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The effect of participating in support groups on relocation stress syndrome in residents of a nursing home: A single-blind randomized clinical trial

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ABSTRACT

Background & Aim: Relocation stress syndrome is one of the consequences of moving someone to a nursing home; it causes unbearable feelings of loneliness, anxiety, and depression. However, it can be prevented by conducting proper and timely nursing interventions. The present study aimed to examine the effect of participation in support groups on relocation stress syndrome in residents of nursing homes.
Methods & Materials: In this single-blind randomized clinical trial, 32 elderly residents of Kahrizak nursing home were randomly assigned to control and intervention groups. The intervention included holding support groups. Demographic information questionnaires, the short form of Geriatric Depression Scale (15-GDS), Geriatric Anxiety Scale (GAS), and the short form of University of California, Los Angeles, UCLA loneliness scale (ULS-8) were used to collect data. The data were then analyzed using statistical tests in SPSS software version 16.
Results: There was no statistically significant difference between the mean scores of loneliness, depression, and anxiety between the two groups in the pre-test ($p> 0.05$). The results of the ANCOVA test to compare the mean scores of loneliness, depression, and anxiety in the post-test with controlling pre-test scores revealed that the intervention was effective on depression ($p<0.001$) and anxiety ($p= 0.003$), but it had no effects on loneliness ($p= 0.156$).
Conclusion: The development and implementation of support group programs for the elderly in a nursing home could improve the outcomes of relocation stress syndrome in terms of depression and anxiety. Nonetheless, it had no effects on the outcome of loneliness. Therefore, it is recommended to implement this intervention for the elderly in a nursing home if the cost-benefit analysis is positive.

Introduction

The elderly population has increased worldwide in recent years because of the advancement in medical science, the improvement of the level of social-health welfare, the reduction of fertility, and lower mortality rates (1, 2). According to the United Nations estimates, about 22% (more than 2 billion people) of the world's population will be over 65 years old by 2050 (3). This figure will equal 75% and 85% in developing countries in 2025 and 2050, respectively (1). In 2016, around 9.27% of the Iranian population was aged 60 or older (4). This figure is estimated to reach 33% by 2050 (3). As one of the most significant economic, social, and health challenges in the 21st century, the increasing population of the elderly globally will lead to many social, economic, health, and medical consequences. Therefore, it is necessary to consider the elderly as one of the vulnerable groups of society (5).

Recently and following the development of urbanization and the

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dominant pattern of nuclear families, there have been crucial changes in the majority of the conventional duties and functions of the Iranian families. For instance, families have entrusted caring for the elderly to nursing homes (6). Moving to a nursing home is one of the most principal and stressful changes in someone's life (7, 8). However, the elderly would respond differently to such relocation. Some senior citizens can effectively adapt to the relocation, while others have difficulty adjusting to the new condition and may face negative consequences and numerous physical, social, and psychological challenges (9). Studies in the nursing home setting have estimated the prevalence of anxiety disorders to be between 0 and 20%. The key negative consequences of anxiety disorders include impaired health and reduced quality of life, whose early diagnosis and appropriate treatment can prevent these adverse consequences (10).

Some researchers argued that "relocation stress syndrome" (RSS) refers to the potential physical and psychological symptoms regarding the relocation of the elderly to a nursing home (11). According to the North American Nursing Diagnosis Association (NANDA), these symptoms are categorized into primary and subordinate symptoms. Primary symptoms include loneliness, apprehension, depression, & anxiety and subordinate symptoms include changes in eating habits, sleep disorders, dependence, insecurity, lack of confidence, digestive disorders, need for confirmation, feelings of discomfort, changes in weight, isolation, insomnia, restlessness, expressing concern or unhappiness about relocation, & expressing feelings of insecurity in the new environment (12). These symptoms have mostly appeared during the first four months after relocation (13).

Relocation stress syndrome emerges within the three phases of pre-institutionalization, transitional, and post-institutionalization. In the pre-institutionalization phase, the elderly might feel upset and indicate signs of depression. During the transitional phase, they may experience acute feelings of abandonment and vulnerability, anger, feelings of injustice, and the occurrence of negative responses. In the post-institutionalization phase, they may experience a sense of control and identity in the new environment. It should also be noted that the clinical symptoms of RSS may continue to exist for up to one year (13).

Numerous studies have investigated troubles associated with relocation to a nursing home and RSS. In this regard, Zamanzadeh et al. (2017) and Moatamedi et al. (2018) concluded that relocation stress syndrome could result in both psychological and physical symptoms, including grief, loneliness, depression, insomnia, and inactivity in the elderly (11, 14). The findings of Wu et al.'s study (2020) indicated that relocation to long-term care centers is a dynamic process within the first year, including a wide range of feelings, emotions, and experiences. However, it is likely to maximize the elderly's adaptation to care centers if relocation is intended for individual-centered care, where the family is also involved in the process (8).

Nurses can play a critical role in helping the elderly with a proper relocation and successful adaptation to the nursing home environment (15). These nurses may positively impact the elderly's healthy relocation if they can identify the factors affecting adaptation accordingly (7). A study in Canada showed that the process of tracing the symptoms of RSS by front-line personnel is particularly crucial because nursing personnel is regarded as the major source of supportive and non-supportive behaviors pertinent to emotional and practical support in dealing with relocation among the elderly (16).

Scocco et al. (2016) conducted a similar study in Italy to determine the role of social interactions between the elderly in society and the elderly living in nursing homes. They revealed that the quality of life for the elderly in a nursing home might be affected by their sociological characteristics as well as their relationships in the nursing home. It may help create more opportunities for people to socialize in nursing homes and also improve their perception of life quality

(17). Thus, it is essential to identify and implement necessary nursing practices to prevent or treat relocation stress syndrome in the elderly.

It is believed that nursing intervention through peer support groups can affect someone's inner resources (e.g., effort, capabilities, & responsibility) without spending much money and advanced clinical services. Thus, it may lead to the improvement of their mental health (18). Support groups include members with shared and similar experiences and concerns, in which people tend to exchange experiences through emotional and mutual support (19). These groups primarily focus on problem-solving strategies, stress management techniques, emotional support, consulting services, skill training, and the exchange of information (20).

Participation in support groups has been investigated among different people in some studies. For instance, Jadid Milani et al. concluded that peer support groups had improved mental health in hemodialysis patients (18). Moreover, Theurer et al. argued that participating in support groups could reduce loneliness and increase friendships, adjustment skills, and support among residents in long-term care centers (21). Petty et al. (1976) conducted a similar study entitled "Support Groups for the Elderly in the Society." They provided support groups to the elderly experiencing moderate aging stress in the form of informal workshops for ten 2-hour sessions. The group leader would provide essential information about regular changes during the last years of life and necessary individual skills to adapt to them. Consequently, the elderly experienced less stress regarding aging and developed more successful problem-solving skills (22).

In general, a growing body of research highlights the effectiveness of support groups in reducing loneliness and depression in the community; nonetheless, there is inadequate evidence for the usefulness of such mediations in care centers. Given the prominence of relocation stress syndrome for the elderly as well as the lack of related studies on the effect of support groups concerning the symptoms of RSS in the elderly, this issue has become a crucial area of research recently. Hence, this research aimed to evaluate the association between participating in support groups and relocation stress syndrome among the elderly living in a nursing home.

Methods

The present study is a single-blind randomized clinical trial. Kahrizak nursing home is selected as the study setting, where they only receive a small fee from the client, and the rest of the expenses are covered by public donations. The study population consists of all the elderly living in Kahrizak nursing home. The research sample includes those eligible elderly living in Kahrizak nursing home from July to September 2016. Since the present study investigates three outcomes (depression, anxiety, & loneliness), at first, the standard deviation of each variable is estimated in a preliminary study. Then, the required sample size for each of the target outcomes is determined using the following formula, considering the 95% confidence interval and statistical power of 80% (α= 0.5 & β= 0.20):

Given that the largest sample size was obtained for anxiety (14 participants in each group), it was also considered as the required sample size for this study. However, due to the probable attrition rate of 10%, the final sample size was determined as 16 individuals in each group (a total of 32 participants). The following inclusion criteria were taken into account: living in a nursing home for a maximum of one year, ability to make eye contact and verbal communication, lack of diagnosed cognitive impairment (e.g., Alzheimer's, delirium, etc.), no history of temper disorders based on a physician's diagnosis (while entering the nursing home, the elderly underwent psychiatric counseling and any probable psychiatric disorder would be recorded in the medical records), and no significant incidents (divorce, death of loved ones, financial bankruptcy, etc.) during the past year. Moreover, the following exclusion criteria were applied for this study: reluctance

to continue participating in the study, two absences in the support group sessions, and any reports of cognitive impairment.

Preliminary sampling was performed using the convenience sampling method. At first, all the elderly living in Kahrizak nursing home who had met the inclusion criteria and were willing to participate were regarded as the research sample. Then, the necessary explanations about the research procedure were given to the samples, and written informed consent was obtained. Consequently, a random sequence was created on www.randomizer.org. Besides, dark envelopes were used to conceal the random sequence. Finally, the samples were randomly allocated to the control group (16 participants) and intervention group (16 participants) by a person not involved in the data collection and intervention process.

The code of ethics (no. IR.TUMS.FNM.REC.1396.3870) was obtained from the joint organizational ethics committee of the Nursing, Midwifery, and Rehabilitation School of Tehran University of Medical Sciences. Then, the study protocol was registered in the Clinical Trial Registration Center of Iran (no. IRCT20170812035647N3). The data were collected using demographic characteristics questionnaires, the short form of Geriatric Depression Scale (GDS-15), Geriatric Anxiety Scale (GAS), and the short form of UCLA Loneliness Scale (ULS-8). Demographic characteristics questionnaires included 16 questions about age, sex, previous job, education, marital status, number of children, monthly income, length of stay in a nursing home, medical history, medication history, significant life events during the past year, & general health status. These questionnaires were completed based on self-reports. In addition, interviews were conducted with the participants who could not complete the questionnaires.

Malakouti et al. (2006) conducted a study investigating the validity and reliability of the GDS-15 questionnaire in the Iranian context and concluded that the obtained Cronbach's alpha coefficient was 0.90 (23). Besides, face validity and content validity were evaluated by ten faculty members of the School of Nursing and Midwifery, Tehran University of Medical Sciences for the other two questionnaires. Then, the necessary modifications were applied, considering the approval of the research team.

Moreover, the test-retest method was used to determine the reliability of the questionnaires by twenty of the selected older people. For this purpose, the internal consistency was estimated based on Cronbach's alpha coefficient. The obtained values were 0.91 for the loneliness questionnaire, 0.71 for the depression questionnaire, and 0.75 for the anxiety questionnaire, which was acceptable. The intra-class correlation (ICC) index was also calculated for these questionnaires with the ICC value of 0.98.

After the random assignment of the samples, all participants completed the study questionnaires. The patients in the control group continued their normal routine life in the nursing home; however, the intervention group was divided into two groups of women (9) and men (7). Then, the support group sessions were held six times. Each session would last between 1 to 1.5 hours twice a week. The session arrangement in the support group was circular like the group discussions so that participants could easily see each other and communicate face to face. The support group sessions were held based on the following order:

Session 1: Introducing the researcher and group members, explaining the purpose of the group, number of sessions, and describing the rules and regulations for members by the researcher;

Session 2: Describing the scenario to convey the concept of depression, describing members' feedback to the scenario, sharing experiences and individual solutions, proposing practical and scientific solutions by the researcher, summarizing the content, assigning empirical tasks from the proposed solutions to be conducted before the next group meeting, and determining the date for the next meeting;

Session 3: Reviewing the content of the previous session, asking questions about the assigned tasks and seeking the members' opinions about its advantages, disadvantages, and obstacles, proposing collective opinions to obviate the existing obstacles in performing the assigned tasks, explaining the scenario to convey the concept of anxiety, seeking the members' feedback to the scenario, sharing experiences and individual solutions, proposing practical and scientific solutions by the researcher, summarizing the content, assigning an empirical task from the proposed solutions to be conducted before the next meeting, and determining the date for the next meeting;

Session 4: Reviewing the content of the previous session, asking questions about the assigned tasks and seeking members' opinions about its advantages, disadvantages, and obstacles, providing collective opinions to overcome the obstacles, describing the scene to convey the concept of loneliness, seeking the members' feedback to the scenario, sharing experiences and individual solutions, proposing practical and scientific solutions by the researcher, summarizing the content, assigning an empirical task from the proposed solutions to be conducted before the next meeting, and determining the date for the next meeting;

Session 5: Reviewing the content of the previous session, asking questions about the assigned tasks and seeking the members' opinions about its advantages, disadvantages, and obstacles, providing collective opinions to remove the obstacles, and preparing the members for the final group session; and

Session 6: Summarizing the content of the previous sessions, encouraging group members to summarize what they have learned during the previous sessions, expressing their feelings and opinions about participating in the group sessions, appreciating the members for their participation in the group, allowing the members to say goodbye to each other, having a final meal together, and saying goodbye.

After four weeks from the last intervention session, the questionnaires were completed again by the members of the intervention and control groups. Following data cleaning, descriptive (frequency, mean, & standard deviation) and inferential (independent t-test, chi-square, Fisher's exact test, & analysis of covariance) statistical methods were used to analyze the data in SPSS software version 16.

Results

31 elderly living in Kahrizak nursing home participated in this study (one of the control group members was excluded at the initial stage of the study because he was reluctant to cooperate) (Figure 1). According to the results of chi-square and Fisher's exact tests, the two groups (control & intervention) were homogeneous concerning underlying variables (Table 1).

Given the normal distribution of variables, independent samples t-test was used to compare the mean scores of loneliness, depression, and anxiety between the intervention and control groups in the pre-test. The findings revealed that the two groups were homogeneous regarding such variables ($p<0.05$). Moreover, based on the results of the t-test, there was no statistically significant difference between the mean scores of loneliness, depression, and anxiety in the intervention and control groups in the post-test ($p<0.05$). However, the one-way analysis of covariance (ANOVA) compared post-test scores in the two groups with control over pre-test scores. The results indicated that the intervention had an impact on depression ($p<0.003$) and anxiety ($p<0.001$). Nonetheless, there was no impact on loneliness ($p >0.05$) (Table 2).

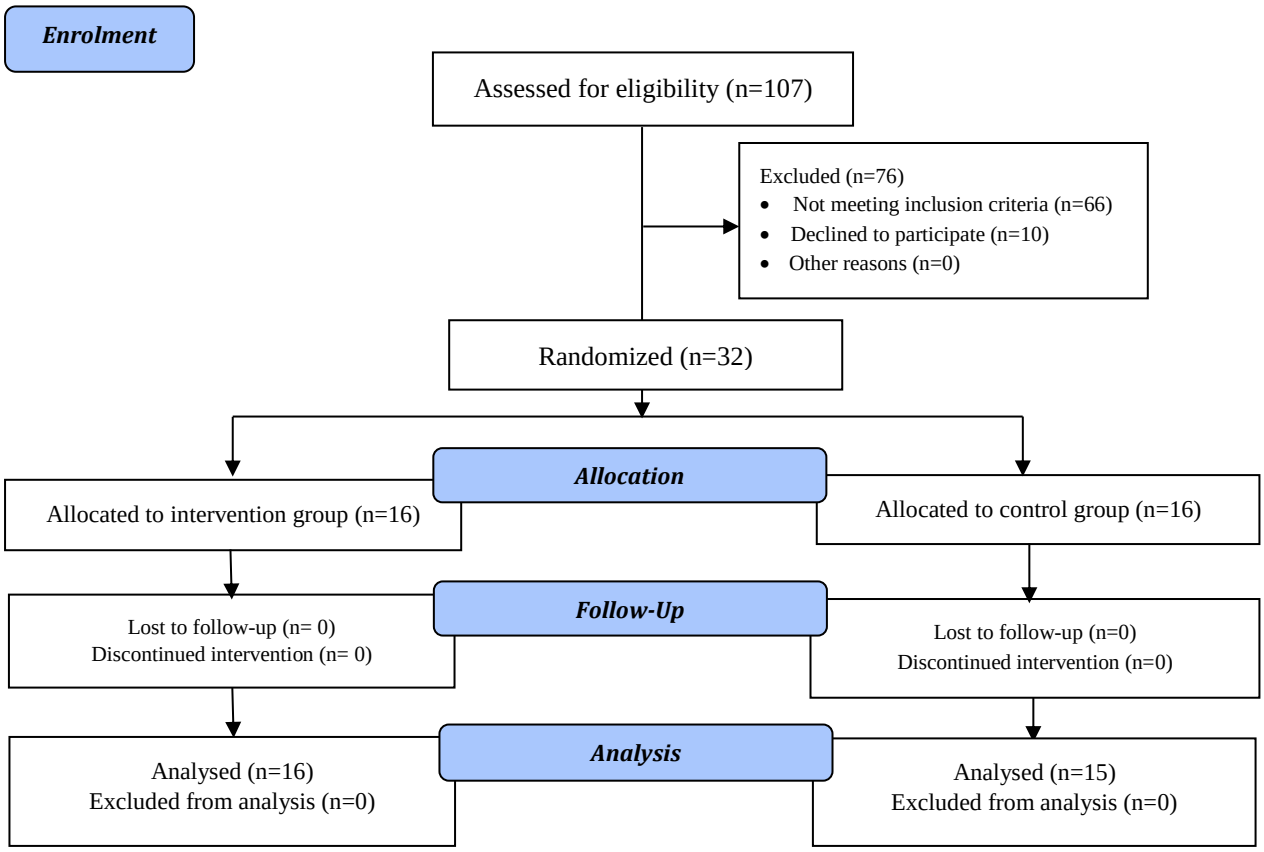

Table 1. The demographic characteristics of intervention and control groups

Variable		Intervention	Control	Test
Age (SD ± Mean)		74.12 ± 7.83	79 ± 8.35	T= -1.677 P= 0.104
Sex	Male	7 (43.75)	6 (40)	Fisher's exact test F= 1 P= 0.561
	Female	9 (56.25)	9 (60)	
	Total	16 (100)	15 (100)	
Marital status N (%)	Single	2 (12.5)	1 (6.7)	Chi-square test X^2 = 0.613 P= 1
	Married	4 (25)	5 (33.3)	
	Divorced	3 (18.75)	2 (13.3)	
	Widowed	7 (43.75)	7 (46.7)	
	Total	16 (100)	15 (100)	
Education N (%)	Illiterate	8 (50)	7 (46.67)	Chi-square test X^2 = 1.112 P= 1
	High-school	7 (43.75)	6 (40)	
	Diploma	0 (0)	1 (6.66)	
	University degree	1 (6.25)	1 (6.66)	
	Total	16 (100)	15 (100)	
Occupation	Household	9 (56.25)	8 (53.34)	Chi-square test X^2 = 0.027 P= 1
	Employee	2 (12.5)	2 (13.33)	
	Self-employed	5 (31.25)	5 (33.33)	
	Total	16 (100)	15 (100)	
Monthly income N (%)	Below 1 million Tomans	15 (93.75)	13 (86.67)	Chi-square test X^2 = 0.444 P= 0.600
	1-2 million Tomans	1 (6.25)	2 (13.33)	
	Over 2 million Tomans	0 (0)	0 (0)	
	Total	16 (100)	15 (100)	
Number of children		2.68 ± 1.77	1.86 ± 1.76	Independent t-test T= 1.288 P= 0.208
Length of stay N (%)	Below 4 months	1 (6.25)	0 (0)	Chi-square test X^2 = 1.651 P= 0.554
	4–8 months	3 (18.75)	5 (33.33)	
	8–12 months	12 (75)	10 (66.67)	
	Total	16 (100)	15 (100)	

Reason for referring to the nursing home N (%)	Loneliness	11 (29.74)	12 (35.29)	Chi-square test $X^2 = 4.782$ P= 1
	Insufficient income	4 (10.81)	2 (5.90)	
	Disease	13 (35.13)	11 (32.35)	
	Abuse	4 (10.81)	3 (8.82)	
	Homelessness	5 (13.51)	6 (17.64)	
	Total	37 (100)	34 (100)	
Physical disease N (%)	Thyroid and parathyroid diseases	1 (2.08)	0 (0)	Chi-square test $X^2 = 24.32$ P= 1
	arthritis	11 (22.91)	9 (19.14)	
	Stroke (CVA)	4 (8.33)	3 (6.38)	
	Diabetes	4 (8.33)	4 (8.51)	
	Digestive disease	3 (6.25)	7 (14.89)	
	Hypertension	7 (14.58)	10 (21.30)	
	Cardiovascular diseases	11 (22.91)	11 (23.40)	
	Urinary tract diseases	6 (12.53)	3 (6.38)	
	Neurology diseases	1 (2.08)	0 (0)	
	Total	48 (100)	47 (100)	
Changes N (%)	Changes in lifestyle	14 (51.85)	13 (65)	Chi-square test X^2= 21.99 P= 0.678
	Insecurity	1 (3.70)	1 (5)	
	Lack of trust	4 (14.82)	2 (10)	
	Falling	1 (3.70)	2 (10)	
	Stress	3 (11.11)	1 (5)	
	Paramnesia	4 (14.82)	1 (5)	
	Total	27 (100)	20 (100)	
Types of medication N (%)	Anti-depressant	3 (5.88)	7 (13.72)	Chi-square test X^2= 26.99 P= 0.862
	Benzodiazepine	7 (13.73)	5 (9.80)	
	antipsychotic	3 (5.88)	4 (7.84)	
	Cardiovascular	11 (21.58)	13 (25.52)	
	Antidiabetics	4 (7.84)	3 (5.88)	
	Anticoagulant	5 (9.80)	5 (9.80)	
	Digestive	4 (7.84)	9 (17.64)	
	Anti-dementia	4 (7.84)	1 (1.96)	
	Analgesic	6 (11.77)	2 (3.92)	
	Genitourinary	3 (5.88)	2 (3.92)	
	Other medications	1 (1.96)	0 (0)	
	Total	51 (100)	51 (100)	
Health status N (%)	Great	0 (0)	0 (0)	Chi-square test X^2= 2.55 P= 0.634
	Very good	0 (0)	2 (13.33)	
	Good	2 (12.5)	1 (6.67)	
	Fairly good	9 (56.25)	7 (46.67)	
	Weak	5 (31.25)	5 (33.33)	
	Total	16 (100)	15 (100)	

Table 2. The comparison of mean and SD for loneliness, depression, and anxiety between the two groups before and after the intervention

Variables	**Group**	**Mean±SD**	
		Before the intervention	**After the intervention**
Loneliness	Intervention	20.87 ± 5.51	18.06 ± 6.29
	Control	20.13 ± 5.15	19.46 ± 4.54
P-value		0.702	0.485
P-value**		-	0.156
Depression	Intervention	7.50 ± 2.58	4.87 ± 1.82
	Control	6.60 ± 2.72	6.26 ± 2.40
P-value		0.352	0.078
P-value**		-	0.001
Anxiety	Intervention	12.43 ± 6.86	8.25 ± 2.79
	Control	10.33 ± 3.30	9.86 ± 3.04
P-value*		0.291	0.134
P-value**		-	0.003

* Independent t-test ** ANCOVA

Discussion

The present study attempted to evaluate the effect of participation in support groups on relocation stress syndrome. The findings indicated that although the intervention was ineffective on loneliness, it could significantly diminish depression and anxiety among the elderly.

Similar studies by Kosugi et al., Leavitt et al., and Theurer et al. have also concluded that participating in support groups can effectively reduce the feeling of loneliness among the elderly (21, 24, 25). However, the findings of these studies were not consistent with the results of the present study. It might be due to the online nature of interventions in some studies, larger research populations, more frequent support group meetings, and the participation of the internal employees in the support groups. On the other hand, the findings of another study by Elias et al. were in line with the results of the present study group highlighting that reminiscence therapy could not significantly decrease loneliness in the elderly (26). Besides, Mostafapour et al. investigated the impact of group logotherapy on reducing loneliness and death anxiety among the elderly (27). Their findings were consistent with the results of the present study. Nevertheless, the present study's findings were not statistically significant, which might be due to the short-term interval for the post-test (four weeks), small sample size, and the impact of time on the adaptation of participants in the control group.

According to the present study's findings, involvement in support groups was effective in reducing depression among the elderly. A seminal study in Canada concluded that 40% of the elderly living in nursing homes are diagnosed with and/or demonstrate symptoms of depression. Depression is a socially critical issue that has yet to be resolved and highlights the need to plan and implement innovative approaches to support the mental health of those living in nursing homes for longer periods (21). As an effective intervention to moderate depression, participation in support groups has been already examined by several researchers, including Shen et al., Prevatt et al., Scocco et al., and Theurer et al. (17, 21, 28, 29). Fessman et al. (2000) conducted a similar study on 170 elderly living in a nursing home in New Jersey who were asked to complete the Self-Rating Depression Scale (SDS) and UCLA loneliness questionnaire. These elderly were also enquired regarding their close friends in the nursing home and the frequency of outside visitors each month. The findings revealed that social networks inside the nursing home could have a more significant impact on depression and loneliness than meeting friends and relatives outside the nursing home. Hence, it is believed that their mental state will improve by communicating with other nursing home residents (30).

Consequently, it is recommended to develop support groups to help create and expand the social network of the elderly in the nursing home. Finally, it can be concluded that the present study is consistent with this study in terms of depression. A systematic review was conducted by Elias et al. in 2015 to investigate the effectiveness of group reminiscence therapy on loneliness, anxiety, and depression in the elderly living in long-term care centers. They concluded that group reminiscence therapy was an effective treatment for depression in the elderly (26), which was consistent with the present study's findings because of the group nature of the intervention and its impact on depression.

Taati et al. conducted a clinical trial (2016) at the Iranian Alzheimer's Center examining the influence of participation in support groups on depression, anxiety, and stress among family caregivers of patients with Alzheimer's disease. Their findings indicated no statistically significant difference between the scores of depression, anxiety, and stress in the intervention group compared to the control group (31), which is not in line with the present study results. It can be attributed to different instruments because we used specific questionnaires to assess these variables, while this study has employed DASS-21 to measure depression, stress, and anxiety among the participants. In addition,

the pressure imposed by taking care of a patient with Alzheimer's disease was likely to cause chronic depression in caregivers. Consequently, other treatments such as taking medication alongside support groups are also recommended.

In the present study, participating in support groups was confirmed effective in reducing anxiety. Another study by Shen et al. showed that participation in support groups could effectively moderate anxiety and depression among the participants (28). Mostafapour et al. employed group logotherapy to decrease loneliness and death anxiety among the elderly. The results were consistent with the present study's findings in terms of anxiety (27). On the other hand, Fogarty et al. concluded that participation in support groups had no impact on social anxiety, stress, and depression (32).

Given the severe consequences of relocation stress syndrome on people's health, especially their mental health, it is essential to investigate RSS among the elderly living in nursing homes. Findings indicated that support groups could decrease depression and anxiety; however, they did not significantly impact their loneliness. Therefore, it is recommended to conduct similar studies with larger sample sizes and more support group sessions. In addition to examining the effect of the support group on other symptoms of relocation stress syndrome, implementing other interventions affecting RSS suggested in the Nursing Intervention Classification is recommended.

Limitations

This study was performed in Kahrizak Nursing Home, a charitable care center with a unique structure and organization providing long-term care and treatments. It can also affect the generalizability of the study findings. Consequently, it is recommended to investigate the elderly in other private and state long-term care centers with higher sample sizes.

Conclusion

The present study results indicated that the development and implementation of support groups in nursing homes could significantly improve depression and anxiety, as the two primary symptoms of relocation stress syndrome. On the other hand, the intervention had no significant effect on loneliness. It is noteworthy that the findings of this study can help policymakers and managers in the health system implement preventive policies to reduce the incidence and prevalence of this syndrome. Besides, it can lead to the improvement of life satisfaction and quality of life among the elderly. Given that support group interventions do not require advanced and costly clinical services, such interventions can be considered cost-effective measures in health care policies. Moreover, due to the growing number of elderly living in nursing homes in Iran, it is imperative to employ specialized nurses, paramedics, and psychologists and empower these people to implement such interventions in nursing homes effectively.

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Conflict of interest

There is no conflict of interest in this article.

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