



# The Effectiveness of Mindfulness-Based Cognitive Therapy on Health-Related Quality of Life and Self-efficacy in Patients with Rheumatoid Arthritis

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## Original Article

### Abstract

**Background:** The purpose of this study was to determine the effectiveness of mindfulness-based cognitive therapy (MBCT) on health-related quality of life (QOL) and self-efficacy in patients with rheumatoid arthritis.

**Methods:** The present experimental field study was conducted with a pretest-posttest design. The statistical population of this study included all patients with rheumatoid arthritis in Isfahan, Iran, in 2018. From among the statistical population, 30 patients were selected as the sample 15 of whom constituted the experimental group and 15 the control group. The measurement tools used included the Health-Related Quality Of Life Questionnaire (SF-36) and the General Self-Efficacy (GSE) scale. First, the pretest was performed in both groups. Then, the experimental group took part in 8 sessions of mindfulness training twice a week, each time for 1.5 hours. After the intervention, the posttest was conducted in both groups. The follow-up was performed 45 days later. Data analysis was performed using multivariate covariance analysis (MANCOVA) and one-way analysis of covariance (ANCOVA).

**Results:** The findings showed that the mean (standard deviation) of QOL of the experimental group was 79.8 (10.2) in the pretest, and increased to 82.8 (8.8) in the post-test ( $P < 0.01$ ). However, the mean (SD) of QOL in the control group was 77.7 (9.2) and 77.8 (9.5) in the pretest and posttest, respectively. This difference was not statistically significant ( $P < 0.05$ ). The mean (SD) of self-efficacy in the experimental group was 27.5 (8.1) in the pretest and increased to 33.4 (9.4) in the posttest ( $P < 0.01$ ). However, the mean (SD) of self-efficacy in the control group was 26.1 (4.9) and 27.7 (6.6) in the pretest and posttest, respectively. This difference was not statistically significant ( $P < 0.05$ ).

**Conclusion:** This study showed that MBCT has an effect on health-related QOL and self-efficacy in patients with rheumatoid arthritis. Mindfulness training is an effective therapeutic approach that is possible in the form of group work. Moreover, MBCT can provide a conceptual framework to help clients to adapt and accept their problems.

**Keywords:** Mindfulness therapy, Quality of life, Self-efficacy, Rheumatoid arthritis

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## Introduction

Rheumatoid arthritis is the result of the complicated interaction of biological, psychological and social variables. Thus conceived, diversity in disorder manifestations has its origin in the interrelations between biological changes, psychological modes, and cultural and social backgrounds that form the patient's notion of his/her disorder as well as his response to it (Smolen et al., 2014). One of the disorders that influence all aspects of human existence, and in addition to physical problems and inabilities, has social and psychological outcomes like depression, distress and lack of a purposeful life is rheumatoid *arthritis*. This disorder is a chronic, multi-systemic, illness. In approximately two-thirds of patients, it gradually begins with fatigue, anorexia, general weakness and vague musculoskeletal symptoms, lasts for weeks or months, and when several joints, especially the joints of hands, wrists, knees, and feet, are symmetrically affected, the disorder starts to show itself. Inflammation in the joints causes pain, swelling, complete dryness of the joints, and, along with it, decreased muscle strength in the muscles attached to the joint and results in motor problems. This condition can sometimes be very painful, and in addition to the detrimental effects on the joints, the effect on other tissues and organs of the body reduces their longevity and effectiveness. In periods of silence, symptoms such as swelling, pain, sleep disorders and weakness disappear, but in others, the disease is always active and progresses with time (Lin et al., 2016).

This illness can overshadow the patient's evaluation of his health condition and quality of life (QOL) by creating physical, social and economic disorders. Therefore, the study of QOL can be very effective in guidance, preservation and development of health in various societies and cultures (Devlin, Shah, Feng, Mulhern, & Van, 2018). It is argued that

individual QOL is a significant criterion of the effectiveness of health care measures and provides the path for prediction of occurrence of disability and death. Evaluation of QOL assists us in taking into consideration the problems of patients in a fundamental way (van Uem et al., 2016). Moreover, the study of QOL of the patients helps in the improvement of therapeutic plans and determination of the predicting factors of feeling good (Punnen, Cowan, Chan, Carroll, & Cooperberg, 2015).

Another significant factor that is affected by the disorder is the sense of self-efficacy. According to the definition offered by Bandura, self-efficacy features an individual's sense of self-trust in a behavior. Self-efficacy beliefs determine the feeling, though, motivation and behaviors of people. Researchers believe that the sense of self-efficacy takes form as the result of facing challenges and continuous and gradual conduction of behavior, and it can be improved by implementation of programs designed based on the needs of patients (Chiarotto et al., 2016). Individuals with a powerful sense of self-efficacy choose more challenging duties. They think of ambitious goals, make more efforts and are more steadfast in tough conditions (Haugland, Wahl, Hofoss, & DeVon, 2016). Jerusalem and Mittag (1995) showed that self-efficacy has a positive correlation with optimism, self-respect, self-overcoming and progress motivation, and a negative correlation with anxiety, depression and neurosis.

One of the treatments of the third wave is mindfulness-based cognitive therapy (MBCT) that has been designed for special medical cases in patients with chronic pains and stresses related to the illness (Frank, Reibel, Broderick, Cantrell, & Metz, 2015). Mindfulness with such factors as acceptance of reality, presence in the present time and avoidance of rumination includes such goals as the promotion of wellbeing, awareness of self, and association of environment with mind

modification. Contrary to many of the schools of psychoanalysis and, of course, in line with the goals and theses of positive psychology, the goal of mindfulness is not ideological changes, but rather contribution to the awareness of processes that provide the path for the individual to have a pathological mentality or be bogged down in those mental states (Abbott et al., 2014). Given the fact that mindfulness as a lifestyle in line with human primordial nature is capable of influencing the human emotional system, i.e., thoughts, bodily senses, raw feelings, and their practical impulses, it can change their life and promote the quality of their relations with others and a world based on a compassionate and realistic vision. MBCT is used with aim to decrease psychological symptoms of frustration and QOL, and in an increasing way both in psychological and physical health. According to this theory, an individual's vulnerability before psychological disorders depends on the extent of his dependency on one aspect of the mind that would unintentionally stop other aspects (Herman, Anderson, Sherman, Balderson, Turner, & Cherkin, 2017). The studies show that mindfulness training has an effective impact on health in the form of reduction of pain, depression and distress. Moreover, Kabat-Zinn (2003) has shown that mindfulness techniques are influential in increasing muscular tranquility as well as reducing depression and stress. de Vibe, Bjørndal, Fattah, Dyrddal, Halland, and Tanner-Smith (2017), in their study entitled *Mindfulness-based stress reduction (MBSR) for improving health, quality of life and social functioning in adults: A systematic review and meta-analysis*, have concluded that mindfulness training improves health, QOL and social functioning in adults.

## Methods

The current study was an experimental field study with a pretest-posttest design and a

control group. The experimental group and control group were chosen based on convenience sampling method. Before the implementation of experimental interventions, a pretest was conducted in the experimental and control groups, and finally, a posttest was done at the end of treatment. The difference between the pretest and posttest of each group was studied in terms of statistical significance. Thus, the effectiveness of MBCT was implemented as an independent variable so that its influence on the health-related QOL and self-efficacy of patients with rheumatoid arthritis in Isfahan city, Iran, was clarified as a dependent variable. The statistical population of this research included all patients with rheumatoid arthritis in Isfahan city in 2018. The statistical sample included 30 patients chosen by means of convenience sampling. Thus, first, from among all patients with rheumatoid arthritis in Isfahan city, 100 patients were selected, and then, all of them completed the Health-Related Quality of Life Questionnaire (SF-36) and General Self-efficacy Scale (GSE). Finally, 30 patients with the minimum grades were chosen; 15 patients formed the experimental group and the other 15 were chosen as the control group.

Health-related Quality of Life Questionnaire (SF-36): This questionnaire has been designed by Ware and Sherbourne in the US for measurement of the QOL of healthy and ill people (Ware & Sherbourne, 1992). The validity and reliability of the Persian version of the SF-36 have been confirmed by Montazeri, Goshtasebi, Vahdaninia, and Gandek (2005) through an independent survey of the citizens of Tehran. This questionnaire includes 36 items with 8 subscales related to health in which two subscales of the physical and mental factors are evaluated. The physical factor includes the aspects of physical function, role restriction due to physical problems, physical pain and general health. The mental factor includes the aspects of role restriction due to emotional problems, mirth and joy, social function and mental health.

**Table 1.** The mean and standard deviation of the scores of variables in the pretest and posttest

| Scale                          | Training type | Pretest<br>Mean $\pm$ SD | Posttest<br>Mean $\pm$ SD | P     |
|--------------------------------|---------------|--------------------------|---------------------------|-------|
| Health-related quality of life | Experimental  | 79.8 $\pm$ 10.2          | 82.8 $\pm$ 8.8            | 0.001 |
|                                | Control       | 77.7 $\pm$ 9.2           | 77.8 $\pm$ 9.5            | 0.590 |
| Self-efficacy                  | Experimental  | 27.5 $\pm$ 8.1           | 33.4 $\pm$ 9.4            | 0.001 |
|                                | Control       | 26.1 $\pm$ 4.9           | 27.7 $\pm$ 6.6            | 0.630 |

SD: Standard deviation

The items are rated based on the RAND system ranging from 0 to 100. By scaling the scores of each subscale and dividing the number obtained by the number of questions in all subscales, the score for that scale is obtained. High scores in every subscale represent a better condition. Finally, the scores of these 8 subscales are summarized into the physical factor (physical health) and mental factor (mental health).

**General Self-Efficacy Scale:** The GSE scale has been designed by Schwarzer, Jerusalem, and Lange (1983). This questionnaire includes 10 items scored based on 4-point Likert scale ranging from 1 to 4 (strongly disagree = 1, hardly agree = 2, almost agree = 3, and totally agree = 4). The score of each individual in the rating scale is equivalent to the total sum of his scores in all questions. The score of this test ranges from 1 to 40. The internal consistency of the GSE was reported as 0.75-0.90% based on the reliability of Cronbach's alpha (Luszczynska, Scholz, & Schwarzer, 2005).

## Results

Among the patients, 16 (53.3%) were adolescents and women and 14 (46.6%) were men. The mean (standard deviation) of age in the experimental and control groups was 36.19 (8.5) and 35.05 (8.1), respectively.

According to the results presented in table 1, the SF-36 and GSE scores were not meaningful in Levene's test; thus, it can be stated that the

two groups were homogeneous in terms of the variance in the research variable before the interventions ( $P > 0.05$ ). The evaluation of the assumption of normality of data distribution shows that all scales of the SF-36 and GSE follow the assumption of normality ( $P > 0.05$ ). Moreover, none of the scales of the SF-36 and GSE was meaningful in terms of homogeneity of regression ( $P > 0.05$ ).

The results presented in table 2 show that the mean (SD) of the QOL score of the experimental group was 79.8 (10.2) in the pretest and increased to 82.8 (8.8) in the posttest ( $P < 0.01$ ). However, the mean (SD) of the QOL score of the control group was 77.7 (9.2) in the pretest and reached 77.8 (9.5) in the posttest; this variation was not statistically significant ( $P < 0.05$ ). The mean (SD) of the self-efficacy score in the experimental group was 27.5 (8.1) in the pretest and increased to 33.4 (9.4) in the posttest ( $P < 0.01$ ). However, the mean (SD) of the control group was 26.1 (4.9) in the pretest and reached 27.7 (6.6) in the posttest; this difference was not statistically significant ( $P < 0.05$ ).

## Discussion

This study showed that by controlling pretest, a significant difference was observed between the experiment and control groups in terms of the dependent variables of QOL and self-efficacy. The results of this study are in line with the results of the research by de Vibe et al. (2017).

**Table 2.** Summary of analysis of covariance of the effectiveness of mindfulness-based cognitive therapy on health-related quality of life and self-efficacy

| Variation source           |              | Sum of squares | df | Mean of squares | F     | P     | Partial Eta-squared |
|----------------------------|--------------|----------------|----|-----------------|-------|-------|---------------------|
| Life in relation to health | Group effect | 1054.82        | 1  | 527.41          | 11.93 | 0.001 | 0.29                |
|                            | Error effect | 2562.51        | 28 | 44.18           |       |       |                     |
| Self-efficacy              | Group effect | 532.86         | 1  | 266.43          | 6.86  | 0.002 | 0.19                |
|                            | Error effect | 2251.13        | 28 | 38.81           |       |       |                     |

df: Degree of freedom

One can feasibly argue that in mindfulness and awareness skills in each instant the individual seeks to understand the patterns of thoughts, emotions and interaction with others so that later he can choose purposeful responses in a professional way instead of reacting in an automatic way with ordinary unconscious methods. Moreover, mindfulness allows the individuals to turn back and analyze their own living conditions and react based on a new method instead of the habitual norms (Frank et al., 2015). Given the fact that audacious behavior leads to the development of successful and open relationships, expression of positive emotions, love and appreciation, and an increase in self-respect and veneration in one's confrontation with others, mindfulness can improve self-expression and audacity. According to the cognitive perspective, distress and anxiety disorders are the results of incorrect, unreal and illogical thoughts and beliefs, particularly, illogical exaggerated beliefs concerning natural hazards. From the cognitive perspective, individuals acquire data, interpret and understand them and make use of them in solving their life problems. In MBCT (a clinical perspective based on cognitive theory), two goals are followed; first, individuals are forced to doubt their fundamental, but mistaken beliefs, and, second, to replace them with more constructive beliefs. Mindfulness is also one of the meditation techniques. Meditation is an act of mental awareness that includes emotions, memories and dreams. Through meditation, we can recognize our mistakes and arrange our mind in a way that we can handle thinking and reaction in a more realistic and honest way (Cairncross & Miller, 2016). We learn to expect less from the people and objects around us, and thus, to reduce our sense of despondence and despair. This causes our relations to improve and our life to become more stable and satisfying. We obtain an extensive and clear sense of our environment. One of the mechanisms of mindfulness is "metacognitive awareness"

that refers to beliefs that people have about their thoughts. This knowledge includes beliefs about particular types of thinking as well as a set of beliefs regarding the functionality of memory or power of concentration. These beliefs influence an individual's response and the regulation of his/her thought. As a result, according to the mentioned points, one can argue that mindfulness has an undeniable effect on the concern over the body picture and uniqueness of patients on the waiting list for aesthetic surgery. Shapiro, Bootzin, Figueredo, Lopez, and Schwartz (2003) declared this process a reaction. It is assumed that this process plays an effective role in the changing of automatical processes in thoughts, sensations and behaviors. Thus, MBCT leads to the improvement of health-related QOL and self-efficacy of patients. As a result, individuals probably practice forgiveness and compassion toward themselves and others. Previous studies show that individuals who show love and kindness in their practices are improving in terms of mental health and emotional balance (Taylor, Cavanagh, & Strauss, 2016). MBCT provides the individual with the opportunity to be more receptive toward others and accept others without prejudice and negative presumptions. Moreover, it persuades people to be tenderer towards others and pay attention to their needs. In fact, with the increase in the capacity for mindfulness, sympathetic concerns and emotional regulation, mindfulness provides stages for increase in the communicational capacity of students.

### Conflict of Interests

Authors have no conflict of interests.

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## References

- Abbott, R. A., Whear, R., Rodgers, L. R., Bethel, A., Thompson, C. J., Kuyken, W. et al. (2014). Effectiveness of mindfulness-based stress reduction and mindfulness based cognitive therapy in vascular disease: A systematic review and meta-analysis of randomised controlled trials. *J Psychosom.Res*, 76(5), 341-351. doi:S0022-3999(14)00054-3 [pii];10.1016/j.jpsychores.2014.02.012 [doi]. Retrieved from PM:24745774
- Cairncross, M., & Miller, C. J. (2016). The Effectiveness of Mindfulness-Based Therapies for ADHD: A Meta-Analytic Review. *J Atten.Disord*. doi:1087054715625301 [pii];10.1177/1087054715625301 [doi]. Retrieved from PM:26838555
- Chiarotto, A., Vanti, C., Cedraschi, C., Ferrari, S., de Lima E Sa Resende, Ostelo, R. W. et al. (2016). Responsiveness and Minimal Important Change of the Pain Self-Efficacy Questionnaire and Short Forms in Patients With Chronic Low Back Pain. *J Pain*, 17(6), 707-718. doi:S1526-5900(16)00563-0 [pii];10.1016/j.jpain.2016.02.012 [doi]. Retrieved from PM:26975193
- de Vibe, M., Bjørndal, A., Fattah, S., Dyrdal, D. G., Halland, E., & Tanner-Smith, E. E. (2017). Mindfulness-based stress reduction (MBSR) for improving health, quality of life and social functioning in adults: a systematic review and meta-analysis. *Campbell Systematic Reviews* 13:
- Devlin, N. J., Shah, K. K., Feng, Y., Mulhern, B., & van, H. B. (2018). Valuing health-related quality of life: An EQ-5D-5L value set for England. *Health Econ.*, 27(1), 7-22. doi:10.1002/hec.3564 [doi]. Retrieved from PM:28833869
- Frank, J. L., Reibel, D., Broderick, P., Cantrell, T., & Metz, S. (2015). The Effectiveness of Mindfulness-Based Stress Reduction on Educator Stress and Well-Being: Results from a Pilot Study. *Mindfulness*, 6(2), 208-216.
- Haugland, T., Wahl, A. K., Hofoss, D., & DeVon, H. A. (2016). Association between general self-efficacy, social support, cancer-related stress and physical health-related quality of life: a path model study in patients with neuroendocrine tumors. *Health Qual.Life.Outcomes.*, 14, 11. doi:10.1186/s12955-016-0413-y [doi];10.1186/s12955-016-0413-y [pii]. Retrieved from PM:26787226
- Herman, P. M., Anderson, M. L., Sherman, K. J., Balderson, B. H., Turner, J. A., & Cherkin, D. C. (2017). Cost-effectiveness of Mindfulness-based Stress Reduction Versus Cognitive Behavioral Therapy or Usual Care Among Adults With Chronic Low Back Pain. *Spine.(Phila Pa 1976.)*, 42(20), 1511-1520. doi:10.1097/BRS.0000000000002344 [doi]. Retrieved from PM:28742756
- Jerusalem, M., & Mittag, W. (1995). Self-efficacy in stressful life transitions. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 177-201). New York, NY: Cambridge University Press.
- Kabat-Zinn, J. (2003). Mindfulness-Based Interventions in Context: Past, Present, and Future. *Clin Psychol (New York)*, 10(2), 144-156.
- Lin, J., Liu, J., Davies, M. L., & Chen, W. (2016). Serum Vitamin D Level and rheumatoid arthritis disease activity: review and meta-analysis. *PLoS.One.*, 11(1), e0146351. doi:10.1371/journal.pone.0146351 [doi];PONE-D-15-32843 [pii]. Retrieved from PM:26751969
- Luszczynska, A., Scholz, U., & Schwarzer, R. (2005). The general self-efficacy scale: multicultural validation studies. *J Psychol*, 139(5), 439-457. doi:10.3200/JRLP.139.5.439-457 [doi]. Retrieved from PM:16285214
- Montazeri, A., Goshtasebi, A., Vahdaninia, M., & Gandek, B. (2005). The Short Form Health Survey (SF-36): translation and validation study of the Iranian version. *Qual.Life.Res*, 14(3), 875-882. Retrieved from PM:16022079
- Punnen, S., Cowan, J. E., Chan, J. M., Carroll, P. R., & Cooperberg, M. R. (2015). Long-term health-related quality of life after primary treatment for localized prostate cancer: results from the CaPSURE registry. *Eur Urol.*, 68(4), 600-608. doi:S0302-2838(14)00844-6 [pii];10.1016/j.eururo.2014.08.074 [doi]. Retrieved from PM:25242555
- Schwarzer, R., Jerusalem, J., & Lange, B. (1983 Apr 11-15). The change of self-concept with respect to reference groups in school. Proceedings of the Annual Meeting of the American Educational Research Association; Montreal, Canada.
- Shapiro, S. L., Bootzin, R. R., Figueredo, A. J., Lopez, A. M., & Schwartz, G. E. (2003). The efficacy of mindfulness-based stress reduction in the treatment of sleep disturbance in women with breast cancer: an exploratory study. *J Psychosom.Res*, 54(1), 85-91. doi:S0022399902005469 [pii]. Retrieved from PM:12505559
- Smolen, J. S., Landewe, R., Breedveld, F. C., Buch, M., Burmester, G., Dougados, M. et al. (2014). EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2013 update. *Ann Rheum.Dis.*, 73(3), 492-509. doi:annrheumdis-2013-204573 [pii];10.1136/annrheumdis-2013-204573 [doi]. Retrieved from PM:24161836
- Taylor B L., Cavanagh, K., & Strauss, C. (2016). The Effectiveness of Mindfulness-Based Interventions in the Perinatal Period: A Systematic Review and Meta-Analysis. *PLoS.One.*, 11(5), e0155720. doi:10.1371/journal.pone.0155720 [doi];PONE-D-15-38979 [pii]. Retrieved from PM:27182732
- van Uem, J. M., Marinus, J., Canning, C., van, L. R., Dodel, R., Liepelt-Scarfone, I. et al. (2016). Health-Related Quality of Life in patients with Parkinson's disease--A systematic review based on the ICF model. *Neurosci.Biobehav.Rev.*, 61, 26-34. doi:S0149-7634(15)30027-0 [pii];10.1016/j.neubiorev.2015.11.014 [doi]. Retrieved from PM:26645499
- Ware, J. E., Jr., & Sherbourne, C. D. (1992). The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Med Care*, 30(6), 473-483. Retrieved from PM:1593914.