

Effect of a Family-Oriented Communication Skills Training Program on Depression, Anxiety, and Stress in Older Adults: A Randomized Clinical Trial

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Abstract

Background: Older adults face several physical and psychological problems such as hearing loss, vision loss, and memory loss, which diminish the quality of their communication. Poor communication in turn affects their psychological wellbeing and induces substantial depression, anxiety, and stress. The family has an important role in the mental health of older adults.

Objectives: This study aimed to investigate the effect of a family-oriented communication skills training program on depression, anxiety, and stress in older adults.

Patients and Methods: For this randomized controlled clinical trial, we enrolled 64 older adults from two healthcare centers affiliated to the Isfahan University of Medical Sciences. The subjects were randomly allocated to an experimental group (n = 32) and a control group (n = 32). In the experimental group, older adults along with their primary caregiver participated in six sessions of communication skill education. The control group participated in two training sessions on nutrition and exercise. All participants answered the DASS21 questionnaire three times—at the start of the study, at the end of the sixth week, and a month after the last educational session of the experimental group. Data were analyzed using chi-square, Fisher's exact and t tests and by repeated measures analysis of variance (ANOVA).

Results: In the experimental group, the mean depression score significantly reduced from 10.56 ± 3.34 before intervention to 7.46 ± 2.80 and 6.30 ± 2.75 after intervention and at follow-up, respectively; the mean anxiety score significantly reduced from 8.46 ± 1.88 before intervention to 5.83 ± 1.93 and 5.80 ± 2.12 after intervention and at follow-up, respectively; and the mean stress score significantly decreased from 11.40 ± 4.53 before intervention to 8.90 ± 3.81 and 8.43 ± 3.31 after intervention and at follow-up, respectively ($P < 0.05$ for all three domains). In contrast, the control group did not show any significant change in the mean depression, anxiety, and stress scores.

Conclusions: Family-oriented education on communication skills could reduce depression, anxiety, and stress in the elderly. Therefore, such programs should be adopted as a non-pharmacological and cost-effective method for reducing depression, anxiety, and stress in older adults.

Keywords: Family, Depression, Anxiety, Stress, Caregivers, Communication skills, Elderly

1. Background

Aging population is one of the main challenges in this century. Since the start of the 20th century, life expectancy has increased by 30 years (1), and this trend will continue in future (2). And, Iran is not an exception to witnessing this trend (3, 4).

Aging causes physiological changes that diminish an individual's physical, mental, and social capabilities (5), and predisposes older adults to various physical and psychological diseases (6). Approximately 15% of people aged 60 years or more experience a mental disorder (7). Depression, anxiety, and stress are common among the elderly, with 25% older adults suffering from one of these disorders (8, 9). These disorders can lead to extreme outcomes such as suicide (10), and often affect their family and caregivers by causing chronic tension and negatively

affect the quality of care extended to older adults (11).

There are several causes for depression, anxiety, and stress in older adults. The common ones include relocation, loss of spouse or close friends, decrease in physical and functional abilities, and loss of independence (12); loneliness (13, 14); loss of job and increase in financial dependency (15); chronic diseases and pain (16); and decrease in senses (17). Communication skills of older adults are among the important predictors of their mental health (18). Poor communication skills can not only evoke anxiety, depression, and stress (19) in older adults but also predispose them to social isolation and loneliness (20). Appropriate communication skills are important for both older adults and their family members, and for their adequate participation when being treated for

psychological problems (21, 22). Good communication skills empower people to establish a more effective and sustainable communication, whereby they can exchange precise messages and effectively manage familial conflicts and disputes, and thus enjoy a more stable family life (19), as well as experience less stress under stressful situations (23). A recent study showed that older adults with regular family contacts are more adaptable and have higher levels of psychological wellbeing (24). Run-can reported that communication skills training of caregivers of the elderly with Alzheimer's disease resulted in a decrease in their perceived stress (22). Further, communication skills training could also reduce stress levels in nurses working in psychiatric units (25). According to a systematic review, health education programs for caregivers improve their knowledge, attitude, and perception toward older adults and, consequently, improve hygiene among elderly people (26). However, also not in the elderly or their caregivers, Curtis et al. reported that medical residents and nurse practitioners who passed a communication skills training program showed higher levels of depression after communication with patients and older adults with serious illness (27).

The conflicts mentioned above, lack of relevant studies in Iran, awareness of the effects of socio-cultural factors on the aftermath of educational interventions, and the fact that family-centered communication skills training is a new theme in elderly care, all raise a pertinent question: "can a training program in communication skills for older adults and their families improve relationships within the family and psychological wellbeing of older adults?"

2. Objectives

The present study aimed to investigate the effect of a family-oriented communication skills training program on depression, anxiety, and stress scores in older adults visiting two healthcare centers affiliated to the Isfahan University of Medical Sciences.

3. Patients and Methods

This clinical trial was conducted from September through October 2014 on aged people visiting Imam Ali (PBUH) and Dastgerd healthcare centers in Isfahan, Iran.

The sample size was calculated based on a study by Mansouri et al. who examined the effect of communication skills training on perceived stress of caregivers of elderly patients with Alzheimer's disease; they reported that after the intervention, the mean \pm SD of stress in the control and the experimental groups was 30.14 ± 8.07 and 24.83 ± 5.86 , respectively (25). For the present study, considering $\beta = 0.2$, $\alpha = 0.05$, $S_1 = 8.07$, $S_2 = 5.86$, $\mu_1 = 30.14$, and $\mu_2 = 24.83$, 26 subjects would have to be enrolled in each group. However, considering the subjects' physical condition and a drop-out rate of 18%, 32 subjects were to be recruited in each group.

The inclusion criteria for the main caregivers were as

follows: ability to read and write in Farsi, willingness to participate in the study, full consciousness, absence of a known physical and mental disability or any psychiatric/behavioral disorder, and not receiving antidepressant, anxiolytic, and anti-stress medications. The inclusion criteria for the elderly were, in addition to the ones mentioned above, age ≥ 60 years and mild to moderate scores for depression, anxiety, and stress based on the DASS21 inventory.

The following were the exclusion criteria for the elderly and their main caregivers: consumption of any antipsychotic medications during the study, a decision to withdraw from the study, absence for more than two training sessions, and death.

After receiving approval for the study, a simple random sampling method was used. First, a list of all urban healthcare centers affiliated to the Isfahan University of Medical Science was prepared. Thereafter, using a random numbers table, two centers were randomly selected from among the 58 centers (i.e., Imam Ali center and Dastgerd centers).

All of the existing records in the selected centers were reviewed to find families with older adults that meet the inclusion criteria. Next, using a random numbers table, 32 subjects were selected from each center. Next, using the "random numbers" option in the "compute" and "function group box" in the transform menu of the SPSS software, the 32 subjects from each healthcare center were randomly divided to two equal subgroups containing 16 subjects, and the two subgroups in each center were randomly assigned either to the experimental or the control group. Thereafter, the patients were contacted; invited to participate in the study; and upon consent, were invited to attend a session, on a predetermined date, at the concerned healthcare center with one of their family members with whom they share a better relation (designated, their primary caregiver). If an elderly patient refused to participate or was inaccessible, another suitable one was selected, as mentioned previously. On the day of the visit to the center, the elderly and their primary caregivers received an explanation of the goals and method of the study (separately to each group), signed a written informed consent, and received the study instrument. The older adults were asked to answer the questionnaire individually in a private environment, without any stress.

3.1. The Study Instrument

The data collection instrument consisted of two sections. The first section comprised questions on demographic characteristics (i.e., age, gender, marital status, education level, financial status, number of the family members living together, and number of children). The second section included the 21-item depression, anxiety, and stress scale (DASS21). The DASS21 includes 21 items for evaluating depression (7 items), anxiety (7 items), and stress (7 items). All items are answered on a four-point Likert scale, ranging from never (= 0) to so much

(= 3) (28). The following scores have been developed for defining normal, mild, moderate, severe, and very severe scores for each DASS scale. Depression: (0 - 4) normal, (5 - 6) mild, (7 - 10) moderate, (11 - 13) severe, and (over 14) very severe. Anxiety: (0 - 3) normal, (4 - 5) mild, (6 - 7) moderate, (8 - 9) severe, and (over 10) very severe. Stress: (0 - 7) normal, (8 - 9) mild, (10 - 12) moderate, (13 - 16) severe, and (over 17) very severe (29).

The validity of the Farsi version of the DASS21 has been previously established by Sahebi et al. through concurrent validity (using Beck depression inventory, Zank anxiety scale, and perceived tension scale) (30). Its reliability was also established by a Cronbach's alpha of 0.93 (31, 32).

3.2. Intervention

At each healthcare center, the family members and the older adults of the experimental group participated in six weekly (28) sessions of family-oriented education on communication skills. Each 45-minute session was delivered by a previously trained geriatric nurse. Table 1 outlines the educational sessions.

Table 1. Outline of the Educational Sessions

No.	Title of Sessions	Contents of Each Session	Time, min
1	Greeting, explaining the rules and basic concepts	Greeting; introducing the program facilitator, explaining the number and structure of the training sessions; presenting the positive aspects and the aftermaths of good communication; and providing the basic rules of group discussion	45
2	Consequences of lacking communication skills	Greeting; reviewing the content of the previous session and receiving feedback from the participants; discussing the short-term and long-term consequences of poor communication skills; asking the older adults and caregivers to summarize the contents of the session	45
3	Active listening and effective questioning	Greeting; reviewing the content of the previous session and receiving feedback from the participants; discussing the types of listening, the purposes of listening, principles and techniques of active listening, and common errors in listening; discussing the right way of effective questioning; and asking the older adults and caregivers to summarize the contents of the session	45
4	Introducing body language, tone of voice of speech, and healing touch skills	Greeting; reviewing the content of the previous session and receiving feedback from the participants, discussing the importance of body language, tone of voice of the speech; types of touching and principles of the healing touch; and asking the elderly and caregivers to summarize the contents of the session	45
5	Introducing the effects of empathy in reducing the sense of isolation and anger	Greeting; reviewing the content of the previous session and receiving feedback from the participants; discussing the importance of empathy, skills for anger control, and using self-relaxation techniques and negotiation and dialogue in stressful situations; and asking the elderly and caregivers to summarize the contents of the session.	45
6	Communication skills needed to communicate with elderly who have communication and age-related disorders	Greeting; reviewing the content of the previous session and receiving feedback from the participants; discussing communication skills needed to communicate with the elderly who have communication disorders such as hearing loss, vision loss, and memory loss; asking the elderly and caregivers to summarize the contents of the session; and asking the participants to answer the DASS21.	45

The educational package was based on a thorough literature review and need-assessment interviews of 20 older adults who met the inclusion criteria and their family members but were not recruited in the main study. The package was designed, its content revised, and finally confirmed by 10 faculty members in the Nursing and Midwifery School of the Isfahan University of Medical Sciences.

The control group also participated in two group discussion sessions. The participants were asked about their favorite issues, and, consequently, nutrition in aging and exercise in old age were discussed in the first and the second session, respectively. All educational sessions in both groups were facilitated by a geriatric nurse who was unaware of the study objectives and of the groups to which the participants belonged.

All subjects in the experimental and the control groups answered the DASS21 three times at the start of the study, at the end of sixth week, and a month after the last educational session of the experimental group.

3.3. Ethical Considerations

The study was approved by the research ethics committee of Isfahan University of Medical Sciences. All subjects and their primary caregivers signed a written informed consent before participating in the study. The questionnaires were anonymous, and personal information was kept confidential. The participants were informed of their right to leave the study at any time. The staff of the healthcare centers was informed about the results at the end of the study. The researchers observed all ethical issues in accordance with the Helsinki Declaration. This study is registered at the Iranian registry of clinical trials (registration number 2014110114463N4).

3.4. Data Analysis

Data analysis was performed using SPSS version 13 (SPSS

Inc., Chicago, IL, USA). Normality of the data was assessed using the Kolmogorov-Smirnov test. Mean (SD) scores were calculated for quantitative variables. Chi-square, Fisher's exact and t tests were used to compare nominal variables between the two groups. The t-test was also used to compare the difference in mean age, number of family members living together, and number of children between the two groups. Repeated measures ANOVA was also used to compare the statistical difference in the mean depression, anxiety, and stress scores at the three measurement time points and to assess the reciprocal effect of the type of intervention and time on the level of depression and stress. $P < 0.05$ was considered statistically significant for all tests.

4. Results

Of the 64 participants in the present study, four were excluded. Two subjects from the experimental group were excluded from analysis because they were absent for more than two sessions. Data of two subjects from the control group were also excluded from the analysis because they did not complete the questionnaire (Figure 1). No significant difference was observed between the demographic characteristics of the two groups of elderly and caregivers (Tables 2 and 3).

In repeated measures ANOVA, Mauchly's test of sphericity was not significant ($P = 0.852$) and repeated measures ANOVA showed no significant difference in the mean depression, anxiety, and stress scores in the control group at the three measurement time points ($P > 0.05$). Meanwhile, the same test showed a significant difference in the experimental group ($P < 0.001$; Table 4).

Independent samples t-test showed no significant difference in the mean scores of depression, anxiety, and stress between the two groups before intervention ($P > 0.05$); however, this difference was significant immediately after and 1 month after intervention ($P < 0.05$).

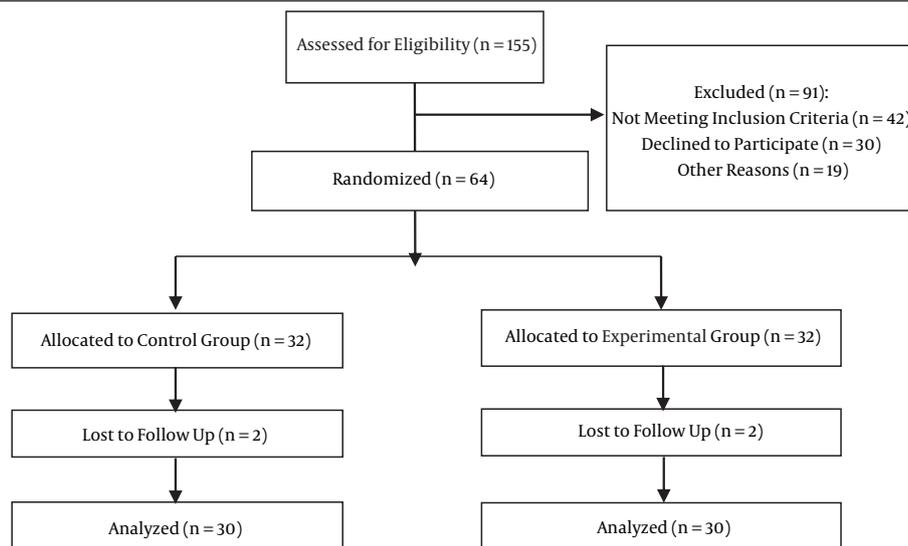


Figure 1. Consort Flow Diagram of the Study

Table 2. Demographic Characteristics of the Older Adults in the Two Groups^a

Variables	Group		P Value
	Experimental	Control	
Gender			0.99 ^b
Female	27 (90)	28 (93.3)	
Male	3 (10)	2 (6.7)	
Marital status			0.77 ^c
Married	22 (73.3)	21 (70)	
Widow	8 (26.7)	9 (30)	
Education level			0.56 ^c
Reading and writing	16 (53.3)	20 (66.7)	
Middle school	9 (30)	6 (20)	
Diploma	5 (16.7)	4 (13.3)	
Financial status			0.91 ^b
Poor	2 (6.7)	1 (3.3)	
Average	18 (60)	20 (66.7)	
Good	9 (30)	6 (20)	
Rich	1 (3.3)	1 (3.3)	
Age, y	65 ± 3.54	64.93 ± 3.82	0.94 ^d
Number of family members living together	3.13 ± 1.10	2.76 ± 0.93	0.17 ^d
Number of children	4.36 ± 1.65	4.90 ± 2.09	0.27 ^d

^aData are presented as No. (%) or mean ± SD.^bFisher's exact test.^cChi-square test.^dIndependent t-test.**Table 3.** Demographic Characteristics of the Caregivers in the Two Groups^a

Variables	Group		P Value
	Experimental	Control	
Gender			0.73 ^b
Female	24 (80)	25 (83.3)	
Male	6 (20)	5 (16.7)	
Marital status			0.82 ^c
Married	13 (43.3)	14 (46.7)	
Single	15 (50)	13 (43.3)	
Widow	2 (6.7)	3 (10)	
Education level			0.98 ^c
Elementary level	3 (10)	3 (10)	
Secondary level	1 (3.3)	2 (6.7)	
High school	7 (23.3)	7 (23.3)	
Associate degree	4 (13.3)	5 (16.7)	
Bachelor	13 (43.3)	11 (36.7)	
Master of Science or higher level	2 (6.7)	2 (6.7)	
Type of relationship with elderly subjects			0.94 ^c
Spouse	4 (13.3)	4 (13.3)	
Children	20 (66.7)	21 (70)	
Others	6 (20)	5 (16.7)	
Age, y	33.33 ± 15.26	32.96 ± 14.76	0.92 ^d

^aData are presented as No. (%) or mean ± SD.^bChi-square test.^cFisher's exact test^dIndependent t-test.

Table 4. Comparison of the Mean \pm SD Depression, Anxiety, and Stress Scores of Older Adults Between the Experimental and Control Groups Before, Immediately After, and 1 Month After Intervention

Outcome Measure	Before	Immediately After	One Month After	F (P Value)	P Value
				Time	Time \times Group
Depression					
Experimental	3.34 \pm 10.56	2.80 \pm 7.46	2.75 \pm 6.30	80.13 (0.001)	0.001
Control	4.45 \pm 11.96	4.41 \pm 11.80	3.44 \pm 11.73	1.22 (0.30)	0.381
Anxiety					
Experimental	1.88 \pm 8.46	1.93 \pm 5.83	2.12 \pm 5.80	63.52 (0.001)	0.001
Control	3.12 \pm 9.70	3.20 \pm 9.56	2.93 \pm 9.50	1.58 (0.21)	0.248
Stress					
Experimental	4.53 \pm 11.40	3.81 \pm 8.90	3.31 \pm 8.43	69.94 (0.001)	0.001
Control	1.81 \pm 12.80	1.90 \pm 12.66	1.78 \pm 12.70	0.61 (0.54)	0.663

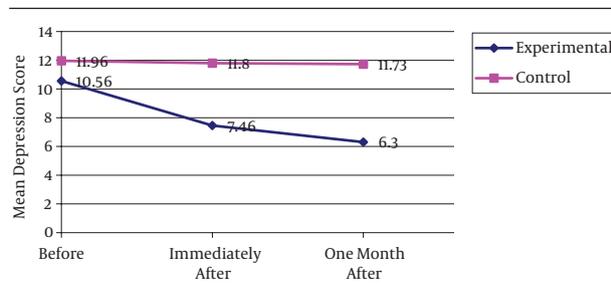


Figure 2. Comparison of Mean Depression Scores of Older Adults Between the Experimental and Control Groups Before, Immediately After, and One Month After Intervention

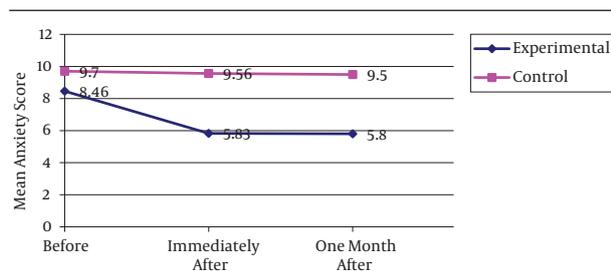


Figure 3. Comparison of Mean Anxiety Scores of Older Adults Between the Experimental and Control Groups Before, Immediately After, and 1 Month After Intervention

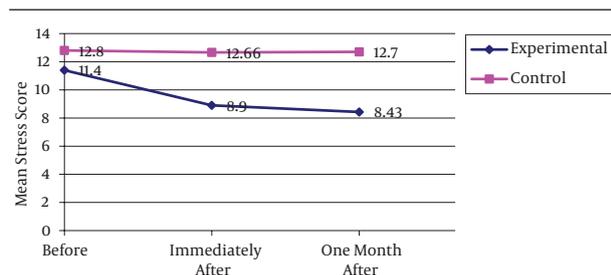


Figure 4. Comparison of Mean Stress Scores of Older Adults Between the Experimental and Control Groups Before, Immediately After, and 1 Month After Intervention

5. Discussion

This study showed that family-centered communication skills education could significantly decrease the mean depression, anxiety, and stress scores in older adults. Most studies evaluating the effect of communication skills education on anxiety and stress have reported its positive effects (23, 25, 33). Lienard et al. have also reported the effect of communication skills on anxiety (34). The decrease in the depression, anxiety, and stress scores of older adults can be attributed to their improved ability in establishing better communication with their relatives. Williams et al. have also reported that through efficient communication, older adults can experience social and emotional support (35). Perhaps, the generation gap between youngsters and older adults is wider than the gap between other age groups, and this gap might find origin in the cultural differences between the two groups. Consequently, older adults and younger generation cannot understand each other because of their varied experiences, viewpoints, and behaviors (36). Issues related to generation gap together with other geriatric problems such hearing loss gradually affect the everyday life of older adults and lead to loneliness, fear, and communication problems (37). Communication skills education appears to inculcate a better understanding among the elderly and their families, in addition to increasing familiarity with the skills. The better understanding and interactions attempt to fill the generation gaps that exist in the family.

In addition, loneliness and inadequate social communications are among the important determinants of depression and mental health in older adults (38). Rather, participation in social activities lowers the mortality rate among the elderly (39). Research shows that the elderly participating in social activities often have a better health status (21, 22). Considering that depressive symptoms or feelings of sadness in older adults may find origin in thoughts and conflicts about end-of-life care, Curtis et al. reported that communication skills training significantly increased the

depression scores in the elderly with serious illness (27). Learning appropriate communication skills can encourage older adults to participate in social activities and empower them to establish stable communication.

Ramos and Wilmoth believe that merely decoding the loneliness in older adults based on the existence or absence of communication is not enough; what is more important is the quality of communication. They showed that imbalanced interactions increase mental disorders in such a way that older adults who have inappropriate and unusual interactions show more signs of mental disorders when compared with those with balanced, normal, and stable interactions (40). Communication skills education is a tool for helping older adults and their caregivers make more balanced and stable communication, modify their inappropriate behaviors, and prevent destructive interactions.

An appropriate communication between the elderly and their family members can substantially affect their satisfaction with their family and reduce the negative consequences of living alone. Existence of a safe, balanced, and appropriate communication between the elderly and their relatives attracts more support. Chou and Chi believe that the elderly receiving more social support from their family members manifest fewer mental disorders such as depression (41).

In the present study, communication skills education was aimed not only for the elderly but also for one of their family members. This strategy may help in decreasing the generation gap and improve relationships within the family. Thus, not only can the elderly establish better communication, but the family members can also better understand the needs of older adults. Meanwhile, children play a pivotal role in making communication with the elderly. Lee and Holm showed that close relationships between the elderly and their children play a key role in preventing or reducing depression in Korean older adults (42).

The limitations of this study include the small sample size and short duration of follow-up. Moreover, the participants' mental status when filling the questionnaire and their access to other sources of data during the study could not be controlled, and this might be viewed as a limitation to generalizing the study results. Future studies are recommended with a large sample size and longer intervention and follow-up. Studies should also examine other effects of family-oriented education such as its effect on the quality of life of older adults and their family members. As the education programs incur low cost and are effective, nurses could use this suitable method to help reduce depression, anxiety, and stress in older adults.

In conclusion, the present study showed that family-oriented education in communication skills could reduce depression, anxiety, and stress among the elderly. Therefore, family-centered education of communication skills program can be adopted as a non-pharmacological and cost-effective method to reduce depression, anxiety, and stress in older adults.

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Footnotes

Authors' Contribution: Simin Feshangchi: assistance in study design and statistical analysis, acquisition of data, and drafting of the manuscript; Zahra Ghazavi: administrative, technical, and material support; study supervision; and critical revision of the manuscript for important intellectual content and drafting of the manuscript; Mousa Alavi: study concept and design, statistical analysis, analysis and interpretation of data; Mahrokh Keshvari: study supervision.

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