Effects of Group Logo therapy Training on Self-Esteem, Communication Skills, and impact of event scale-revised (IES-R) in Elderly

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Research

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Abstract

Background: To evaluate the effects of group logotherapy training on the Self-Esteem, communication skills, and dealing with event in elderly.

Methods: The sample of this randomized controlled trial (RCT) includes 30 elderly individuals with unstable and weak self-esteem in an Daily Center for the elderly. The Samples are selected by convenience method and divided into two equal groups, i.e. the cases and controls. The Coopersmith Self-Esteem Inventory (CSEI), Weiss and Marmar's Impact of Event Scale-Revised (IES-R), and Barton's Communication Skills Questionnaire were instruments for data collection. After evaluating the baseline, the case group attended ten sessions of group logotherapy. During this period, the controls were only using the conventional programs of the center. At the end of the program, the baseline sessions were completed by all participants at 1 and 3-month follow-up. The collected data were analyzed using analysis of variance with repeated measures, independent t-test, and chi-square.

Results: The results show that group logotherapy significantly is effect on the improvement of self-esteem, communication skills, and dealing with events in the elderly ($P<0.001$). However, a decrease in the effects of the trainings over time was observed in the follow-ups one and three months after the program.

Conclusions: It can be concluded that group logotherapy training can be used for boosting the self-esteem, improving the communication skills, and improving proper responses to stressful events among the elderly. The durability of the benefits of these trainings requires reevaluation of this program in the long term.

Background

In recent years, in the majority of countries around the world, the efforts for further industrialization on the one hand and population growth, increased urban settlement, and migration on the other have created changes in the people's lifestyles, their habits and traditions. Following these fundamental changes in the society, specific conditions or problems have been created or exacerbated escaping from which proves much difficult. One of these problems is the increasing upsurge in stresses, followed by psychosocial distress sources [1].

The increasing trend of the population growing older as well as the sheer number and diversity of stresses the elderly face every day including loss of employment and social status, loss of close relatives, and loss of health, as well as the changes in social interactions have made focusing on mental health among the elderly an integral necessity [2].

During the last half century, along with the increase in the spread of mental disorders among the elderly, a revolution in diagnosing and treating these disorders in particular and in the field of mental health in general occurred as well. Mental health is a science helping individuals adopting accurate mental and

emotional methods to adapt to their environment and find more desirable solutions for their problems [3]. Some scholars believe that the best way to maintain mental health and avoid mental disorders including depression and anxiety among the elderly is to stay socially active. Failure to be accepted by others and social exclusion are among the main causes of mental diseases among the elderly [4]. Growing old causes gradual loss of some of an individual's physiological and psychological functions. While it is possible that this reduction in functioning may not lead to the dependency of the elderly on others, it has significant effects on the vulnerability of this population group, which can in turn play a major role in reducing the self-esteem of people in this age group [5]. On the other hand, in their studies, Geeds et al. concluded that the elderly individuals have difficulty understanding new signs that show their mistakes and naturally force them to change their minds. In fact, lack of willingness to evaluate new information reduces their flexibility, which will in turn reduce their adaptive responses to tensions, causing problems in their social interactions. On the other hand, it seems that compared to the youngsters, the elderly do not sufficiently use preliminary training and feedback information. Moreover, when faced with some forms of pressure, they express a more intense reaction compared to the youth [6].

In effect, considering the physical, mental, and social changes caused by old age as well as problems such as facing the death of peers, the elderly are very vulnerable to developing Post-Traumatic Stress Disorder (PTSD). These individuals show three types of problems or basic signs: re-experiencing the painful memory, nightmares, and flashbacks as if they experience the even once again; physical distress symptoms including difficulty in falling sleep, irritability or anger in the majority of times, difficulty concentrating, and feeling tension or guarding against others [7]. Robert Leahy believes that by changing the attitudes and teaching proper methods of dealing with tension, the above-mentioned difficulties and complications can be mitigated [8].

Since it is assumed that logo therapy is a method whose application can help the individual finding meaning in his or her life and since a meaningful life means a positive response to life despite whatever we face, whether misery or death, logo therapy helps the individual understand that while he or she cannot change the certain events of his or her life, he or she can learn to change the method used for dealing with these events and he or she can have a better reaction and response when facing that event. Logo therapy is for those facing existential despair and failure to find "a reason to live" [9]. Group logo therapy works through methods including expression of care and empathy, providing information, providing tools for diffusion of beliefs in solving problems, and helping the individual in recovering his or her attitude towards his or her own interpersonal world [10]. Various studies indicate the effectiveness of participatory learning on self-concept [11], increasing self-esteem and social acceptance of the learner [12], and motivation, self-efficacy, and constructive interaction with peers [13].

In recent years, the majority of countries in the world have started using logo therapy for improving the physical, mental, and social status of the elderly. Moreover, various studies have shown the effectiveness of logo therapy for self-discrepancy and depression in stay-at-home women with HIV/AIDS [14], self-esteem of women who were victims of human trafficking [15], depression of patients suffering from impairment of the central nervous system [16], quality of life of women in nursing homes [17], depression

in cancer patients [18], and combating social exclusion among the elderly [19]. However, there are very few studies on the effects of this treatment method on increasing self-esteem, improving social skills, and increasing the ability of individuals to deal with environmental stresses. In addition, the related available studies lack the follow-up step to make sure of the long-term effectiveness of this treatment strategy. Therefore, the current study tries to evaluate the impacts of changing the meaning of life and attitudes of the elderly through training on factors such as self-esteem, communication skills, and the components of mental helplessness when facing specific events. Moreover, this study evaluates the persistence of the training during time in order to design a proper model for improving the health conditions of the elderly.

Methods

Study population and design

This study is a controlled randomized clinical trial. The statistical population of the study included 350 regular visitors to Mehr Daily Center for the Elderly in Kermanshah. The sample of the study included 30 elderly people selected by convenience method from the population. The inclusion criteria for the study included being 60 or older, unstable or poor self-esteem (a self-esteem score of higher than 8 in the Coopersmith Self-Esteem Inventory (CSEI)), not participating in any other studies at the time, Ability to read and write in Persian language, not suffering from cognitive or learning difficulties, and a written consent to participate in the intervention. Lack of willingness to continue participation in the study or being absent more than once from the group program, suffering from cognitive illnesses (based on hospital records of psychological departments or a history of visiting neurological and psychological specialists along with the confirmation of the physician) were the exclusion criteria In the case of PTSD, we used the dimensional method proposed in the DSR-5 rather than the class evaluation. The selected individuals were randomly assigned to two 15-member groups, i.e. the intervention group and the control group. The size of the sample, considering the attrition rate, was set equal to at least 15 for each group. The data collection tools included the demographic information questionnaire, the Coopersmith Self-Esteem Inventory (CSEI), Weiss and Marmar's Impact of Event Scale - Revised (IES-R), and the interpersonal communication skills inventory.

As the first step, the necessary permits were obtained from the authorities in Mehr Center in Kermanshah. The study was then explained for all the elderly present in Mehr Center. The ethical aspects of the study including the confidentiality of the answers, the confidentiality of their identities, and the fact that no one would interfere with their personal or family issues were explained for the elderly and the suggestion to participate in the study was presented to them. Then, after giving a written consent, the participants were entered into the study. At the next step, the Coopersmith Self-Esteem Inventory (CSEI), Weiss and Marmar's Impact of Event Scale - Revised (IES-R), and the interpersonal communication skills inventory were filled out by the members of both groups and their scores were recorded as the evaluation baseline. Moreover, the intervention group went through ten sessions of group logo therapy; with two sessions each week for five weeks. The content of the sessions included the items presented in Fig. 1. During the study,

the control group only participated in the regular programs of Mehr Day Clinic for the Elderly including classes for drawing, science, manual artifacts, exercise, and rehabilitation. It is worth mentioning that the control group was used in the study to make sure the regular classes of the center cannot interfere with the results of the study as a confounding factor. Finally, after completing the logo therapy intervention, the data collection tools were again given to the participants in the intervention and control groups. They also completed the questionnaires again one month and three months after the intervention in order to evaluate the persistence of the effects of the therapy and their scores were recorded as the posttest.

Tools

The Demographics Information Questionnaire

The demographics information questionnaire was devised by the researcher and expert professors in order to compare the congruity of the test and control groups after random assignment. The demographic characteristics included age, gender, occupation, education level, marital status, geographical location, suffering from other physical and mental diseases (except for cognitive illnesses), and social habits including smoking and abusing drugs, as well as living conditions and the social and financial support systems.

The Coopersmith Self-Esteem Inventory (CSEI)

The short form of this inventory has been designed for adults and it includes 25 questions. For this questionnaire, higher scores show lower self-esteem. It is used when the time for answering the questions is limited. This short form does not include the lie detection scale and the scores of the subscale. From a theoretical point of view, this short form of the inventory only measures one dimension and the answers are based on the two-option scale (agree vs disagree) similar to the long form [20]. Since a total score of 17 to 25 indicates very low self-esteem (doesn't trust himself/herself at all), scores from 8 to 16 indicate unstable self-esteem (sometimes satisfied with who they are or what they do and sometimes they are quick to doubt themselves triggered by any criticism from others), and a score lower than 7 indicates excellent self-esteem, the score threshold for entering the study was a score higher than 8. Moreover, the validity and reliability of the Coopersmith Self-Esteem Inventory (CSEI) have been confirmed in various studies. The adult form of this questionnaire was localized for Iran by Tabatabei in 1999 and by Mohammad Ali Besharat in 2011 [21, 22].

Weiss and Marmar's Impact of Event Scale - Revised (IES-R)

This scale was developed by Weiss and Marmar (1997) in line with the criteria in DSM-IV for the diagnosis of PTSD. The self-report impact of event scale was devised for covering the symptoms of hyperarousal. This questionnaire includes 22 questions and its objective is to evaluate the components of mental helplessness when facing specific life events (avoidance, intrusion, and hyperarousal). The answers are based on the Likert scale ranging from never, sometimes, often, and extremely scored from 0 to 4, respectively. This scale includes three subscales for avoidance (8 questions), intrusive thoughts (7

questions), and hyperarousal (7 questions). In general, higher total scores in this scale indicate higher mental helplessness and vice versa. In Iran, this scale was translated into Persian by Moradi, and it has been used in numerous studies. The internal consistency of the scale is acceptable with an Alpha Coefficient of 0.75 to 0.92, and it has a good validity [23].

Barton's Communication Skills Questionnaire

Communication Skills Questionnaire was developed by Barton J. A. (1990) and it includes 18 items in three subscales of verbal skill (6 questions), listening skill (6 question), and feedback skill (6 questions) to identify and evaluate communication skills. The scoring in this questionnaire is based on a five-option Likert scale ranging from completely disagree, disagree, not sure, agree, completely agree scored as 4, 3, 2, 1, and 5, respectively [24]. In Iran, this scale was used by Nazari et al. in various studies and it possesses good internal consistency with an Alpha Coefficient of 0.81 and good validity [25].

Statistical Analysis

The statistical methods used in the current study include descriptive analysis including mean, standard deviation, frequency, and percentage used for describing the variables based on the type of the variable (i.e. quantitative and qualitative). The repeated measures test was used for evaluating the changes in the mean scores before, immediately after, one month after, and three months after the intervention in the two groups. The chi-square test was used for evaluating the distribution of qualitative variables including gender and marital status in both groups. Finally, the independent t-test was used for comparing the mean values of quantitative variables for both groups separately at each measurement step. In order to analyze the collected data, SPSS software application version 19 was used and while evaluating the results, a P value less than 0.05 was considered as significant.

Ethical consideration

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Results

The participants in this study were 8 women (53.33%) and 7 men (46.66%). The two groups of the study, i.e. the experimental and control groups, were identical with regards to the demographic characteristics since there was no significant statistical difference between the two groups with regards to all demographic variables ( ). Table 1 presents the demographic information for individual participants.

Objectives and the Content of the Training

Table 1 Comparing the Frequency of Main Variables (Number and Percentage) for the Experimental and Control Groups

Based on analysis of variance with repeated measures and considering the significance of the mutual impact of time/group, the results show that the scores of the subscale of self-esteem in the pretest aren't significantly different between the two groups. However, when comparing the mean scores of posttest, the scores for self-esteem of the patients participating in the group logotherapy sessions were significantly higher than the self-esteem scores of the elderly not attending the logotherapy sessions ( ). For all the dimensions, the decrease in scores for the experimental group was higher than that of the control group.

When following up on the patients one month after the intervention, self-esteem for the experimental group was still high; however, in the next follow up, which was three months after the intervention, the level of self-esteem for the experimental group was lower than the previous measurements. After the intervention, the score for self-esteem was still higher than the score before the intervention. This is while the self-esteem scores of the participants in the control group didn't show any significant difference during the study (Table 2 and Figure 1). On the other hand, the variation in the experimental group was non-linear ( ), while the variations in the control group were linear.

Table 2 Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Self-Esteem in the Experimental and Control Groups during the Study

Figure 1 Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Self-Esteem in the Experimental and Control Groups during the Study

When comparing the average scores for interpersonal communication skills before, immediately after, one month after, and three months after the intervention between the experimental and control groups, the results show that before the intervention, the average score for the experimental group was not much different than the average score for the control group. However, after the intervention, there was a significant difference between the average scores ( ). In addition, the trend of changes during the follow-up period was significant ( ) and remained high. The results indicate that immediately after and one month after the intervention, there is a significant difference between the two groups with regards to the scores for the interpersonal communication skills ( ). However, when measuring three months after the intervention, while the scores for communication skills in the experimental group were higher than those for the control group, this difference wasn't statistically significant ( ). This is while the average scores for

the control group didn't vary much over time. The changes in the experimental group were non-linear ( ), while the changes in the control group were linear ( ) (Table 3 and Figure 2).

Table 3 Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Interpersonal Communication Skills in the Experimental and Control Groups during the Study

Figure 2 Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Interpersonal Communication Skills in the Experimental and Control Groups during the Study

Moreover, when comparing the average scores for interpersonal communication skills before, immediately after, one month after, and three months after the intervention between the experimental and control groups, the results show that before the intervention, the average score for the experimental group was not much different than the average score for the control group. However, after the intervention, there was a significant difference between the average scores ( ). In addition, the trend of changes during the follow-up period was significant ( ) and remained high. The results indicate that immediately after and one month after the intervention, there is a significant difference between the two groups with regards to the scores for the interpersonal communication skills ( ). However, when measuring three months after the intervention, while the scores for communication skills in the experimental group were higher than those for the control group, this difference wasn't statistically significant ( ). This is while the average scores for the control group didn't vary much over time. The changes in the experimental group were non-linear ( ), while the changes in the control group were linear ( ) (Table 4 and Figure 3).

Table 4 Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Weiss and Marmar's Impact of Event Scale - Revised (IES-R) in the Experimental and Control Groups during the Study

Figure 3 Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Weiss and Marmar's Impact of Event Scale - Revised (IES-R) in the Experimental and Control Groups during the Study

Discussion

Since studies focusing on the effects of group training using the logo therapy approach on self-esteem, communication skills, and methods for dealing with events are so rare, the findings of the current study

are in line with the results of the study carried out by Koulaee, who measured the impact of logo therapy on coping with social exclusion among the elderly [18]; the study carried out by Kim, who evaluated the effects of logo therapy on making life purposeful, reducing stress, and increasing self-esteem [26]; and the study carried out by Yazdanbakhsh, who focused on feeling lonely among elderly men [27]. Duffy et al. concluded that self-esteem played a mediating role in the relationship between social friction and harmful social issues [28]. On the other hand, the results of the current study can be considered in line with the results of studies by scholars including Vitaly [29], Morgan [30], Suatrison [31], Dadkhah [32], Shah Kazemi et al. [33], Kung et al. [34], Koulaee [35], Merton et al. [36], Gol Mohammadi et al. [37], Gemrania et al. [38].

Based on the results in Table 2, the results of the one-month follow-up show that teaching meaning acquirement has undeniable effects on improving the self-esteem of the elderly, and in the follow-up measurements, the self-esteem level of people receiving intervention was higher than the control group. Moreover, we can see the effects of the training decreasing based on the observations one and three months after the intervention, which can be attributed to the fact that the sessions were very short and more time is required for changing attitudes and dispositions [39]. This finding can be explained by the fact that based on the Continuity Theory, habits, tastes, and personal styles acquired during life will stay with the individual until old age. Therefore, in order to replace these behaviors with more desirable ones, there is a need for changing the attitudes of individuals [40]. However, a short while after the training, significant changes in the individuals were observed, which is in line with the results obtained by Sudani et al. [41] positing that what we learn will remain; however, this is for only one follow-up. Other researchers haven’t studied the persistence of the effects of the interventions.

In addition, the results indicate that group logo therapy training can have an effective impact on increasing the interpersonal communication skills of the elderly. On the other hand, since these skills included a series of actions for improving the capability of the elderly for establishing communication, contrary to self-esteem whose persistence depended on changes in attitude, they show a lower level of reduction over time, which can indicate the ability of the elderly for learning logo therapy skills taught to them and implementing these skills in their own interpersonal relations. This conclusion is in line with the results of Kalantar Kusheh et al. [42], the theory of Gazda [43], and the theory of Nelson Joins [44]. Furthermore, the results indicate that logo therapy can help the elderly to have appropriate reactions when facing undesired life evens. This will prevent a large number of problems caused by tensions following stressful life events such as the death of the spouse, disability, and loneliness. This explanation is in line with the theory proposed by Linden and Reese [44, 45].

Conclusion

Based on the findings of this study, it can be concluded that group logo therapy training can be utilized for increasing self-esteem, improving communication skills, and improving proper reactions and responses when facing stressful life events in the elderly. However, considering the results of the follow-up tests, it is necessary that other studies with a larger sample size, a longer intervention period, and

following up on the effectiveness of the interventions over time be carried out in order to affect persistent attitude changes in the elderly.

Abbreviations

GLTT:Group Logo therapy Training; SE:Self-Esteem; CS:Communication Skills; IESR:impact of event scale-revised

Declarations

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Authors' contributions

All authors participated and approved the study design. AS, FM, and ECH contributed in designing the study, AZ and MSH collected the data, and analyzed by IJ, SN and AZ. The final report and article were written by AZ, FM and ECH and All authors read and approved the final manuscript.

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Availability of data and materials

Authors report that the data supporting their findings can be publicly shared.

Ethics approval and consent to participate

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Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests

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Objectives And The Content Of The Training

Session	Objectives	Execution
1	Determining the goals and objectives and presenting the rules governing the group as well as the responsibilities of the members; establishing good relations; and getting familiar with the general concept of logo therapy	Administering the pretest; getting familiar with the members and the counselor; talking about the rules and regulations; recommending accountability for own and others; active participation in the sessions; respecting the rights of others; getting prepared for knowing oneself; signing the contract by the members and the counselor; increasing awareness of the members about mental health; summarizing the session
2	Reinforcing relations and understanding unknown potentials	Members' discussion about their abilities, empowering the group for finding strategies to improve their abilities and obtain an accurate understanding of interpersonal difference in the group or in the surrounding environment.
3	Reinforcing the sense of accountability among the members	Reviewing the homework from the previous session: discussing the members' experiences causing their distress and disrupting their mental health; the counselor explaining freedom, choice, accountability, and their interconnections; Who are you influenced by more than anybody? What have you done so far for your own satisfaction? Who have you chosen as your example? Creating a mental image: Imagine one of the success or failure situations; who do you see as responsible for that situation? What is your feeling towards that person? Enumerate the behaviors or actions you have taken under the control of the expectation and rules set by others and discuss the results. Reducing the stresses caused by the disruption of body image and self-image and teaching life expectancy methods.
4	Going beyond oneself (widening the field of view of the patient in a way that meanings and values are placed in the patient's field of view and field of consciousness)	Reviewing the homework from last session, talking about issues that can affect the individual's thoughts and emotions. How much do you empathize with others? How much do you feel you are responsible for strangers, family members, and your country? When was the last time you helped someone? How do you feel when helping or being kind to someone? Rank a number of valuable behaviors or actions you haven't done and you are worried about in order of priority? How sensitive are you to the problems of others?
5	Teaching the skill necessary for paradoxical intention	Reviewing the homework from last session; helping the patient deal with his or her behavioral and mental problems using replacement (in effect, the thoughts or muscles get involved in this new action and behavior, making the repetition of the previous habit impossible); Prepare a list of your undesirable thoughts or habits and your problems. What have you done so far to deal with these issues? How successful have you been? Exercising a method for improving ability in parts and responses of the body you think you can't control.
6	Dereflection	Reviewing the homework from last session; how much do you focus on issues that you think are problematic? Have you ever tried to neglect these problems and focus on other issues? Was your strategy effective?
7	Correcting attitudes, logo therapy though experiential, dispositional, and creative values	Reviewing the homework from last session; express your problem; try to look at the problem from different angles. Can you find an acceptable reason for your issue? Can you reach a higher level of peace by changing your attitude towards the issue? In fact, this session involves challenging wrong beliefs like adverse fate, negative fate, bad omens, and feeling of guilt which are often related to anxiety, negative mood, and severe depression.
8	Retrieval techniques (teaching sensitivity to logos)	Reviewing the homework from last session; encouraging and supporting members because of acting based on their real desires and values; explaining one's journey; discussing the desires and wishes. How do you see your religious beliefs? Are these beliefs based on your own desires or those of others? Exercising the caressing skill (eye contact, kind speech, and touching). Completing sentences: I want to....; I can .... Which wishes are meaningful in your life? How are you trying to realize those wishes? Caress a number of people close to you and take notes on your feeling and the results of the caressing.
9	Teaching members about various types of anxiety; dealing with death from a new perspective; challenging the members	Reviewing the homework from last session; explaining existential anxiety; discussing life limitations and creating motivation in individuals for improving lifestyle; discussing a new look at death and accepting it. The main objective of this session was to help members understand death-related depression as an existential concept which must be understood by the individual and trying to accept it instead of refusing or deflecting it. How you seen someone dying? Talk about your thoughts and feelings about that even. Creating a mental image: imagine yourself on your deathbed. Explain your feelings and thoughts about how you spent your life. The challenge of losing meaning in life after diseases with high likelihood of death or because of surgeries and health complications and finding new meanings.
10	Reviewing the lessons of previous sessions; summarizing the items	In both groups simultaneously: thanking the members and the counselor for working on the changes that were created; evaluating the sessions to see if the selected goals were met; administering posttest

discussed during the intervention;

posttest

Tables

Table 1 Comparing the Frequency of Main Variables (Number and Percentage) for the Experimental and Control Groups

Main variables		Test group number (percent)	(control group number (percent)	p-value
age	60-70	6(40)	5 (33.33)	
	70-80	6(40)	5 (33.33)	0.71
	>80	3(20)	5 (33.33)	
gender	Female	8(53.33)	8 (53.33)	1.00
	male	7(46.66)	7 (46.66)	
Marital status	Married	10(66.66)	10 (66.66)	1.00
	Widow	5(33.33)	5 (33.33)	
Employment	Employed	8(53.33)	8 (53.33)	0.49
	Unemployed	7(46.66)	7 (46.66)	
Physical illness	has it	12(80)	10 (66.66)	0.40
	does not have	3(20)	5 (33.33)	
mental illness	has it	8(53.33)	6 (40)	0.46
	does not have	7(46.66)	9 (60)	
Relations with the family	good	11(73.33)	10 (66.66)	0.69
	bad	4(26.66)	5 (33.33)	
Get Family Benefits	yes	4(26.66)	6 (40)	0.43
	no	11(73.33)	9 (60)	
Smoking cigarettes	yes	5(33.33)	7 (46.66)	0.45
	no	10(66.66)	8 (33.53)	
Material dependence	has it	2(13.33)	2(13.33)	1.00
	does not have	13(86.66)	13(86.66)	

Table 2 Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Self-Esteem in the Experimental and Control Groups during the Study

Variable	Time	Before intervention		Immediately after the intervention		One month after the intervention		Three months after the intervention		p-value		
	The statistics	Moderate average	Standard deviation	Moderate average	Standard deviation	Moderate average	Standard deviation	Moderate average	Standard deviation	Time	Group	Time / group
Self-esteem score	test	16.33	2.43	11.93	2.05	10.26	4.19	14.46	4.74	0.001<	* 0.027	* 0.001
	Control	15.86	2.16	15.60	2.66	15.33	4.06	15.26	4.25			
Comparison of two groups		P=0.58		P=0.001		P=0.001		P=0.001				

Table 3 Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Interpersonal Communication Skills in the Experimental and Control Groups during the Study

Variable	Time	Before intervention		Immediately after the intervention		One month after the intervention		Three months after the intervention		p-value		
	The statistics	Moderate average	Standard deviation	Moderate average	Standard deviation	Moderate average	Standard deviation	Moderate average	Standard deviation	Time	Group	Time / group
	group											
Self-esteem score	test	51.26	14.99	66.13	12.09	66.13	12.27	62.73	11.62	* 0.001<	* 0.027	* 0.001
	Control	52.93	15.94	53.86	15.69	55.06	14.78	55.33	14.46			
Comparison of two groups		P=0.77		P=0.023		P=0.034		P=0.134				

Table 4 Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Weiss and Marmar's Impact of Event Scale - Revised (IES-R) in the Experimental and Control Groups during the Study

Variable	Time	Before intervention		Immediately after the intervention		One month after the intervention		Three months after the intervention		p-value		
	The statistics	Moderate average	Standard deviation	Moderate average	Standard deviation	Moderate average	Standard deviation	Moderate average	Standard deviation	Time	Group	Time / group
	group											
Self-esteem score	test	59.60	18.18	37.53	13.60	40.60	12.81	47.80	14.76	* 0.001<	* 0.061	* 0.001
	Control	58.73	19.59	59.86	17.82	57.20	18.69	56.73	18.55			
Comparison of two groups		P=0.109		P=0.001		P=0.008		P=0.156				

Figures

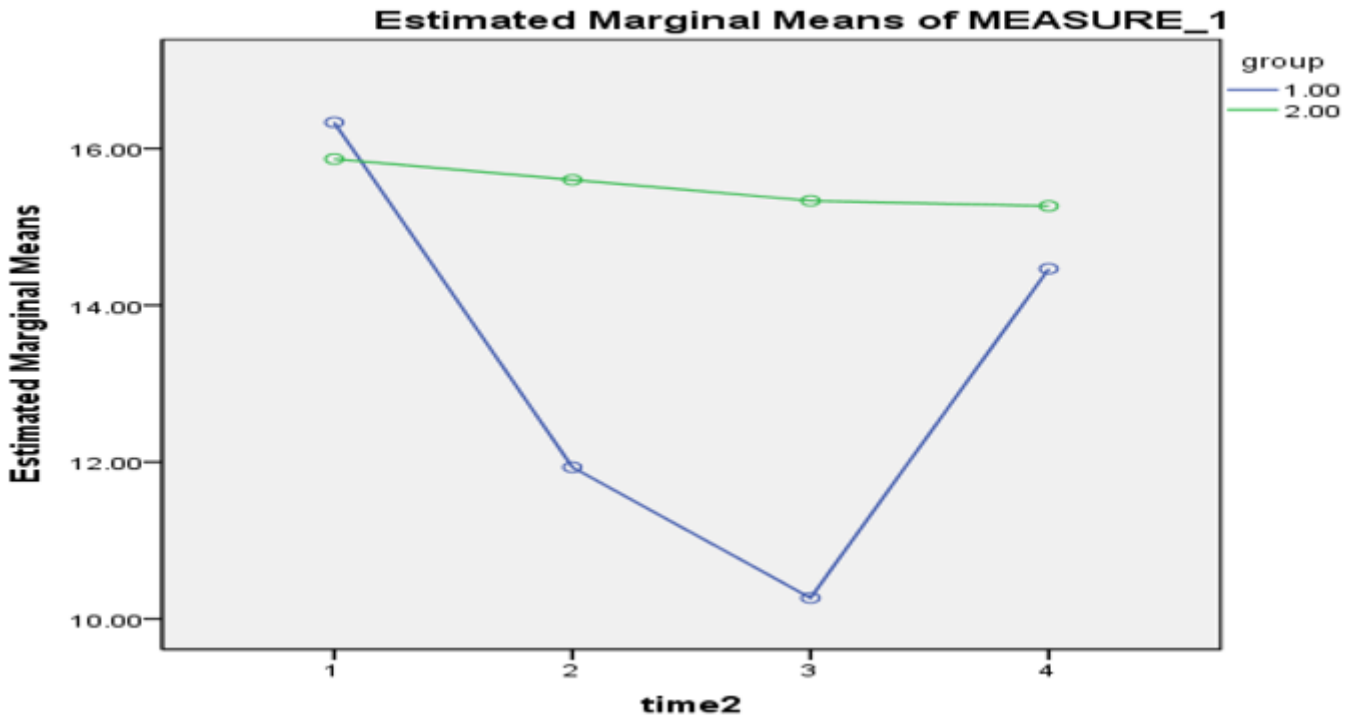

Figure 2

Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Self-Esteem in the Experimental and Control Groups during the Study

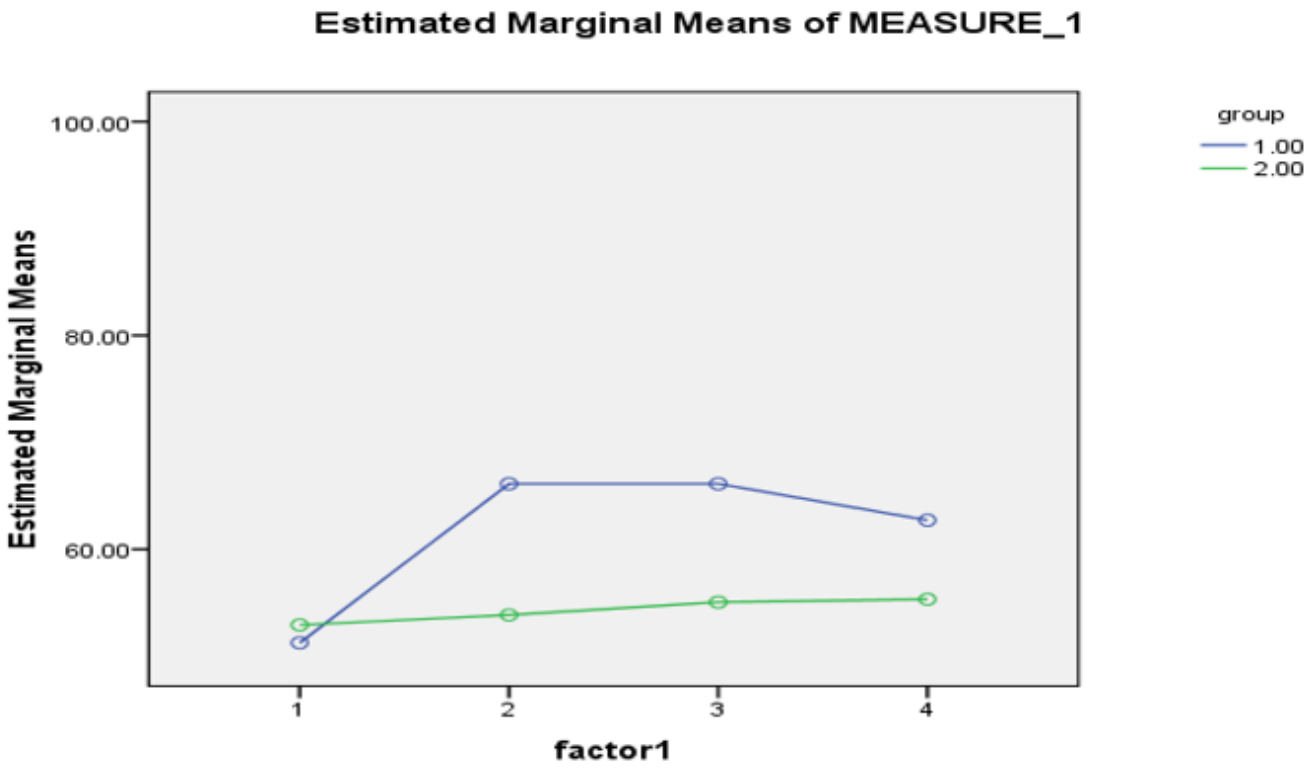

Figure 4

Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Interpersonal Communication Skills in the Experimental and Control Groups during the Study

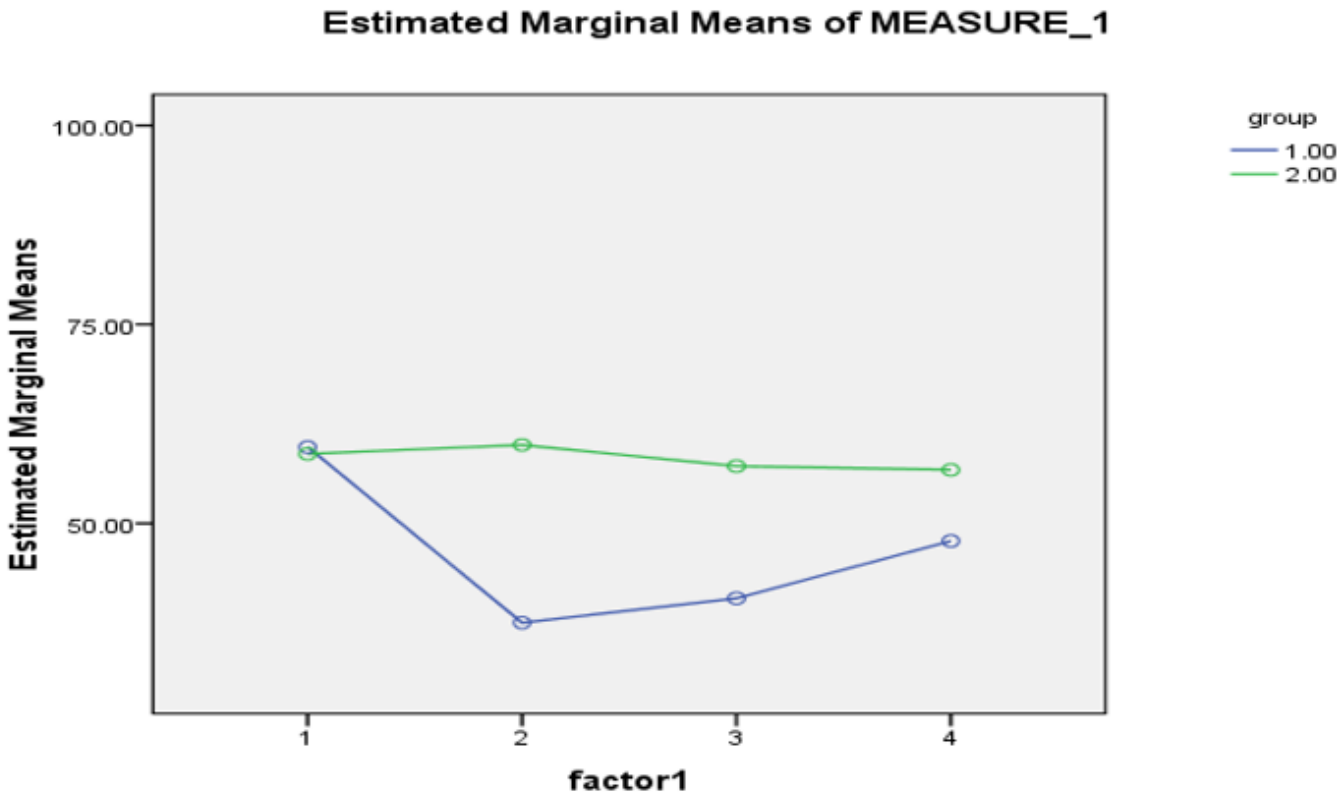

Figure 6

Comparing the Changes in Adjusted Mean and Standard Deviation of Scores for Weiss and Marmar's Impact of Event Scale - Revised (IES-R) in the Experimental and Control Groups during the Study