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The Effect of Reminiscence Therapy on Cognition, Depression, and Activities of Daily Living for Patients With Alzheimer Disease

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Abstract

The purpose of this study was, conducted with experimental design, to investigate the effect of reminiscence therapy on cognition, depression, activities of daily living of institutionalized mild and moderate Alzheimer patients. The study was conducted with a total of 62 patients (31 intervention group and 31 control group) in four home care in Ankara, Turkey. Study was done between the July 1, 2013 and December 20, 2014. Reminiscence therapy sessions were held with groups consists of 4-5 patients, once a week with 30-35 minute duration for 12 weeks. Standardized Mini Mental Test was used in sample selection. Patients were listed through their mini mental test scores, and randomized as odd numbers to control group and even numbers to intervention group. Data were collected with forms developed by researcher 'Data Sheet' and 'Activities of Daily Living Follow-up Form' as well as scales 'Standardized Mini Mental Test' and 'Geriatric Depression Scale'. Chi-square, Mann Whitney-U test, variance analyses in repeated measures and Bonferroni tests were used for analysis. The increase in mean Standardized Mini Mental Test score and the decrease in mean Geriatric Depression Scale score of the individuals in the intervention group compared to the control group at the end of the reminiscence therapy was statistically significant ($P < 0.05$). At the end of reminiscence therapy sessions, increase in cognition and decrease in depression were found statistically significant in intervention group.

Keywords

Alzheimer disease, elderly, cognitive testing, depression

Introduction

Alzheimer disease (AD) together with cognitive decline causes various neuropsychiatric and behavioral problems in activities of daily living, resulting in serious physical and psychological destruction in the elderly patients.[1] Advancing AD causes the patients to need continuous care. They may also lose the ability to recognize themselves, close family members, and caretakers or to feed themselves and walk without help, and they may become fully bedridden.[2]

Pharmacological and nonpharmacological methods are used in the treatment of such symptoms in AD. Nonpharmacological interventions that have no side effects and slow disease progression are currently becoming increasingly important as an addition to pharmacological treatment.[3] Nonpharmacological applications are patient centered and geared toward supporting the individuals rather than forcing them or focusing on their deficiencies.[4] Reminiscence therapy is the most commonly used nonpharmacological application in AD and other types of dementia.[5-8]

Reminiscence is defined as the individual remembering a past event, verbally or nonverbally, alone or with a group.[7] Reminiscence was defined by Burnside and Haight as "the process of remembering long-forgotten experiences and events that are worth remembering for the person" (p.587) based on its dictionary meaning.[9] Stinson states that the Nursing Interventions Classification (NIC) System describes reminiscence therapy as an intervention based on remembering the events experienced in the past in order to increase the adaptation to the present time, quality of life, and satisfaction from the institution of institutionalized individuals. According to the NIC, reminiscence therapy is largely derived from the nursing information system, care plan manuals, and nursing books. Reminiscence therapy is among the independent functions of nurses recommended by NIC and it is emphasized that it should be among the care applications provided in the institutions where elderly people live.[10]

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Reminiscence therapy has been used since the early 1960s and toward the end of this period has taken the form of sharing the activities, events, and experiences in the past with other individuals in the group and others, usually with the help of an old music, voice recording, photograph, and other familiar elements, and in the form of individual or group therapy by nursing professionals.[8] Its use in or outside institutions, especially by geriatric nurses, social workers, occupational therapists, and psychologists became widespread in the 1980s.[11]

Reminiscence therapy is also used in emergency departments, day care nursing homes, long-term care homes, hospitals, and the houses of the individuals in addition to nursing homes.[9] Studies from the 1990 to 2015 period have reported using reminiscence therapy for 6 to 12 weeks as 1 to 2 sessions lasting 30 to 60 minutes each per week.[5,12-18] The most positive results were reported with sessions performed in groups of 6 to 10 elderly people living in an institution, providing sufficient time for each individual in this groups.[9,12] It is suggested that reminiscence therapy be conducted with positive memories during the session.[10,14] Each session should have a specific subject. The last session should be the closing session with a general summarization and evaluation.[10]

According to the literature, reminiscence groups are most commonly formed with patients having dementia living in nursing homes.[6] Reminiscence therapy has been found to decrease depressive emotions[13,19,20] and feeling of loneliness,[5] and to increase psychological well-being,[20,21] life satisfaction,[8,20] and communication.[5] Additionally, reminiscence therapy was found to increase the cognitive level[22,23] and social activities[24] and have a positive effect on daily living activities.[23]

The aim of our study was to make a positive change in the daily living activities of patients with AD by providing a positive effect on the cognitive status and depression level with reminiscence therapy. Other aims were to increase the knowledge of nurses on the application of reminiscence therapy as it has many benefits and ensuring more common use of this therapy among the nursing applications in our country. This study was performed to investigate the effect of reminiscence therapy on the cognitive status, depression, and daily living activities of institutionalized patients with mild and moderate AD.

Method

Study Design

The study was conducted in a quasi-experimental post hoc manner to investigate the effect of reminiscence therapy on the cognitive status, depression, and daily living activities of institutionalized patients with mild and moderate AD. The study took place in 4 Ministry of Family and Social Policies elderly care and rehabilitation centers in Ankara, Turkey, between July 1 and December 20, 2013.

Participants

The following criteria were used for selecting the sample of the study:

- Aged 65 years and above and has a diagnosis of AD,
- the standardized Mini-Mental State Examination (MMSE) test cognitive levels score is 10 to 24 points,
- will be staying at the institution for at least 3 months for regular attendance at the therapy sessions, and
- has no obstacle regarding talking and communication that would prevent active participation in group interactions and volunteers to participate in the study.

We did not include participants with an MMSE result above 24 or below 10 in the study sample. We first obtained the lists of participants aged 65 years and above with a diagnosis of AD from the institution's records. We then administered MMSE according to the educational level of the participants in the list. The third stage included sorting the participants who met the sampling criteria according to the MMSE score range (18–23 points and 10–17 points) and gender. The experiment and control groups were created from this final list with odd numbers making up the control group and even numbers the intervention group.

The study sample was calculated using power analysis. It was determined that a minimum of 17 participants should be included in the study at the level of 90% power and 5% type I error to find a significant 2.8 points decrease in the depression scale score of the intervention group compared to the control group at the end of the reminiscence therapy. Considering the losses that could be experienced during the research process and the statistical significance of the tests, a total of 66 individuals were included in the sample with 33 in the intervention group and 33 in the control group. One participant was excluded from the sample due to death, 2 had to undergo treatment in intensive care, and 1 developed a speech problem because of stroke. The study was completed with a total of 62 individuals consisting of 31 participants each in the intervention and control groups.

Measures

The study data were gathered with face-to-face interviews using the Geriatric Depression Scale (GDS) and Standardized MMSE test in addition to a Descriptive Information Form and Daily Living Activities Observation Form prepared by the investigator. The administration of the forms took about 60 minutes.

The Descriptive Information Form consisted of a total of 38 questions, 14 open and 24 close-ended. The Descriptive Information Form included questions on the demographic characteristics of the individuals, their medical characteristics, daily living activities, and living in the institution.

The Daily Living Activities Observation Form was prepared by the investigator after reviewing the literature as the scales used for the evaluation of daily living activities in our country were not appropriate for institutionalized individuals. This form was prepared by obtaining the opinions of 5 specialists on the participant during the preparation process. The Daily Living Activities Observation Form was used to evaluate the mobility, hygiene, nutrition, sleep, dressing, establishing and

maintaining communication, willingness to collaborate, socialization, and restlessness status of the individual. The daily living activities of the individuals were entered into the Daily Living Activities Observation Form by getting help from the people who took care of the elderly person. This form was administered to the individuals in both groups by the investigator as both a preliminary test and a final test. The scores obtained by the individuals in this form were converted to percentages and evaluated.

The Standardized MMSE was developed by Folstein et al to evaluate cognitive deficiencies and includes 5 main topics as recording memory, attention, calculation, remembering, and language with a total of 11 items.[25] The MMSE appropriate to the educational status of the individuals was administered by the investigator to the individuals in both groups in both the preliminary and final tests.

The GDS was developed by Yesavage et al and its validity and reliability tests have been performed.[26] This scale developed for the elderly patients consists of a total of 30 questions with "yes" or "no" answers. Each answer in favor of depression has a value of one point, and the other answers have a value of zero points. The score is evaluated as no depression for 0 to 11 points, possible depression for 12 to 14 points, and definite depression for over 14 points. The GDS was administered to the individuals in both groups as both preliminary and final tests by the investigators in our study.

Procedures

The individuals included in the study after MMSE application were interviewed with the face-to-face technique and the GDS, Descriptive Information Form, and Daily Living Activities Observation Form were administered in the preliminary test. The MMSE, GDS, and Daily Living Activities Observation Form were administered at the final test. For individuals who could not participate in the reminiscence therapy sessions due to an excuse, a makeup session was held for the participant at the end of the 12-week study.

In order to ethically prevent interaction between the groups, a conversation lasting 20 to 25 minutes on average per week was held with the individuals in the control group with tea or coffee and the participants and duration varied by week. The conversation topic could be the religious or official special days in the relevant week, the health of the individuals, or current issues. No questions regarding remembering the past were asked to the individuals in these sessions.

The dates suitable for the individuals in the intervention group were determined, and a 12-week meeting schedule was prepared. The days or hours when the individuals regularly visited health care institutions and the hours when their visitors came to see them were taken into account when preparing this schedule. The individuals were told by the investigator that regular participation in the sessions would affect the result when the meeting schedule was being prepared. The reminiscence therapy sessions were started on August 8, 2014 and ended on December 20, 2014.

Reminiscence therapy has been performed in the form of 1 to 2 sessions per week for a total of 6 to 12 weeks, each lasting 30 to 60 minutes in the literature. The reminiscence therapy was applied in the form of sessions lasting a total of 12 weeks and 30 to 45 minutes in the form of having conversation about 1 participant each week, once a week in our study. Considering that the individuals within the scope of the study had mild or moderate AD and were aged 65 years and above, we made sure that there would be 2 to 5 individuals in a session. Individuals of the same gender were put together when creating the groups.

We made sure positive memories were shared, as suggested. Session subjects included introduction, childhood and family life, school days, starting work and work life (for housewives, a day spent at home), a day of fun outside the home, marriage, plants and animals, infants and children, food and cooking, holidays and travel, and celebrations, followed by session evaluation and closure.[6,27-29] Old objects and pictures of old objects were taken to the institution by the investigator to facilitate remembering of the weekly subjects and pictures belonging to the individuals were requested from the study participants when possible. Weekly sessions performed within the scope of the study were held in the meeting room and the library that the elderly individuals could easily access.

Tea and coffee were offered to the individuals before starting the reminiscence therapy sessions. The sessions were first started by asking how the individuals had spent their previous week. After showing the objects appropriate for the subject of the week to facilitate remembering, the individuals were asked to share the events and experiences they remembered with the group. Each individual was given time to think and an additional time was also provided to think by changing the speaking order if requested. Issues shared in the sessions were summarized at the end of each session, the subject of the next week was announced, and the session was completed. The experiences or events remembered by the individuals were noted by the investigator at each session.

The individual directing the group plays an important role in managing reminiscence therapy properly. This person has to be a good leader and also needs to manage time well, develop professional relationship with the group members, give them equal opportunity to speak, and ensure an environment that is based on interaction and sharing. The leader also needs to help the group members to form a connection between the past and the present day based on what they remember during the reminiscence sessions.

Data Analysis

The statistical analysis of the study data was performed using the IBM SPSS for Windows Version 21.0 (SPSS Inc. Chicago, Illinois) package program. Numerical variables were summarized with mean $\pm$ standard deviation and median (minimum–maximum) values in the analysis of the data. Categorical variables were shown with numbers and percentages. Before making the intergroup and within-group comparisons for numerical variables, the parametric test assumptions (normality,

Table 1. Characteristics of the Study Participants.

Variable	Experimental Group (n = 31) n (%)	Control Group (n = 31) n (%)	Pretest Comparison Test/*P* Value[a]
Age (years) × ±SD	81.83 ± 4.87	82.26 ± 5.07	
65-79 age	8 (25.8)	9 (29.0)	$\chi^2 = 0.000$
80 and above	23 (74.2)	22 (71.0)	$P^a = 1.000$
Gender			
Female	21 (67.7)	21 (67.7)	$\chi^2 = 0.000$
Male	10 (32.3)	10 (32.3)	$P = 1.000$
Education level			
Elementary education and	19 (61.3)	22 (71.0)	$\chi^2 = 0.288$
High school and above	12 (38.7)	9 (29.0)	$P = 0.591$
Marital status			
Married	0 (0.0)	3 (9.7)	
Unmarried	31 (100.0)	28 (90.3)	$P^b = 0.238$
Employed status previously			
Worked	23 (74.2)	22 (71.0)	$\chi^2 = 0.00$
Have not worked	8 (25.8)	9 (29.0)	$P = 1.000$
Number of chronic diseases excluding Alzheimer disease			
1-4	23 (74.2)	24 (77.4)	$\chi^2 = 0.000$
5 and above	8 (25.8)	7 (22.6)	$P^a = 1.000$
Needed help status for daily living activities			
Yes	13 (41.9)	21 (67.7)	$\chi^2 = 3.191$
No	18 (58.1)	10 (32.3)	$P^a = 0.074$
Living duration in the home care			
0-5 Years	15 (48.4)	16 (51.6)	$\chi^2 = 0.00$
6 Years and above	16 (51.6)	15 (48.4)	$P^a = 1.000$

Abbreviation: SD, standard deviation.
[a] $P < .05$.
[b] Fisher exact test values is given to χ^2 value could not be given.

homogeneity of variance, and sphericity) were checked. The presence of a difference between the intervention and control groups in terms of categorical variables was investigated with the chi-square test. The effect of the demographic characteristics of the intervention and control groups on the scale scores was evaluated with the Mann-Whitney *U* test. Within-time and intergroup differences in terms of scale scores were examined with the variance analysis in repeating measurements. Pairwise comparisons were performed with the Bonferroni test. The significance level was accepted as $P < .05$. The independent variables of the study included the information obtained during reminiscence therapy and the descriptive information form of the individuals such as age, gender, educational status, and duration of institutionalization. The dependent variables of the study were the MMSE, GDS, and Daily Living Activities Observation Form.

Ethical Considerations

Written permission for the study to be conducted was obtained from the Governorship of Ankara Provincial Directorate of Family and Social Policies and from Hacettepe University Noninterventional Clinical Research Ethics Committee (GO 13/356). All patients gave written consent after receiving both an oral and written explanation of the study's objectives and procedures.

Results

The mean age of the individuals who participated in the study was 82.1 ± 4.9, and 67.7% were female. The educational status of 66.1% was primary school and lower, 95.2% were single, 72.6% had been employed previously, 75.8% had a history of 4 or fewer chronic diseases, 54.8% needed help for daily living activities, and the mean living duration in the home care was 6.5 ± 5.3 years. The difference between the descriptive features of the individuals in the intervention and control groups was found to be statistically insignificant ($P > .05$; Table 1).

The increase in mean MMSE score of the individuals in the intervention group compared to the control group at the end of the reminiscence therapy was found to be statistically significant ($P < .05$). Although not stated in the table, the differences between mean MMSE scores of the individuals in the intervention group by disease stage was found to be statistically insignificant ($P > .05$). The decrease in mean GDS score of the individuals in the intervention group compared to the control group at the end of the reminiscence therapy was statistically significant ($P < .05$; Table 2).

The score difference medians of the individuals in both groups for mobility, individual hygiene, feeding, sleeping, and dressing parts of the Daily Living Activities Observation Form before and after the reminiscence therapy revealed no change

Table 2. Descriptive Statistics Data of Experimental and Control Groups of MMSE and GDS.

Variable	Experimental Group (n = 31) X ± SD	Control Group (n = 31) X ± SD	*T* Value, *P* Value[a,b]
MMSE			
Pretest	15.65 ± 2.49	14.16 ± 2.14	***F* = 22.418, *P* < .001**
Posttest	18.54 ± 3.36	14.35 ± 1.99	
GDS			
Pretest	15.61 ± 3.06	15.93 ± 4.35	***F* = 30.518, *P* < .001**
Posttest	9.32 ± 2.82	14.35 ± 4.66	

Abbreviations: MMSE, Mini-Mental State Examination; GDS, Geriatric Depression Scale; SD, standard deviation.
[a] Variance analysis in repeating measurements was used.
[b] $P < 0.05$.

Table 3. Descriptive Statistics Data of Experimental and Control Groups of Activities of Daily Living.

Activities of Daily Living		Experimental Group (n = 31) Median (min–max)	Control Group (n = 31) Median (min–max)
Mobility	Pretest	100 (0–100)	100 (33.3–100)
	Posttest	100 (0–100)	100 (33.3–100)
Individual hygiene	Pretest	100 (33.3–100)	100 (33.3–100)
	Posttest	100 (33.3–100)	100 (33.3–100)
Feeding	Pretest	100 (33.3–100)	100 (33.3–100)
	Posttest	100 (33.3–100)	100 (33.3–100)
Sleeping	Pretest	100 (0–100)	100 (0–100)
	Posttest	100 (0–100)	100 (0–100)
Dressing	Pretest	100 (33.3–100)	66.7 (33.3–100)
	Posttest	100 (33.3–100)	66.7 (33.3–100)
Communication	Pretest	33.3 (0–100)	33.3 (0–100)
	Posttest	66.7 (33.3–100)	33.3 (0–100)
Collaboration	Pretest	66.7 (0–100)	33.3 (0–100)
	Posttest	66.7 (33.3–100)	33.3 (0–100)
Socialization	Pretest	66.7 (33.3–100)	66.7 (33.3–66.7)
	Posttest	66.7 (66.7–100)	66.7 (0–100)
Restlessness	Pretest	100 (66.7–100)	100 (66.7–100)
	Posttest	100 (0–100)	66.7 (33.3–66.7)

between the groups. A positive change was found in the communication, collaboration, socialization, and restlessness parts of the Daily Living Activities Observation Form in the intervention group. The score difference median for the communication part of the Daily Living Activities Observation Form was found to increase 33.3% at the end of the application in the intervention group compared to the preapplication state. Although there was no change in the score difference median of the intervention and control groups for the collaboration and socialization parts of the Daily Living Activities Observation Form, an increase of 33.3% was found in the intervention group scores after treatment. There was a decrease of 33.3% in the minimum restlessness score of the intervention group and a decrease of 33.3% in the median restlessness score of the control group (Table 3).

Discussion

The Effect of Reminiscence Therapy on the Cognitive Status of Individuals

The MMSE mean score of the individuals in the intervention group was found to show a statistically significant increase compared to the individuals in the control group at the end of reminiscence therapy in our study ($P < .05$; Table 2). Thorgrimsen et al reported a positive effect of reminiscence therapy on cognitive functions in a study they conducted with patients having dementia.[23] Wang found a significant increase in the MMSE score of individuals who underwent reminiscence therapy in a study conducted with individuals in 5 elderly care institution in Taiwan.[30] Similarly, Van Bogaert et al found a significant increase in the MMSE scores of individuals at the end of reminiscence therapy in a study where they examined the effect of individual reminiscence therapy on patients with mild and moderate stage AD.[22] The same study found a greater increase in the MMSE scores of patients with moderate stage AD compared to those in the mild stage at the end of reminiscence therapy. The difference between the MMSE mean scores of the individuals in the intervention group by disease stage was statistically insignificant ($P > .05$) in our study in contrast to the previous study. We believe that applications supporting remembering the past at regular intervals in elderly individuals positively affects the cognitive process as the individuals make a conscious effort and spend more time to remember past events while the memories of another person stimulate the memories of the individual during the sessions and facilitate reminiscence.

The Effect of Reminiscence Therapy on Depression

A decrease of 6.29 units was found in the GDS score of the individuals in the intervention group at the end of reminiscence therapy in our study ($P < .05$; Table 2). Our results are similar to other studies where the effect of reminiscence therapy on depression was investigated. Chiang et al reported a decrease in loneliness and depression levels and an increase in the psychological well-being of the individuals in the group where reminiscence therapy was used in a study they conducted with institutionalized individuals aged 65 years and above.[5] Chueh and Chang reported a decrease in depressive symptoms at the end of the therapy period in a study where they monitored institutionalized male participants aged 65 years and above for 6 months following therapy for 4 weeks.[19] Serrani Azcurra reported a significant decrease in depression in the reminiscence therapy group in a study where the effect of reminiscence therapy on the quality of life of patients with AD staying at a nursing home was evaluated.[15] Similarly, Van Bogaert et al reported a significant decrease in the depression score of individuals following reminiscence therapy in a study they conducted with patients having AD.[22] Melendez-Moral et al reported decreased depressive symptoms and a positive change in life satisfaction, self-esteem, and psychological well-being of individuals who underwent reminiscence therapy in a study they conducted with institutionalized elderly participants.[20] Youssef found decreased

depression scores following reminiscence therapy in females aged 65 to 74 years while no change was found in the group aged 75 years and above.[12] However, some studies report no effect of reminiscence therapy on depression.[13,31,32] The decrease in depressive findings is thought to be due to factors such as increased communication of the individuals with each other, the individuals being able to talk without being criticized, allocating time to the participants regularly, the development of the notion of belonging to a group, remembering past events, increased confidence following such reminiscence, and the weekly sessions providing a regular schedule for the person.

The Effect of Reminiscence Therapy on the Daily Living Activities of the Individuals

While no change was found in the score difference medians of the intervention group for the motility, individual hygiene, eating, sleeping, and dressing areas of daily living activities, a positive change was found in communication, collaboration, socialization, and restlessness (Table 3). Lai et al found that reminiscence therapy had no effect on the daily living activity of individuals in a study they conducted on patients with dementia staying at a nursing home.[16] Similarly, a positive effect of reminiscence therapy on daily living activities was not found in a study conducted by Serrani Azcurra with patients having AD living in a nursing home.[15] Thorgrimsen et al found that the behavior and daily living activities of individuals in the intervention group had changed positively compared to those in the control group at the end of reminiscence therapy in a study they conducted in individuals with dementia.[23] This difference between the study results is thought to be due to factors such as the various stages and durations of AD, the number of additional chronic diseases, and the level of physical dependence of the participants.

The score difference medians for daily living activities in the communication area of individuals in our intervention group were found to increase 33.3% as a result of the therapy (Table 3). Head et al found that the communication with institution staff of the individuals in the group where reminiscence therapy was administered had increased at the end of the therapy in a study.[33] Chiang et al found an increase in the communication and self-confidence and a decrease in loneliness of institutionalized individuals at the end of reminiscence therapy in their study.[5] Thorgrimsen et al found that the communication of the individuals in the intervention group had increased compared to the individuals in the control group in a study they conducted with patients having v.[23] We believe that the increase in the communication of the individuals noted in our study similar to the studies conducted could be due to factors such as an appropriate environment that ensures the individual prepares a weekly program, gets prepared for the sessions, shares emotions, and becomes a member of a group, together with the opportunity to socialize provided by the group.

Although there was no change in the score difference medians of the individuals in either the intervention or control group in the collaboration and socialization areas of daily living activities at the end of reminiscence therapy, an increase of 33.3% was found in the minimum scores of the intervention group. Reminiscence therapy is reported to increase participation in social activities, well-being, satisfaction, and cognitive stimulation.[7] Reminiscence therapy was found to have a positive effect on the socializing of the individuals in a study conducted by Cook with 54 institutionalized individuals.[32] Jonsdottir et al found that reminiscence therapy had a positive effect on the socialization and well-being of individuals in a study they conducted on final stage of patients with lung disease.[31] Serrani Azcurra reported a positive increase in social collaboration and quality of life in a group where reminiscence therapy was used in their study on the effect of reminiscence therapy on the quality of life in patients with AD staying at a nursing home.[15] Siviş and Demir reported that the activities performed with the group as a result of reminiscence therapy application to elderly people living in an institution facilitated developing positive relationships between the individuals and making new friends and affected their social life positively.[24] The result of the study are similar to the literature and include a positive change both in communication and socialization as a result of the individuals getting the opportunity to know each other by participating regularly in the sessions, discovering their common life experiences through sharing, and gradually feeling that they belong to a group.

Conclusion

We found reminiscence therapy to have a beneficial effect on the cognitive status and depression in institutionalized patients with mild and moderate AD in our study. Reminiscence therapy had a positive effect on communication but a limited effect on collaboration, socialization, and restlessness. The positive effect of reminiscence therapy on the cognitive status, depression, and daily living activities in institutionalized patients with mild and moderate AD indicates a need for more widespread use of reminiscence therapy and training health care staff and especially nurses to support such activities, while the limited effect on daily living activities indicates the need to establish programs supporting any activities the individual cannot perform while developing those that can be performed. We also recommend studies on larger samples and also on patients with chronic diseases other than AD.

Limitations and Strengths

The limitations of this study include having been performed in 4 institutions in Ankara and not including patients with AD from other institutions and the lack of periodic follow-up following the reminiscence therapy.

Declaration of Conflicting Interests

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