The application of Reminiscence Treatment in Dementia Elderly: A Case Study in Pingtung, Taiwan

Reminiscence therapy has been utilized in work for the elderly people with dementia for years. Social group work may use it as a treatment to help elderly people with dementia to have more personal interactions and emotional support in order to retard the process of dementia. This research organized a social group work using reminiscence treatment. Twelve elderly clients with dementia (moderate and mild grade only) were sampled from 90 people in a home setting in Pingtung. Eleven of them agreed to join the group but only ten completed all sessions of treatments. Eight sessions of reminiscence cooking lessons were conducted. They were tested before and after 8 sessions by brain-scanning, MMSE (Mini-Mental Status Examination), a depression scale and the scale of feeling of participation. Significant differences were found after 8 sessions, especially for the brain-scanning. The average value of their fast waves rose from 43.88 up to 55.12, whereas the average value of their slow waves was lower from 56.12 to 44.13 after the intervention. After the analysis of Wilcoxon matched paired signed rank test, significant differences were noted. Findings are discussed in the final section.
Key Words: reminiscence treatment, social group work, feeling of participation.

摘要

懷舊治療已在失智老人服務工作運用多年，社會團體工作亦可運用此一方式針對失智老人進行處遇以增進老人之社會互動與社會支持，透過此种處遇以期減緩失智進程。本研究運用懷舊處遇組成一個團體，從屏東某一老人之家 90 個老人中，選擇 12 位輕、中度失智老人參與，11 位老人同意參與本項研究，惟僅 10 人完成所有團體處遇。總計進行 8 次團體處遇，參與者皆在 8 次團體處遇後接受腦波、MMSE（簡易智能狀態測驗）、憂鬱量表及參與感量表測量。8 次處遇後，發現有顯著性之差異，特別是腦波測量結果，腦部快波平均值在處遇後由 43.88 升至 55.12，腦部慢波平均值由 56.12 降至 44.13，經 Wilcoxon matched paired 測試分析結果顯示有顯著性差異，研究結果於末章進行討論。

關鍵詞：懷舊處遇、社會團體工、參與感。
Introduction

It is widely acknowledged that elderly people with dementia will never recover from it. Despite this, work has been done in order to slow down or even to reverse this process. One such treatment within social group work is reminiscence treatment (Chong, 2000). The stated aim of this kind of intervention is to retard or reverse the effects of dementia (Graham, Clayton & Warner, 1999). This may help them to have more personal interactions and greater emotional support. However, no medical evidence has been shown to date that this kind of treatment really works with elderly people who have dementia.

This research organized a social group in an old people’s home in order to test reminiscence treatment. A series of 8 sessions of reminiscence cooking lessons and social group work were conducted (MMSE [Mini-Mental Status Examination] score from 12 to 26—moderate and mild grade only). A sample of 12 elderly people was taken from 90 people living in a home in Pingtung suffering from dementia. From a sample of 12 people, eleven agreed to join the group but only ten were able to complete the whole assignment. They were tested before and after 8 sessions using brain-scans, MMSE, a depression scale and the scale of feeling of participation as well. After research the analyses and findings are discussed. Conclusions and suggestions are given in the final section.

General Statement of the Problem

According to the research (Hooyman & Kyiak, 1991), 15 to 22 per cent of elderly people
within the community are diagnosed with depression. The number of depressed people in institutions is three times greater than within the community (Jefferson & Greist, 1993; Koening & Blazer, 1996; Parmelee, Katz, & Lawton, 1992). In addition, the prevalence of elderly people with dementia is about 3 to 29 per cent (Erkinjuntti, Ostbye, Steenhuis, & Hachinski, 1997). In Taiwan, the prevalence of major depressive elderly people in the community is about 19 to 26 per cent (Lee, 2000) and 2 to 4 per cent are elderly people with dementia in the community (Leo, 2003). In addition, the prevalence of those with dementia in the institutions is nearly 50 per cent (Hooymann & Kyiak, 1991). According to the survey of Taiwan Alzheimer's Disease Association (TADA) (2004), the prevalence of dementia among people aged 65 and over is 4.48 per cent in the community, whereas 24.54 per cent in residential homes, 61.17 per cent in non-skilled nursing homes and 65.70 per cent in nursing homes.

It has been acknowledged that there is a higher risk of dementia & other problems for elderly people living in institutions. To sum it up, the problem of elderly people living in institutions may be listed as follows:

(1) Dementia issues: not only greater prevalence of dementia but personal interaction is less for those living in institutions than for those elderly people living in the community.

(2) Depression issues: there is also a higher ratio of symptoms of depression diagnosed
in institutionalised elderly (people), compared with those living in community.

In addition, people living in the institutions in Taiwan tend to be diagnosed with compound symptoms (Yang, 2006). They need to be helped by professionals such as those working in or running homes for elderly people. Professionals are trying to organize group activities or treatments using reminiscence therapy in order to retard the process of dementia among older people. However, no evidence or positive effects have been demonstrated after the treatment. This research deals with the issue of retarding dementia in a home for elderly people in Pingtung County. The designed social group work program was conducted in order to see whether the process of dementia may be retarded.

**The Purpose of the Research**

The purpose of this research was as follows:

(1) To increase the interesting of social participation of elderly people with dementia by applying the reminiscence social group work in order to improve their function and reduce the depression symptom in advance.

(2) To prove the reminiscence group work effects by depression scales and EEG measurements before and after treatments.

**Literature Review**

**The development of symptoms in the progress of dementia**

Many elderly people experiencing dementia also has associated feelings of helplessness.
Reisberg, Ferris, De Leon, and Crook (1982) suggests seven stages in the process of dementia. The first stage is that of conception and where the physical functions of people with dementia decline, but people tend to ignore them. The second stage is when they gradually become slightly forgetful and have problems with full time jobs. In the third stage, their cognition and memory can be impaired, so that working and traveling may be difficult as well. In the fourth stage, symptoms of puzzles, lack of self-control and social disengagement may be found. After the fifth stage, most of them forget things that have just happened. This can include clothing and bathing difficulties. In the sixth stage, people would have memory orientation difficulties, Activity of Daily Living Scale (ADL) helps may also be needed and personalities can change. In the seventh stage, they will lose their ability to communicate, ADL as well as falling to sleep all the time. All of these stages basically may not be recovered or stopped, but early diagnosis and treatment may be able to retard these processes.

In fact, at present there is no medicine that can be used to heal dementia. However, behavior therapy and environmental intervention have been utilized in order to promote personal reaction and to retard the process of dementia. Maintaining a consistent environment in which the person is, or direction orientation training, keeping regular schedules, simplifying the path of rooms and labeling environments in order to promote their ADL functions may be utilized in order to reduce damage from dementia. The reminiscence therapy is derived from these concepts (Unruh, 1989) and it adopts a positive way to treat and retard
the process of dementia.

Reminiscence therapy

The term ‘reminiscence therapy’ has many meanings. Unruh (1989) points out that ‘reminiscence therapy’ is not only a recall of personal past experiences, feelings, self-concepts or sub-conscious memories which might have already disappeared for years from daily life, but also an integration or a review of feelings of personal incidents. Bruce (1999) agrees that ‘reminiscence therapy’ is a process to review and to share personal life experiences. A ‘reminiscence therapy group’ utilizes the process of reminiscence group work in order to encourage and support people living with dementia to have more personal interaction through the group process (Bradley, 2007). Reminiscence group work may be able to improve communication skills between careers and people with dementia (Graham, 1999) and enable careers to utilize elderly people’s crystallized intelligence to promote their ability in social interaction and positive reflection (Bradley, 2007). In fact, crystallized intelligence as measured by tests assessing the general function of information and vocabulary, shows little change as a result of aging until the age 70 or later (Schaie, 1996). Therefore, people with dementia may have more self-identity through crystallized intelligence communication as a result of reminiscence group work. This research tried to encourage and support the social interaction of people with dementia through reminiscence group work in an old people’s home for elderly, by which it may be able to retard the processes of losing IADL
(Instrumental Activities of Daily Living) and ADL.

**Childhood cooking lessons and reminiscence treatment**

Many positive experiences are connected with food or cooking during childhood, especially for elderly people. Elderly people experiencing childhood cooking may not only satisfy their physical needs but also satisfy their mental needs. Another issue for elderly people is the personal interaction experienced through cooking and eating. By learning cooking, it also meets their growth needs as well as promoting personal relationships as well. This is a positive circular development and exactly reflects the field theory on social group work. Through the processes and lessons of childhood cooking elderly people with dementia develop several social and psychological functions (Huang, Lee, Yang, Lin, & Chang, 2007):

1. Physical needs may be met; 2. Self-achievement can be made; 3. Self-growth can be fulfilled; 4. Social interactions may be improved; 5. Emotional stability could be improved; 6. Self-control and autonomy may increase; 7. A family atmosphere can be promoted in the institution; 8. Individual needs can be met.

To sum up, the reminiscence group work is a treatment to promote physical and mental development which will retard the process of the development of dementia in the elderly.

**Electroencephalography and reminiscence therapy**

Basically, electroencephalography (EEG) records brain waves; it is used to detect the level of electrical activity in the brain. Human brain cells communicate by electrical impulses
and an EEG measures and records these electrical impulses to detect anything abnormal. An EEG measures primarily *grey matter* or *higher* brain function (Lee, 2007). The largest part of the brain is comprised of the cerebrum, which is split into right and left hemispheres. The cerebrum controls voluntary actions, thought, speech, and memory. In humans, the cerebrum comprises most of the brain, while in other mammals it is relatively small. This allows human beings to perform much more complicated actions than any other species. The outer layer of the cerebrum, called the cerebral cortex, is responsible for most of the higher brain functions such as thought, reasoning, memory, and voluntary muscle movement. The cerebral cortex is mostly made up of neurons, which are nerve cells that carry messages throughout the body. In turn, the activity of the cerebral cortex is regulated by two structures that lie deeper in the brain: the thalamus, which is located in the center of the brain and carries signals from the sensory organs to the brain, and the reticular activating system, which sends signals to tell human beings to go to sleep and to wake up. The electrical activity of all these structures is the primary focus of the EEG help in the diagnosis and management of Seizure disorders, Encephalopathy, Stupor and Coma. Stupor is defined as reduced or slowed responsiveness, and *coma* is defined as unresponsiveness (not waking up, or if appearing to be awake, but not reacting to stimuli). Although EEGs may record the lack of electrical activity in some comatose patients, which can be used as evidence of brain death, in many other instances EEGs turn up treatable conditions such as otherwise undetected seizures disorders or chemical
imbalances. EEGs may also uncover signs of an otherwise unexpected good prognosis, like otherwise undetectable responses to stimuli, or evidence of normal sleep patterns (Wikipedia, 2007).

Researchers (Bai et al., 2007) have speculated that a fully functioning brain can generate as much as 10 watts of electrical power. Even though this electrical power is very limited, it does occur in very specific ways that are characteristic of the human brain. Electrical activity emanating from the brain is displayed in the form of brainwaves. There are four categories of these brainwaves, ranging from the most activity to the least activity. When the brain is aroused and actively engaged in mental activities, it generates beta waves. Beta waves have relatively low amplitude, and are the fastest of the four different brainwaves. The frequency of beta waves ranges from 15 to 40 cycles per second. Beta waves are characteristics of a strongly engaged mind. A person in active conversation would be in beta. A debater would be in high beta. The next brainwave category in order of frequency is alpha. Where beta represented arousal, alpha represents non-arousal. Alpha brainwaves are slower and higher in amplitude. Their frequency ranges from 9 to 14 cycles per second. The next state, theta brainwaves, are typically of even greater amplitude and slower frequency. This frequency range is normally between 5 and 8 cycles per second. The repetitive nature of driving a car along a country road would entail the brain differentiating between a theta state and a beta state in order to perform the driving task safely. The final brainwave state is delta. Here the
brainwaves are of the greatest amplitude and slowest frequency. They typically center around a range of 1.5 to 4 cycles per second. They never go down to zero because that would mean that you were brain dead. But, deep dreamless sleep would take you down to the lowest frequency. Typically, 2 to 3 cycles a second (Intelegen, 2005 & Centre for Educational Research and Innovation [CERI], 2004).

Research (Matousek & Petersen, 1983; Huang, Tsai, & Kuo, 2001) showed that dementia may be diagnosed in terms of fast waves (Beta and Alpha waves), or slow waves (Theta and Delta waves). Basically, elderly people with more fast waves represent a better mental state, whereas slow waves represent the worse state in the brain of the elderly people with dementia. This research is trying to measure the brain waves in order to find the effectiveness of the social group work.

Framework of Research

Based on the literature review, elderly people with dementia may have less social interaction, lower MMSE score and higher risk of depression. The effectiveness of the group work treatment will be evaluated by ‘feeling of participation’, ’score of MMSE scale’ and ‘score of depression scale’. In addition, because dementia may be diagnosed in terms of measurement of fast/slow waves, the effectiveness of the group work will be assessed by EEG brain scanning as well. Therefore the framework of this research will be stated as follows: X₁ is basic characteristics. X₂ is reminiscence group work. Y is its effectiveness, which includes dimensions: 1. Feeling of participation; 2. Score
of MMSE scale; 3. Score of depression scale and 4. Scale of fast/slow waves. A hypothesis that \( X_1 \) and \( X_2 \) affect \( Y \) will be tested.

**Methods**

**Participant**

This research was based on the literature review. Its target group was 12 elderly clients with dementia (moderate and mild grade only) living in a Pingtung old people’s home. They were sampled from the 90 people living in the home. Twelve of them were selected but only 11 agreed to join the group. Because of sickness, only 10 clients completed the group work entirely. Eight sessions of reminiscence cooking lessons and social group work was conducted. They were tested before and after the 8 sessions using brain-scans, MMSE and depression scales in order to measure the effects of the reminiscence treatment.

**Measurement**

This research utilized a personal interaction scale, the scale of feeling of participation questionnaires, MMSE, a Geriatric Depression Scale, and EEG to measure the effectiveness of reminiscence group work before and after treatment. The measurement scales illustrated as follows:

1. The personal interaction scale:

   Seven items in the personal interaction scale (Chong, 2000) were utilized. They are feeling of happiness, communication, talking, positive interaction, participation, by orders and activity preference.

2. The scale of feeling of participation:

   The questionnaires of feeling of participation was designed by authors as the group
working. It includes items feeling of emotion, stress relief, adaptation, and impression of the group work activities.

3. MMSE:

The Mini-Mental State Examination (MMSE) (Folstein, et al., 1975) includes five items: orientation, registration, attention and calculation, recall and language. It was utilized before and after group work treatment.

4. The depression scale:

Geriatric Depression Scale (GDS-30) (Yeh et al., 1995) was employed to measure the depression symptoms of samples in the home.

5. EEG

Electroencephalography (EEG) records fast and slow brain waves. Basically, fast waves represent a better mental state, whereas slow waves represent the worse state in the brain of the elderly people with dementia.

Questionnaire investigations were used to measure subjective experiences, whereas the elderly people’s brain scans were measured at the hospital with the persons consent which yielded objective observations. The elderly people’s personal stories about childhood cooking were obtained by the group leader who interviewed the different individuals as the group work progressed.

**Target Group and Sampling**

Twelve elderly clients with dementia (moderate and mild grade only) were sampled from 90 persons in a home in Pingtung. Eleven of them agreed to join the group work. However, one of them became ill on the 5th session. The other 10 clients joined the group consistently until the end of group work.

**The Procedure of Group Treatment**
This research organized social group work with reminiscence treatment. Eight sessions of reminiscence cooking lessons in the social group work were conducted. They were all reminiscence dishes selected by the 11 elderly clients, including stir-fried powder (traditional soup), soup of wheat product, fried oyster, fried noodle, dumpling, deep-fried oyster, Bensip soup, green onion pancake. From May 4th to June 30th 2007, 8 sessions were completed. A full schedule for every session was 90 minutes. It included 10-minutes for ‘warm up’, ‘cooking procedures demonstrated and explained’ by group leaders for 20 minutes, eating after cooking for 30 minutes. The experiences of elderly people interviewed by the leaders were 30 minutes.

Validity and Reliability of Questionnaire

After the analysis of validity and reliability of the questionnaires, the reliability of the questionnaire on feelings of participation was $\alpha = .6463$ and the personal interaction scale was $\alpha = .9785$. Both of these questionnaires are acceptable on the basis of validity and reliability.

Results and Discussion

Analysis of Basic Characteristics

The analysis of basic characteristics revealed that 7 of the samples (63.6 per cent) were male and 4 were female. Seven samples (63.6 per cent) were Buddhists or Taoists and 4 (36.4 per cent) had other beliefs. In addition, 6 of them (54.5 per cent) were illiterate and 5 (45.5 per cent) were primary school educated and higher. Only 6 (54.5 per cent) of them were married and the rest of them were unmarried. Most of them had a physical disability, and the rest of them had vision impairment or a hearing disability (see Table 1). It shows that most of those sampled suffered not only from dementia, but also had other disabilities.

Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
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<th>%</th>
<th>Variables</th>
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<td>Gender</td>
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<td>Marriage</td>
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<td>Females</td>
<td>4</td>
<td>36.4</td>
<td>unmarried</td>
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<td>45.5</td>
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Analyses of Personal Interaction Scale

There were 5 items in the variable of ‘personal interaction scale’. These were ‘average of happiness’, ‘talking to people’, ‘positive communication’, ‘positive interaction’ and ‘participation’. All of these items were monitored by co-leaders throughout the process of group work. After 8 sessions of group work treatment, although there were no significant difference between before and after treatment on ‘talking to people’, all of the other items in the personal interaction scale, for instance, the ‘average of happiness’, ‘positive communication’, ‘positive interaction’ and ‘participation’ of elderly clients showed significant differences.

Table 2.

**Analyses of Personal Interaction Scale Before and After Group Work Treatment**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Average</th>
<th>frequency</th>
<th>SD</th>
<th>t-test</th>
</tr>
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<tbody>
<tr>
<td>Happiness before treatment</td>
<td>4.6000</td>
<td>10</td>
<td>0.9165</td>
<td>-5.244***</td>
</tr>
<tr>
<td>Happiness after treatment</td>
<td>5.8000</td>
<td>10</td>
<td>0.4000</td>
<td></td>
</tr>
<tr>
<td>Positive communication before treatment</td>
<td>4.7000</td>
<td>10</td>
<td>1.1874</td>
<td>-2.442*</td>
</tr>
</tbody>
</table>

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<td>4.7000</td>
<td>10</td>
<td>1.1874</td>
<td>-2.442*</td>
</tr>
</tbody>
</table>
Positive communication after treatment 5.6000 10 .6633
Talking before treatment 4.6000 10 1.2806 -2.183
Talking after treatment 5.5000 10 1.0247
Positive interaction before treatment 4.3000 10 1.2689 -3.504**
Positive interaction after treatment 5.5000 10 .6708
Participation before treatment 5.0000 10 1.1832 -2.803*
Participation after treatment 6.0000 10 .0000
By orders before treatment 4.9000 10 1.1358 -3.212**
By orders after treatment 6.0000 10 .0000
Activity preference before treatment 5.4000 10 .8000 -2.487*
Activity preference after treatment 6.0000 10 .0000

* \( p \leq 0.05 \)  \( ** p \leq 0.01 \)  \( *** p \leq 0.001 \).

**Analyses of Feeling of Participation**

There were 4 items in the variable of ‘feelings of participation scale’—the averages of ‘feeling of emotion’, ‘stress relief’, ‘adaptation’ and ‘impression’. They were observed by co-leaders throughout the process of group work as well. After 8 sessions of group work treatment, analyses of ‘feeling of participation’ showed the average scores of ‘stress relief’, ‘adaptation’ and ‘impression’ of elderly clients increased significantly after group treatments, although ‘feeling of emotion’ showed no significant difference. The t-values were -.802, -2.250, -4.743 and -2.250 respectively.

**Table 3. Analyses of Feeling of Participation Before and After Treatment**

<table>
<thead>
<tr>
<th>Variables</th>
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<th>SD</th>
<th>t-test</th>
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</thead>
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<td>Feeling of emotion before treatment</td>
<td>3.6000</td>
<td>10</td>
<td>.5164</td>
<td>-.802</td>
</tr>
<tr>
<td>Feeling of emotion after treatment</td>
<td>3.8000</td>
<td>10</td>
<td>.4216</td>
<td></td>
</tr>
<tr>
<td>Stress relief before treatment</td>
<td>2.9000</td>
<td>10</td>
<td>.5676</td>
<td>-2.250*</td>
</tr>
<tr>
<td>Stress relief after treatment</td>
<td>3.5000</td>
<td>10</td>
<td>.5270</td>
<td></td>
</tr>
<tr>
<td>Adaptation before treatment</td>
<td>2.9000</td>
<td>10</td>
<td>.5676</td>
<td>-4.743***</td>
</tr>
</tbody>
</table>
Adaptation after treatment 3.9000 10 .3162
Impression before treatment 3.9000 10 .6325 -2.250*
Impression after treatment 3.8000 10 .4216

*p ≤ .05  **p ≤ .01  ***p ≤ .001.

**Analysis of MMSE Scores, Depressive Scale and Brain-Scanning**

After the analyses of MMSE scores before and after treatment, the averages of MMSE scores of ten clients after treatment were higher score than before. The t-value was -1.281. It shows that MMSE scores of ten clients have been improved after treatment. In addition, the scores of clients on depression scale were lower after treatment. Its t-value was .904. Although it is not significantly different, it also shows that the levels of depression of elderly clients has been positively affected. All of these results showed the positive effects of reminiscence group work. The most important issue was the EEG. The average value of their fast waves rose from 43.88 up to 55.87, whereas the average value of their slow waves was lower from 56.12 to 44.13 after the intervention. After the analysis of Wilcoxon matched paired signed rank test and t-test, they showed significant differences between them.

Table 4.

**Analysis of MMSE Scores, Depression Scale and EEG Measurement Before and After Treatment**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Average</th>
<th>frequency</th>
<th>SD</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMSE scores before treatment</td>
<td>15.91</td>
<td>10</td>
<td>4.95</td>
<td>-1.281</td>
</tr>
<tr>
<td>MMSE scores after treatment</td>
<td>17.10</td>
<td>10</td>
<td>3.99</td>
<td></td>
</tr>
<tr>
<td>Depression scale before treatment</td>
<td>11.91</td>
<td>10</td>
<td>7.90</td>
<td>.904</td>
</tr>
<tr>
<td>Depression scale after treatment</td>
<td>10.64</td>
<td>10</td>
<td>7.98</td>
<td></td>
</tr>
<tr>
<td>Fast waves of brain-scanning</td>
<td>43.88</td>
<td>10</td>
<td>3.96</td>
<td>-2.356*</td>
</tr>
</tbody>
</table>
before treatment (left F3-C3 area)

Fast waves of brain-scanning       55.87       10       18.25
after treatment (left F3-C3 area)

\* p ≤ .05 \*\* p ≤ .01 \*\*\* p ≤ .001.

Conclusions and Suggestions

Personal interaction between elderly people has been improved

Most of the personal interaction scales—the ‘average of happiness’, ‘positive communication’, ‘positive interaction’ and ‘participation’ of the elderly clients showed significant differences. It showed that personal interaction between elderly people was improved after group work treatment.

Feeling of participation was significantly positive

Feeling of participation was significantly positive as well, especially for the average scores of ‘stress relief’, ‘adaptation’ and ‘impression’ of the elderly clients. They were increased significantly after group treatment.

The results gave higher scores of MMSE and lower scores on depression scale but these did not constitute significant differences after treatment

After the analyses of MMSE scores and depression scale before and after treatment, although results showed the higher MMSE scores and the lower scores of depression scale the differences were not significant. However, these results still showed the positive effects of retarding the process of dementia.
The average value of the fast waves of the clients rose, whereas the average value of their slow waves was lower after the intervention.

Significantly, in terms of EEG measurement, the average value of the old people’s fast waves rose, whereas the average value of their slow waves was lower after intervention. These results basically proved that reminiscence group work had positive effects after group work treatment which proved to be significant after statistical analysis. Reminiscence group work should be promoted in the future.

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