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IMPLEMENTATION OF THE MONTESSORI PROGRAM IN ASSISTED LIVING: POSITIVE OUTCOMES AND CHALLENGES

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Abstract: The purpose of this study was to evaluate the impact of the implementation of the Association Montessori Internationale (AMI) Montessori for Dementia and Aging (1) (MDA) program in a memory care Assisted Living community. A pre-post quasi experimental descriptive study was conducted with 29 elders in an assisted living community. The AMI MDA program1 was implemented over the course of one year; adoption of program features was documented pre- and post-implementation. Outcomes for elders included number of neuropsychiatric symptoms due to dementia (Cohen-Mansfield Agitation Inventory (2)), falls, medications and hospitalizations; attitude, attention and engagement (Observational Measure of Engagement (3)), affect (Observed Emotion Rating Scale (4)); and the Dementia Quality of Life Scale (5). The Benjamin Rose Nurse Assistant Job Satisfaction Scale (6) was used to measure employee job satisfaction before and after implementation of the program. After 1 year, the community had adopted 68% of program features compared to 28% at study start. Elders displayed significantly more positive emotions, affect, and feelings of self-esteem and belonging after the intervention; positive trends were documented for increased engagement. Overall, employee job satisfaction was higher after the implementation of the program; barriers to full implementation, however, were identified.

Key words: Montessori, aging, dementia, assisted living.

Introduction

A new person-centered approach for long-term care and aging in place communities, AMI Montessori for Dementia and Aging (1) extends the tenets of person-centered care by focusing on the abilities, needs, interests, and strengths of persons with dementia. This innovative team approach creates worthwhile and meaningful roles, routines, and activities for the person within a supportive physical environment. Montessori's philosophy was to enable persons to be as independent as possible, to have a meaningful place in their community, to possess high self-esteem, and to have the chance to make meaningful contributions to their community. The purpose of this study was to evaluate the impact of the implementation of the AMI MDA (1) program on elder and staff outcomes in a memory care Assisted Living community. The AMI MDA program was created based on the pedagogical philosophy of Dr. Maria Montessori and evidenced based person-centered approaches (7) to dementia care. The merging of the two disciplines results in a person-centered approach to life that addresses the cognitive, physical, spiritual, social and emotional needs of elders and those living with dementia. This approach facilitates changes to the way one interrelates with elders and people with dementia by improving the quality of interactions. The goal of the program was to form and maintain a caring community that is aligned with elders' needs, interests, and abilities by creating an environment that is carefully prepared to provide opportunities for success, choice, enhanced independence and self-initiated activity. Elders' lives are therefore enriched through the engagement in roles, routines and activities, fostering a sense of community belonging and well-being.

The AMI Montessori for Dementia and Aging Advisory Board has established standards and quality indicators for the application of Montessori in an aged care setting (1). The standards address three critical areas of program implementation: leadership; staff; and the prepared environment. In a community that has fully implemented this philosophy, the organizsation's leadership encourages elders to be actively involved in the decision making related to daily life. Multi-disciplinary teams are created, with a commitment to working together, with the purpose of meeting the needs of each person in their care. In addition, the organization's leadership uses effective communication tools to give staff, families, and elders a full understanding about the Montessori approach. There are financial commitments to budget allocations for best practice resources and staff training is conducted by a certified AMI Montessori for Dementia and Aging Educator. There is a formal commitment to continuous improvement of the implementation of MDA. For instance, staff collect, maintain and use a comprehensive individual profile of needs, interests and strengths. Through collaboration with elders and their families, staff actively seek out and create opportunities for elders to act independently, exercise choice, move about with freedom and engage in activities of interest. Throughout the day, observation is utilized as a key tool for reflection and identification of individual needs. The environment must be visually organized and aesthetically pleasing. Shared spaces in the care community must provide enticement to engage by having dedicated, interactive

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areas allocated for activities. A Montessori community has evidenced-based cues and modifications in the environment to support independence. The environment should offer a full complement of appropriate multisensory materials, resources and activities that are accessible at any time.

Study Purpose

The purpose of this project was to implement and evaluate the AMI MDA program in a memory care Assisted Living community. The program had the following goals:

1. Demonstrate implementation of the MDA program by increasing the adoption of environmental, staff, and leadership features of the program.
2. Increase elder engagement in purposeful activities, improve sense of well-being, improve affect, reduce psychotropic medication use, hospitalizations and falls, and reduce occurrence of neuropsychiatric symptoms due to dementia.
3. Increase staff job satisfaction.

Methods

The Institutional Review Board of Ideas Institute approved all study procedures and consent forms. This study utilized a pre-post, quasi-experimental design to implement and evaluate outcomes of the MDA program in one Midwestern assisted living in the United States. The assisted living is part of a non-profit continuing care retirement community housed on two campuses that includes independent and assisted living as well as skilled nursing. The assisted living area contains 42 private bedrooms and shared activity, dining and living room spaces.

Participants

Study participants were (1) 29 elders with dementia or other cognitive impairment who resided in the community and (2) 22 employees of the assisted living community. An introductory letter and consent form was sent to the person holding durable power of attorney for each elder in the community. After receipt of the signed consent form, the authors reviewed the elder's medical chart; completed a communication, cognitive and reading screening of the elder; conducted an observation during their daily activities; and completed the quality of life assessment. Participants who were employees of the assisted living community provided informed consent to complete the following: 1) a job satisfaction survey (6); and 2) a rating of the elder's neuropsychiatric symptoms (2) throughout the course of 2-weeks.

Measures

Measures used to collect data from participants who were elders with dementia or other cognitive impairment included: 1) chart review confirming diagnosis of dementia or other cognitive impairment; frequency of hospitalizations, falls, neuropsychiatric symptoms due to dementia and medications per nursing notes in the six months before and 3 months after implementation of the program; 2) informal communication screening (8)) and reading screening (9)) ; 3) the Montréal Cognitive Assessment (MoCA) (10); 4) the Observational Measure of Engagement (3); 5) the Observed Emotion Rating Scale (4)); and, 6) the Dementia Quality of Life Scale (5). Employee participants completed the Benjamin Rose Nurse Satisfaction Survey (6), and the Cohen-Mansfield Agitation Inventory (2) for elder participants in the study. Lastly, a program implementation checklist adapted from AMI MDA standards (Table 1) was also completed to assess program fidelity and measure specific elements of program implementation. All of these measures with the exception of the informal communication screening, reading screening and MoCA were re-administered post- implementation and are described in more detail below.

After informed consent was completed, the second author reviewed each participant's medical record to confirm diagnosis of cognitive impairment or dementia related disorder. The number of current medications, falls and hospitalizations was also recorded in the prior 6 months pre-implementation (6-months prior to implementation month 1) and at 3- months post-implementation. Finally, nursing notes were reviewed by the second author to assess frequency of neuropsychiatric symptoms due to dementia in the prior 6 months pre-implementation (6-months prior to implementation month 1) and at 3-months post-implementation. Neuropsychiatric symptoms due to dementia were defined as events that were significant enough for the nursing staff to record in a log and included violence toward other elders, inappropriate sexual advances toward other elders and verbal lashing out toward care partners.

The informal communication screening (8) was administered to each elder as well. The participant was asked his or her age, primary language, and they were observed as to whether or not they had glasses and/or hearing aids. During this process, elders were asked to about their education, hobbies, former occupation, likes and dislikes. The researchers observed conversational features of the elder including the ability to maintain topic, to initiate new topics, to request clarification, to take turns and ask questions. Researchers also noted if the elder was verbal at the single word, short phrase, few sentences or many sentences level. A reading screening was then conducted with each elder (9). Elders were assessed according to the optimal font for oral reading and reading for following simple, 1-step directions.

The MoCA (10) was completed with each elder for descriptive purposes only. The MoCA is a well-studied cognitive screener assessing visuospatial and executive functioning, naming, memory, attention, language, abstraction, delayed recall and orientation. Normal cognitive functioning is considered to be a score of 26 or higher out of 30 possible points, adding an additional point for any individuals who have 12 years of education or less.

Table 1
Montessori for Aging and Dementia Program Implementation Checklist

Area 1 - Leadership	**Pre**	**Post**
All aspects of the organization are guided by the values of the AMI MAGAD Charter.	25%	100%
Leadership encourages elders to be actively involved in the decision making related to daily life.	75%	75%
Leadership has established and utilizes admission policies and practices that support the aim of the AMI MAGAD Charter.	0%	25%
Multi-disciplinary teams are created with the purpose of meeting the needs of each person in their care.	50%	50%
The organization's leadership uses effective communication tools to give all stakeholders a full understanding about the Montessori for Aging and Dementia.	0%	75%
There are financial commitments to budget allocations for best practices training and resources.	0%	100%
The organization employs a multidisciplinary staff that has been trained by a certified AMI Montessori for Aging and Dementia Educator.	0%	75%
	21%	71%
Area 2 - Staff		
Staff display attitudes and behaviors of caring, respect, calm and patience.	75%	75%
Staff opportunities for older adults to act independently, exercise choice, move about with freedom and engage in activities of interest.	25%	75%
Observation is utilized as a key tool for reflection and identification of individual needs.	25%	50%
Staff involve individuals in daily tasks as appropriate.	0%	50%
Staff collect, maintain and use a comprehensive individual profile of needs, interests and strengths.	25%	75%
Staff use positive, supportive verbal and non-verbal communication techniques.	25%	50%
Staff involve the elder and significant others in care plan development and review.	100%	100%
Staff are trained in Montessori for Ageing and Dementia.	0%	75%
The organization has made a formal commitment to continuous improvement of the implementation of Montessori for Ageing and Dementia.	0%	50%
	30.%	67%
Area 3 – The Prepared Environment		
The prepared environment is organized and provide enticement to engage with dedicated interactive activity spaces.	25%	75%
There are appropriate cues and modifications to the environment to support independence.	0%	75%
The environment offers a full complement of appropriate Montessori-based multi- sensory materials, resources and activities that are accessible at any time.	0%	50%
The environment offers different space and seating for quiet contemplation, reading, intimacy and socialization.	100%	100%
Meals provide opportunities for choice, social connection and independence.	25%	50%
Individuals have easy access to safe, interesting and inviting outdoor areas.	50%	50%
	33%	67%
OVERALL	28%	68%

The Observational Measure of Engagement (3) involved the investigators rating each elder according to 'Attention' and 'Attitude' during a 5-minute observation of the elder during an activity. Attention was rated on a 4 point Likert scale where 1 corresponds to 'not attentive' and 4 corresponds to 'very attentive'. Attitude was ranked on a 7 point Likert scale, ranging from 1 (very negative) to 7 (very positive). Inter-rater reliability for this measure was reported to be 84% for engagement outcome measures (3).

The Observed Emotion Rating Scale (4) was completed for each elder as well. The investigators ranked elders according to their facial affect and other qualities that display either negative emotions or positive emotions. The maximum score for the display of both positive and negative emotions is 5, corresponding to the idea that the participant strongly displays that emotion. The minimum score for the display of both positive and negative emotions is 1, corresponding to the idea that the participant never displays that emotion. Kappa reliability for each of these emotion ratings was reported to be .76 or higher and validity, and validity estimates were also deemed supportive of the measure.

The Dementia Quality of Life Scale (5) is a self-report measure of 5-constructs of quality of life: positive affect, negative affect, feelings of self-esteem, feelings of belonging, and experience of aesthetics. Visual supports, including a 24-point type size rating scale and captioned pictures representing the topic of the questions, were used to support communication during the administration of this measure. Internal consistency of all constructs was reported to be .67 or higher

The Benjamin Rose Nurse Assistant Job Satisfaction Scale (6) was administered as a measure of job satisfaction before and after implementation of the program. A score of 0 reflects a highly dissatisfied employee and a score of 3 reflects a highly satisfied employee. This measure has been shown to demonstrate appropriate validity and reliability of .92 (6).

The Cohen-Mansfield Agitation Inventory (2) was completed by employee participants for all participants at pre-and post-implementation of the program. Familiar staff rated levels of agitation for 29 types of physical and verbal aggressive and non-aggressive behavior. While there are subscales to this measure, for the purposes of this study, participants were given an overall agitation score, ranging from 150 (maximum agitation) to 29 (minimum agitation). Cronbach's alpha for this measure was reported to be .86, .91 and .87 for raters (2).

A Program Implementation Checklist adapted from the AMI MDA standards was developed to record the frequency of the program features/standards in place before and after the program was implemented. As shown in Table 1, three standards areas were assessed: Leadership (7 features), Staff (9 features) and Prepared Environment (6 features), for a total of 88 required components of a fully implemented program. Each feature was observed to be: 0=Not at all implemented;

1=started to be implemented; 2=moderately implemented; 3=mostly implemented; 4=fully implemented.

Data Analysis

All raw data was entered into Microsoft Excel and later SPSS 24. Descriptive data analysis of all variables included means, standard deviations and ranges of responses. Pre-post and paired sample t-test comparisons were conducted as appropriate.

Implementation of Montessori Program Procedures

After obtaining consent for the elder participants, and collecting the pre-implementation measures the project began with a two-day educational workshop by the first author; 80% of the care partners, nurses, and other life enrichment staff who worked in the care area attended the workshop (8 Life care enrichment staff, 3 nurses, and 11 care partners, respectively). The didactic, interactive presentation included hands on practice with Montessori materials. A team was then created to lead the Montessori initiative within the community. This team, in collaboration with the first author, identified barriers to participation and needed environmental cues to support the Montessori activities. The following environmental changes were made: replaced room name and number plate room signs with photos that were enlarged, enhanced with a colorful border, framed, and hung on the wall next to the elder's bedroom doorway; furniture was rearranged to increase resident activity participation; wayfinding signage and cues were created; wayfinding cues (large colorful themed decals) were placed at the entrance to elder bedroom hallways and new signage was designed and mounted to improve the elders' ability to find common locations such as their rooms, the dining room and the living room. Kelly green name tags were implemented for all employees and elders within the community. Name tags were of appropriate type size and font for elders to call both each other and other care partners by name throughout the living community.

Next, all elders' interests, skills and abilities were documented through a "Life Story Form" which was co-constructed by assisted living employees and the 1st author (Appendix A). After reviewing these forms, 84 different types of activity materials were purchased or created by the authors, with approximately 25 displayed at one time on trays or in containers and placed in the living room bookcases. Signs were created for some of the activities to act as invitations for engagement. Activities were based on elders' interests and some examples included flower arranging, sewing, reading, games, sorting, folding laundry, or puzzles. A refreshment station was created to promote the independent consumption of food and drink throughout the day.

In addition, elders' interests and desires were identified to match each elder with a community role to support purposeful and meaningful living. Prior to the implementation of the program, none of the elders had a community role. Possible community roles included wiping down tables and chairs after meals, garden caretaker, delivering cards, setting tables, passing out waters, serving appetizers, folding bulletins, visiting other residents, writing the menu for lunch and supper, playing the piano for sing a longs and bible study, delivering mail, volunteering in the mini mart volunteer, creating art with a fellow resident. Families and staff were also instructed, via a workshop on making memory books, to support both conversation and activities of daily living.

Weekly coaching calls that ranged in time from 30 minutes to 120 minutes were conducted with the first author and the Life enrichment staff for a 1-year period. These calls were designed to problem solve barriers to program implementation, as described below.

Results

Twenty-nine elders participated in the implementation of Montessori for Aging in Dementia had a mean age 89.52 years (SD = 7.17) The majority of participants were female (26/29) and wore glasses (22/29). Most of the participants did not wear hearing aids (23/29). All of the participants spoke English, and one participant was bilingual, also speaking German fluently. All participants passed a conversational screening (8), demonstrating ability to participate in conversation verbally at least at the word level. The majority of participants passed a reading screening (9) (20/29) at a 12-point font, (3/29) at a 16-point font, (2/29) at a 24-point font, and (1/29) at a 36-point font. Three participants did not pass the reading screening due to significant visual challenges; however, these participants were still included in the study as they participated in personalized roles and activities that did not require fine use of vision or visual cues. Participants' Montreal Cognitive Assessment[10] mean scores were 9.86 out of 30 (SD = 5.71; range = 2 – 25). All employee participants were female, except for one male; 8 were Life care enrichment staff, 3 were nurses, and 11 were care partners.

The first goal of this evaluation was to demonstrate implementation of the MDA program by increasing the adoption of leadership, staff, and environmental features of the program. Table 1 illustrates the pre- and post-scores on the MDA Implementation checklist. Staff and elders were observed, policies and practices were reviewed and the environment was evaluated to determine the degree of implementation of each Montessori program standard. Each standard was rated on a Likert scale reflecting '0' meaning no implementation and '4' meaning fully implemented. Likert scale ratings were then converted to percentages to describe the degree to which the community was enacting the practice: '0' or not at all implemented, 25% implemented; 50% implemented; 75% implemented or 100% or fully implemented.

Upon paired t-tests, significant differences for each aspect of the program (i.e., Leadership ($p<.01$), Staff ($p<.002$), and Environment) ($p<.04$) were demonstrated by comparing pre-

Table 2
Pre- and Post-Implementation frequency of neuropsychiatric symptoms due to dementia, falls, hospitalizations, and medications, Cohen-Mansfield Agitation Inventory

Measure	Pre-Implementation			Post-Implementation		
	Mean	SD	Range	Mean	SD	Range
Neuropsychiatric symptoms due to dementia	1.86	2.03	0 -7	1.48	2.8	0 -14
Falls	1.52	1.62	0- 6	1.38	1.35	0 -5
Hospitalizations	.31	.97	0- 5	0	0	0
Medications	11.83	4.49	5-23	11.86	4.1	4-24
Cohen-Mansfield Agitation Inventory	40.34	9.34	20-63	41.86	6.64	29-64

Note: None of the pre-post comparisons were significantly different.

Table 3
Pre- and Post-Implementation scores on the Observed Measure of Engagement3 and the Observed Emotion Affect Scale4

Subscale	Pre-Implementation			Post-Implementation		
	Mean	SD	Range	Mean	SD	Range
Engagement - Attention	3.17	.97	1 to 4	3.14	.69	1 to 4
Engagement - Attitude	5.28	1.39	2 to 7	5.17	1	3 to 7
Affect - Negative emotion	1.19	.40	1 to 2.67	1.14	.26	1 to 2
Affect - Positive emotion	3.35	1.04	1 to 5	3.97*	.76	1.5 to 5

Note: * p<.01

and post- program implementation features. Although these data confirm that significant changes were made in all program areas, the implementation percentage scores ranged from 67% to 71% at the end of the study, documenting that the program was less than fully implemented.

The second goal of this program was to increase elder engagement in purposeful activities, improve sense of well-being, improve affect, reduce psychotropic medication use, hospitalizations and falls, and reduce occurrence of elder neuropsychiatric symptoms due to dementia, and thereby, improve perceived quality of life. The frequency of falls, medications, hospitalizations and neuropsychiatric symptoms due to dementia from nursing notes pre- and post-implementation are documented in Table 2. After frequency and then descriptive analysis, none of the paired sample t-test pre-post comparisons were significantly different. In addition, there were no statistically significant pre-post paired sample t-test differences between the means of the frequency and/or intensity of agitated events as rated by the employees for the elder participants in the study on the Cohen-Mansfield Agitation Inventory (2).

Descriptive analysis of the Observation Measure of Engagement (3) which included subscales of Attention and Attitude, included mean, standard deviation and range of variables. Paired sample T-test comparisons did not reveal any significant changes pre- and post-program implementation. Descriptive analysis of means via a paired sample t-test on the Observed Emotion Rating Scale (4), however, revealed a significant increase in positive emotions from pre-implementation, (M=3.35, SD =1.04) to post-implementation (M=3.97, SD=.76); t(28)=-2.83, p = .009. Table 3 displays the means pre- and post-program implementation for the observational measures of engagement and affect. Reliability for each point of observation on these two measures was completed by two independent observers and point-to-point agreement was 80% or greater, with a range of 80% to 100% agreement. In addition, 15 out of 29 elders had a purposeful community role post program implementation.

The Dementia Quality of Life Scale (5) captured significant positive outcomes from pre-program implementation to post-program implementation in the areas of self-esteem, positive affect and belonging. These mean data are further displayed in Table 4 and results of paired t-tests reveal the following significant differences for self-esteem, positive affect, and belonging respectively, t(28)=-4.21, p = .000; t(28)=-2.45, p=.017; t(28)=-5.03, p=.000. Significant changes were not,

Table 4
Pre- and post-implementation scores on the Dementia quality of life scale5

Subscale	Pre-Implementation			Post-Implementation		
	Mean	**SD**	**Range**	**Mean**	**SD**	**Range**
Self-esteem	3.34	.69	1 to 4.5	3.90**	.50	2.25 to 4.75
Positive affect	3.67	.56	2.17 to 4.67	3.96*	.36	2.83 to 4.67
Negative affect	2.17	.46	1 to 3.09	2.05	.44	1 to 3
Belonging	3.24	.67	1 to 4.67	3.95**	.51	3 to 4.67
Aesthetics	3.65	.60	1.8 to 4.8	3.5	.58	2 to 5

Note: * p<.01; **p<.001

however, noted in negative affect or aesthetics.

Descriptive analysis of the job satisfaction survey in terms of means, standard deviations and range of responses was also conducted. Staff displayed statistically significantly higher job satisfaction (6) from pre-implementation (M=1.56, SD =.32) to post-implementation (M=2.04, SD=.5); t(20)=-3.4, p = .003 according to paired sample t-tests.

Discussion

The purpose of this study was to evaluate the implementation of the MDA program in an assisted living facility and document elders' and staff outcomes. After 1 year, the community had adopted 68% of program features compared to 28% at study start. This represents statistically significant improvements in each area of the AMI MDA program, Leadership, Staff, and Environment. One very critical barrier to implementation was the lack of a large, cohesive, multidisciplinary team to lead and sustain this initiative. During the project, the community experienced higher than typical staff turnover for their community, which resulted in lower than normal staffing levels. Nursing management worked overtime as caregivers to meet the basic needs of the elders. This meant that nursing management and front-line nursing staff were not available for the Montessori team meetings. In addition, there was turnover in the Life Enrichment department, so this department also operated with less than normal staffing for several months. A new Life Enrichment assistant needed to be trained in the middle of the project. The dietary department was also negatively affected by turnover, which made it difficult to collaborate with this department and incorporate aspects of the Montessori program at meal times. These staffing challenges made it problematic to both implement and sustain the Montessori program because staff were focused on addressing the immediate care issues of the elders; there was limited time for helping the elders to learn how to engage in new and different types of activities. As a result, the bulk of the program responsibilities were managed by the Life Enrichment Specialist and the Director of Dementia Care Services.

It should be noted that in comparison to other communities that have implemented a Montessori-based approach11, this project measured the program features implemented via a fidelity measure, the MDA Implementation Checklist. It is important for future programs to document the fidelity of their implementation in order to be able to compare across studies and to better understand the relative importance of specific program features.

With the documented level of implementation at 68%, elders in this study responded to the changes implemented by displaying significantly more positive emotions, affect, and feelings of self-esteem and belonging after the intervention. These quality of life improvements may be related to a variety of changes made to the environment, the increase in activities and roles, and the behaviors of the staff as a result of their training. Future studies will need to evaluate the relative importance of these different feature changes; the current study was not designed to do a components/feature analysis. Although positive trends were documented for increased engagement, the fact that the program was not fully implemented may explain the lack of significant differences in engagement by elders. The fact that only 15 of the 29 elders were engaged in a community role at the end of the project suggests that additional staff training may be necessary to support these roles.

It is important to note that there were no statistically significant changes in the variables that have been reported to change in other Montessori programs (11). Desired reductions in medication use, falls, hospitalizations, and neuropsychiatric symptoms due to dementia were not documented, possibly due to the fact that the frequency of these instances was relatively low, with the exception of medications, at the start of the study. An additional rationale for this result may include the lack of statistical power due to decreased sample size.

Overall, employee job satisfaction was higher after the implementation of the program; the staff who participated in the training and witnessed changes in the elders reported a greater degree of job satisfaction. The persistent challenges of

short-staffing and staff turnover may have interfered with staff fully implementing the program and thereby not experiencing the potential benefits of the program.

Conclusions

Overall this study documents the value of a person-centered, Montessori-based approach to the care of elders with dementia and other conditions of aging. Implementation of specific leadership, staff, and environmental features leads to changes in the quality of life and affect of individuals with dementia and in the job satisfaction of the staff employed to care for them. Future documentation of the full implementation of this MDA approach has the potential to change significantly the culture of care and quality of life outcomes of persons with dementia.

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Conflict of Interest: Ms. Brush reports personal fees from Clark Retirement Community during the conduct of the study; personal fees as Owner, Brush Development, outside the submitted work; and serves as a volunteer member of the Association Montessori International Advisory Board for Montessori for Dementia and Aging. Dr. Douglas reports personal fees from Brush Development, during the conduct of the study. Dr. Bourgeois reports personal fees from Brush Development Company during the conduct of the study; and serves as a volunteer member of the Association Montessori International Advisory Board for Montessori for Dementia and Aging.

Ethical Standard: The Institutional Review Board of Ideas Institute approved all study procedures and consent forms. An introductory letter and consent form was sent to the person holding durable power of attorney for each elder in the community. A simplified assessment to participate was given to all elder participants. No baseline data was taken until after receipt both of the signed power of attorney consent form and signed participant assent. Both documents were kept by the lead researcher in a secure location.

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