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Activity-Based Goals Generated by Older Adults with Mild Cognitive Impairment

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Abstract

Client-centered care is one promising rehabilitation model that may support the unique needs of older adults with Mild Cognitive Impairment (MCI). This secondary analysis examined (1) whether older adults with MCI generated activity-based goals using a client-centered model and (2) the types of goals generated. Thirteen older adults with MCI addressed 55 goals. Using client-centered care, the participants generated goals despite subtle limitations in activities and participation. Participants generated the greatest number of goals related to instrumental activities of daily living. This study demonstrated that older adults with MCI generated goals through a client-centered model. This is important because older adults with MCI are at risk for disability, and they may benefit from early rehabilitation care models that minimize activity limitations and participation restrictions despite underlying cognitive impairments.

Keywords

Older adults; Goal setting; Client-centered practice; Cognitive impairment

An estimated 15 percent to 20 percent of individuals aged 65 or older have mild cognitive impairments (Alzheimer's Association, 2015). With the tripling in the number of older adults in our society, we are poised to experience a rapid growth in the number of older adults who have cognitive impairments (Alzheimer's Association, 2015). Early rehabilitation care models may still be developed and implemented to support continued engagement in meaningful daily activities, by minimizing activity limitations and participation restrictions despite underlying cognitive impairments (Rodakowski, Saghafi, Butters, & Skidmore, 2015). Mild Cognitive Impairment (MCI) is the state between normal

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Conflict of Interests

The Authors declare that there is no conflict of interest.

Research Ethics

The University of Pittsburgh, Institutional Review Board reviewed and approved the research methods discussed in the enclosed manuscript (#PRO14070341).

cognitive aging and dementia (Alzheimers Association, 2015). Older adults with MCI have some changes in their thinking and memory, yet less severe declines compared to those with dementia. Unfortunately, older adults with MCI are at risk for declining to disability, (Mitchell & Shiri-Feshki, 2009) but they do not currently received traditional rehabilitation interventions.

Early rehabilitation care models need to address the unique needs of older adults with MCI, as they do not experience overt disability (De Vriendt et al., 2013). Based on the diagnostic criteria put forth in the *Diagnostic and Statistical Manual of Mental Disorder, Fifth Edition*, individuals with MCI have independence in basic daily activities but may require greater effort or adaptations in complex activities (American Psychiatric Association, 2013). The greater effort or adaptations are distinctly different from individuals who have dementia; according to the diagnostic criteria, cognitive deficits experienced by individuals with dementia interfere with independence (American Psychiatric Association, 2013). Recent research operationalizes these criteria and have found that individuals with MCI demonstrate greater limitations in cognitively demanding instrumental activities of daily living (e.g., medication management and financial management) when compared to older adults with normal cognition (Ciro, Anderson, Hershey, Prodan, & Holm, 2015; Jekel et al., 2015; Rodakowski et al., 2014). Furthermore, the deficits experienced by individuals with MCI are distinctly different than the deficits experienced by those dementia (Cullum et al., 2001; Jekel et al., 2015; Pereira et al., 2010); large effect sizes (Cohen's $d = 2.18$) have been found when comparing performance of instrumental activities of daily living in individuals with MCI compared to those with dementia (Jekel et al., 2015). This research emphasizes that the limitations in daily activities experienced by individuals with MCI are subtle; clients may not fully recognize the activity limitations and participation restrictions that they experience. Furthermore, future changes will likely be incremental and insidious.

Client-centered care is one potential model that could minimize activity limitations and participation restrictions for older adults with MCI. Client-centered care includes the client in goal setting, care decisions, and monitoring of outcomes, meaning clients are central to the development and implementation of care (Epstein & Street, 2011). Individuals with MCI may particularly benefit from this model in rehabilitation due to the subtle limitations and restrictions they experience.

Goal setting is a critical component to client-centered care models, as it provides the foundation for intervention (Doig et al., 2010; Toto, Skidmore, Terhorst, Rosen, & Weiner, 2015). Evidence shows that client-centered goals result in better outcomes than provider-selected goals (Lunenburg, 2011; Ottenbacher & Cusick, 1990). Lunenburg (2011) emphasizes the importance of client-centered goals and suggests that provider-selected goals results in client's not committing to the goals. The idea of client and clinician collaboration in setting goals ensures that goals are realistic, achievable, and clients are more likely to commit to the goals (Reuben & Tinetti, 2012). Ultimately, the generation of client-centered goals maximizes potential outcomes (Reuben & Tinetti, 2012). The ability of individuals with MCI to set client-centered goals in a rehabilitation program when their limitations and restrictions are subtle is unknown. Thus, drawing from a parent study, the purpose of this secondary analysis is to investigate whether older adults with MCI generated activity-based

goals using a client-centered model. Secondly, we sought to categorize the types of goals generated to inform the design for early rehabilitation programs that use a client-centered approach.

METHODS

We employed a single-group design to examine a collaborative goal setting process between a licensed occupational therapist and a community-dwelling older adult with MCI. The University of Pittsburgh Institutional Review Board approved this study.

Participants

Participants were at least 60 years of age, adjudicated to have MCI, self-reported difficulty in at least 1 activity of daily living, and were community dwelling. The participants did not meet criteria for current major depression, have a central nervous system disorder (other than MCI), have a substance use disorder in past 5 years, or lifetime history of bipolar disorder or schizophrenia. These criteria allowed participation of older adults who had MCI without having other conditions that may be best treated outside of the study.

MCI was conferred using a comprehensive assessment program suggested by National Institute on Aging-Alzheimer's Association criteria (Beekly et al., 2007), using a two-part process of an initial screening and full screening. A neurologist and neuropsychologist adjudicated cognitive status.

Measures

Self-reported age, gender, race, ethnicity, and education were collected to describe the sample. The Modified Mini-Mental State Examine (3MS) was used to assess global cognition (Teng & Chui, 1987). The 3MS has good internal consistency (Tombaugh, Tombaugh, McDowell, Kristjansson, & Hubley, 1996). The scores can range between 0 and 100, and higher scores on the 3MS indicates better global cognition.

The Activity Card Sort was used to identify meaningful activity preferences (Baum & Edwards, 2008). The Activity Card Sort has been applied to community dwelling older adults (Carpenter et al., 2007; Everard, Lach, Fisher, & Baum, 2000), and it has been found to have internal consistency (Carpenter et al., 2007; Everard et al., 2000), test-retest reliability (Carpenter et al., 2007), as well as content and construct validity (Carpenter et al., 2007).

Goal Setting

Participants generated goals through a semi-structured interview, using a standardized process for initial goal setting in the participants' homes. The occupational therapist used the Activity Card Sort (Baum & Edwards, 2008) photos to guide the participant in identifying meaningful activities. The Activity Card Sort includes 89 photographs of older adults performing activities in the community. For the first step of the process, participants sorted these cards into categories of activities they *currently do*, have *never done*, and *previously did* and want to resume doing. Subsequently, participants were encouraged to identify

activities in their *currently do* and *previously did* piles that were most important to them to improve their performance. Then, the occupational therapist guided the participants to specify goals with objective criterion based on the identified activities. The occupational therapist ensured that the participant identified criterion that would indicate goal achievement. The therapist did that by requesting the client to align their identified criterion with their stated goal.

In the parent study, participants had nine home-based intervention sessions in which to achieve criterion set for goals generated. In those sessions, participants prioritized goals, and participants generated strategies to reach their objective criterion set; the intervention methods have been described elsewhere (Rodakowski et al., 2016).

DATA ANALYSIS

We conducted analyses using Stata 14 (StataCorp, 2015). We computed percent agreement to assess inter-rater reliability, assessing the reliability of two trained raters for counting and categorizing the goals.

For this secondary analysis, we first randomly selected three intervention sessions from each study participant (N=13) using an electronically generated random numbers table using Stata 14 (StataCorp, 2015). We then recorded the goals that were addressed during each of the selected sessions. This method assured that we would assess a variety of intervention sessions across participants, minimizing the likelihood that we only recorded goals addressed on the last session. We felt this was important, because participants may select a different type of goal in later sessions than in earlier sessions, so we captured a variety of sessions.

For the first aim, we examined the generation of goals using descriptive statistics. We summed the number of goals generated across all participants. We counted each goal only once; modifications to a goal did not count as a new goal. Then, we calculated the mean and standard deviation for the number of goals generated by each participant.

For the second aim, we categorized the goals generated using an *a priori* content analysis (Weber, 1990). We selected our categories based on the categories of occupations described in the Occupational Therapy Framework (American Occupational Therapy Association, 2014). Categories from the framework consisted of Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), rest and sleep, education, work, leisure, and social participation. We summed the number of goals within each of the categories from the framework to identify categories with the most number of goals generated by participants.

RESULTS

There was complete agreement (100% accuracy) by the two independent raters for number of goals and categorization of goals. Raters recorded all goals in the same manner, assuring consistency and accuracy.

We investigated whether older adults with MCI generated activity-based goals using a client-centered model. Thirteen older adults with MCI (Table 1 presents the sample characteristics)

generated fifty-five activity-based goals. All participants generated activity-based goals when working collaboratively with the licensed occupational therapist. Participants generated an average of 4.23 goals each ($SD = 1.48$). Below is a list of example goals that were generated by participants.

1. To get involved in a community organization by calling the local borough office to identify Lion's Club meetings times and locations, as well as attending the next month meeting.
2. To cook dinner for extended family by identifying recipes, obtaining ingredients needed, planning sequence of cooking, and cooking meal.
3. To go swimming at local community center by taking the bus to the facility after breakfast three times per week.

We categorized the types of goals generated. Participants chose 39 IADL goals, two rest and sleep goals, eight leisure goals, and six social participation goals. IADL consisted of 70.9% of all the goals generated; 12 out of the 39 IADL goals were exercise related (30.7%), contributing to the largest component within IADL goals. Participants did not select goals in the categories of ADL, education, or work. Table 2 provides categories and types of goals generated by and the numbers of goals generated in each category.

DISCUSSION

Our results suggest that community-dwelling older adults with MCI do generate activity-based goals through a client-centered process. While research suggests that individuals with MCI may not have pervasive activity limitations or participation restrictions (Rodakowski et al., 2014), they generated goals related to activities and participation. This is important to emphasize, because effective client-centered care models will likely include the opportunity for clients to generate goals related to their interest, providing a foundation for intervention. Identifying client-centered areas of interest may provide better outcomes in enhancing mental and physical activity (Epstein & Street, 2011), and future research could examine how this information could be incorporated in the design of early rehabilitation care models.

These findings are preliminary. Nevertheless, some areas bear further discussion and future exploration. First, we expected older adults with MCI to vocalize difficulty in generating goals due to subtle and insidious changes in activities and participation. No participant vocalized frustration or difficulty. Through the goal setting process with a licensed occupational therapist, all participants generated activity-based goals. These findings support goal-setting literature that encourage goal setting as a component of client-centered care. This literature suggests that activity-based goal setting is feasible (Toto et al., 2015) and that client-centered goal setting is a critical component of client-centered care models (Reuben & Tinetti, 2012).

Secondarily, we expected several goals related to leisure activities prior to the study, because leisure activities are purported to provide social support, reduce stress, and provide a venue for meaningful activities of daily living for older adults (Chang, Wray, & Lin, 2014). Nevertheless, only 14.5% percent of goals that were generated were leisure oriented. Goals

related to IADL consisted of most of the goals generated. This category consisted activities such as driving with a GPS, organizing bills, and exercising. One potential explanation for the emphasis on IADL activities may be that older adults with MCI tend to live in the community, and successful IADL performance supports independent living (Lin, Gleason, & Heidrich, 2012).

The findings from this study are promising and suggest further investigation in this area. This study, however, is not without limitations. This study was a secondary analysis, and our sample size was small. Our study was conducted with occupational therapists in the participants' homes; findings may differ based on the professionals involved and setting. Our sample was primarily white and highly educated, which limits the generalizability of our findings.

CONCLUSION

The population is expected to age, and these aging adults are anticipated to experience longer life expectancies. With age, these older adults are at risk for activity limitations and participation restrictions associated with MCI, yet individuals with MCI are not currently receiving rehabilitation interventions to minimize limitations and restrictions experienced in daily life. This study supports client-centered rehabilitation models for individuals with MCI. This study shows that older adults with MCI generate goals through a client-centered model. Self-selection of goals is important because there is a possibility for greater and better outcomes when one has an interest in the goal identified. Additionally, variability exists in the activity limitations and participation restrictions that older adults with MCI wish to address. This discovery is important so we can effectively develop future interventions that match participants' true interests, while supporting continued engagement in meaningful daily activities.

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Table 1

Study Sample Characteristics

Characteristics	N=13
Age in years, M(SD)	78.5 (7.19)
Gender, % female	69.2
Race, % White	92.3
Ethnicity, % non-Hispanic	100.0
Education, % College or above	23.1
Modified Mini-Mental State Examination (0–100) *	93.5 (4.79)

Note:

* Higher scores are better scores

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Table 2

Categories and types of activity-based goals generated, n(%)

Instrumental Activities of Daily Living 39(71%)	Rest and Sleep 2(4%)	Leisure 15(%)	Social Participation 11(%)
Organizing bills	Falling asleep within 30 minutes	Using a tablet	Going out with friends
Exercising	Waking up earlier	Woodworking	Going out to dinner
Dieting		Gardening	Going to a fitness club
Driving with GPS		Mazes/Brain Activities	Playing board games with friends
Shopping for groceries		Knitting/Sewing	Saying “no” and managing activities

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