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Reaching for Cardio-Metabolic Fitness and Resilience through Self-Healing and Guided Individualized Cyber-Therapy – an Opportunity to Reenergize Primary Care

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Abstract

The goal of this study was to see how effective group reminiscence therapy (GRT) is for improving mental health and happiness in elderly hemodialysis patients. From February 1 to August 30, 2019, 60 elderly patients undergoing hemodialysis participated in this clinical trial. Simple random allocation was used as the sampling method. The intervention was then delivered to the patients in the experimental group over the course of eight sessions, twice a week, using structured GRT. However, no interventions were given to the control group. The results revealed that the difference in mean mental health status scores between the experimental and control groups was significant following the implementation of GRT (p0.05), indicating that the experimental group's mean scores (30.768.07) were lower than the control group's (37.136.28) after the given intervention. The experimental group's mean happiness scores had also increased significantly after GRT (114.47.98) compared to the control group (93.0319.97) (p0.05). It was concluded that implementing GRT could improve the mental health and happiness of elderly and adult hemodialysis patients over the age of 50.

Keywords: Mental Health, Happiness, Group Reminiscence Therapy, Elderly Patients, Hemodialysis

INTRODUCTION

One of the most pressing challenges in public health is ageing (1). According to the World Health Organization (WHO) (2013), the number of persons aged 50 would double between 2000 and 2050, rising from 11 percent to 22 percent and from 65 million to 2 billion people (2). In Iran, the population of middle-aged people increased from 6.59 percent in 2004 to 8.26 percent in 2008, showing a rise in the middle-aged population (3).

Psychological distress, like other chronic physical illnesses, is widespread among people with chronic kidney disease and end-stage renal disease at a significantly greater rate than in the general population (4). As the population of the elderly grows, advances in nephrology, particularly hemodialysis, have resulted in an increase in the number of older adults having this treatment(5) , As a result, 40 percent of patients with chronic renal disease are between the ages of 65 and 75. (6, 7). Furthermore, 40.1 percent of these people are between the ages of 41 and 59, indicating that they will reach old age within the next two decades. As a result, it is critical to plan ahead for this age range.

As a result, 40 percent of patients with chronic renal disease are between the ages of 65 and 75. (6, 7). Furthermore, 40.1 percent of these people are between the ages of 41 and 59, indicating that they will reach old age within the next two decades. As a result, it is critical to plan ahead for this age range. Cognitive-behavioral therapy (CBT), interpersonal therapy (IPT), short-term psychodynamic therapy, and recollection therapy were among the most widely accepted psychotherapies in a review of evidence on treatments for depression in the elderly, as well as promoting qualities such as self-esteem (9). Many geriatric researchers have focused their emphasis on group reminiscence therapy (GRT) in this area..

The usefulness of memory in the treatment of depression in older individuals has been increasingly reported in recent decades. However, the results are not yet finalised, and it appears that investigations into remembrance and all aspects of mental health status are incomplete, yielding inconclusive results because they only examined separate components of mental health status. (10, 11).

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Considering the findings of several studies on the effectiveness of GRT in mental health status and the lack of research in the field of positive psychology, such as happiness levels among the elderly and those undergoing hemodialysis, the shortcomings of similar investigations and their differences in terms of measurement tools and variables examined, the lack of adverse side effects with this treatment, and its cost-effectiveness This study was designed to investigate the impact of group reminiscence therapy (GRT) on mental health status and levels of happiness among elderly patients on hemodialysis, as no previous research had been done in this area.

MATERIAL AND METHODS

Design and participants

This two-group, pretest-posttest, randomised clinical trial (RCT) was conducted on 72 old and middle-aged patients aged 50 who were referred to North Khorasan University's Imam Ali and Imam Khomeini medical-educational institutes. of Medical Sciences in the cities of Bojnourd and Esfarayen from 1 February 2019 to 30 August 2019. To determine the sample size, similar study was utilized (12). 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. Age range of 50 years, hemodialysis history of more than three months, no clinical diagnosis of mental diseases in medical records during hemodialysis, no antidepressants, no drug misuse, no group psychotherapy, and no communication problems with sensory deficiencies (hearing and eyesight) and ability to talk were the inclusion criteria in this study. Exclusion criteria included being hospitalised during the intervention due to an acute illness, showing signs of depression after evaluating life events, missing three GRT sessions, and refusing to continue the trial.

Instruments

In this study, data was collected using a demographic characteristics information questionnaire, the General Health Questionnaire-28 (GHQ), and the Oxford Happiness Questionnaire (OHQ).

Questionnaire on General Health (GHQ-28)

This questionnaire was developed in 1989 by Goldberg and Hillier containing 28 items and 4 sub-scales; 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. GHQ-28 also includes 28 elements with scores ranging from 0 to 3. Overall, the score will range from 0 to 84; the lower the number, the better the mental health level, and vice versa. The questionnaire's sub-scales are somatic symptoms (items 1–7), anxiety/insomnia (items 8–14), social dysfunction (items 15–21), and depression symptoms (items 22–28). (13).

Oxford Happiness Questionnaire (OHQ)

OHQ was created using the structure of Beck's Depression Inventory, which consists of 29 multiple-choice questions. Self-image, mental preparedness, enthusiasm, aesthetics, life satisfaction, self-efficacy, and life expectancy are all assessed in this version of the questionnaire. Total disagree, disagree, somewhat disagree, comparatively agree, agree, and absolutely agree are among the items in the new edition of OHQ that can be scored from 1 to 6. Each item is also given its own score. Respondents will receive a score for each component as well as an overall score for the entire questionnaire, indicating their satisfaction levels. This questionnaire yielded maximum and minimum scores of 174 and 29, respectively. It should be noted that higher scores mean higher levels of happiness (14).

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 twice a week for four weeks, according to the protocol developed by Stinson et al, in the form of 60-minute sessions (11). The first session began with the participants introducing themselves to one another, as well as the researcher providing some information about his profession and qualifications in order to get to know the participants better. The researcher then defined the principles utilised in each session and outlined the preparatory requirements. The sessions were organised around a certain theme, and participants were able to focus on different things during GRT in each session. During the sessions, the researcher further fostered interactions. Expressing childhood memories, recalling school memories, talking about youth and military service memories, recounting marriage and childbirth memories, talking about memories with parents and friends, expressing memories about holidays, travel information, and career experiences, as well as reminiscing about exceptional and important life events in the past were among the subjects covered in GRT sessions. The sessions were also overseen by the researcher and nurses from hemodialysis clinics. In addition, during sessions and conversations, participants were required to recollect. The participants may understand and analyse the content with the researcher's guidance, give meaning to what they had gone through, and fuse what they had gone through with their current lives following each conversation. The following session's topic was reminded to the participants at the end of each one, and they were instructed to be prepared for it in the next one. The members discussed their experiences joining this group and shared their last memories on issues discussed in prior sessions in the final session. In addition, the researcher concluded the meetings by providing comments on the concerns raised and explored in earlier sessions. The experimental group completed the GHQ-28 and OHQ again at the end of the last session, and their mean scores were used as posttest results. The control group received only normal care and no interventions throughout this time. GHQ-28 and OHQ were also recompleted by the control group at the end of the eighth session, and their mean scores were used as posttest results. Both groups completed the specified questionnaires again one month following the last session. (Figure 1)

Figure 1. Study Flow Diagram
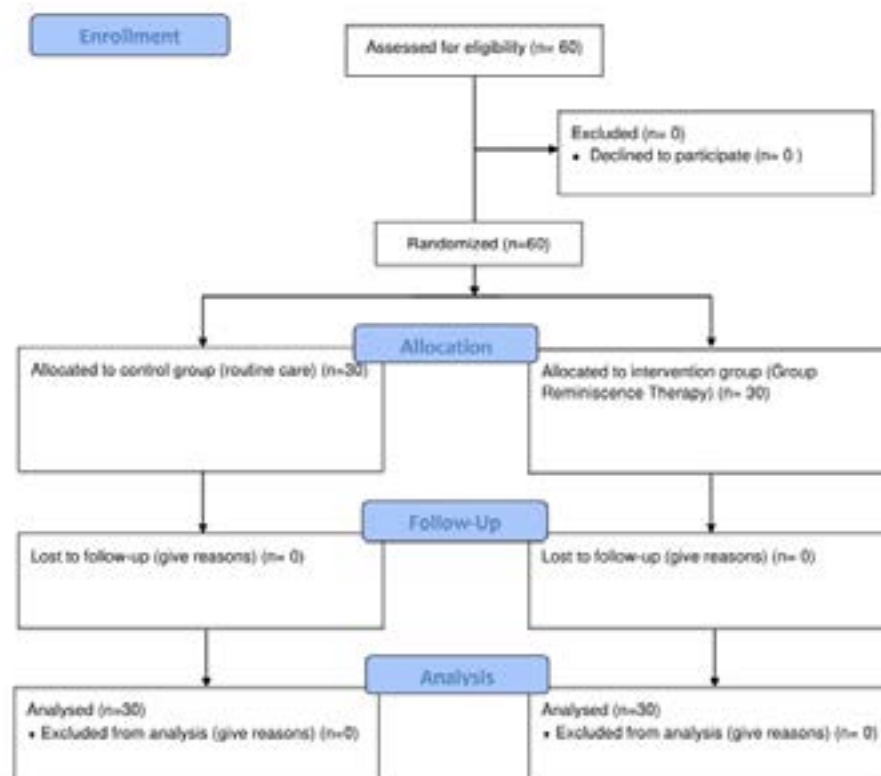
Ethical considerations

In this study, ethical considerations included presenting the researcher to the samples, describing the research objectives and techniques, obtaining written consent, providing voluntary participation in research and giving participants the right to withdraw, maintaining confidentiality of all data gathered, and anonymously distributing questionnaires using codes. The Ethics Committee of Esfarayen University of Medical Sciences and the Ethics Committee of the research site both authorised this work (Ethic code: IR.NKUMS. REC.1396.51). The Iranian Registry of Clinical Trials (IRCT) gave the clinical trial the number IRCT20190102042214N1. The study was reported using the CONSORT checklist.

Statistical analysis

The sample demographics were described using descriptive tests of frequency, mean, and standard deviation (SD). Friedman, Mann-Whitney U, and Wilcoxon signed-rank tests were among the other tests used. The data was analysed using SPSS Version 18.0 for Windows (SPSS Inc., Chicago, IL, USA). It was considered significant if the confidence interval was 95 percent and the P-value was less than 0.05.

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 differed at three stages: before GRT sessions, the mean score was 37.110.55, and after GRT and one month after the conclusion of the sessions, the mean scores were 30.768.07 and 31.963.04, respectively; nevertheless, the difference was not statistically significant (p-value=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-value=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-value=0.020) (Table 1). Furthermore, after the intervention, there was a significant difference in mean mental health status scores in both groups (Mann Whitney U test=278, p-value=0.011), indicating that the mean scores in the experimental group (30.768.07) were considerably lower than those in the control group (37.136.28). The findings also demonstrated that GRT implementation had an influence on mental health status, and that it may moderate mean scores (better status) in the experimental group, indicating that the effect was substantial when compared to the control group. (Table 2).

Table 1 : Comparison of mean and SD scores of mental health status in both study groups before, after, one month after intervention

Mental health status scores	Before GRT Mean±SD	After GRT Mean±SD	One-month follow-up Mean±SD	X^2	P-value*
Experimental group	37.11±0.55	30.76±8.07	31.96±3.04	3.814	0.14
Control group	35.166±6.79	37.13±6.28	33.23±6.75	7.81	0.02
Mann Whitney U test	399	278	414	_	_
**P-value	0.45	0.01	0.59		

*Friedman test was used.

**Mann Whitney U test was utilized.

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

Overall mental health status Test	Z-score	P-value
Before and after GRT	-0.45	0.24
Before and one month after GRT	0.25	0.99
After and one month after GRT	0.7	0.02

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 (X2=21.5, p-value=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-value=0.001) and before and one month after the intervention (z-score=-0.96, p-value=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 (X2=4.85, p-value=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.

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

Levels of happiness scores	Before GRT Mean±SD	After GRT Mean±SD	One-month fol-low-up Mean±SD	X^2	P-value*
Experimental group	93.03±19.97	114.4±7.98	115.1±7.47	21.5	▯0.001
Control group	111.5±30.45	110.7±27.64	103.93±29.72	4.85	0.08
Mann Whitney U test	326	394	320	-	-
**P-value	0.06	0.40	0.05	-	-

*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

Overall levels of happiness / Test	Z-score	P-value
Before and after GRT	-1.03	0.001▯
Before and one month after GRT	-0.96	0.001
After and one month after GRT	0.067	0.99▯

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

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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 (15). 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 (16).

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(17).

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 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 levels of happiness in the experimental group increased after intervention compared to before; hence, GRT had boosted levels of happiness in older individuals in the experimental group and this had been maintained at the one-month follow-up, which was consistent with the findings of the current inquiry. (12).

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(18).

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 reminding 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 (19).

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.

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