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The effectiveness of Meaning-Centered Group Psychotherapy on improving spiritual well-being and reducing anxiety in Iranian male cardiovascular patients

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Abstract:

BACKGROUND AND PURPOSE: Cardiovascular diseases (CVDs) are the most important cause of death in Iran and the Kermanshah province. One of the most important problems that cardiovascular patients are dealing with is the psychological consequences of their illness. This study aimed at investigating the effectiveness of Meaning-Centered Group Psychotherapy (MCGP) intervention in improving spiritual well-being and reducing anxiety in cardiovascular patients.

MATERIALS AND METHODS: The study population included all patients referred to specialized cardiovascular centers in Kermanshah province in 2019. The participants consisted of 30 patients who were randomly assigned into experimental and control groups after the primary and secondary screening. The experimental group received routine treatment + MCGP (8 weeks and 90–120 min per session) and the control group only received routine treatment. The dependent variables were assessed by Spiritual Well-Being Scale and Beck Anxiety Inventory before and after receiving the treatment and 2 months after the treatment. ANCOVA and multivariate analysis of covariance were applied to the data through SPSS-22. IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.

RESULTS: The results of covariance analysis showed that MCGP increased spiritual/existential well-being and decreased anxiety in the experimental group ($P < 0.001$), while no significant difference was traced in the control group.

CONCLUSION: The findings of this randomized controlled trial provide good evidence for the effectiveness of MCGP as a treatment to improve the psychological and spiritual/existential distress in patients with CVDs.

Keywords:

Anxiety therapy, cardiac rehabilitation, cardiovascular diseases, logotherapy, spiritual well-being

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Introduction

Despite the prevalence of COVID-19 mortality, globally, cardiovascular diseases (CVDs) were responsible for 17.9 million deaths in 2017, accounting for 31.8% of all of the deaths.^[1] Among

East Asian countries, Iran probably has the highest rate of such diseases.^[2] The Kermanshah province has the highest rate of CVD among its provinces, according to statistic.^[3,4] Despite advanced developments in diagnosis and treatment, one-third of patients having a heart attack will die. The

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rest will neither fully recover nor return to their normal lives.^[5] The studies indicated that reducing risk factors such as nutritional knowledge, illness perceptions, and adherence to diet would reduce the probability of coronary diseases.^[6] Due to the impact of heart disease on a person's life, patients with heart disease are an object of interest in the field of mental health; thus, the mind and the heart are inextricably linked.^[7] Research indicates that mental-social factors including depression, anxiety, social isolation, and chronic stress can significantly cause and extend coronary problems.^[8] Research also asserts that anxiety plays a role in causing, extending,^[9,10] and recurrence of symptoms of CDV.^[11] In spite of the fact that mental health care is critical for CVD, it is difficult to generalize the results of studies due to the large statistical heterogeneity.^[12,13] The most common interventions for CV patients include: exercise rehabilitation,^[14] short-term therapy based on psychoanalysis,^[15] life style promotion and structured lifestyle counseling,^[16,17] and anger management group therapy.^[18] Overall, still, some patients no longer show motivation to return to normal life and rehabilitation. Mental trauma is less likely to occur to those who maintain a high level of spiritual well-being.^[19]

Meaning in life and spiritual well-being are two components that can protect factors against psychological distress in end-stage patients.^[20] Accordingly, meaning-oriented interventions help people reduce the pain caused by helplessness, anxiety, and psychological distress. It assists them in finding the meaning of their lives through unifying life.^[21] Raising awareness, confronting one with the consequences of their choices, and elevating responsibility regarding those choices are among the effective factors of existential therapies. In a meta-analysis, it was demonstrated that the sense of meaning in life correlates with a reduction of CVD risk factors.^[22]

Meaning-Centered Group Psychotherapy (MCGP) is one of the existential treatments to help clients find their lives' meaning.^[23] Breitbart *et al.*^[24] have introduced MCGP as an effective treatment to alleviate psychological distress and to improve the quality of life in patients with chronic physical problems. Cardiovascular patients face life-threatening diseases which causes are not obvious to them. They mostly lose the adequate power to confront the consequences of the disease. MCGP could benefit those who are not necessarily experiencing the end stages of the disease by improving their meaning in life and well-being.^[21] This research thrives on investigating the effectiveness of MCGP Intervention in improving spiritual well-being and reducing anxiety in cardiovascular patients.

There are different approaches to existential therapies. Two of these are the meaning-oriented therapy of Briertbart

et al.^[25] and the meaning-oriented therapy of Dezelic and Ghanoum.^[26] Although Breitbart's approach is designed for people with physical illnesses (such as cancer), we thought that Dezelic and Ghanoum's approaches were more appropriate to the cultural-spiritual context of Iranian society. For instance, Human being is considered as a triad of body-mind-spirit and the defiant power of the human spirit. Moreover, compared to existential aspects of Bart *et al.*'s protocol, instruction of stress reduction techniques along with behavioral activation found in Dezelic and Ghanoum's protocol can be more beneficial to cardiovascular patients. In the current study, Iranian male cardiovascular patients were evaluated for their spiritual well-being and anxiety symptoms with MCGP.

Materials and Methods

Study design and setting

The present research was a randomized clinical trial performed with a control group in the design of pretest, posttest, and 2-month follow-up assessment. Participants of both groups received the usual treatment (heart function training and Mantra). Mantra is one of the mindfulness methods that can be a statement or a phrase and helps one calm their body and mind. In MCGP, one can benefit from group Mantra such as appealing or individual Mantra like gratitude booklet as a rich source of the meaning of the moment. In addition to the usual treatment, the experimental group received eight sessions of MCGP in a single 15-person group. Each session was between 90 and 120 min and exclusively based on Dezelic and Ghanoum's MCGP Manual.^[26]

Study participation and sampling

First, 219 medical documents of CV patients were referred to Helpdesk by the admission system of hospitals and clinics in Kermanshah city. Second, according to the inclusion and exclusion criteria, 173 cases were excluded for different reasons [Figure 1]. Then, 64 patients, selecting by purposive sampling, were evaluated through the Structured Clinical Interview (SCID-IV), where two patients with treatment-resistant depression (history of pharmacotherapy and ECT), two patients with obsessive-compulsive personality disorder, a patient with borderline personality disorder, and a patient with a history of suicide attempt were excluded. Finally, considering the compensation for sample size dropouts, 30 male cardiovascular patients, who went to Imam Ali Specialist Cardiology and Heart Hospital, Imam Reza Hospital, and ShahidFatahi Subspecialty Clinic in Kermanshah city during the spring of 2019, were randomly assigned into two groups after filling out consent form. A single experimental group ($N = 15$) and a control group ($N = 15$). The sample size in each group was calculated by using the formula for comparing means

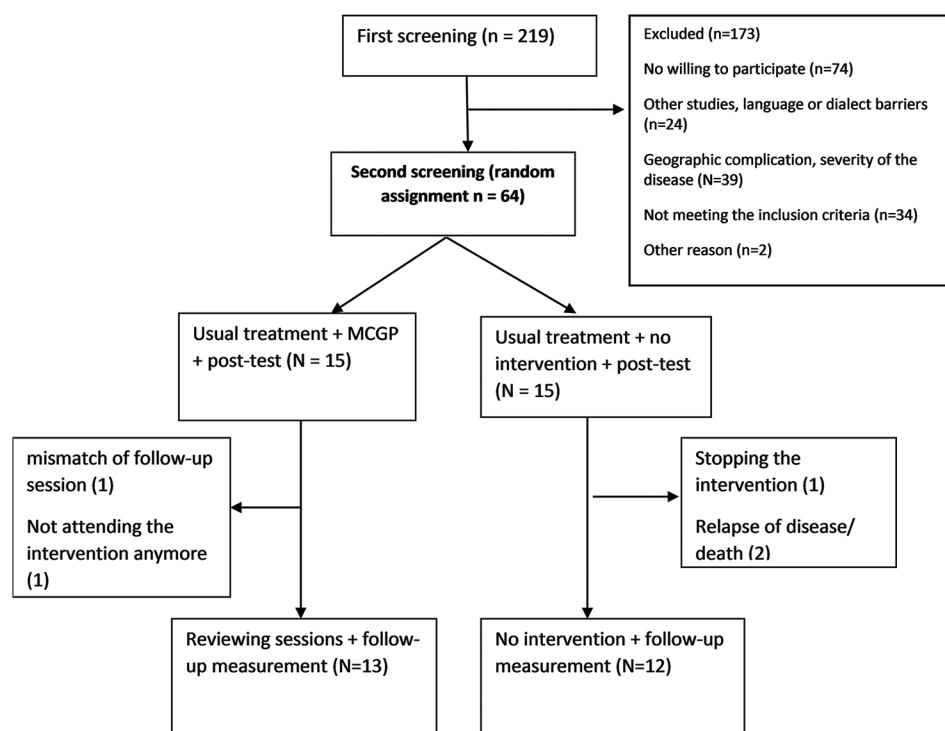


Figure 1: The procedure of screening and sampling up to the end of the study

between two groups.^[27] In this formula, the confidence level, power, and the smallest recognizable difference were considered 0.95 and 0.80, respectively. The standard deviation of the Meaning in Life Questionnaire in control and experimental groups were obtained 0.674 and the previous studies was considered 0.55. Participants were divided by the randomization into two groups to minimize the impact of confounding variables. The therapist holds their master's degree in clinical psychology and has been trained by a member of Frankl Centre of MCGP.^[28] Eight weekly group sessions were held by a specialist trained in a meaning-oriented approach. Treatment adherence was supervised by the thesis supervisor and reader. Inclusion criteria: having a CVD diagnosis, having a minimum literacy level, not having psychotic disorders or substance abuse disorders (based on SCID-II and SCID-I), not having Cluster II personality disorder, and willingness to sign an informed consent. The exclusion criteria were as follows: recurrence or exacerbation of the disease, hospitalization, missing more than two sessions of therapy, and the lack of willingness to continue the therapy sessions. To analyze the data, one-way analysis of variance and multivariate analysis of covariance (MANCOVA) were implemented.

Data collection tool and technique

To collect data, dependent variables (before starting treatment, the demographic questionnaire was completed) were measured before and after the

intervention and 2-month follow-up. Each of the participants did not know which group will be assigned them. Afterward, necessary coordination was done with the experimental group. Before each session, participants were reminded of the time and day of the sessions by telephone and text message. The present study was approved by Kermanshah University of Medical Sciences, and the hospitals in which the sampling was performed were affiliated with this university. Hence, the necessary correspondence was done with the hospitals to cooperate with the researcher.

Spiritual Well-Being Questionnaire (Spiritual Well-Being Scale)

The instrument is a 20-item questionnaire that was devised by Paloutzian *et al.* (1991). The questionnaire is composed of two subscales of religious well-being (RWB) and existential well-being (EWB). The scores would range from 20 to 120, where the higher scores would indicate higher levels of well-being. The RWB subscale is a self-evaluation of the relation with God. In contrast, the subscale of EWB is a self-evaluation based on sensing the goal of life and life satisfaction. In Iran, Cronbach's alpha was used to calculate the test reliability, which was reported to be 84% for EWB, 81% for RWB, and 89% for spiritual well-being.^[29]

Beck Anxiety Inventory

BDI was devised by Beck *et al.*^[30] to estimate the rate of anxiety and includes 21 items. Each item reflects one

anxiety symptom. The intensity of each symptom during the past week was graded and recorded on a four-point Likert scale, from 0 to 3. Through the calculation of Cronbach’s alpha, the reliability of the questionnaire has been reported to be 92% in Iran. In addition to psychological variables, three more variables of the number of times being rehospitalized, times referring to a physician, and the amount of drug use were investigated via self-report questionnaires and evaluated in pretest and follow-up.

Ethical consideration

The research was approved by the Ethics Committee of Kermanshah University of Medical Sciences (IR.KUMS.REC.1398.047). In this trial, the Iranian Registration of Clinical Trials code of conduct is used (IRCT20190422043347N1). Informed consent was obtained before the interview from the participants. Confidentiality of the participants’ identity and the response was ensured.

Structure of Meaning-Centered Group Psychotherapy

Sessions are briefly explained as follows: Sessions one and two: expression of fundamental concepts of MCGP; distributing handouts and discussions over meaning-centered therapy assumptions; exploring the concept of meaning in life, meaning triangle (creativity, experiences, and attitude); and opportunities in life to discover meaning. Sessions three and four: reviewing the previous session; cardiovascular psycho-education and mantra practice; human ontological concepts; awareness and acceptance toward probable limitations; awareness and ability to activate meaning triangle in noetic dimension; moving toward reaching unique internal capacities of each person; a booklet of gratitude; and reconstruction of the story of life in a meaningful way. Sessions five and six: reviewing

the previous session; Mind-Body-Spirit Rejuvenation Method; considering triad of Pain-Death-Guilt; triad of Depression-Aggression-Addiction; discussing tragic triangle and neurotic triangle; defining homo patient; modification of attitudes; paradoxical intension; and de-reflection. Sessions seven and eight: reviewing the previous session; defining homo patient versus homo faber; activation and entering meaning triangle creativity-experiences-attitudes; activation of the ultimate meaning and meaning in the moment; 7-step neogenic dimension; create a collage; facilitating meaning learning; using the cycle of Connect-Convey-Create; reflecting one’s feedbacks and emotions during the journey of clients; and concluding and finalizing the therapy.

Results

Before performing any statistical procedure, the normal distribution of the data was investigated by the Shapiro test. Levene’s test was used to check for the homogeneity of variances. The results proved that the two groups enjoyed homogeneity of variances ($P < 0.001$). The descriptive indices of demographic variables, including marital status, educational background, age, illness history, and the history of drug addiction, were calculated and latter compared through *t*-tests and Chi-square [Table 1].

The majority of participants were suffering from abnormal heart rhythms, coronary heart disease, heart attack, and heart failure. Furthermore, 73% had an acute prognosis, and 27% had a chronic prognosis. All patients resided in Kermanshah province and were Muslim Kurds. The results indicated no significant difference between the groups among the indices ($P > 0.001$).

The results of covariance analysis indicated that compared to the control group, the average score of

Table 1: Mean and standard deviation of demographic variables in experimental and control groups

Variables	Experimental group, n (%)	Control group, n (%)	Total, n (%)	Significance level
Marital status				
Married	13 (86.7)	12 (80)	25 (83.3)	0.001
Single	2 (13.3)	3 (20)	5 (16.7)	
Other diseases				
Positive	9 (60)	9 (60)	18 (60)	0.001
Negative	6 (40)	6 (40)	12 (40)	
Tobacco and addiction to opium				
Positive	10 (66.7)	10 (66.7)	20 (66.7)	0.001
Negative	5 (33.3)	5 (33.3)	10 (33.3)	
Educational background				
High school diploma	8 (53.3)	7 (46.7)	15 (60)	0.848
Bachelor’s degree	6 (40)	7 (46.7)	13 (43.3)	
Master’s degree	1 (6.7)	1 (6.7)	2 (6.7)	
Age (years), mean (SD)	42.93 (8.17)	46.6 (10.92)	44.7 (9.6)	0.307

Mean and SD of age in experimental and control groups are 42.93 (8.17) and 46.60 (10.62), respectively. SD=Standard deviation

spiritual well-being showed a significant increase in the experimental group. On the other hand, the average score of participants in the experimental group regarding the anxiety variable significantly reduced posttest and follow-up [Table 2]. Using MANCOVA, changes in religious, existential, and spiritual well-being, as well as anxiety, were subject to evaluation in posttest and follow-up of both experimental and control groups [Table 3].

Posttest values of F for RWB ($P = 0.001$, $F_{17,67}$), EWB ($P = 0.001$, $F_{28,53}$), and the total score of spiritual well-being ($P = 0.001$, $F_{23,38}$) are significant. Furthermore, follow-up values of F for the subscales of RWB ($P = 0.002$, $F_{12,89}$), EWB ($P = 0.001$, $F_{23,53}$), and the total score of spiritual well-being ($P = 0.001$, $F_{18,46}$) were significant. That is to say, the aforementioned variables in both experimental and control groups were significantly different in posttest as well as follow-up.

Discussion

In this study, MCGP significantly reduced anxiety and increased spiritual well-being scores in the experimental group compared to the control group. The results confirm other findings in this field. According to Zheng *et al.*, for example, a meta-analysis has shown that meaning-integrated interventions can lead to improved spiritual well-being and positive outcomes for people with chronic illnesses such as CVD and their caregivers.^[31] On the other hand, studies show that meaningful life experience provides the potential beneficial mechanism to modulate ANS, hormonal, immune, and neurological pathways.^[32] Based on the present research, the scores of the Spiritual Well-Being Subscale experienced a higher increase compared to the scores of the RWB subscale. A possible explanation could be linked to the structure and the focal point in different existential treatments. First, Dezelic and Ghanoum's protocol implemented in this study focuses more on the triad of seeking meaning, accountability, and spirituality.^[26] Secondly, less religious terms are used here and there is a shift toward spiritual terms. This structure tries to avoid orientating toward or implementing those words that have a religious tone or impose certain customs or specific religious rituals. Thirdly, sociocultural context can influence a patient's

orientation toward religious (spiritual) beliefs, in Iran, which is a country with a variety of religious and linguistic contexts. Mantra techniques, sharing spiritual experiences, and other factors of MCGP, like appealing, could probably improve spiritual well-being.

The results imply that MCGP reduces anxiety in cardiovascular patients in the experimental group compared to the control group. Some of the probable reasons could be fear of an uncertain future, progress of the disease, or the limitations one would face after the course of the disease, which would reappear at an existential level in the form of fear of death. It seems reasonable to consider the meaning triad and de-reflection techniques to be effective in reducing anxiety in cardiovascular patients; another possible mechanism is de-reflection where one would learn to let go of hyper-reflection rather than insisting on self-observation. Frankl believed that we discover the meaning in life through self-transcendence.

In addition to the above results, three more self-rated health variables, the number of rehospitalizations, referring to the physician, and medications, were evaluated 2 months before the therapy and in follow-up. The experimental group reported fewer visits to the physician as compared to the control group, though there were no significant differences between the groups in taking medication. Based on Zhang *et al.*'s findings) 2017(, meaning in life probably accompanies improvement of general health and reduction of health-care admission. The results of Baczwaski's study indicated that the presence of meaning in life correlates with self-efficacy and reduces anxiety and stress.^[33] The findings of other studies^[34-36] also imply the effectiveness of MCGP on reducing anxiety.

Limitation and recommendation

Results may have been affected by the following limitations: using self-report instruments, especially considering the age range and physical condition of the patients, experimenting with two free consultation coupons to consult a cardiovascular specialist, thereby encourages patients to hyper-check more symptoms; the sample is being of one gender only. By eliminating the previously mentioned limitations, this study could be further improved.

Table 2: Mean and standard deviation of spiritual, religious, and existential well-being as well as anxiety in experimental and control groups

Level	Group					
	Experimental group			Control group		
	Pretest, <i>n</i> (%)	Posttest, <i>n</i> (%)	Follow-up, <i>n</i> (%)	Pretest, <i>n</i> (%)	Posttest, <i>n</i> (%)	Follow-up, <i>n</i> (%)
Religious well-being	23.5 (5.85)	27.9 (6.14)	28.8 (5.12)	21.3 (5.93)	22 (5.11)	23.4 (5.7)
Existential well-being	22.5 (8.18)	26.1 (6.79)	29.5 (5.96)	21.2 (7.28)	19.4 (4.29)	22.6 (4.64)
Spiritual well-being	44 (10.8)	48.2 (12.14)	50.1 (18.79)	43.1 (11.54)	40 (10.28)	43 (10.17)
Anxiety	17.92 (7.08)	14.1 (4.27)	13.6 (3.3)	18.6 (6.54)	18.8 (4.48)	17.7 (4)

Table 3: The results of ANCOVA on well-being and anxiety variables in cardiovascular disease patients

Variable	DF	Significance level (P)	Eta squared
Posttest			
Religious well-being	17.67	0.001	0.435
Existential well-being	28.53	0.001	0.544
Spiritual well-being	23.38	0.001	0.493
Anxiety	43.65	0.001	0.465
Follow-up			
Religious well-being	12.89	0.002	0.380
Existential well-being	23.53	0.001	0.529
Spiritual well-being	18.46	0.001	0.465
Anxiety	36.67	0.001	0.526

Conclusion

Psychotherapy is considered an important element in enhancing the health of patients. This study emphasized the importance of meaning-centered interventions and the presence of meaning in patients' lives. Patients with CVD seem to be less motivated to adopt a healthy lifestyle because of their concerns, which leads to more psychological stress, and increases the risk of CVD. According to this research, meaningful life can contribute significantly to the recovery of CVD patients and MCGP appears to be a way to help them do that.^[37,38] In nutshell, MCGP helps cardiovascular patients find meaning in their lives, return to normal life, and lead to an upgrade of quality of life. In therapeutic settings, patients can also higher benefit from MCGP as a supportive therapy.

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Conflicts of interest

The authors have no conflict of interest.

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