ABSTRACT

Background/Purpose: Consideration of mental health status together with levels of happiness in elderly patients undergoing hemodialysis is among issues disregarded in health systems even though this age group is likely to suffer from numerous mental disorders induced by physical problems. This study aimed to determine the effectiveness of group reminiscence therapy (GRT) on Mental Health Status and Levels of Happiness among Elderly Patients on Hemodialysis.

Methods: This clinical trial study was conducted on 60 elderly patients undergoing hemodialysis from 1 February 2019 to 30 August 2019. The sampling method was simple random allocation. The intervention was then implemented through structured GRT for the patients in the experimental group within eight sessions, twice a week. The control group, however, did not receive any interventions. SPSS Version 18.0 was used to analyze the data.

Results: The results revealed that the difference between mean scores of mental health status between both experimental and control groups was significant following the implementation of GRT ($p=0.02$), so the mean scores in the experimental group (30.76±8.07) had reduced after the given intervention compared with that in the control group (37.13±6.28). The mean scores of levels of happiness had also significantly increased in the experimental group following GRT (114.4±7.98) compared with that before it (93.03±19.97) ($p \leq 0.02$).

Conclusion: It was concluded that implementation of GRT could have a positive effect on mental health status and levels of happiness in elderly and adult patients aged ≥50 years undergoing hemodialysis.
1. INTRODUCTION

Aging is one of the most important issues in public health. As reported by the World Health Organization (WHO) (2013), it has been estimated that the population of individuals aged ≥50 years will be doubled between 2000 and 2050, so it will increase from 11% to 22% and it will also grow from 65 million to 2 billion people. In the case of Iran, the population of middle-aged individuals in 2004 was reported by 6.59% which reached 8.26%, indicating a growth in the middle-aged population.

Like other chronic physical illnesses, psychological distress is also common at a significant rate higher than that in general populations of individuals with chronic kidney disease and end-stage renal disease. Growing number of elderly individuals along with improvements in nephrology, in particular hemodialysis, have thus led to an increased number of older adults undergoing this treatment, so the age range of 40% of patients with chronic kidney disease is ≥65 years. Moreover, 40.1% of such individuals are placed in the age range of 41-59 years, which will reach old age in the next two decades. Therefore, it is of utmost importance to plan ahead for this age group.

Nowadays, drug therapy and psychotherapy are commonly utilized to treat mental disorders but those employed to deal with depression are mainly of drug therapy type. Although researchers acknowledge that the given therapy can reduce specific symptoms of depression, specialists have offered reasons for its inadequacy. The review of literature on treatments available for depression in the elderly along with promoting factors such as self-esteem have also revealed that cognitive-behavioral therapy (CBT), interpersonal therapy (IPT), short-term psychodynamic therapy, and reminiscence therapy have been among the mostly supported psychotherapies. In this regard, group reminiscence therapy (GRT) has been the focus of attention among many geriatric researchers.

In the past few decades, the effectiveness of reminiscence in the treatment of depression in older adults has been increasingly reported. However, the results are not fixed yet and it seems that studies into reminiscence and all aspects of mental health status are not complete and they have merely obtained inconclusive findings since they have merely measured different aspects of mental health status.

Considering results of various studies on effectiveness of GRT in mental health status and lack of research in the field of positive psychology such as levels of happiness among the elderly and adults undergoing hemodialysis, shortcomings of similar investigations and their differences in terms of measurement tools and variables examined, no adverse side effects with this treatment, cost-effectiveness, need for less expertise, having enough time in the presence of patients in hemodialysis centers and also due to differences in Iranian culture in terms of reminiscence, self-disclosure, and its consequences; no study had been so far conducted in this so this study was conducted aimed to determine the effectiveness of group reminiscence therapy (GRT) on mental health status and levels of happiness among elderly patients on hemodialysis.

2. METHODS

2.1. Design and Participants

This two-group, pretest-posttest, randomized clinical trial (RCT) study was conducted on 72 elderly people and middle-aged individuals aged ≥50 referring to Imam Ali and Imam Khomeini Medical-Educational Centers affiliated to North Khorasan University of Medical Sciences in the cities of Bojnourd and Esfarayen from 1 February to 30 August in 2019. To determine the sample size, similar study was utilized. Taking into account level of confidence (α=0.1), test power (80%), as well as standard deviation (SD) (8.1), and error (3.5); the minimum sample size was calculated by 66 individuals for experimental and control group. In this study, the sample size was calculated by 33 individuals after modifications and 10% (3 individuals) was also counted with regard to the probability of sample loss, so the final sample size was 36 individuals in experimental and control groups, respectively. Simple random sampling was used to data collection. The inclusion criteria in this study were age range of ≥50 years, having a hemodialysis history of more than three months, no clinical diagnosis of mental illnesses in medical records during hemodialysis, taking no antidepressants, absence of drug abuse, receiving no group psychotherapy, as well as no communication problems with sensory deficits (hearing and eyesight) and ability to speak. The exclusion criteria included being affected with an acute illness and hospitalization during the intervention, having symptoms of depression once reviewing life events, absence in three GRT sessions, and unwillingness to continue the study.

2.2. Instruments

A demographic characteristics information questionnaire, General Health Questionnaire-28 (GHQ), and Oxford Happiness Questionnaire (OHQ) were used for data collection in this study.

General Health Questionnaire (GHQ-28)

This questionnaire was developed in 1989 by Goldberg and Hillier containing 28 items and 4 sub-scales, and scored in the form of a four-point Likert-type scale. Overall score and four sub-scales (i.e. somatic symptoms, anxiety/insomnia, social
dysfunction, and depression) can be thus obtained. As well, GHQ-28 contains 28 items scored from 0 to 3. Ultimately, the overall score will be between 0 and 84; so, the lower the score, the higher the mental health status and vice versa. The sub-scales of the questionnaire are somatic symptoms (items 1 to 7), anxiety/insomnia (items 8 to 14), social dysfunction (items 15 to 21), and symptoms of depression (items 22 to 28).11

**Oxford Happiness Questionnaire (OHQ)**

OHQ was developed based on the framework of Beck’s Depression Inventory containing 29 multiple-choice items. This version of the questionnaire evaluates mental constructs such as self-image, mental preparation, enthusiasm, sense of aesthetics, life satisfaction, self-efficacy, and life expectancy. The items in the new version of OHQ can be scored from 1 to 6 including totally disagree, disagree, relatively disagree, relatively agree, agree, and totally agree, respectively. Each item is also scored independently. Respondents can thus receive one score for each component and an overall score for the whole questionnaire; indicating their levels of happiness. The maximum and minimum scores obtained from this questionnaire are 174 and 29, respectively. It should be noted that higher scores mean higher levels of happiness.12

### 2.3. Data Collection

For data collection the researcher attended the centers through handing in the permits and then provided the list of individuals aged ≥50 years through making arrangements with relevant authorities in hemodialysis centers, cooperating with head nurses, and reviewing patients’ medical records. Firstly, the list of the individuals was coded and then they were selected from random number table and then the numbers were read until the required sample size was obtained. After that, the numbers were written on a scrap of paper and put into a container. Subsequently, 33 numbers were drawn out for the experimental group and the remaining ones were considered for the control one. After determining the group members, a briefing session was held for the experimental group to obtain their written consent and to assure them their information will remain confidential and they will have right to withdraw at each stage of the study. Then; the demographic characteristics information questionnaire, GHQ-28, and OHQ were completed by the study samples and their mean scores were considered as pretest ones. To hold GTR sessions, the required arrangements were further made with the samples in the experimental group and several decisions were subsequently made in relation to how and when they will attend the specified sessions. The participants in the experimental group were divided into smaller ones according to their attendance schedule. Besides, the GRT sessions were held in a room in the hemodialysis centers and their due time was selected out of that for hemodialysis. The GRT sessions were then held based on the protocol developed by Stinson et al in the form of 60-minute sessions, twice a week, and lasting four weeks.13 The first session started with the introduction of the participants to each other by themselves and the researcher also provided some information about his work and qualifications to get to know more the participants and then explained concepts used in each session and delineated the preparation requirements. The sessions were organized based on a specific topic and the participants could focus on various items during GRT in each session. The researcher further facilitated interactions during sessions. The topics of GRT sessions included expressing childhood memories, recalling school time memories, talking about youth and military service memories, recounting marriage and childbirth memories, talking about memories with parents and friends, expressing memories about vacations, travel information, and job experiences, as well as reminiscing special and important life events in the past. The sessions were also administered by the researcher and nurses working in hemodialysis centers. Besides, the participants were expected to reminisce during sessions and discussions. With the help of the researcher and after the end of each discussion, the participants could interpret and evaluate the content, give meaning to what they had passed through, and merge what they had experienced with those in their present life. At the end of each session, the topic of the next one was reminded to the participants and they were advised to be prepared for it in the next session. In the last session, the participants spoke of their experiences of joining this group and shared their last memories on topics discussed in previous sessions. The researcher also wrapped up the sessions and provided feedback regarding the issues shared and discussed in previous sessions. At the end of the last session, GHQ-28 and OHQ were completed once again by the experimental group and their mean scores were considered as posttest ones. During this time, the control group received only routine care and no intervention was performed. At the end of the eighth session, GHQ-28 and OHQ were also recompleted by the control group and their mean scores were taken into account as posttest ones. One month after the last session, the mentioned questionnaires were completed once again by both groups (Figure 1).

### 2.4. Ethical Considerations

Ethical considerations observed in this study were introducing the researcher to the samples, explaining research objectives and methods, obtaining a written consent, providing voluntary attendance in research and giving right to participants for withdrawal, keeping confidentiality of all information obtained, as well as distributing questionnaires anonymously using codes. This study was approved by the Ethics Committee of Esfarayen University of Medical
Sciences and the Ethics Committee of the place where research was conducted (Ethic code: IR.NKUMS.REC.1396.51). The clinical trial was approved by the Iranian Registry of Clinical Trials (IRCT) under No: IRCT20190102042214N1. The CONSORT checklist was used to report the study.

2.5. Statistical Analysis

Descriptive tests of the frequency, mean and standard deviation (SD) were used to describe sample demographics. Other tests were include Friedman test, Mann-Whitney U test, and Wilcoxon signed-rank test. SPSS Version 18.0 for Windows (SPSS Inc., Chicago, IL, USA) was used to analyze the data. Confidence interval of 95% and a significance level of \( p \)-value less than 0.05 was considered significant.

3. RESULTS

The mean age and SD of the participants was 61.53±5.44 years. There was also no significant difference between both groups in terms of age, gender of participants.

The mean scores of mental health status in the experimental group had differences during three stages, so the mean score before GRT sessions was 37.1±10.55 and such values had turned into 30.76±8.07 and 31.96±3.04 after GRT and one month following the completion of the sessions, respectively; although such a difference was not statistically significant (\( p = 0.14 \)).

The mean scores of mental health status in the control group had also differences within three stages, so the mean score before GRT sessions was 35.166±6.79 and such values had changed into 37.13±6.28 and 33.23±6.75 after GRT and one month following the completion of the sessions, respectively; which were statistically significant (\( p = 0.02 \)).

Given the significance of the Friedman test results, Wilcoxon signed-rank post-hoc test with Bonferroni correction was used to examine the mean scores of mental health status in the control group. This significance was observed between mean scores following the intervention and one month after it (z-score=0.7, \( p = 0.020 \)) (Table 1). Besides, there was a significant difference between mean scores of mental health status in both groups after the intervention (Mann Whitney U test=278, \( p = 0.011 \)), so the mean scores in the experimental group (30.76±8.07) had significantly reduced compared with those in the control group (37.13±6.28). The results also revealed that implementation of GRT had an effect on mental health status and it could moderate its mean scores (improved status) in the experimental group, so the given impact was significant compared with that in the control group (Table 2).

The mean scores for overall levels of happiness in the experimental group had increased over three stages, so the mean score in the stage before GRT were 93.03±19.97 which had turned into 114.4±7.89 and 115.1±7.47 following the intervention and one month after it, respectively; and such a rising trend was statistically significant (\( \chi^2 = 21.5, p = 0.001 \)). With regard to the significance of overall mean scores of levels of happiness in the experimental group, Wilcoxon signed-rank post-hoc test with Bonferroni correction was used for the statistical significance observed
between the mean scores before and after GRT (z-score=-1.03, p=0.001) and before and one month after the intervention (z-score=-0.96, p=0.001) (Table 3), representing the impact of GRT in the experimental group and its stability at one-month follow-up. The mean scores of levels of happiness in the control group had also reduced within the three stages, so the mean score before GRT was 111.5±30.45 and these values had changed into 110.7±27.64 and 103.93±29.72 following the intervention and one month after it, respectively; but this reduction was not statistically significant (X^2=4.85, p=0.08). The results suggested that GRT had a significant effect on levels of happiness and it had significantly augmented the mean scores of levels of happiness in the experimental group after the intervention.

4. DISCUSSION

Structured GRT could effectively improve mental health status in elderly and middle-aged patients undergoing hemodialysis aged ≥50 years, in such a way that the mean scores of mental health status in the experimental group had reduced after the intervention (improved status) compared with those before it. The given impact had also remained stable one month after the intervention; however, the mean scores of the control group had boosted after GRT compared with that before it, so the given change had been observed with a descending trend in mental health status. It meant that no intervention could have an adverse effect or no effect on the control group. As well, the mean scores of mental health status after the intervention between both groups were different, as the given values had declined in the experimental group compared with those in the control group (increased mental health status), and the results indicated that performing GRT had an effect on mental health status.

In the investigation by Akhoondzadeh et al. the mean scores of memory after the given intervention had increased compared with those before it, in a way that GRT could improve memory in the elderly which was consistent with the results of the present study. In another work by Ting-Ji Chen et al., evaluating the effect of GRT on decreased manifestations of depression, a significant statistical relationship had been further reported after intervention, and this effect had been also observed three months after the intervention, which was in line with the objectives of the present study.

In view of the outcomes of the above-mentioned studies, it could be concluded that structured GRT had an impact on mental health status in such a way that it could improve mental health status in the elderly, since having an active role in reminiscence could lead to increased self-confidence and a sense of usefulness in old age. Moreover, life review could help individuals understand how they had grown up throughout life and converted into ones at present. It would also help them recognize and express how they had learned from their own positive and negative experiences and state how encounters and values had guided their lives.

In the investigation by Harasankar Adhikari, mental health status in the experimental group had improved compared with that in the control group, which was in agreement with the present study.

Comparing the mean scores of levels of happiness before, after, and one month after the intervention in each group and comparing them with each other as well as analyzing the results of this study indicated that the mean score of levels of happiness in the experimental group had improved after GRT compared with that before it and the given impact had remained stable even one month after the intervention. However, the mean score of levels of happiness in the control group had not changed during the study, so the level of happiness was not different after the

### Table 2. Wilcoxon signed-rank post-hoc test with Bonferroni correction for mental health status in control group.

<table>
<thead>
<tr>
<th>Overall Mental Health Status</th>
<th>Test</th>
<th>z-score</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before and after GRT</td>
<td>-0.45</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>Before and one month after GRT</td>
<td>0.25</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>After and one month after GRT</td>
<td>0.7</td>
<td>0.02</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3. Comparison of mean and SD scores of levels of happiness in both groups before, after, one month after.

<table>
<thead>
<tr>
<th>Levels of happiness scores</th>
<th>Before GRT Mean±SD</th>
<th>After GRT Mean±SD</th>
<th>One-month follow-up Mean±SD</th>
<th>X^2</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group</td>
<td>93.03±19.97</td>
<td>114.4±7.98</td>
<td>115.1±7.47</td>
<td>21.5</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Control group</td>
<td>111.5±30.45</td>
<td>110.7±27.64</td>
<td>103.93±29.72</td>
<td>4.85</td>
<td>0.08</td>
</tr>
</tbody>
</table>

**Friedman test was used. **Mann Whitney U test was utilized.

### Table 4. Wilcoxon signed-rank post-hoc test with Bonferroni correction for levels of happiness in control group.

<table>
<thead>
<tr>
<th>Overall Levels of Happiness</th>
<th>Test</th>
<th>z-score</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before and after GRT</td>
<td>-1.03</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Before and one month after GRT</td>
<td>-0.96</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>After and one month after GRT</td>
<td>0.067</td>
<td>&gt;0.99</td>
<td></td>
</tr>
</tbody>
</table>
intervention compared with that before it. There was even no difference in levels of happiness between experimental and control groups before, after, and one month following GRT.

In the study by Yousefi et al., the mean scores of levels of happiness in the experimental group had increased following intervention compared with that before it; therefore, GRT had boosted levels of happiness in older adults in the experimental group and this had been maintained at the one-month follow-up, which was consistent with the results of the present investigation.10

In one other study by MAJZOObI et al., the mean score of levels of happiness in the experimental group had increased after the intervention, and this achievement had also remained stable at one-month follow-up stage, but the mean score of levels of happiness in the control group after the intervention had not differed from those before and one month after it, and this state had been maintained at one-month follow-up, which was in agreement with the results of the present study.17

It should be noted that reminiscence is normally a conceptual technique to review life events. It is also taken into account as a mental process in which talking about events and incidents in the past can augment levels of happiness and life expectancy. Being of assistance to the elderly to match with normal process of aging through remining and rebuilding experiences, reminiscence also helps them obtain much more positive values of life via increasing their self-confidence and decisiveness, raising their self-perception, fostering their personality traits, and consequently earning senses of integrity and satisfaction. Studies have further shown that reminiscence makes it possible for the elderly to review their life experiences and reconstruct life events in a cognitive manner and subsequently expand their self-concepts and perceptions regarding history of personal life which can directly affect their emotions. Therefore, life review is inherently a therapeutic process which leads to insight and self-perception accompanied by emotional, behavioral, and cognitive changes. Once patients talk about these memories, they can thus remember days when they were full of energy and were also socially active. Reminding and bringing back memories can accordingly give them energy and make it possible for them to assume rights to live like other healthy individuals.18

5. CONCLUSION

The findings of the present study revealed that GRT can increase mental health status and levels of happiness in the elderly and this type of intervention is introduced that can help individuals to give a specific meaning and comprehensiveness to their half-finished experiences. Also GRT can be utilized in a simple, inexpensive, and applicable manner in all hemodialysis and elderly care centers and even individually at home and it is expected that the given technique will be welcomed by elderly patients on hemodialysis, as well as their family, and medical staff members.

CONFLICTS OF INTEREST

The authors declared no conflict of interest.

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