ORIGINAL ARTICLE

Effects of short-term reminiscence therapy on elderly with dementia: A comparison with everyday conversation approaches

Yumiko OKUMURA,[1,2] Satoshi TANIMUKAI[3] and Takashi ASADA[2]

[1]Department of Clinical Psychology, Faculty of Health and Welfare, Kawasaki University of Medical Welfare, Kurashiki, Okayama, [2]Department of Clinical Neuroscience, Graduate School of Comprehensive Human Sciences, University of Tsukuba, Tsukuba, Ibaraki and [3]Department of Neuropsychiatry, Neuroscience, Ehime University Graduate School of Medicine, Toon, Ehime, Japan

Correspondence: Yumiko Okumura MA, Department of Clinical Psychology, Faculty of Health and Welfare, Kawasaki University of Medical Welfare, Matsushima, Kurashiki, Okayama 701-0193, Japan. Email: yokumura@mw.kawasaki-m.ac.jp

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Abstract

Background: Recent research has demonstrated the usefulness of reminiscence therapy as a psychosociological approach to the care of the demented elderly. However, to date neither the variables (e.g. evaluation methods and the optimal number of therapy sessions related to this technique) have been established, nor have the differences between reminiscence and other verbal interventions been clarified. In the field of clinical and nursing care in which reminiscence therapy is undertaken, in order to facilitate the participation of as large a number of elderly people as possible, both short- and long-term courses of sessions are needed. The present study conducted five therapy sessions using closed groups. Mainly, a verbal fluency task was used to assess the efficacy of therapy.

Method: The results of the five sessions that were conducted with a reminiscence therapy group (reminiscence group; $n = 8$ ambulant elderly women with Alzheimer's-type dementia) were compared with those of an everyday conversation group (conversation group; $n = 8$ ambulant elderly women with Alzheimer's-type dementia).

Results: In the reminiscence group, there was a significant increase in the number of words recalled at the end of the fifth session compared with that recalled at the end of the first session. In addition, the number of words recalled increased significantly compared with that recalled by the conversation group. Furthermore, the interchanges through non-verbal communication between others in the group improved and a positive change in participants' everyday life circumstances was observed. Moreover, the participants in the reminiscence group reported that they enjoyed the sessions.

Conclusions: Reminiscence therapy performed over a short period of time in closed groups was shown to be more effective than everyday conversations in the treatment of elderly people with dementia. It is suggested that the effectiveness of group reminiscence therapy should be ascertained not only by the verbal fluency tasks, but also by changes in patients' interactions with others through non-verbal communication.

INTRODUCTION

As the importance of individual care for elderly people with dementia is increasingly recognized, improving the quality of care is becoming the expected norm. In particular, psychological and sociological therapeutic approaches are being introduced in the hope that they will help maintain an optimal mental condition of the demented elderly. Reminiscence therapy is one of these approaches, in which the elderly recall various experiences from their past life and share them with others. Through this process, it is expected that emotional stability will be promoted and that the elderly will be able to share their knowledge and areas of expertise.[1–8] Psychological and sociological

approaches to caring for the demented elderly are necessary to draw a distinction between non-pharmacological therapies and recreation therapies.[9] However, studies have suggested that it is difficult to place reminiscence therapy within these classifications.[10,11] In addition, methods for evaluating the adequacy of reminiscence therapy, as well as the optimal means of implementing it, are still under investigation.[12,13] In particular, it is necessary to undertake investigations regarding the exact therapeutic pathways that are realized through reminiscence therapy in the context of care that supports the everyday lives of elderly people with dementia.

Prior research on reminiscence therapy has evaluated its effectiveness by analyzing the content of the memories recalled[14] and the interactions that took place during the sessions.[2] Other research has examined general cognitive functions, the ability to perform everyday living activities, personality, attentiveness, reaction times, and verbal/visuospatial functions.[15] However, in many studies, the assessment has been designed to fit the intentions and needs of the therapist.[16] It is important to undertake easy and simple evaluation methods that assess the efficacy of treatment approaches based on improvements in the patients' conditions. In addition, evaluation methods should take into account the context in which the therapy will ultimately be implemented.

In most cases, reminiscence therapy is conducted as a course consisting of approximately eight to 10 sessions with fixed members. However, when there are a large number of sessions and participation is fixed, it is likely that many elderly people suffering from dementia will not have the chance to participate in therapy. In the field of clinical and nursing care, a fewer number of sessions is preferable and considered more practical.

In a previous study, because reminiscence therapy is a verbal approach, the effectiveness of reminiscence therapy in elderly patients with Alzheimer's disease was investigated with a verbal fluency task reflecting the operation of verbal functions.[17] The results were compared with a group that did not receive reminiscence therapy intervention. The design of the study included a small number of sessions with a semiclosed group. Results indicated that, in the treatment group, the number of words recalled in the verbal fluency tasks increased significantly after five sessions and, moreover, increased significantly compared with the number of words recalled by elderly people in the non-treatment group. The positive effects of reminiscence therapy, observed using a short-term, semiclosed treatment format, suggested that it was an appropriate means of fitting the treatment to the individual needs of patients. In addition to the benefits of long-term therapy with a closed group that have been reported in the literature, the results of that study of short-term therapy with a semiclosed group indicated the benefits of introducing reminiscence therapy to more elderly people with dementia. Furthermore, the study indicated the usefulness of verbal fluency tasks. However, the differences between the effects of reminiscence therapy and other verbal approaches to treatment have not been clarified, because prior studies have only used no-treatment control groups. In view of this limitation, the present study compared a reminiscence therapy group with an everyday conversation (control) group to determine the efficacy of reminiscence therapy.

METHODS

The research was approved by the ethics committees of all the care facilities that participated in the study and was conducted according to their guidelines.

Reminiscence and conversation groups

The two interventions (reminiscence and conversation) occurred over a course consisting of five therapy sessions that were designed similar to those in prior studies that used verbal fluency tasks for evaluation purposes,[17] with the exception that in the present study a closed group (all participants were fixed) was used in order to clarify the effects of the two different approaches. The sessions took place once a week for approximately 1 h.

At each session, the reminiscence group began with greetings (informing participants of the start of the meeting, the agenda, and the date, among other things) and then moved on to reminiscence. The session concluded with closing greetings (informing participants of the end of the meeting and other information). The group leader was one of the authors (YO), with one or two staff members participating as coleaders. There were four reminiscence themes: (i) childhood play; (ii) helping with housework; (iii) school memories; and (iv) memories centered on the current

Table 1 Characteristics of the elderly subjects with dementia participating in reminiscence therapy or the everyday conversation group

	Reminiscence group ($n = 8$)	Conversation group ($n = 8$)
Sex	Women only	Women only
Age (years)		
Mean ($\pm$ SD)	84.0 ± 4.7	84.0 ± 8.5
Range	(74–89)	(68–93)
MMSE (points)		
Mean (ISD)	15.5 ± 3.6	14.9 ± 2.2
Range	(10–22)	(12–19)

season. The sessions were designed so that the first and final (fifth) sessions were based on the same theme.

A group engaging in everyday conversations was set up as a verbal control group to compare with the reminiscence group. There were no set themes for this group and they discussed everyday topics. With this exception, all other aspects of the sessions conducted with the conversation group were identical to those of the reminiscence therapy sessions.

Participants

The participants consisted of elderly with dementia who were either in hospital, in a group home, or using day service centers. In accordance with the guidelines of the ethics committee of each facility, oral or written informed consent to participate in the study was obtained either from the participants or their families. The group receiving reminiscence therapy (reminiscence group) consisted of eight ambulant elderly women with Alzheimer's-type dementia (mean age 84.0 ± 4.7 years; range 74–89 years) with mean scores on the Mini-Mental State Examination (MMSE)[18] of 15.5 ± 3.6 points (range 10–22 points). The group participating in everyday conversations (conversation group) also consisted of eight ambulant elderly women with Alzheimer's-type dementia (mean age 84.0 ± 8.5 years; range 68–93 years) with mean scores on the MMSE of 14.9 ± 2.2 points (range 12–19 points; see Table 1). There were no significant differences in age ($t_{(14)} = 0.00$, NS) or MMSE score ($t_{(14)} = 0.42$, NS) between the two groups.

Evaluation of outcomes

Treatment outcomes were evaluated in the same way in both groups. The MMSE was administered before the initial session. In order to assess the effect of participating in the treatment, a four-item verbal fluency task was administered to the two groups. This included: (i) animal names; (ii) words beginning with the letter 'A'; (iii) words beginning with other letters ('KA', 'SA', 'TA', and 'NA'); and (iv) words related to the theme of the day in the reminiscence group. Similar to the method used in a prior study,[17] item (iii) was changed weekly with new letters according to the order of the Japanese syllables, 'KA', 'SA', 'TA', and 'NA'. The verbal fluency tasks were designed so that the first and final evaluations were based on the same items. After each session, participants returned to their living area, such as private rooms or common rooms, and individually recorded the words they could remember over a period of 1 min.

Furthermore, we used additional evaluation scales to ascertain whether there were changes beyond the number of words recalled.

The appearance of the reminiscence group at each session was evaluated using the Todai-shiki Observational Rating Scale (TORS).[19,20] This scale consists of 20 items designed to evaluate verbal communication, non-verbal communication, attention/interest, and emotion. One point was awarded to a participant each time an item on the scale was observed, such that higher scores indicated a better condition. The inter-rater reliability of the TORS in elderly dementia patients was confirmed.[20]

The participants' subjective feelings were also evaluated by asking them about their level of happiness after each group session, as they returned to their living areas. Mood was evaluated on a scale ranging from 1 (very unpleasant) to 5 (very good). Happiness was evaluated similarly on a scale ranging from 1 (didn't feel happy at all) to 5 (felt very happy).

Furthermore, the everyday condition of the participants was evaluated before the first session and after the last session using the Saint Marianna Hospital's Elderly Dementia Patients' Daycare Evaluation Table for care-giving staff[21] (hereafter, the Daycare Evaluation Table). The Daycare Evaluation Table was originally developed to evaluate the condition of the elderly while participating in daycare. The reliability and validity of the evaluation table was not confirmed. This evaluation table was adopted in the present study because its evaluation items and standards were considered an easy means by which to assess the condition of elderly patients with dementia.

Because the 31 items in total also include items concerning the condition of patients undertaking activities at the daycare site, one psychiatrist and one clinical psychologist independently extracted appropriate items to evaluate the condition of the elderly with dementia in everyday life. Finally, 10 items ('facial expression', 'cooperativeness', 'emotional tendency', 'reliance tendency', 'anxiety tendency', 'damage tendency', 'depression state', 'talking', 'spontaneously talking to others', and 'showing interest in others') were adopted as items for evaluation chosen by both the psychiatrist and clinical psychologist. In this scale, a lower the score indicates a better condition. The evaluations were performed by a psychologist or the care-giving staff. The conversation group was also evaluated in a similar manner.

Analysis of results

Two-way analysis of variance (ANOVA) was conducted on the number of words recalled in the verbal fluency task. In addition, t-tests were performed on the results of TORS, the subjective feelings of the participants, and the Daycare Evaluation Table. Next, two-way ANOVA was conducted on the first and final evaluations on the verbal fluency task, TORS score, the subjective feelings of the participants, and the Daycare Evaluation Table for the two groups. A multiple comparison test (Dunnett's t-test) was used to determine any significant changes in the number of words for each session. Furthermore, correlation analysis was performed to ascertain whether there were any relationships among the scales indicating significant changes for the reminiscence group.

Because the reliability and validity of the Daycare Evaluation Table was not confirmed, in the present study a value of internal consistency of 10 items was calculated using Cronbach's alpha coefficient (Cronbach's $\alpha = 0.88$).

The significance level was set at below 5%.

RESULTS

Comparison of first scores on each scale

The results of two-way ANOVA on the number of words remembered on the four verbal fluency tasks at the first evaluation were not significantly different within ($F_{(3,42)} = 2.14$, NS) or between ($F_{(1,14)} = 0.23$, NS) the two groups. Furthermore, no significant differences were found between the two groups on evaluation of the participants' condition during the first evaluation of TORS verbal communication ($t_{(14)} = 0.60$, NS), nonverbal communication ($t_{(14)} = -0.72$, NS), attentiveness/interest ($t_{(14)} = 0.86$, NS), emotion ($t_{(14)} = 0.51$, NS), subjective feelings 'Mood' ($t_{(14)} = 0.00$, NS), and 'happiness' ($t_{(14)} = -1.00$, NS), or for the 10 items investigated using the Daycare Evaluation Table ($t_{(14)} = 1.48$, NS).

Changes in verbal fluency scores between the two groups

#### Comparison of first and final evaluations

The mean verbal fluency score of the reminiscence group on the first and final evaluations changed from 3.4 to 5.1 for animal names (Fig. 1a), from 2.3 to 3.9 for words beginning with 'A' (Fig. 1b), from 2.9 to 4.0 for words beginning with another letter (Fig. 1c), and from 2.5 to 4.8 for words relating to the reminiscence theme of the day (Fig. 1d). These results clearly show that the number of words increased between the first and the final evaluations.

Conversely, the mean verbal fluency score of the conversation (control) group on the first and final evaluations changed from 4.0 to 3.5 for animal names (Fig. 1a), from 2.6 to 2.1 for words beginning with 'A' (Fig. 1b), from 3.6 to 2.8 for words beginning with another letter (Fig. 1c), and from 2.6 to 2.0 for words relating to the reminiscence theme of the day (Fig. 1d). It is clear that, in this group, the number of words between the first and final evaluations did not increase in any of the categories.

Next, the change in the total number of words on the first and final evaluations was compared for the two groups. In the conversation group, the mean number of words decreased from 12.9 to 10.4, whereas in the reminiscence group the mean number of words increased from 11.0 to 17.8 (Fig. 2). Two-way ANOVA revealed an interaction between the total number of words recalled on the first and final evaluations for each group ($F_{(1,14)} = 13.79$, $P = 0.002$). There was a significant difference in the number of words recalled on the first and final evaluations between the two groups (Table 2).

Changes in the number of words recalled following the sessions

Changes in the total number of words recalled by the reminiscence group after each treatment session are shown in Fig. 3. Figure 3 shows that the number of
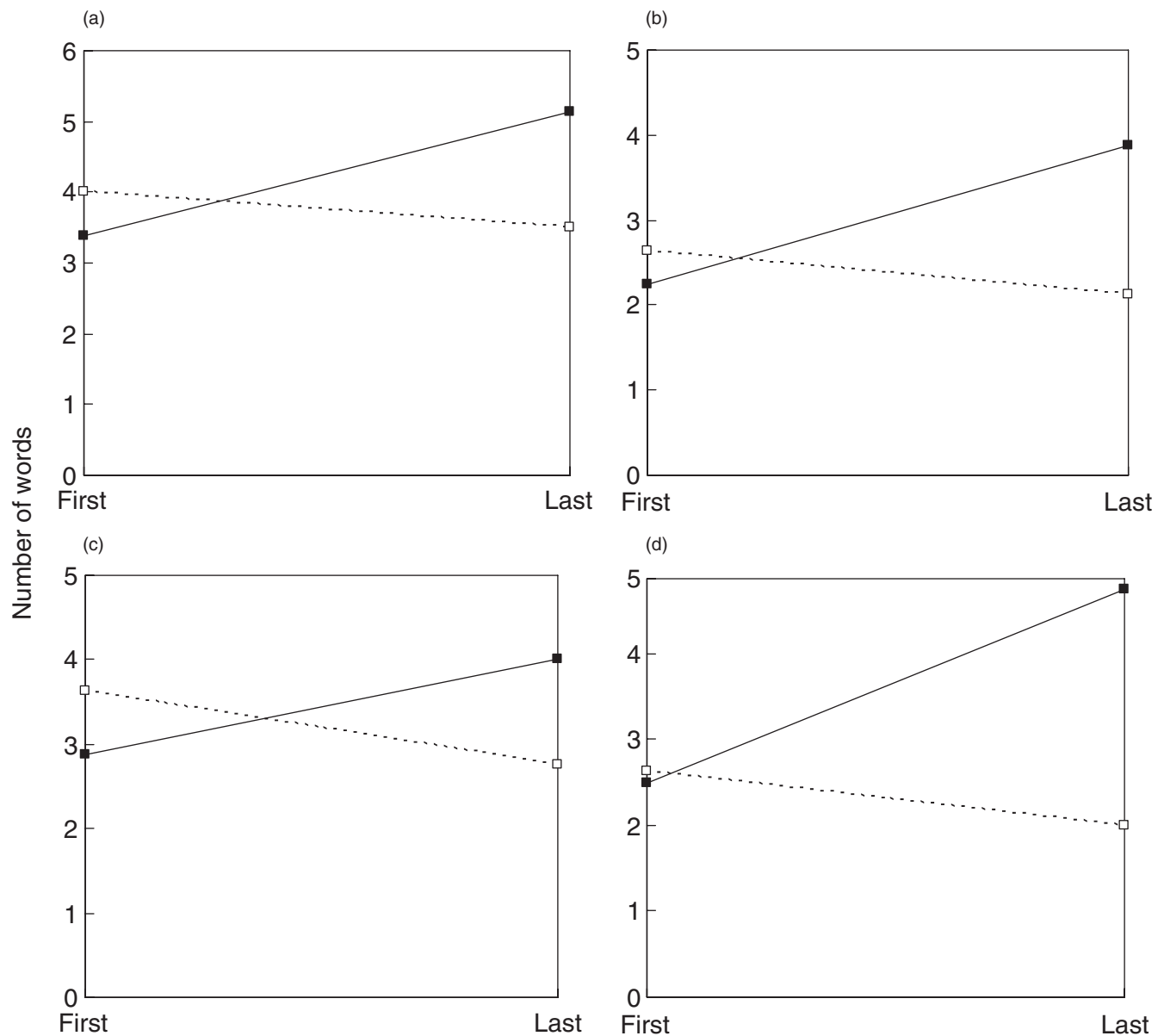
Figure 1 Changes in the number of (a) animal names, (b) words beginning with the letter 'A', (c) words beginning with the letter 'KA', and (d) words relating to the theme recalled by patients in the reminiscence (■) and conversation (□) groups at the first and fifth evaluations of therapy.

words increased with the number of times reminiscence therapy was repeated. A multiple comparison test was used to investigate changes in the number of words over the five sessions. Compared with the first session, the number of words increased significantly in the reminiscence group from the third session onwards (after the third session, $P = 0.003$; after the fourth session, $P = 0.012$; after the fifth session, $P = 0.000$). Conversely, there was no significant

change in the number of words recalled by the conversation group between the first and the following sessions (Fig. 3).

Changes in other evaluations
Evaluation of patients on the first and final sessions using TORS indicated that there were significant differences only for non-verbal communication items between the two groups ($F_{(1,14)} = 13.60$, $P = 0.002$).
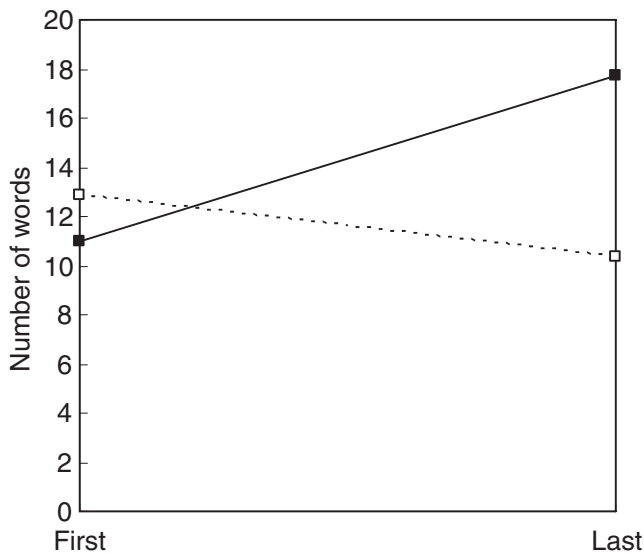
Figure 2 Total number of words recalled by patients in the reminiscence (■) and conversation (□) groups at the first and fifth evaluations of therapy.

Thus, changes in non-verbal communication differed based on differences in the type of session (Table 2; Fig. 4).

Evaluation of subjective feelings after each session indicated an interaction only in the happiness scores for the two groups between the first and final sessions ($F_{(1,14)} = 14.40$, $P = 0.002$). These results confirm that the degree of happiness differed based on the type of session (Table 2; Fig. 5).

Evaluation of daily appearance based on the Daycare Evaluation Table (total score of 10 items) revealed an interaction between the two groups before and after the sessions ($F_{(1,14)} = 8.44$, $P = 0.012$). Accordingly, it was confirmed that changes in the items on the Daycare Evaluation Table were related to the content of the session (Table 2; Fig. 6).

Participants' appearance during the sessions

Participants in the reminiscence group were observed to be uneasy during the beginning of the first session, but gradually they became closer to each other as they recalled nostalgic memories with the group. The participants did not always actively converse, but still enjoyed conversing with others. The staff observing the session was encouraged by the appearance of the participants in the reminiscence group. Conversely, in the conversation group, although resistance did not increase from the first session onwards, the conversations were difficult to start, there was no progression in group development, and the staff felt that the therapeutic intervention was difficult and that it should be conducted in line with the abilities of the participants.

Correlations among the scales for the reminiscence group

We used correlation analysis to ascertain whether there were any relationships among the scales indicating significant changes for the reminiscence group. After the reminiscence therapy had been performed five times, compared with the first therapy session, significant changes were found in the following scales: the total words recalled on the verbal fluency task, 'non-verbal communication' of TORS, the feeling of 'happiness' at each session, and the Daycare Evaluation Table. We investigated correlations among the scales using the results of the final evaluations (Table 3). The results revealed a significant negative correlation ($r = -0.94$, $P < 0.01$) between the Daycare Evaluation Table and the feeling of 'happiness' at each session. Furthermore, the correlation coefficient for the number of words recalled and the feeling of 'happiness' each time was $r = 0.68$, revealing no significant difference. Thus, no clear correlation was observed.

DISCUSSION
Changes based on session content and evaluation method

It was expected that participants in the reminiscence group would not only come to feel more secure, but that communication with their families and care-giving staff would also improve. The present study revealed an interaction between the number of words recalled on the first and final evaluations using the verbal fluency task and the type of intervention, either reminiscence therapy or conversation only.

In the reminiscence group, interest in the other group members increased with each session. Non-verbal communication was undertaken with no trouble with participants nodding their heads as they appeared to enjoy listening to each other. After the sessions, they reported feeling happier than did participants in the conversation (control) group. For elderly people with dementia who have impaired recall of recent memories, it is easier to recall and talk about nostalgic memories from the distant past. Therefore, it

Table 2 Comparison of changes between the reminiscence and conversation groups

Evaluation	Mobilizing factor (intrasubject)	Type III sum of squares	Degrees of freedom	Mean square	*F* value	*P* value
Verbal fluency						
Total	Pre–post	36.13	1	36.13	2.91	0.110
	Pre–post × therapy	171.13	1	171.13	13.79	0.002
	Error (pre–post)	173.75	14	12.41		
Todai-shiki Observational Rating Scale						
Verbal communication	Pre–post	5.28	1	5.28	16.66	0.001
	Pre–post × therapy	0.78	1	0.78	2.47	0.139
	Error (pre–post)	4.44	14	0.32		
Non-verbal communication	Pre–post	3.78	1	3.78	9.74	0.008
	Pre–post × therapy	5.28	1	5.28	13.60	0.002
	Error (pre–post)	5.44	14	0.39		
Attentiveness/interest	Pre–post	0.28	1	0.28	0.44	0.518
	Pre–post × therapy	0.28	1	0.28	0.44	0.518
	Error (pre–post)	8.94	14	0.64		
Emotions	Pre–post	3.13	1	3.13	2.85	0.114
	Pre–post × therapy	0.50	1	0.50	0.46	0.511
	Error (pre–post)	15.38	14	1.10		
Subjective feelings						
Mood	Pre–post	0.28	1	0.28	0.84	0.375
	Pre–post × therapy	1.53	1	1.53	4.57	0.051
	Error (pre–post)	4.69	14	0.34		
Happiness	Pre–post	1.13	1	1.13	3.60	0.079
	Pre–post × therapy	4.50	1	4.50	14.40	0.002
	Error (pre–post)	4.38	14	0.31		
Daycare Evaluation Table						
Total of 10 items	Pre–post	51.26	1	51.26	19.70	0.001
	Pre–post × therapy	21.95	1	21.95	8.44	0.012
	Error (pre–post)	36.42	14	2.60		

*P* < 0.05 was considered significant (two-way ANOVA).
Pre–post, evaluation at first session and final sessions; Therapy, reminiscence group or conversation group.
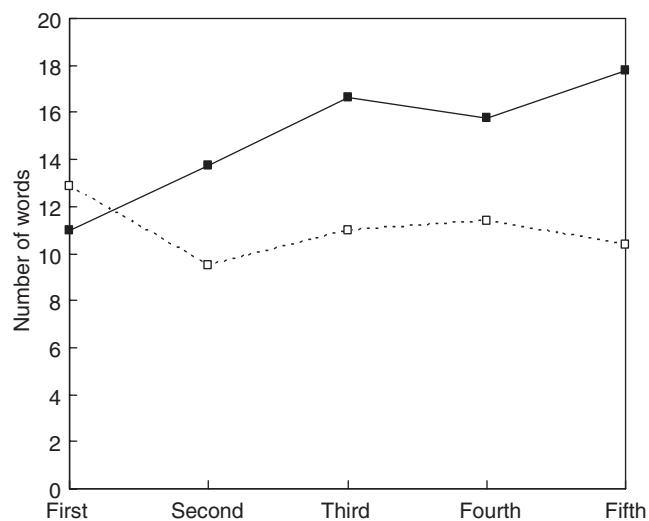

Figure 3 Changes in the total number of words recalled by patients in the reminiscence (■) and conversation (□) groups after each therapy session.
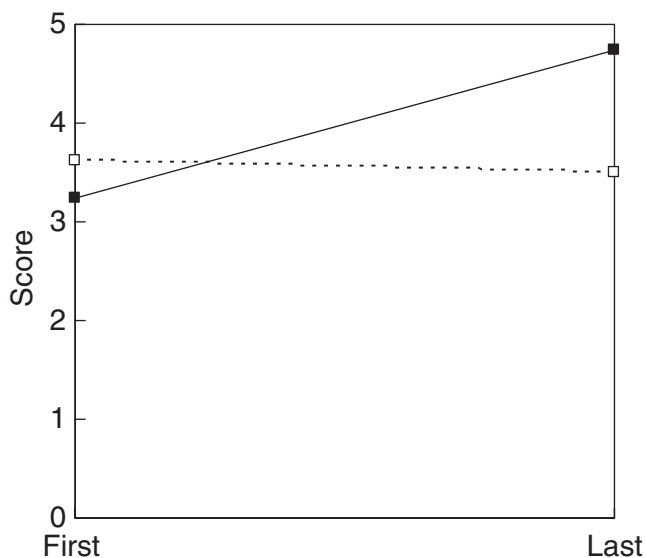
Figure 4 Changes in non-verbal communication, as assessed by the Todai-shiki Observational Rating Scale, in patients in the reminiscence (■) and conversation (□) groups at the first and fifth evaluations of therapy.
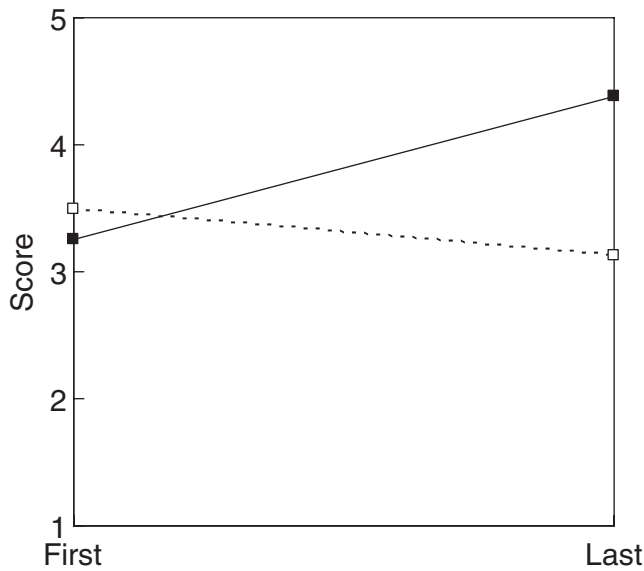
Figure 5 Changes in the impression of 'happiness' in patients in the reminiscence (■) and conversation (□) groups at the first and fifth sessions of therapy.
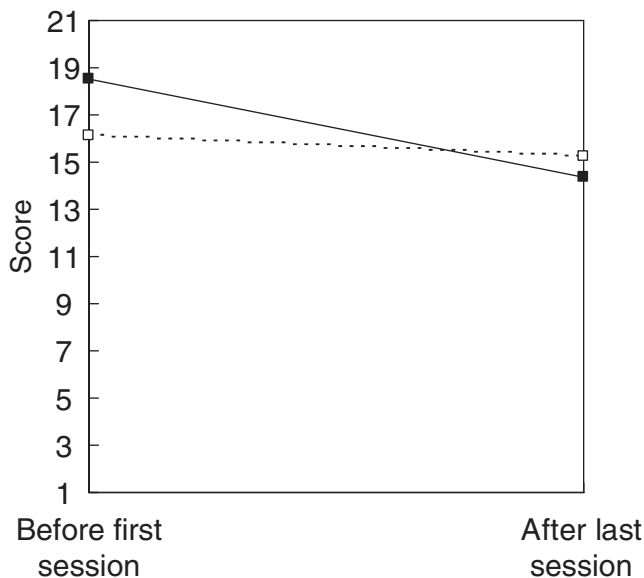
Figure 6 Scores (total 10 items) for the Daycare Evaluation Table in the reminiscence (■) and conversation (□) groups before the first and after the last session of therapy.

is likely that the number of words recalled, as well as the happiness of this group, was promoted through reminiscence therapy. The present study did not find a significant difference in the verbal communication scores during the sessions based on TORS. However, there was an increase in non-verbal communication,

including sensitivity, turning one's ear, and smooth exchanges with others. Therefore, improvements resulting from therapy were not limited to fluency in recalling memories. It is possible that the introduction of appropriate topics to release memories that the elderly with dementia could relate to easily facilitated the sharing of experiences.

The reminiscence group also showed positive changes in daily life, as indicated by the Daycare Evaluation Table for estimating changes in communication with others and other psychological variables. This suggested that reminiscence therapy may have an effect on the daily life of elderly people with dementia, even after the reminiscence session.

Previous studies have used a variety of scales to evaluate the efficacy of reminiscence therapy in the elderly with dementia. It should be noted that a certain degree of communicative ability is necessary for subjects to participate in reminiscence therapy. Moreover, because there are a number of ways to participate in the sessions, such as recalling experiences of the self, representing experiences, listening closely to others' recollections, there could also be individual differences in the manifest efficacy of therapy, depending on the type and degree of participation. In the present study, we measured the number of words produced on a verbal fluency task as an index of the efficacy of reminiscence therapy. We suggest that future research should also consider the effects of changes in interest and exchanges with others when evaluating the efficacy of such therapy.

Methods of implementing treatment

Usually reminiscence therapy is conducted in closed groups over eight to 10 sessions, and participants are reported to actively participate and change positively as they develop smoother interpersonal relationships with others.[3–6] The present study took into consideration the circumstances of those in a hospital, group home, or visiting a daycare center, and conducted the treatment over a short five-session regimen. Moreover, the group members were fixed (closed group) in order to compare the reminiscence group with the conversation group. In the reminiscence group, significant positive changes, such as an increase in the number of words recalled and an improvement in daily living condition, were revealed. Improvements in the participants observed in the present study suggest

Table 3 Correlations among the scales in the reminiscence group

	Verbal fluency (total)	TORS	Impression of 'happiness'	The Daycare Evaluation Table
Verbal fluency (total)	–	0.28	0.68	−0.49
TORS		–	0.31	−0.34
Impression of 'happiness'			–	−0.94**
The Daycare Evaluation Table (total)				–

Pearson correlation coefficient, **$P < 0.01$.
TORS, non-verbal communication (Todai-shiki Observational Rating Scale).

that reminiscence therapy could be introduced to the elderly with dementia, even over a short time span.

Moreover, investigation of the correlations among the scales in which significant changes were observed after the reminiscence therapy had been performed revealed a significant negative correlation between the feeling of 'happiness' at each session and the Daycare Evaluation Table. These results show that happiness while participating in reminiscence therapy is related to a change in everyday life. In addition, the results reveal that it is possible that elderly patients with dementia are not emotionally impaired. However, no significant correlations were revealed on either of the scales for the number of words recalled on the verbal fluency task. Therefore, it is possible that reminiscence therapy is helpful in activating the frontal and temporal lobes, even in patients who did not enjoy the therapy. The difficulties in evaluating the effectiveness of reminiscence therapy are possibly related to the distinctive characteristics of the therapy. Although it is very important that the elderly participants in reminiscence therapy enjoy reminiscing, the findings of the present study indicate the importance of investigating multiple meanings of reminiscence therapy beyond simply happiness. Even though there was a tendency for a correlation between the number of words and enjoyment, this was not significant. However, because the number of participants in the present investigation was limited, we hope to increase the number of subjects in further studies to examine any possible connection.

From the perspective of continuing the therapy, it may be easier to offer this to participants using group-work techniques (planning, formation, development, closure) to devlop the group over time[2] for long-term treatment. Moreover, the present study found a significant increase in the number of words from the third session onwards. It is thought that patients suffering from dementia are able to adapt easily, even with a short period of practice, such as in the present study,

which took place over a course of five sessions only. However, the results also indicate that positive changes are limited and that the patients did not have sufficient pleasant feelings at an adequate level. This may possibly have been caused by the shortness of the treatment period, which prevented the group from maturing. In addition, because the participants' degree of dementia was not mild, it is possible that the degree of reminiscence achieved was not sufficient.

Based on the results of the present study, it is concluded that reminiscence therapy is an effective method of providing care to a wide range of elderly people, including those with dementia. It could be introduced as a part of the daily exchange at care facilities. For example, it may be implemented quickly in group homes with the goal of improving care in accordance with the wishes of elderly with dementia.[22] The present study revealed the usefulness of introducing such therapy over a short period of time.

It is suggested that introducing reminiscence therapy could serve a number of purposes, such as a recreational activity providing an enjoyable time for everyone over a longer period of time. As the number of therapy sessions changes, the purpose of the group, the condition of the patients, and the intervention point to keep in mind may also change. In addition, based on the results obtained over short and long periods of therapy, a variety of concrete plans for developing this method could be developed.

Further research is necessary to examine the effectiveness of reminiscence therapy based on differences in the number of sessions and the progression of the disease. Studies should also be designed to investigate the relationship between reminiscence therapy and other non-pharmacological therapies.

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