The Effectiveness of Group Logotherapy on Psychological Distress and Belief in a Just World in MS Patients

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Abstract

Objective: The present study aims to investigate the effectiveness of group logotherapy on psychological distress and belief in a just world in M.S patients.

Method: This is a quasi-experimental study with a control and an experimental group. The study population consisted of 583 members of the MS Society of Iran located in Ilam City in 2021 who were selected through the convenience sampling method. According to this research method, the number of samples was 30 (15 people for each group) selected by the Iranian MS Society through the introduction of the members of the association. To measure the variables, Kessler's Psychological Distress Assessment Questionnaire (K10) and the Fair World Belief Questionnaire were used by Sutton & Douglas (2005), Dalbert (1999), and Dalbert et al. (2001). The therapeutic intervention in this study was a group logotherapy package for MS patients, and treatment sessions (based on Mohammadi, E-Fard, &Heidari's dual therapy package, 2019). Spss24 software and Covariance or ANCOVA test were used to analyze the data.

Results: This study showed a noteworthy contrast between the experimental and control groups in terms of psychological distress and belief in a just world at the level of 0.05. Subsequently, two primary theories of affirmation and zero suspicion were rejected.

Conclusion: It was found that group logotherapy is compelling to mental trouble and belief in a just world in MS patients. Therefore, this treatment method can be useful in clinics.

Keywords: Logotherapy, Psychological Distress, Belief in a Just World, MS Patients.

Introduction

Multiple sclerosis is a chronic condition that occurs through the destruction of neurons in the nervous system, which is estimated to be affected by approximately 2.5 million people worldwide (World Health Organization, 2020). In MS, multifocal areas through demyelination and axon loss, which appear to be due to weakness in autoimmune, lead to the accumulation of damage in the central nervous system (Flanchecker, 2006; Gertz & Balakhov, 2008). Multiple sclerosis is associated with a range of motor and sensory disorders, cognitive decline, and neurological and psychological symptoms. The resulting disabilities vary in each individual, depending on the location and severity of multiple sclerosis lesions. Many people with multiple sclerosis experience episodic symptoms or relapses that are only partially resolved and persist over days, weeks, or months after each recurrence (Flanker, 2006).

Psychological distress is more likely seen in these people than in the general population (Fisher, Salmond, Huntley & Reilly, 2020). Psychological distress is a particular discomfort and emotional state experienced by the individual temporarily or permanently in response to certain stresses and traumatic requests (Alchler, Roberts, Herring & Idea, 2021). Psychological distress in people with the condition is commonly experienced as

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depression and/or anxiety but can be as symptoms of trauma or a global negative impact (Concel, Kahler & Asundson, 2013). The lifetime prevalence rate for depression is 36% to 54% in multiple sclerosis compared to 16% in the GENERAL US population, with a lifetime prevalence rate of 36% for anxiety disorders in multiple sclerosis versus 29% in the general population (Alchler et al., 2021). Increased levels of emotional distress are associated with a greater disease burden and affect the quality of life of the disease (Fisher, 2020). In addition, emotional distress is associated with greater use of health care, increased levels of fatigue, and hurts social interactions (Simpson et al., 2019). At least one-third of people with multiple sclerosis have anxiety or depression that are significant enough population and require clinical intervention, effective psychological interventions must be available to these people (Simpson et al., 2019).

Human beliefs and cognitions in different areas of life have an undeniable effect on behaviors and reactions. Each category of human beliefs focuses on a particular phenomenon that sometimes takes on a moral and sometimes social, economic, or political aspect. A group of human beliefs of a multidimensional nature is the belief in the existence of a just world (Gol Parivar & Vaseghi, 2010). More than three decades of research show that these beliefs are based on the fundamental idea that what is gained by human beings is not the result of accident and luck, but by effort, competence, and perseverance. Based on this idea and in a changing mental and cognitive environment and based on different life experiences, the belief gradually becomes that a good person is faced with good consequences and bad people face bad consequences because different human achievements are not the result of the goodness of the world in which they live, but the result of their competence (Mahmoudi & Karbala'i Bagheri, 2020).

Belief in a just world is divided into two categories: 1- Belief in an individual just world and 2- belief in a general just world. Believing in a personally just world means that a person believes that the world is fair to them and they get what they deserve, and believing in a generally just world also means that a person believes that others get what they deserve. According to the findings, belief in a personally just world can reduce depression and negative emotions when faced with stressful events (Wang, Wang, Liu, Yang, Zheng, & Bai, 2021). Studies have shown that believing in a just world has an adaptive function for individuals, namely a preventive perspective and a promotion perspective (Desrumaux, Gillet & Nicolas). From a theoretical perspective, (BJW) acts as a protector of people's well-being through these functions and helps individuals interpret their life events in a meaningful way (Münscher, Donat, & Kiral Ucar, 2020).

Another experimental method that can be suitable for reducing psychological distress in these patients is logotherapy because these patients need to find meaning in their lives more than they need physical health, which has a direct relationship with one's personal beliefs about the world. Therefore, it may be appropriate for MS patients who suffer from cognitive impairments. Meaning therapy is a philosophical approach to people and their existence and deals with important themes and issues of life, such as life and death, freedom and responsibility for themselves and others, semantics and dealing with meaninglessness, and the like; this event compels parents to see beyond the problems of everyday events (Afkham Rezaei et al., 2011). Considering the transient existence and existence of human beings instead of Wanzawa's pessimism, meaning therapy calls on human beings to strive and work, stating that what kills human beings is not their undesirable sufferings and destiny, but the meaninglessness of life that is catastrophic. If suffering is boldly accepted, life will have meaning until the last tail and the meaning of life can include even the potential meaning of suffering. For this reason, semantics in life can have profound effects on reducing the

psychological problems of different groups of patients. Meaning therapy is a method of existential approach that can prepare the conceptual structure to help clients to challenge finding meaning in their lives. This method emphasizes the four important interests rooted in human existence and is based on death, freedom, loneliness, and meaninglessness. Having the meaning of purpose in life has a positive relationship with psychological factors and leads to adjustment, life satisfaction, good psychological feeling, social support, and the reason for their survival (Mohammadi, Dokana Fard, and Heidari, 2019).

On the other hand, group therapy and social support, through the active participation of patients in self-care, promote their health (Khezri Moghadam, Ghorbaniev Bahrami, & Rostami, 2012). Therefore, it seems that logotherapy as a group can be more appropriate because of the economic and social support in the group, the present study seeks to answer the question of whether group logotherapy can affect the level of psychological distress and belief in a just world in MS patients.

Method

Participants and the process

The present study was a semi-Experimental study with the control and Experimental group, at first, the subjects were selected through the Iranian MS Society with the necessary coordination and were randomly assigned to the control and experimental groups. The statistical population of this study will be ms patients in Ilam City who were members of the MS Society of Iran in 1400(2021). The number of patients after an inquiry from the representative office of the MS Society of Iran in Ilam province was 583.

According to the research method, the sample size was estimated at 30 (15 people for each group) selected by the Iranian MS Society by introducing the members of the association. It should be noted that the subjects were randomly assigned into two groups. The sampling method is available among people who have MS in Ilam City and are members of the MS Society of Iran. In this way, the sample was selected from people who were available and able to participate in research and therapeutic intervention, and finding them easy, and after reaching the desired number, sampling was finished.

Measures

Psychological Distress Questionnaire. Kessler's Psychological Distress Assessment Questionnaire (K10) is specific to identifying mental disorders in the general population that assesses the status of a mentally ill patient during the last month. This questionnaire was developed by Kessler and his colleagues in 2002 with 10 questions. The answers to questions are 5 options (always, most of the time, sometimes, rarely, and never) and with scores between 0-4, the maximum score in (K10) is equal to 40 (Kessler, 2003). In Jacobi's research (2015), sensitivity, specificity, and general classification error for the best cut-off point of the psychological distress questionnaire which was 8, 81%, 80.5%, and 16.5%, respectively. Also, the cut-off points with maximum sensitivity (100%) score of 1 and maximum specificity (100%) score were 27. Cronbach's alpha coefficient was 0.93 and the reliability coefficient of Ballad and Spearman-Brown was 0.91.

A questionnaire of belief in a just world. The Fair World Belief Questionnaire was designed by Sutton and Douglas (2005), Dalbert (1999), and Dalbert et al. (2001) based on general beliefs (the fairness of the world) and personal beliefs (the fairness of events that take place in one's own life). For this questionnaire, Cronbach's alphas were αTURKEY=0.74; αAUSTRALIA=0.77; αGERMANY=0.73; αRUSSIA=0.80; αUSA=0.78;αBRAZIL=0.72(KiralUcar, Donat, Bartholomaeus, Thomas, 2022) But in Iran, The questionnaire was first translated into Persian by Golparvar et al (2007) and then the translated Persian version was returned to English. The pencil-paper

and a self-report questionnaire consisting of 27 items and 4 subscales of "beliefs of a just world for oneself", "beliefs of a just world for others", "beliefs of the public just world", and "beliefs of the unfair world". Items 1, 2, 3, 4, 5, 6, 7, 8 Subscale "Fair World Beliefs for Themselves", Items 9, 10, 11, 12, 13, 14, 15, 16 Subscales "Beliefs of the Just World" For others," items 17, 18, 19, 20, 21, 22, 23 subscales measure "public fair world beliefs" and items 24, 25, 26, 27 subscales of "unfair world beliefs." Scoring items on the five-degree Likert scale is completely in favor=5, to the complete opposite=1. Therefore, the minimum and maximum scores obtained will be 27 and 135, respectively, With the interpretation that a low score means less believability and a high score indicates more believability.

In Golparvar's research (2007), the reliability of the questionnaire using Cronbach's alpha method for subscales of beliefs of a fair world for oneself and beliefs of a just world for others was 0.72 and 0.84, respectively. In the research of Golparvar and Javadi (2006), Cronbach's alpha was obtained at 0.90 and 0.53 for subscales of beliefs of the public fair world and unfair world beliefs, which is satisfactory. Also, the results of Golparvar's research (2007) to determine the content validity using experts' opinions indicating the content and simultaneous validity of the questionnaire and the results of exploratory factor analysis and principal component analysis (PC) through various rotation Wax confirmed the existence of four factors with a greater special value than one under the titles of "beliefs of a just world for oneself," "beliefs of a just world for others," "beliefs of the just public world" and "beliefs of an unfair 1world" (Golparvar & Azizi, 2007).

Table 1: Group logotherapy package for MS (based on the therapeutic package of Mohammadi, Doganeh Fard and Heydari, 2020):

Sessions	Objectives and activities
Session 1	Obj: Bilateral familiarity and awareness of the group's charter Activities: Introducing, expressing the overall structure, how the process works, and the charter of the group
Session 2	Objective: Clients' awareness of fundamental concepts of meaning therapy Activities: A compact expression of Frankel's biography and fundamental beliefs of meaning therapy
Session 3	Objective: Awareness of meaningful ways of seeking, understanding, and receiving the meaning of life Activities: Expressing three proposed ways of meaning-seeking life
Session 4	Objective: Accepting individual freedom and accountability Activity: Open dialogue on individual freedom and accountability and connecting every thought with the reality of the client's lives
Session 5	Objective: Understanding the meaning of love Activity: Open dialogue about love and its meaning and personal experiences of clients
Session 6	Objective: Understanding the meaning of suffering Activity: Group dialogue on the sufferings of people with MS
Session 7	Objective: Understanding the meaning of death Activity: Group dialogue on the transient context of life, the reality of death, and it's meaning
Session 8	Objective: Understanding god's presence in the transcendental subconscious of man Activity: A group dialogue about God's presence in the deepest layers of human existence
Session 9	Objective: Summing up the words, reads, and findings of participants Activity: Summarizing and expressing a summary of the previous sessions' founds

Statistical Analysis

Descriptive Statistics

The results of examining the status of gender and age of patients who participated in this research are as follows:

Most of the people in the current research sample are men, which in the current research are approximately 54% of the sample people, and women are included for about 43% of the research sample people.

in terms of age, the largest number is about 47% of the participants were in the age range of 31-40 years. 13% of the participants were in the age range of 20-30 years and finally, 40% of the participants were in the age range of 41 years and older.

statistics were used to investigate the research hypotheses which according to the type of hypotheses were covariance or the ANCOVA test.

Results

According to the first hypothesis, group logotherapy affects psychological distress in MS patients. The results of Table 2 showed that the mean of the control group in the pre-test was 27.29, and in the post-test was 28.50, and there was no significant difference. Also, the mean of the Experimental group in the pre-test was 28.70, and there was not much difference from the control group, while the mean of the experimental group in the post-test

Table 2: Descriptive stats of psychological distress variance

	Group	Average	Standard deviation
Pre-test	Experimental	28/70	4/89
	Control	27/29	4/54
Post-test	Experimental	17/33	3/52
	Control	28/50	3/41

In this research, descriptive statistics were used to describe the research indicators, and inferential

was 17.33, indicating that the mean psychological distress of the Experimental group in the post-test

Table 3: Descriptive stats of belief in a just world variance

		Group	Average	Standard deviation
Belief in a just world for themselves	Pre-test	Control	93/11	09/2
		Experimental	93/11	55/1
	Post-test	Control	28/11	86/1
		Experimental	97/16	71/1
Belief in a just world for other people	Pre-test	Control	32/12	54/1
		Experimental	58/12	11/2
	Post-test	Control	33/12	18/2
		Experimental	49/16	31/4
Just world beliefs	Pre-test	Control	64/9	40/2
		Experimental	74/10	54/1
	Post-test	Control	36/10	29/1
		Experimental	34/14	10/2
Unjust world beliefs	Pre-test	Control	37/7	46/1
		Experimental	46/7	41/1
	Post-test	Control	29/7	62/1
		Experimental	68/4	912/0

was significantly lower than other data.

The second hypothesis was that group logotherapy influenced belief in the just world and its components (believing in a just world for oneself, believing in a just world for others, and believing in a just public world and believing in an unfair world) in patients with MS. The results of Table 3 show that the mean of the control group in the pre-test and post-test is not significantly different. Also, the mean of the Experimental group in the pre-test is not significantly different from the control group, while the mean of the experimental group in the post-test is significantly different from other data.

The Shapiro Wilk test was used to determine the normality of the data distribution. According to this test, when the distribution is normal, the P-value is greater than the critical number at the level of 0.05. According to Shapiro Wilk's test results table, it shows the obtained data have a normal distribution.

As a result, parametric tests can be used to analyze the data.

The second hypothesis is the homogeneity of variances, to investigate this hypothesis, the Levene test has been used, this test shows the homogeneity of variances in groups, the significance level obtained from this test should be higher than 0.05, otherwise, the assumption of homogeneity of variances is not correct.

The results of this study in Table 5 indicate that the variance of groups is congruent, and all significant level values are higher than 0.05, so this hypothesis is also established.

The results obtained from the data of this study in the regression slope homogeneity table indicate that the variance of the groups is congruent and all the significance level values are higher than 0.05, so this hypothesis is also established. The following is the hypothesis related to the homogeneity of the

Table 4: Shapiro Wilk test

Variance	Sample quantity	meaningfulness	Status
Psychological distress	30	064/0	Normal
Belief in a just world for themselves	30	070/0	Normal
Belief in a just world for other people	30	055/0	Normal
Beliefs in a just world	30	415/0	Normal
Beliefs in an unjust world	30	610/0	Normal

Table 5: Levene test to study the homogeneity of variances of psychological distress and belief in a just world, post-test

Variances	Test	Levene statistics	df1	df2	Meaningfulness
Psychological distress	Pre-test	140/0	1	28	711/0
	Post-test	845/1	1	28	185/0
Belief in a just world	Pre-test	769/0	1	28	380/0
	Post-test	546/3	1	28	07/0

Table 6: The results of the homogeneity of the regression slope

	Sum of squares	Degree of freedom	Mean squares	F	Meaningfulness
Modified model	02/927	2	51/463	12/24	097/0
Pre-test group of psychological distress	02/927	2	51/463	12/24	097/0
Error	77/518	27	21/19		
Total	01/17208	30			
Modified sum	80/1445	29			

regression slope.

According to the table above, it can be seen that the significant level of group variable psychological distress pre-test is 0.097 and more than 0.05. This indicates that the hypothetical homogeneity of the regression slope has been observed.

In Table 7, the results of the homogeneity of the regression slope for the belief in a just world are

regression slope has been observed.

In table 8, The main result of the covariance analysis test based on which the first hypothesis has been considered is presented.

The results of the covariance analysis test are shown in the table above to compare the psychological distress of the groups. The significance level of the pre-test shows that the F value is significant because

Table 7: The results of the homogeneity of the regression slope for the belief in a just world

	Sum of squares	Degree of freedom	Mean squares	F	Meaningfulness
Modified model	79/879	2	89/439	497/1	082/0
Pre-test group of belief in a just world	79/879	2	89/439	497/1	082/0
Error	28/819	27	34/30		
Total	50/62920	30			
Modified sum	08/1699	29			

survey

According to the table above, it can be seen that the significant level of the pre-test group of belief in a just world is 0.097 and more than 0.05. This indicates that the hypothetical homogeneity of the

its probability is smaller than the significant level of 0.05 (F=0.58 and p=0.030), now it can be said that the hypothetical correlation of the selected pretest variable has been observed. After removing the effect of the pre-test, the results show that there

Table 8: The results of the covariance analysis test of the psychological distress

	Sum of squares	Degree of freedom	Mean squares	F	Meaningfulness	Eta square
Modified model	73/963	2	86/481	98/26	000/0	667/0
Psychological distress pre-test	26/967	1	96/26	58/2	030/0	153/0
Group	61/963	1	61/963	24/92	000/0	667/0
Error	06/282	27	44/10			
Total	01/17208	30				
Modified sum	80/1445	29				

Table 9: The results of the covariance analysis test of the belief in a just world

Variance	Source	Sum of squares	Degree of freedom	Mean squares	F	Meaningfulness	Eta coefficient
Belief in a just world (total)	Group	75/874	1	75/874	69/28	000/0	
	Error	98/822	27	48/30			
Beliefs in a just world for themselves	Group	23/243	1	23/243	85/78	000/0	745/0
	Error	28/83	27	08/3			
Beliefs in a just world for other people	Group	80/134	1	80/134	50/11	002/0	299/0
	Error	37/316	27	71/11			
Beliefs in a just world	Group	17/126	1	17/126	59/43	000/0	618/0
	Error	14/78	27	89/2			
Beliefs in an unjust world	Group	91/50	1	91/50	34/28	000/0	512/0
	Error	50/48	27	79/1			

is a significant difference between the mean of the two groups in the post-test (F=92.24 and p=0.000). In the above table, there was a significant difference between the psychological distress scores of the whole experimental group and the psychological distress scores in the control group (significant level less than 0.05). Also, the amount of the Eta coefficient in the last column is presented. Accordingly, it can be said that the assumption of group logotherapy on psychological distress in MS patients is confirmed.

The results of the covariance analysis test are shown in the table above to compare beliefs in the just world of groups. In the above table, there is a significant difference between the post-test scores of beliefs in a just world (beliefs of the just world for oneself, beliefs of the just world for others, beliefs of the public just world, beliefs of the unfair world) of the experimental group with the scores of beliefs in the just world in the control group (significant level less than 0.05). Also, the amount of the Eta coefficient in the last column is presented. Accordingly, it can be said that the research hypothesis about the effect of group logotherapy on belief in the just world and its components (belief in a just world for oneself, belief in a just world for others, and belief in a just public world and belief in an unfair world) is confirmed in patients with MS.

Conclusion

The first hypothesis was that group logotherapy had an effect on psychological distress in MS patients, which is confirmed according to the results obtained from data analysis.

The results of this hypothesis are in line with the results of research by Salari and Haji Alizadeh (2017), Saffarinia and Dortaj (2017), Sun et al. (2021), and Aboud et al. (2020).

In justifying the obtained results, it can be said that the method of meaning therapy seeks to find the meaning of life. When a person has a lot of illnesses or problems and considers life meaningless, he or she suffers from psychological distress. Such a person sees life as a whole fear that in no way can overcome, finds himself a powerless being in the face of the events of the day and compares his life to others and constantly asks himself why he got sick, and is always looking for a reason for his illness. Finding the meaning of life helps patients overcome mental disorders and is responsible for their lives by relying on the freedom to choose life. In other words, meaning therapy teaches the patient to stop worrying and pay attention to other life issues. Therefore, meaning therapy helps the patient to accept stressful events and difficulties in life and then deal with them and thereby achieving psychological health and well-being.

The meaning of patients' lives reduces their suffering and reduces psychological stress and adverse consequences of illness, and improves their quality of life and adaptiveness. Logotherapy helps patients not to focus on the lost, but to seek meaning, despite their hopelessness. Consequently, life is meaningful from the perspective of logotherapy under any circumstances. What is important in logotherapy is the evidence of human potential and uniqueness in the best way that it can turn a tragedy into a personal victory and change an unpleasant situation into a human situation. When we are unable to change a situation, we have to try to change ourselves.

The second hypothesis was that group logotherapy affected belief in the just world and its components (believing in a just world for oneself, believing in a just world for others, and believing in a just public world and believing in an unfair world) in patients with MS, which is confirmed according to the results of data analysis. The results of this hypothesis are in line with the results of Golparvar et al. (2012), Kang et al. (2009), and Park et al. (2008).

In the explanation of this assumption, it can be said that people undergoing meaningfulness therapy realize that illness is an inevitable problem, so they learn to change the way they view the problem and their life. The meaning of sufferings and pains, they do not focus on them and spend their life and

ability to quality of life, not the quantity of it, and with an optimistic view of the future, they choose courageous and valuable goals for themselves and hopefully continue their lives. As a result, meaning therapy through the mechanisms explained can improve optimism and perceived justice in patients with MS. Also, those with meaning in life, instead of focusing on unpleasant events, learn from them and use them in pursuit of future goals. Therefore, this intervention (logotherapy) helps patients to adopt a courageous attitude against inevitable suffering. Instead of passive endurance, they choose to seek meaning in relationships, here and now, and in their daily conflicts, most deeply. During this treatment, they review their values and learn about their limitations, explore excellence and spirituality, and even in some patients lead to the development of a guide for a better life. This approach with its special attitude has been able to help this category of patients to deal with their problems and reduce them.

References

Afkham, R. Z., Tabrizi, M., & Shafieabadi, A. E. (2008). The effectiveness of group logotherapy on women's health improvement.

Abood, M. H., Alaedein, J. M., Mahasneh, A. M., & Alzyoud, N. F. (2020). Effect of Logotherapy Group Counseling in Reducing Depression and Improving Life Satisfaction among Elderly Males. *North American Journal of Psychology,* 22(1).

Alschuler, K. N., Roberts, M. K., Herring, T. E., & Ehde, D. M. (2021). Distress and risk perception in people living with multiple sclerosis during the early phase of the COVID-19 pandemic. *Multiple sclerosis and related disorders,* 47, 102618.

Counsell, A., Hadjistavropoulos, H. D., Kehler, M. D., & Asmundson, G. J. (2013). Posttraumatic stress disorder symptoms in individuals with multiple sclerosis. Psychological Trauma: Theory, Research, Practice, and Policy, 5(5), 448.

Dalbert, C. (1999). the World Is More Just for Me Than Generally: about The Personal Belief in a Just World Scales

Validity. Social Hustice Research, 12(2), 79-98.

Fisher, P. L., Salmon, P., Heffer-Rahn, P., Huntley, C., Reilly, J., & Cherry, M. G. (2020). Predictors of emotional distress in people with multiple sclerosis: A systematic review of prospective studies. *Journal of Affective Disorders*

Flachenecker, P. (2006). Epidemiology of neuroimmunological diseases. *Journal of neurology,* 253(5), v2-v8.

Golparvar, M., & Vaseghi, Z. (2011). Attribution Moderator Of Relationship Between Belief In A Just World With Female Students'aggressive Reaction.

Geurts, J. J., & Barkhof, F. (2008). Grey matter pathology in multiple sclerosis. *The Lancet Neurology*, 7(9), 841-851.

Kessler, R.C., Barker, P.R., Colpe, L.J., Epstein, J.F., Gfroerer, J.C., Hiripi, E., Howes, M.J., Normand, S-L.T., Manderscheid, R.W., Walters, E.E. & Zaslavsky, A.M. (2003). Screening for serious mental illness in the general population. Archives of General psychiatry. 60(2), 184-189.

Kiral Ucar, G., Donat, M., Bartholomaeus, J., Thomas, K., & Nartova-Bochaver, S. (2022). Belief in a just world, perceived control, perceived risk, and hopelessness during the COVID-19 pandemic: Findings from a globally diverse sample. *Current Psychology*, 1-10.

Kang, K. A., Im, J. I., Kim, H. S., Kim, S. J., Song, M. K., & Sim, S. Y. (2009). The Effect of Logo therapy on the Suffering, Finding Meaning, and Suffering, Well-being of Adolescents with Terminal Cancer. Child Health Nursing Research, 15(2), 136-144.

Khezri, M. N., Ghorbani, N., Bahrami, E. H., & Rostami, R. (2012). Efficacy of group therapy on reduction of psychological signs of multiple sclerosis patients.

Mohammadi, F., Dokaneifard, F., & Heidari, H. (2020). The Effectiveness of Logo therapy in Improving Self-Compassion and Life Expectancy in Women with Depression. *Journal of Assessment and Research in Counseling and Psychology*, 1(2), 1-18.

Mahmoodi, H., & Karbalaee Bagheri, Z. (2020). Effectiveness of Acceptance and Commitment Therapy on a Sense of Hope and Belief to the Just World in Patients with Breast Cancer. Quarterly

Journal of Health Psychology, 9(34), 155-170.

Park, C. L., Edmondson, D., Fenster, J. R., & Blank, T. O. (2008). Meaning-making and psychological adjustment following cancer: the mediating roles of growth, life meaning, and restored just-world beliefs. *Journal of consulting and clinical psychology*, 76(5), 863.

Saffarinia, M., & Dortaj, A. (2018). Effect of group logotherapy on life expectancy and mental and social wellbeing of the female elderly residents of nursing homes in Dubai. *Iranian Journal of Ageing*, 12(4), 482-493.

Simpson Jr, S., Taylor, K. L., Jelinek, G. A., De Livera, A. M., Brown, C. R., O'Kearney, E., ... & Weiland, T. J. (2019). Associations of demographic and clinical factors with depression over 2.5-years in an international prospective cohort of people living with MS. *Multiple sclerosis and related disorders*, 30, 165-175.

Sun, F. K., Hung, C. M., Yao, Y., Fu, C. F., Tsai, P. J., & Chiang, C. Y. (2021). The effects of logotherapy on distress, depression, and demoralization in breast cancer and gynecological cancer patients: a preliminary study. Cancer Nursing, 44(1), 53-61.

Tajik Esmaeili, S. (2021). Predicting Students' Religiosity Based On Their Dependence on the Internet and Belief in a Just World. *Religion & Communication*, *27*(58), 29-79.

Yaghubi, H. (2016). Psychometric properties of the 10 questions Version of the Kessler Psychological Distress Scale (K-10). Applied *Psychological Research Quarterly,* 6(4), 45-57.

World Health Organization Disability Assessment Schedule II (WHODAS-II) in patients with multiple sclerosis.(2020). *Multiple Sclerosis Journal 21*(4), 448-456.