

The Effectiveness of Mindfulness-Based Cognitive Group Therapy on the Quality Of Life and Hope in the Patients with Coronary Heart Disease

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ABSTRACT

Background and objectives: The aim of this study was examining the effectiveness of mindfulness-based cognitive group therapy on the quality of life and hope in the patients with coronary heart disease. **Methods:** The present study was quasi-experimental with pre-test, post-test and follow-up with control group. To fulfill the study, 30 patients were selected randomly and were assigned into experimental (n = 15) and control groups (n = 15). To collect the data, participants of both groups completed demographic information sheet, MacNew Heart Disease Health-Related Quality of Life Questionnaire and Miller Hope Scale, respectively of coronary heart disease questionnaire at pre-test, post-test and follow-up (2 months after the intervention). Participants of experimental group received eight 90-minute intervention sessions. **Results:** The results of the multivariate covariance analysis with repeated measures showed that mean score quality of life (P<0.05), hope (P<0.001) in participants of the experimental group had a significant difference compared to the participants of the control group at post-test and follow-up. **Conclusion:** results showed that mindfulness - based stress reduction treatment can be effective in improving life quality and hope in coronary heart disease. Implication for further research and possible clinical applications are discussed.

Keywords: *Mindfulness, Quality Of Life, Hope, Coronary Heart Disease.*

Coronary heart disease (CHD) is a leading cause of death, a case of every five deaths can be attributed to this disease [1]. Disability and reduced functionality are leading with the high

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prevalence of disease, [2]. In addition, it is the major cause of health costs consumption in the society [3]. The studies have identified several factors that play a role in the increased risk of coronary heart disease including behavioral factors (for example, the pattern A behaviors and smoking) and psychological factors (e.g., stress, anger and hostility) [4]. Psychological symptoms after cardiac events are commonly experienced among heart disease patients [5]. The results have shown that depression and despair is very common in patients with coronary heart disease [6]. The patients who have pessimistic understandings of life are at risk of health hazards because their immune system does not have favorable performance [7]. Also, many patients with CHD, particularly those with lower and minimal quality of life are exposed to the serious warning and are considered expensive treatment of health psychology [8].

World Health Organization defined the quality of life as the perceptions of an individual about their position in life in terms of culture and value systems in which one lives and in relation to the goals, expectations, standards and priorities. Thus, it is quite individual and cannot be viewed by others and is based on individuals' perceptions of various aspects of their lives [9]. Quality of life has been known and used as an indicator to measure the health status in the studies [10].

Examining the quality of life in the health studies on the patients with heart disease help the experts in determining the living conditions and the risks of disease on quality of life and can clarify many unclear points, including undesirable effects of heart disease on the physical, psychological, social performance and in general the quality of life in patients [11]. In recent decades, remarkable progresses have taken place in the development of psychosocial interventions for patients with chronic diseases [12]. Not only because they may increase the success of medical and clinical treatment but also because it can enhance the quality of life in the patients who suffer more than other organic patients [13]. Controlling and reducing the psychological symptoms following the physical ailments not only enhance the skills and raise the fighting spirit in these patients but also boost the immune system and thus reduce and improve the physical symptoms [14]. Teasdale, Segal, & Williams (1995) considered the skills called such as attention control from the mindfulness meditation and believed that they would help the individual to control their mental ruminations that causes restlessness and eventually leads to depression and anxiety [15]. The main learned skills can make the person to put aside the engaging in sustainable patterns of negative thinking. Mindfulness-based cognitive therapy by combining the mindfulness-based stress reduction program and cognitive skills and techniques provide the condition so that the person can see his negative thoughts without judgment [16].

In this treatment, the mindfulness skills to cope with depression and despair and growing awareness of the present moment are taught that include the meditation training, relaxation, yoga and Hatha [17, 18]. Mindfulness means paying attention to the present moment in a particular, objective and free from judgment manner [16]. One of the main objectives of the program is to promote health and reduce stress [18]. The meditation practices and mindfulness lead to enhance

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the ability of self-awareness and self-acceptance in patients [19]. Numerous studies have been done on the effectiveness of mindfulness-based therapies to improve the quality of life of patients with chronic diseases. Mindfulness-based treatment model has found some success in improving the quality of life of cancer patients [20]. The meta-analysis study by Bohlmeijer et al. showed that mindfulness-based therapy was an effective way to reduce stress and improve quality of life for patients with different diagnoses. The groups studied in this meta-analysis included the cancer patients with mental disorders and cardiovascular diseases such as hypertension and chronic pain [21].

The results of the study by Gloria et al. (2008) on the effectiveness of mindfulness-based cognitive therapy in patients with high blood pressure have shown that it was an effective treatment of depression and anxiety in daily life and for reducing the symptoms of chronic illness such as high blood pressure [22]. The results of the study conducted by Parswaniet al. (2013) have shown that mindfulness-based stress intervention program led to the reduction in symptoms of depression and anxiety, blood pressure (BP) and fat mass (BMI) in coronary heart patients and after 3 months follow-up the effects of the treatment remained [23].

RESEARCH METHOD

The present study is a quasi-experimental research with pretest and post-test and follow-up design. The research population included all the patients with coronary heart disease referring to the Cardiology Hospital of Tehran province, Iran (of Imam Hossein hospital) from August to October 2015. To calculate the sample size given that the appropriate sample size for each group is 15 people in research experiments, a sample size of 15 participants ($n = 15$) was selected for each group.

Inclusion criteria included diagnosis of coronary heart disease based on the detection of cardiologists, the consent and informant willingness to participate in research, the ability to participate in meetings and collaborate on assignments, to work in completing the instruments, the physical and psychological stability (lack of intervening physical or psychological symptoms during sessions the treatment including fatigue, muscle aches, etc.)

Minimum education was the pre-high school degree and the age range of the participants was 20 to 45 years. Also, the patient was excluded if she or he was treated because of a physical or psychological illness or in the presence of cognitive impairment or impaired cognitive function, acute and severe symptoms so that the patients' participation in the present was difficult or almost impossible. Accordingly, a number of patients were selected from among the patients with coronary heart disease referring to the Cardiology Hospital of Tehran province, Iran (Imam Hossein hospital) from August to October 2015 and in case of having consent and inclusion criteria were randomly selected and divided into two groups of mindfulness-based cognitive therapy (experiment) and control group.

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Research Instruments

The instruments used in this study included the demographic information sheet, MacNew Heart Disease Health-Related Quality of Life Questionnaire and Miller Hope Scale, respectively.

- **The sheet of the demographic information**

This sheet included the information on age, education level and marital status which was developed and evaluated by the researcher of the present study.

- **MacNew Heart Disease Health-Related Quality of Life Questionnaire:**

This is a self-report questionnaire developed in English by Neil Aldrich and Lynette Lim (1994) in America and was revised by Valenti (1996); it contains 27 questions and measures the quality of life in 3 emotional, physical and social domains. Any questions is rated based on the 7-point Likert scale (from always to never) and average response time was 10 minutes. The way of dividing the questions in the scale is in such a way that any questions can be set in one, two or three areas [24].

This instrument has the reliability, validity and responsive to clinical changes. As such, in the study of AsadiLary, Javadi, Malawi and Aldrich (2003), the Cronbach's alpha reliability of the MacNew questionnaire in Iran's population was as the following: the emotional dimension 0.92 ,physical dimension 0.92, the social dimension 0.95 and total score of 0.95, respectively. The correlation coefficient of it included: the emotional dimension 0.42, physical dimension 0.38,the social dimension, 031 and total score of 0.50, respectively.

Intergroup correlation on the emotional dimension was 0.92, physical dimension, 0.92, the social dimension 0.93 and total score of 0.95, respectively. The validity of the questionnaire through construct validity for the emotional, physical and social dimensions was in the whole range of 0.63 to 0.66.5.

- **The Miller Hope Scale**

The Miller Hope Scale (1988) is a diagnostic test that was first used to measure hope in heart disease patients in America. The questionnaire consisted of forty-eight aspect of the modes of the hope and desperation, the items of which are selected based on the covert and overt behavior of the individuals in hopeful and desperate people. Every aspect that represents a behavioral signs is rated based on the 5-point Likert scale ranging from strongly disagree (score 1) to strongly agree (score 5) and everyone should select the one option which is mostly true about him. The total score ranging from 48 (least hope) to 240 (most optimistic) will be acquired in this way. Finally, the total score obtained can indicate the hope and despair. 15 statements of the Miller scale are composed of a negative items and the scores are reversed including the statements of 11,13,16, 18, 25, 27, 28, 31, 33, 34, 38, 39,44,47 and 48 [25].

The reliability and validity of the questionnaire have been confirmed in several studies. Abdi and Assadi Larry (2011) in Iran have approved the validity and reliability of the questionnaire and stated that the Miller Hope Scale is the best test to predict hope in the patients with low self-esteem and damaged social support and academic support. In the study of Darvishi the reliability of the questionnaire was obtained (0.89) using Cronbach's alpha and (0.79) using split-half and

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its validity was evaluated as 0.79. In the present study reliability of this questionnaire was 0.929 using Cronbach's alpha.

Research Procedure

In order to conduct the study, first, 30 patients who have inclusion criteria were selected from among the patients referring to the specialized heart hospital in Tehran province (Imam Hossein hospital) which had records and referred for the regular visits to the heart specialist in certain dates. All the patients were randomly assigned to two groups of A and B and then they were randomly divided into the experimental group and the control group. Mindfulness-based cognitive therapy patients in heart clinic were trained for by two clinical therapists, who passed the course of treatment and had the necessary expertise and experience in this context, each week for 1 session of 2 and half hours. The protocol of the mindfulness-based cognitive therapy sessions for patients is presented in Table 1 [26].

Table 1. Summary of functional instruction sessions of mindfulness-based cognitive

Session	Topic
First session: Automatic Pilot	The introduction of automatic guidance system/ knowing how to use present moment awareness of bodily sensation, thoughts and emotions in reducing stress/practicing eating raisins ⁶ , giving feedback and discussion about the practice/three - minute breathing, giving assignment for next week and distributing leaflets of the first session and CDs of meditation
Second session: facing obstacles	Re-examining body workout/ giving feedback and discussion about examining body workout/ practicing breathing mindfulness meditation/ /distributing leaflets of the second session and CDs of meditation
Third session: Kindness with breathing, body and awareness about breathing and body movement	Having conscious sitting with awareness of breathing(the sitting meditation)/ practicing three -minute breathing /distributing leaflets of the third session and video tape of yoga practices
Fourth session: learning how to answer	Re-examining body workout / (in the hospital chapel)/5-minute practicing of “seeing or hearing”/ re-practicing conscious session with awareness of breathing and body/ distributing leaflets of fourth session and CDs of meditation
Fifth session: slowly cope with difficulty (attendance)	Practicing breathing /re-practicing conscious session(awareness of breathing ,body, sounds and thoughts)/explaining the stress and identifying participants’ reactions to stress/examining awareness of pleasant and unpleasant events on feeling ,thoughts and bodily sensations/ practicing 3-minute breathing /distributing leaflets
Sixth session: thoughts are not facts	practicing sitting meditation (mindfulness of sounds and thoughts)/distributing leaflets of the sixth session and number4 video tape to participants
Seventh session: self-care	Practicing mountain meditation/sleep hygiene/ repeating exercises of the previous session/making a list of enjoyable activities/distributing leaflets of the seventh session
Eighth session: going beyond fear	Examining body workout /overview of program/examining and discussing programs /practicing stone, beads and marbles meditation

⁶Object attention training

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RESULTS

The demographic characteristics of the sample in this study are presented in Table 2.

Table 2: Demographic characteristics of the participants

Index		Control(n=15)		Experimental(n=15)	
		Number	percentage	Number	percentage
Sex	Man	7	53.3	8	46.7
	Woman	8	46.7	7	53.3
Age	26 to 30	2	13.3	3	20
	31 to 35	3	20	2	13.3
	36 to 40	5	33.3	4	26.7
	41 to 45	5	33.3	6	40
	Mean and standard deviation	5.62±37.80		5.54±38.07	
Education	High school	5	33.3	3	20
	Associate Degree	3	20	5	33.3
	Bachelor	7	46.7	7	46.7
marital status	Single	2	13.3	1	6.7
	Married	13	86.7	14	93.3

In the following, the mean and standard deviation of the variable of the quality of life and hope in the pretest, posttest, and follow-up in terms of experimental and control groups is reported in Table 3.

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Table 3: Mean and standard deviation of hope the quality of life in patients with coronary heart disease over time (pre-test, post-test, follow-up)

Variables and Dimension			Experimenta l(n=12) Mean±sd			Control(n= 12) Mean±sd		
			Pre-test	Post-test	Follow-up	Pre-test	Post-test	Follow-up
Quality of Life	Emotion	37.27±2.93	48.73±4.86	45.33±4.03	38.33±2.02	39.20±2.30	37.01±2.61	
	Physical	26.47±1.99	34.93±2.52	31.33±3.41	26.67±2.09	23.33±1.71	26.20±1.37	
	Social	30.27±2.68	37.20±3.02	34.78±2.82	30.53±1.68	29.47±1.88	29.53±2.29	
	Total score of life quality	94.01±4.88	120.87±12.75	111.53±4.94	95.53±3.70	92.02±3.52	92.73±3.84	
hope		138.67±18.81	160.40±25.97	161.93±16.82	143.07±11.43	126.73±14.44	139.87±11.43	

As can be seen in Table 3, not only all aspects of quality of life scores in the experimental group (emotional, physical and social) has increased from pre-test to post-test. It is in the pursuit of relative stability and the largest increase in score reduction is observed in social and emotional dimension. Total score for the quality of life in patients with coronary heart disease also increased from pre-test to post-test which is the sign of improvement in quality of life. The mean and standard deviation of hope increased from pre-test to post-test and in follow up period had a relative stability.

In this study, the statistical analysis of quality of life and hope scores in both experimental and control groups was performed with multivariate analysis of covariance with repeated measures. In this analysis, the pre-test scores as a covariate and post-test and follow-up scores were considered as the dependent variable and time was considered as a moderating variable. Prior to the analysis, first the assumptions of the model were investigated.

The results of the Mauchly's Test showed that the assumption of the equal covariance matrix does not hold ($P = 0.026$ Mauchly's $W = 0.762$, $Df=2$). Thus, the Huynh-Feldt test was used because of the lack of equality of variance –covariance. The value of the test of the main effect of time was not significant within groups ($P > 0.05$, Partial Eta Squared = 0.102, $F = 3.197$).

However, the test of interaction between time and group was significant ($P < 0.001$, Partial Eta Squared = 0.287, $F = 11.288$). The results of multivariate tests showed that the effect of time (pre-test, posttest and follow-up) was significant for hope variable (Partial Eta Square = 0.284, $P < 0.011$, $F = 5.36$, Pillai's Trace = 0.284). In addition, the effect of (mutual) interaction between

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group \times time was significant (Partial Eta Square = 0.353, $P < 0.003$, $F = 7.375$, Pillai's Trace = 0.353).

Given that the difference between the experimental and control groups was significant and according to the results presented in Table 3, the mean score of post-test and follow-up in the experimental group was higher than the control group. It can be concluded that the independent variable (mindfulness-based cognitive therapy) has been effective on increased hope.

The results of the Mauchly's Test showed that the assumption of the equal covariance matrix does not hold ($P = 0.371$ Mauchly's $W = 0.929$, $Df = 2$). Thus, the Sphericity Assumed test was used because of the lack of equality of variance – covariance. The value of the test of the main effect of time was not significant within groups ($P < 0.001$, Partial Eta Squared = 0.676, $F = 58.330$). However, the test of interaction between time and group was significant ($P < 0.001$, Partial Eta Squared = 0.782, $F = 100/463$). The results of multivariate tests showed that the effect of time (pre-test, posttest and follow-up) was significant for hope variable ((Partial Eta Square = 0.784, $P < 0.001$, $F = 49.067$, Pillai's Trace = 0.784). In addition, the effect of (mutual) interaction between group \times time was significant (Partial Eta Square = 0.865, $P < 0.001$, $F = 86.209$ Pillai's Trace = 0.865). Given that the difference between the experimental and control groups was significant and according to the results presented in Table 3, the mean score of post-test and follow-up in the experimental group was higher than the control group. It can be concluded that the independent variable (mindfulness-based cognitive therapy) has been effective on increased hope.

The results of the Mauchly's Test showed that the assumption of the equal covariance matrix does not hold ($P = 0/672$ Mauchly's $W = 0/971$, $DF = 2$). Thus, the Sphericity Assumed test was used because of the lack of equality of variance – covariance. The value of the test of the main effect of time was not significant within groups ($P < 0.001$, Partial Eta Squared = 0.726, $F = 74/182$). However, the test of interaction between time and group was significant ($P < 0.001$, Partial Eta Squared = 0/701, $F = 65/542$). The results of multivariate tests showed that the effect of time (pre-test, posttest and follow-up) was significant for hope variable ((Partial Eta Square = 0/784, $P < 0.001$, $F = 75/152$, Pillai's Trace = 0.848). In addition, the effect of (mutual) interaction between group \times time was significant (Partial Eta Square = 0.845, $P < 0.001$, $F = 73/442$, Pillai's Trace = 0.845). Given that the difference between the experimental and control groups was significant and according to the results presented in Table 3, the mean score of post-test and follow-up in the experimental group was higher than the control group. It can be concluded that the independent variable (mindfulness-based cognitive therapy) has been effective on increased emotional aspect of the patients.

The results of the Mauchly's Test showed that the assumption of the equal covariance matrix does not hold ($P = 0.759$ Mauchly's $W = 0/682$, $DF = 2$). Thus, the Sphericity Assumed test was

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used because of the lack of equality of variance –covariance. The value of the test of the main effect of time was not significant within groups ($P < 0.001$, Partial Eta Squared = 0/384, $F = 17.472$). However, the test of interaction between time and group was significant ($P < 0.001$, Partial Eta Squared = 0.739, $F = 79/148$). The results of multivariate tests showed that the effect of time (pre-test, posttest and follow-up) was significant for hope variable ((Partial Eta Square = 0/784, $P < 0.001$, $F = 75/152$, Pillai's Trace = 0.848). In addition, the effect of (mutual) interaction between group \times time was significant (Partial Eta Square = 0.789, $P < 0.001$, $F = 50/363$, Pillai's Trace = 0.789). Given that the difference between the experimental and control groups was significant and according to the results presented in Table 3, the mean score of post-test and follow-up in the experimental group was higher than the control group. It can be concluded that the independent variable (mindfulness-based cognitive therapy) has been effective on increased physical aspect of the patients.

The results of the Mauchly's Test showed that the assumption of the equal covariance matrix does not hold ($P = 0.195$ Mauchly's $W = 0.886$, $DF = 2$). Thus, the Sphericity Assumed test was used because of the lack of equality of variance –covariance. The value of the test of the main effect of time was not significant within groups ($P < 0.001$, Partial Eta Squared = 0.282, $F = 10.98$). However, the test of interaction between time and group was significant ($P < 0.001$, Partial Eta Squared = 0.430, $F = 21.156$). The results of multivariate tests showed that the effect of time (pre-test, posttest and follow-up) was significant for hope variable (Partial Eta Square = 0/448, $P < 0.001$, $F = 10/958$, Pillai's Trace = 0.448). In addition, the effect of (mutual) interaction between group \times time was significant (Partial Eta Square = 0/626, $P < 0.001$, $F = 22/580$, Pillai's Trace = 0.626). Given that the difference between the experimental and control groups was significant and according to the results presented in Table 3, the mean score of post-test and follow-up in the experimental group was higher than the control group. It can be concluded that the independent variable (mindfulness-based cognitive therapy) has been effective on increased physical aspect of the patients.

DISCUSSION

According to the statistical findings, it can be concluded that mindfulness-based cognitive group therapy (control group) compared to the control group in both post-test and follow up had a significant impact on the improvement of quality of life and hope for patients with coronary heart disease. The results of the present study showed that healthy lifestyle behaviors through Mindfulness-based training has led to enhance the quality of life of patients and this change was statistically significant (Table 3).

This study has shown that mindfulness-based cognitive therapy training lifestyle reduces psychological symptoms of frustration and depression, thus leading to improved quality of life for patients. In the present study, we can conclude explain behavior training related to healthy lifestyle factors such as: stress management, interpersonal support, nutrition, exercise and so on

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MBCT group therapy techniques such as focus techniques, the emotion regulation, breathe and eat consciously and practice yoga to reduce psychological symptoms (depression, anxiety, etc.) and thus to improve the quality of life in patients with coronary heart.

It can be said that on the one hand, judgments and prejudices have caused despair and depression in many patients with chronic conditions, and it would increase the use of cognitive errors. This vicious cycle can lead to the increase in the diseases and disorders. In order to reduce the use of these errors is necessary that the patients should avoid any kind of judgment (emotions and events) and accept them as they are [27].

On the other hand, this understanding without the judgment and practicing the mindfulness techniques (meditation, yoga, body scan, stress management, etc.), increase the ability of clients to tolerate negative emotional states and makes them ready to deal effectively, will be followed enabling reduced use of maladaptive coping strategies [28].

Using the techniques of mindfulness (auto practice, focus) and relaxation training (body checking, relaxation, Hatha, Yoga, etc.) largely as a stress management skills must be used regularly and patient (22) and studies have shown that mindfulness on improving the mental and physical well-being and reduce physical symptoms is effective (16). This finding can be said to justify because mindfulness is the feelings without judgment and balance of consciousness that helps clearly seeing and accepting emotions and physical phenomena, (20).

Therefore, teaching it to patients with coronary heart disease who suffer from the physical and psychological problems encourages them to accept their physical feelings and symptoms and accepting the feelings reduces the excessive attention and sensitivity to the problems. In this regard, the studies suggest that the emotional inhibition as a negative emotion regulation strategies lead to cardiovascular disease and blood pressure and emotional and cognitive appraisal as a positive strategy is followed by the emotion regulation and reducing blood pressure [29].

In explaining the other results, it can be said that depression, anxiety and stress are among the important contributing factor on the decline in the quality of life (8, 10). In order to justify the finding, it can be said that the techniques stress reduction program of mindfulness-based and conscious yoga, on the one hand, increase the attention and awareness of thoughts, emotions and practical desires and lead to the individual and social improvement and so the psychological factors such as depression are thus reduced [30].

Furthermore, it leads to reducing the physical stress and epinephrine and norepinephrine hormones and in parallel reducing the stress and anxiety and thus improving the quality of life in patients. According to Benson, the relaxation exercises (relaxation, body

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scanning, meditation and yoga) lead to the physiological changes and these changes are coordinated by reducing sympathetic nervous system activity and thus lead to a decrease in blood pressure [31]. The effects of the treatment group therapy is to increase coping ability to adapt, create a sense of hope, more responsive to treatment and therefore fall under the influence therapeutic outcomes [32]. But it should be noted that the persistence of this effect requires continuous training and extends throughout life is mindfulness techniques so that this method will become a way of life. . Lack of follow up longer than three months and the lack of comprehensive sampling of all urban areas and limiting it to just one hospital were among the limitation of this study. It is recommended that this type of treatment to be used as a way of psychotherapy and complementary medical therapies to reduce blood pressure in patients with hypertension. It is finally included that mindfulness-based cognitive group therapy has the potential to improve the quality of life and in increasing the hope in patients with coronary heart disease.

REFERENCES

1. Nichols M, Townsend N, Scarborough P, Rayner M. Cardiovascular disease in Europe – epidemiological update. *European Heart Journal* 2013;34:3028 –3034.
2. Tarride JE, Lim M, DesMeules M, Luo W, Burke N, O'Reilly D, et al. A review of the cost of cardiovascular disease. *Can J Cardiol* [Internet]. 2009 Jun [cited 2016 Jan 21];25(6):e195-e202. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2722492>
3. Kotb A, Hsieh S, Wells GA. The effect of telephone support interventions on coronary artery disease (CAD) patient outcomes during cardiac rehabilitation: a systematic review and meta-analysis. *PLoS ONE* [Internet]. 2014 May 5 [cited 2015 Nov 25];9(5):e96581. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4010507>
4. Huang K, Liu W, He D, Huang B, Xiao D, Peng Y, et al. Telehealth interventions versus center-based cardiac rehabilitation of coronary artery disease: A systematic review and meta-analysis. *Eur J Prev Cardiol*. 2015 Aug;22(8):959-71Costa PD
5. Reis AH, Rodrigues PP. Clinical and economic impact of remote monitoring on the follow-up of patients with implantable electronic cardiovascular devices: an observational study. *Telemed J E Health*. 2013 Feb;19(2):71-80.
6. Burri H, Sticherling C, Wright D, Makino K, Smala A, Tilden D. Cost-consequence analysis of daily continuous remote monitoring of implantable cardiac defibrillator and resynchronization devices in the UK. *Europace* [Internet]. 2013 Nov [cited 2015 Nov 25];15(11):1601-8. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3810620>
7. Smith SC, Collins A, Ferrari R, Holmes DR, Logstrup S, McGhie DV, Ralston J, Sacco RL, Stam H, Taubert K, Wood DA, Zoghbi WA. Our time: a call to save preventable death from cardiovascular disease (heart disease and stroke). *J Am Coll Cardiol* 2012;60:2343 – 2348.
8. Calò L, Gargaro A, De Ruvo E, Palozzi G, Sciarra L, Rebecchi M, et al. Economic impact of remote monitoring on ordinary follow-up of implantable cardioverter defibrillators as compared with conventional in-hospital visits. A single-center prospective and randomized study. *J Interv Card Electrophysiol*. 2013 Jun;37(1):69-78.

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9. Vujcic IS, Sipetic SB, Dubljanin ES, Vlajinac HD. Trends in mortality rates from coronary heart disease in Belgrade (Serbia) during the period 1990– 2010: a joinpoint regression analysis. *BMC CardiovascDisord*2013;13:112
10. Organisation for Economic Co-operation and Development (OECD). OECD.-stateextracts. Health care quality indicators: acute care. http://stats.oecd.org/index.aspx?DataSetCode=HEALTH_STAT (22 May 2014). OECD 2014.
11. Frasure-Smith N, Lesperance F. Depression and anxiety as predictors of 2-year cardiac events in patients with stable coronary artery disease. *Arch Gen Psychiatry*. 2008 Jan; 65(1): 62-71.
12. Dempe C, Junger J, Hoppe S, Katzenberger ML, Moltner A, Ladwig KH, Herzog W, Schultz JH. Association of anxious and depressive symptoms with medication nonadherence in patients with stable coronary artery disease. *J Psychosom Res*. 2013 Feb; 74(2): 122-7.
13. Hoen PW, Whooley MA, Martens EJ, Na B, van Melle JP, de Jonge P. Differential associations between specific depressive symptoms and cardiovascular prognosis in patients with stable coronary heart disease. *J Am CollCardiol*. 2010 Sep 7; 56(11): 838-44.
14. Watkins LL, Koch GG, Sherwood A, Blumenthal JA, Davidson JR, O'Connor C, Sketch MH. Association of anxiety and depression with all-cause mortality in individuals with coronary heart disease. *J Am Heart Assoc*. 2013 Mar 19; 2(2).
15. Brantley, J.(2005).Mindfulness-Based Stress Reduction .In S.M.Orsillo&L.Roemer (Eds),Acceptance and mindfulness-based approaches to anxiety :Conceptualization and treatment(pp.131-145).New York:Springer.
16. Baer, R. A. (2006). Mindfulness-based treatment approaches: Clinician's guide to evidence base and applications, San Diego: Elsevier.
17. Lengacher C, Barta M, Jacobsen P, Kip K, Shelton M, Budhrani P, et al. Feasibility of a Mindfulness-Based Stress Reduction Program for Early-Stage Breast Cancer Survivors. *J Holist Nurs*. 2011; 29(1): 107- 17.
18. Matousek, R., Dobkin, L., Pruessner, J.(2010). Cortisol as a marker for improvement in mindfulness-based stress reduction. *Complement Ther Clin Pract*.16: 13-19.
19. Chaskalon, M., Wiley, J., sons, A.(2011).The mindful workplace: developing resilient individuals and resonant organizations with MBSR.
20. Speca, M., Carlson, L. E., Goodey, E., &Angen, M. (2000). A randomized wait-list controlled clinical trial: The effect of a mindfulness meditation-based stress reduction program on mood and symptoms of stress in cancer outpatients. *Psychosomatic Med*, 62, 613-22.
21. Williams JM, Duggan D, Crane C, Fennel M. Mindfulness - Based Cognitive Therapy for Prevention of Recurrence of Suicidal Behavior. *J Clin Psychol*. 2006; 62(2): 201-210.
22. Forti A. Mindfulness and quality of life among breast cancer survivors: the mediating role of eslf- kindness and alexithymia. Carolina: Harvard Health Publications; 2011.
21. Nichols M, Townsend N, Scarborough P, Rayner M. Cardiovascular disease inEurope – epidemiological update. *European Heart Journal* 2013;34:3028 –3034.
22. Herbst S, Pietrzak RH, Wagner J, White WB, Petry NM. Lifetime major depression is associated with coronary heart disease in older adults: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Psychosom Med*. 2007 Nov; 69(8): 729-34.

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23. Carmody J, Bear R. Relationships between mindfulness practice and levels of mindfulness, and psychological symptoms and well-being in a mindfulness based stress reduction program. *J Behav Med.* 2008; 31(1): 23-33.
24. Asadi-Lari M, Javadi HR, Melville M, Oldrige N, Gray D. Adaptation of the Macnew Quality of Life Questionnaire after Myocardial Infarction in an Iranian Population . *Health Qual Life Out.* 2003; 1: 23.
25. Abdi, N. &Asadi-Lari, M. (2011). "Standardization of three hope scales as possible measures at the end of line in Iranian population". *Iranian Journal of Cancer Prevention.* 4(2), 71-77.
26. Bakhtiar, M. (2000). Psychiatric disorder sin patient's with body dimorphic disorder. Master's thesis in clinical psychology. Iran University of Medical Sciences, Tehran Psychiatric Institute
27. Delavar, A. Research Methods in psychology and educational Sciences. Tehran: Edited Press, 2007.
28. Höfer S, Saleem A, Stone J, Thomas R, Tulloch H, Oldridge N. The MacNew Heart Disease Health-Related Quality of Life Questionnaire in Patients with Angina and Patients with Ischemic Heart Failure. *Value Health.* 2012; 15: 143 – 150.
29. Ma, SF., Teasdale, JD. (2004). Mindfulness-based cognitive therapy for depression: Replication and exploration of differential relapse prevention effects. *Journal of consulting and clinical psychology* , 72(3): 31-40.
30. Concannon TW, Nelson J, Goetz J, Griffith JL. A percutaneous coronary intervention lab in every hospital? *Circ CardiovascQual Outcomes.* 2012; 5(1):14-20
31. Gallagher R, Trotter R, Donoghue J. Preprocedural concerns and anxiety assessment in patients undergoing coronary angiography and percutaneous coronary interventions. *Eur J CardiovascNurs.* 2010; 9(1):38-44.
32. Imel, Z., Baldwin, S., Bouns, K., & MacCoon D. (2008). Beyond the individual: Group effects in mindfulness-based stress reduction. *Psychotherapy Research*, 18,735-742.

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