training on how to facilitate group activities with individuals with dementia in order to achieve a larger sample size. Another limitation of this study is related to the number of activities I observed while completing the GOME. Again, due to staffing issues, I was only able to observe three activity sessions.

**Implications for Future Practice**

The present research study found that utilizing a cognitive-based approach to activity design allowed older adults with dementia at a day center to engage in appropriate and meaningful group activities. Occupational therapists play a valuable role in providing care to individuals with dementia in a variety of settings, including adult day centers. This research adds to the growing body of literature that supports the benefits of tailoring activities to best meet the needs, interests, and abilities of older adults with dementia. I recommend further exploration of activity engagement using the GOME, using a wider variety of activities and at a larger scale. OT practitioners need to be aware of the benefits of tailoring our care to best suit the needs, interests, and abilities of older adults with dementia to positively impact their health and well-being.

References

Allen, C. K., Austin, S.L., David, S. K., Earhart, C. A., McCraith, D. B, & Riska-Williams, L. (2007). *Manual for the Allen cognitive level screen-5 (ACLS-5) and Large Allen cognitive level screen-5 (LACLS-5)*. Camarillo, CA: ACLS and LACLS Committee.

Alzheimer's Association. (2019). Alzheimer's disease facts and figures. *Alzheimer's Dement 2019*;15(3):321-87

American Occupational Therapy Association. (2011). *Tips for living life to its fullest: Living with Alzheimer's disease* [Tip Sheet]. Retrieved from https://www.aota.org/~/media/Corporate/Files/AboutOT/consumers/Adults/Alzheimers/Alzheimers%20tip%20sheet%20(2).pdf

American Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain and process (3rd ed.). *American Journal of Occupational Therapy, 68*(Suppl. 1), S1-S48.

American Occupational Therapy Association (Ed.). (2017a). Dementia and the Role of Occupational Therapy. Retrieved from https://www.aota.org/-/media/Corporate/Files/AboutOT/Professionals/WhatIsOT/MH/Facts/Dementia.pdf

American Occupational Therapy Association. (2017b). Occupational therapy's role with adult cognitive disorders [Fact Sheet]. Retrieved from https://www.aota.org/~/media/Corporate/Files/AboutOT/Professionals/WhatIsOT/PA/Facts/Cognitive-Disorders-Fact-Sheet.pdf

Amiri, E., Khiavi, F. F., Dargahi, H., & Dastjerd, E. (2017). Retirement homes: Social participation and quality of life. *Electronic Physician*, *9*(4), 4108–4113. doi: 10.19082/4108

Berenbaum, R., Tziraki, C., & Mazuz, K. (2017). The enduring self: personhood, autonomy and compassion in the context of community-based dementia daycare centers. *Journal of Compassionate Health Care, 4*(1). doi: 10.1186/s40639-017-0037-z

Berger, S., McAteer, J., Schreier, K., & Kaldenberg, J. (2013). Occupational therapy interventions to improve leisure and social participation for older adults with low vision: A systematic review. A*merican Journal of Occupational Therapy, 67*, 303–311. doi: http://dx.doi.org/10.5014/ajot.2013.005447

Bourgeois, M. S., Brush, J., Elliot, G., & Kelly, A. (2015). Join the Revolution: How Montessori for Aging and Dementia can Change Long-Term Care Culture. *Seminars in speech and language*, *36*(3), 209–214. https://doi.org/10.1055/s-0035-1554802

Brooker, D., & Duce, L. (2000). Wellbeing and activity in dementia: a comparison of group reminiscence therapy, structured goal-directed group activity and unstructured time. *Aging and Mental Health*, *4*(4), 354–358. https://doi.org/10.1080/713649967

Camp, C., Antenucci, V., Roberts, A., Fickenscher, T., Erkes, J., & Neal, T. (2017). The Montessori method applied to dementia: an international perspective. *Montessori Life: A Publication of the American Montessori Society*, *29*(1), 40–47

Centers for Disease Control and Prevention. (2019). What is Alzheimer's disease? Retrieved from https://www.cdc.gov/aging/aginginfo/alzheimers.htm

Chan, H. Y., Yau, Y. M., Li, S. F., Kwong, K. S., Chong, Y. Y., Lee, I. F., & Yu, D. S. (2021). Effects of a culturally adapted group based Montessori based activities on engagement and affect in Chinese older people with dementia: a randomized controlled trial. *BMC geriatrics*, *21*(1), 24. https://doi.org/10.1186/s12877-020-01967-0

Chang, P.-J., Wray, L., & Lin, Y. (2014). Social relationships, leisure activity, and health in older adults. *Health Psychology*, *33*(6), 516–523. doi: 10.1037/hea0000051

Chen, S.-W., & Chippendale, T. (2018). Leisure as an end, not just a means, in occupational therapy intervention. *American Journal of Occupational Therapy*, *72*(4). doi: 10.5014/ajot.2018.028316

Cohen-Mansfield, J. (2018). The impact of group activities and their content on persons with dementia attending them. *Alzheimer's Research & Therapy*, *10*(1), 37–37. https://doi.org/10.1186/s13195-018-0357-z

Cohen-Mansfield, J., Hai, T., & Comishen, M. (2017). Group engagement in persons with dementia: the concept and its measurement. *Psychiatry Research*, *251*, 237–243. https://doi.org/10.1016/j.psychres.2017.02.013

Cole, M. & Tufano, R. (2008). *Applied theories in occupational therapy: A practical approach*. Thorofare, NJ: SLACK Incorporated.

Coogle, C., Head, C., & Parham, I. (2006). The Long-Term Care Workforce Crisis: Dementia-Care Training Influences on Job Satisfaction and Career Commitment. *Educational Gerontology, 32*(8), 611–631. https://doi.org/10.1080/03601270500494147

Dabelko-Schoeny, H., & King, S. (2010). In their own words: participants' perceptions of the impact of adult day services. *Journal of gerontological social work*, *53*(2), 176–192. https://doi.org/10.1080/01634370903475936

DeVries, D., Bollin, A., Brouwer, K., Marion, A., Nass, H., & Pompilius, A. (2019). The impact of reading groups on engagement and social interaction for older adults with dementia: a literature review. *Therapeutic Recreation Journal*, *53*(1), 53–75.

DiZazzo-Miller, R., Pociask, F. D., & Adamo, D. E. (2020). The role of confidence in family caregiving for people with dementia. Physical & Occupational Therapy in Geriatrics, 38(4), 355–369. https://doi.org/10.1080/02703181.2020.1762824

Ducak, K., Denton, M., & Elliot, G. (2018). Implementing Montessori Methods for Dementia™ in Ontario long-term care homes: Recreation staff and multidisciplinary consultants' perceptions of policy and practice issues. *Dementia (London, England)*, *17*(1), 5–33.

Eastham, A. J., & Cox, D. (2017). Dementia-friendly wards: a review of the literature and pilot study of patient interaction and daily activity engagement. *International Journal of Health Governance*, *22*(1), 25–36. https://doi.org/10.1108/IJHG-05-2016-0027

Fernández-Mayoralas, G., Rojo-Pérez, F., Martínez-Martín, P., Prieto-Flores, M. E., Rodríguez-Blázquez, C., Martín-García, S., Rojo-Abuín, J. M., Forjaz, M. J., & Spanish Research Group on Quality of Life and Ageing (2015). Active ageing and quality of life: factors associated with participation in leisure activities among institutionalized older adults, with and without dementia. *Aging & mental health*, *19*(11), 1031–1041. https://doi.org/10.1080/13607863.2014.99673

Gitlin, L. N., Winter, L., Burke, J., Chernett, N., Dennis, M. P., & Hauck, W. W. (2008). Tailored activities to manage neuropsychiatric behaviors in persons with dementia and reduce caregiver burden: a randomized pilot study. *The American journal of geriatric psychiatry: official journal of the American Association for Geriatric Psychiatry*, *16*(3), 229–239. https://doi.org/10.1097/JGP.0b013e318160da72

Horowitz, B., & Vanner, E.A. (2010). Relationships Among Active Engagement in Life Activities and Quality of Life for Assisted-Living Residents. *Journal of Housing For the Elderly, 24*, 130 - 150.

Huang, C. Y., Weng, R. H., Wu, T. C., Hsu, C. T., Hung, C. H., & Tsai, Y. C. (2020). The impact of person-centred care on job productivity, job satisfaction and organisational commitment among employees in long-term care facilities. *Journal of clinical nursing*, *29*(15-16), 2967–2978. https://doi.org/10.1111/jocn.15342

Janssen, L. M., Kinney, J. M., & Farfsing, K. M. (2020). Through the Montessori Looking-Glass: Barriers to Implementing a Montessori-Based Intervention. *Journal of applied gerontology*, 733464820938270. Advance online publication. https://doi.org/10.1177/0733464820938270

Judge, K. S., Camp, C. J., & Orsulic-Jeras, S. (2000). Use of Montessori-based activities for clients with dementia in adult day care: Effects on engagement. *American Journal of Alzheimer's Disease*, *15*(1), 42–46. https://doi.org/10.1177/153331750001500105

Kielhofner, G. (2009). *Conceptual foundations of occupational therapy practice*. Philadelphia: F.A. Davis Company.

Klyczek, J. P., Bauer-Yox, N., & Fiedler, R. C. (1997). The interest checklist: A factor analysis. *American Journal of Occupational Therapy*, *51*(10), 815–823. doi: 10.5014/ajot.51.10.815

Rajamohan, S., Porock, D., & Chang, Y.-P. (2019). Understanding the relationship between staff and job satisfaction, stress, turnover, and staff outcomes in the person-centered care nursing home arena. *Journal of Nursing Scholarship*, *51*(5), 560–568. https://doi.org/10.1111/jnu.12488

Scerri, A., Innes, A., & Scerri, C. (2020). Person-centered dementia care in acute hospital wards—the influence of staff knowledge and attitudes. *Geriatric Nursing*, *41*(3), 215–221. https://doi.org/10.1016/j.gerinurse.2019.09.001

Scerri, A., & Scerri, C. (2019). Outcomes in knowledge, attitudes and confidence of nursing staff working in nursing and residential care homes following a dementia training programme. *Aging & Mental Health*, *23*(8), 919–928. https://doi.org/10.1080/13607863.2017.1399342

Smallfield, S., & Heckenlaible, C. (2017). Effectiveness of Occupational Therapy Interventions to Enhance Occupational Performance for Adults With Alzheimer's Disease and Related Major Neurocognitive Disorders: A Systematic Review. *The American journal of occupational therapy, 71*(5),1-9. https://doi.org/10.5014/ajot.2017.024752

Smith, B. C., & D'Amico, M. (2020). Sensory-Based Interventions for Adults with Dementia and Alzheimer's Disease: A Scoping Review. *Occupational therapy in health care*, *34*(3), 171–201. https://doi.org/10.1080/07380577.2019.1608488

Tak, S. H., Kedia, S., Tongumpun, T. M., & Hong, S. H. (2014). Activity engagement: perspectives from nursing home residents with dementia. *Educational Gerontology*, *41*(3), 182–192. doi: 10.1080/03601277.2014.937217

Toit, S.H., & Buchanan, H. (2018). Embracing Cultural Diversity: Meaningful Engagement for Older Adults With Advanced Dementia in a Residential Care Setting. *The American Journal of Occupational Therapy, 72*, 7206205090p1–7206205090p8.

Vernooij-Dasssen, M. J., Faber, M. J., Olde Rikkert, M. G., Koopmans, R. T., van Achterberg, T., Braat, D. D., Raas, G. P., & Wollersheim, H. (2009). Dementia care and labour market: the role of job satisfaction. *Aging & mental health*, *13*(3), 383–390. https://doi.org/10.1080/13607860902861043

Wesson, J., Clemson, L., Crawford, J. D., Kochan, N. A., Brodaty, H., & Reppermund, S. (2017). Measurement of functional cognition and complex everyday activities in older

adults with mild cognitive impairment and mild Dementia: validity of the Large Allen's cognitive level screen. *The American Journal of Geriatric Psychiatry*, *25*(5), 471–482. doi: 10.1016/j.jagp.2016.11.021

Wilks, S. E., Boyd, P. A., Bates, S. M., Cain, D. S., & Geiger, J. R. (2019). Montessori-based activities among persons with late-stage dementia: evaluation of mental and behavioral health outcomes. *Dementia*, *18*(4), 1373–1392. https://doi.org/10.1177/1471301217703242