The Effectiveness of the Intervention of Mindfulness Based Cognitive Therapy (MBCT) on Reducing Irrational Beliefs, Cognitive Emotion Regulation, Coping Styles in Patients with Tension Headaches and Migraines in Najaf Abad Township

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Abstract

Background and aim: tension headaches appear usually as a result of different environmental or internal stresses. Accordingly, the present study is aimed at investigating the effectiveness of the intervention of mindfulness based cognitive therapy (MBCT) on reducing irrational beliefs, cognitive emotion regulation, coping styles in patients with tension headaches and migraines in Najaf Abad Township.

Method: the sample considered for the present quasi-experimental study was selected using random and convenience sampling methods from among patients having referred to Aftab Clinic of Najaf Abad in 2 months. The sample included 40 subjects who were diagnosed to suffer from tension headaches and migraines. They were, then, divided into two 20 subject MBCT and control groups. The experimental group received 8 sessions of intervention (MBCT) and was assessed in two pretest and posttest stages by the Irrational Beliefs Questionnaire, Cognitive Emotion Regulation Questionnaire, and Coping Styles Questionnaire. The results were analyzed using ANCOVA.

Findings: the results of the study indicated that MBCT is significantly effective on reducing irrational beliefs, cognitive emotion regulation, coping styles in patients with tension headaches and migraines (p<0.05).
Conclusion: MBCT emphasizes assessment, conceptualization, and intervention in physical symptoms. In addition MBCT influences the cognitive system and information processing of individuals by increasing their consciousness at time via skills such as attention to breath and body and consciousness to here and now. MBCT significantly emphasizes pain management by coping styles and self-management because this method helps them to create more effective coping skills and feel that they can minimize effects of pains in their everyday lives.

Keywords: MBCT, irrational beliefs, cognitive emotion regulations, coping styles, tension headaches.
Introduction
The migraine headache refers to a kind of unilateral headache mostly in beating from often accompanied by nausea and sensitivity to light, sound, and smell. Migraine headaches have a 15% prevalence in the society. This disorder is the result of performance changes of the brain causing changes in the cerebral blood flow, and finally coronary dilatation of the brain and then narrowing of the arteries in the brain in reaction to it cause headache (however, there are other theories such as the increase in nervous sensitivity [5] are presented in the pathophysiology of migraine). The severity of headache in patients is so great that they are unable to do their everyday activities. Common treatments for migraine headaches are medicinal treatments such as Propranolol, amitriptyline, sumatriptan and ergotamine. A lot of patients have complaints about the ineffectiveness of drugs. In addition, side effects of these drugs are big barriers in their consumption. Moreover, tension headache is another common headache among adults. This headache is called the stress headache. Tension headache may be periodical or daily. Periodical tension headache is usually with mild to moderate symptoms such as pain, cramps or a feeling of pressure around the forehead or back of the head and neck. The duration of these types of headache is from 30 minutes to several days. Periodical tension headache usually starts gradually and occurs mostly at the midday. The severity of tension headache increases its frequency. Chronic tension headache (with long-term daily duration) occurs in a long-term period of time and then fades. In this headache, pain is in the beating form and covers forehead, above, and both sides of the head. Although the severity of this pain changes during a day, it exists all the time. Chronic tension headache affects vision and balance. Tension headache usually makes individuals unable to do their everyday affairs.

Which groups may suffer from tension headaches? About 30% to 80% of the adult population in the USA suffer from tension headache. From among this rate, about 3% suffer from daily (chronic) daily tension headache. The possibility of occurrence of this headache in women is twice men. Most individuals suffering from tension headache experience it more than one time per a month. Chronic tension headache is more prevalent in women. There are a lot of causes for these headache hereditary causes. In some of these individuals, tension headache Stiff neck and scalp muscles are common. This muscular tension may be due to the following reasons:
* Inadequate rest
* Poor posture of the head and neck
* Emotional or psychological stress, such as depression
* Anxiety
* Fatigue
* Excessive hunger

Tension headache occurs usually caused by different kinds of environmental and internal stresses. The most common resources of stress are family, social relations, friends, work, and school. Instances of stressors affecting occurrence of tension headaches are as follows:
* The problem of the home and family
* Fatherhood or motherhood
* Lack of close friends
* Starting a new job
* Losing Jobs
* Overweight

http://www.ijhcs.com/index.php/ijhcs/index
* Being a perfectionist
* Not having enough sleep

Periodical tension headache usually occurs caused by a temporary stressful situation. Daily stresses can result in tension headache. Keeping calm and coping stressful situations are the most important factors in preventing headaches. What are symptoms of tension headaches? Individuals suffering from tension headaches usually have these symptoms: mild to moderate pain or pressure in the front, top or sides of the head, severe headache, having difficulty in sleeping, chronic fatigue, irritability, sensitivity to light or noise, and general muscle pain. Contrary to migraine, there is no nervous symptom such as muscle weakness or blurred vision in individuals suffering from tension headache. Among external preventive methods are as follows:
* stress management
* Biofeedback
* Treatment of severe symptoms

Emotion regulation is the intrinsic aspect of tendencies to emotional reactions. In fact, emotion regulation refers to a set of operations applied for changing or modifying an emotional state. Psychological texts have mostly used this concept for describing the process of modifying negative emotions. Although emotion regulation can cover conscious processes, it does not necessarily require it. Emotion regulation plays roles in emotion management. It is a specific type of self-regulation. It is defined as internal and external processes involved in reviewing, assessing and mitigating the emergence, intensity and duration of emotional reactions applied in three non-conscious, sub-conscious, and conscious. Researchers have identified 9 strategies for emotion regulation: rumination, acceptance, self-blame, positively refocusing, focused on planning, positively re-valuating and revising, monitoring, considering something catastrophic, and blaming others. Cognitive emotion regulation strategies help individuals to regulate negative arousals and emotions. These regulation methods have relationships with development, advancement, or occurrence of mental disorders.

Coping strategies are thoughts and behaviors applied when a person faces stressful situations. This is while that coping resources are in the person itself existing before the occurrence of a stressful event such as self-esteem, sense of mastery over the situation, cognitive styles, locus of control, self-efficacy, and problem solving ability (Vafei Bur Bur, 1999). From among important affairs in this relation are the abilities of an individual for facing this problem. These evaluations may be in compatible with real world situations or real abilities of the individual or not, but whatever they are the individual’s main determining abilities and capabilities for coping difficulties. If an individual feels unable, he cannot cope with difficulties in spite of all skills he have learned. Evaluating individuals from their own abilities for facing problems can be in three stages and effective on shaping coping behaviors:

1. In this stage, individuals evaluate the predicting situation of stresses and threats. For example, individuals may ask themselves that whether the situation is threatening or not?
2. In this stage, individuals evaluate their abilities for doing affairs in relations with their stressful situations and ask themselves that what they can do for solving problems?
3. In the third stage, individuals revaluate situations in order to see that their evaluations of the situations or available resources for encountering problems have been appropriate or not?
According to above issues, they reconstruct and modify their behaviors (ibid). There are different types of coping strategies:
In general, in encountering stressful situations, two types of coping strategies can be applied by individuals:

1. Efficient coping strategies
2. Inefficient coping strategies

What is called coping skills are methods of encountering issues consciously designed and performed by individuals and consequently, solving problem and increasing the psychological capacity of individuals for coping successfully critical conditions and avoiding damages caused by mental crises are presented. Insufficient coping strategies are efforts which although they are used for coping with difficult conditions, but typically they result in deterioration of conditions. Therefore, these coping strategies cannot be interpreted as skills. For example, in case of a person who resorts to drug addiction; although it is a kind of strategy for coping with stresses in short-term periods, he should pay the cost of these short pleasures in the form of addiction and its negative consequences (Rio, 1997).

Different types of efficient coping strategies can be divided as follows:

a. Problem-focused coping strategy

Problem-focused coping strategies refer to direct intellectual and behavioral performances performed for changing and modifying environmental threatening conditions. In other words, problem-focused coping strategies are related to individuals' efforts for changing the state and direct engagement in problems (Paris, 1991). Nobody can achieve something without efforts. Decision making about the issue that what individuals should do in case of facing stresses is based on their judges. These judges are influenced by negative emotions obtained from past negative experiences. For example, if an individual with critical conditions have rarely had a successful experience in influencing the world for changing situations, and additionally depression have engendered disappointment in him or her, he or she cannot cope with problems in spite of a of activities which he or she can do for modifying situations. These individuals instead of considering themselves as the main player in their lives, consider themselves as the victims of actions, behaviors, and dictates of others. Having no belief in one’s own efficiency is a great barrier for problem solving because in such a state, individuals do not exert any effort for solving problems (Vafaei Bur Bur, 1999).

Kampas et al. (1998) concluded that individuals who use problem-focused method in their successes have more control over them. They pointed out that adolescents use this method in facing academic stressful events because these stresses are more controllable and contrarily, in social stressful events, the emotion-focused method is mainly used. In the research done by Valing and Martick (1995), it was found out that individuals who face fatigue, have less control over their physical and academic activities. They added that students who feel that have domination over situations can control consequences of their performance and use strategies for solving problem in facing activities whose learning is difficult (Vafaei Bur Bur, 1999).

According to conducted investigations, problem-focused coping methods are effective in controllable situations, while for uncontrollable situations (death of one of relatives) emotion-focused coping strategies are more appropriate (Dafei, 1997). In problem-focused coping strategies, individuals employ ways as follows:
1. Active coping strategies: a set of processes during which an individual actively exerts his efforts for modifying resources of psychological pressures.

2. Planning-based coping strategies: in this type of strategies, individuals evaluate different solutions for controlling and solving problems with reliance on their own thoughts and then solve problems with selection of the best method.

3. Tolerant coping strategies: they refer to restraint and avoidance from immature activities resulting in more complicatedness of problems and creating disturbance in the process of problem solving.

4. Effective social support search coping strategies: when an individual considers himself unable to solve problems, he easily uses others’ help. This help, according to the need and type of the problem, can be achieving information via guidance services, counseling, and absorption of material and spiritual facilities from others.

b. Emotion-focused coping strategies: these coping strategies include all activities or thoughts applied for controlling and improving inappropriate emotions caused by stressful conditions. They are as follows:

1. Emotional support search-based coping strategies: these strategies include individuals’ efforts for achieving moral supports, sympathy, empathy, and feelings perceived by others.

2. Positive reinterpretation-based coping strategies: positive evaluation of events and situations which is based on optimistic attitudes towards life events. These strategies are sued mostly for controlling emotions and mental disorders rather than resources of stress (Lazarus and Folkman, 1984).

3. Religious-based coping strategies: in these coping strategies, individuals resort to doing religious activities for coping and controlling their problems. Findings of McCurry and Ketsa indicated that this type of strategies are suitable for all people because they are used as emotional support resources and as instruments for positive changes; therefore, they facilitate next coping strategies.

4. Acceptance-based coping strategies: they refer to an action coping strategy in which individuals accept stressors. This issue are important and effective in conditions which resources of stresses (death of a relative) cannot be changed (Carver et al. as cited in Alimohammadi, 1992).

Inappropriate and insatiable coping strategies: they construct a set of coping methods which although used for changing resources of stresses and improving emotions caused by stressors, these strategies deteriorate situations; therefore they cannot be considered coping factors. These strategies are as follows:

1. Paying attention to painful emotions via wishful thinking: this coping strategy is sued for neutralizing what has happened. These thoughts are typically as follows: if only, I wish it were a lie, etc. sometimes, these thoughts are in the form of what should happen. “If only” is a calming coping strategy for fleeing temporarily from pains caused by truth. The disadvantage of this stat is that no desire can take the place of truths and later or sooner, truths appear. In this state, the time which could be used for finding new ways for facing reality and problems is lost.
2. Using drugs for fleeing from pains: sometimes individuals use drugs such as alcohol, nicotine, opiates, heroin and painkillers without a prescription sleeping pills and anti-depressants for avoiding their pains caused by stresses and crises. Using these drugs and those drugs added to this list under names such as ecstasy are dangerous. Therefore, deteriorating the process of psychological reconstruction mostly are new resources of increasing pains. For example, alcohol results in losing internal control forces and restraint and individuals’ resort to violence in case of anger. Abusing drugs influences our mental processes having got insufficient previously by stress and emotions and damages abilities such as judgment, planning, reasoning and concentration necessary for solving problems (Paris, 1991).

3. Negative thinking: in this state, individuals unrealistically emphasize negative cases and indissolubly evaluate problems more than what they are (Pay Setim and Mayer, 1989).

4. Impulsive behaviors: they refer to particular coping methods by which individuals act immediately without thinking and evaluating what has occurred and typically result in deterioration of conditions.

5. Not mental and behavioral engagement: in this type of coping strategies, by doing diverse behaviors, individuals are busy and therefore, they try to not think about problems. These strategies are having fun with another person, taking refuge in day dreams, running away from the problem for sleeping or watching TV and movies (Lazarus and Folkman, 1984).

6. Coping strategies in the form of denials: in this set of coping strategies, individuals act as if nothing has happened and the event adds to the crisis and prevents from further effectiveness (Mathews et al. 1983).

Research method
The sample considered for the present quasi-experimental study was selected using random and convenience sampling methods from among patients having referred to Aftab Clinic of Najaf Abad in 2 months. The sample included 40 subjects who were diagnosed to suffer from tension headaches and migraines. They were, then, divided into two 20 subject MBCT and control groups. During the practical process of MBCT, 4 participants initially reject to participate in the study and one participant participated irregularly in sessions and then left participation.

Research instrument
Jones’ (1968) Irrational Beliefs Test (IBT) (40 items): it includes 40 items and Ebadi and Mohtadin (2005) developed it based on the 10 factor Jones' (1968) Irrational Beliefs Test and factor analysis method among Iranian population. This questionnaire measures four factors of helplessness in the face of change, expectation of approval of others, avoidance of problems, and emotional irresponsibility based on five point Likert scale (1=strongly disagree to 5=strongly agree). Ebadi and Motadin used split-half and Cronbach’s alpha method to investigate the reliability coefficients and for the whole scale it is 0.75 and 0.76 and for its subscales of helplessness in the face of change it is 0.80 and 0.82, for expectation of approval of others as 0.73 and 0.74, and for emotional irresponsibility as 0.75 and 0.72.
Findings

The present study is aimed at investigating the effectiveness of the intervention of mindfulness-based cognitive therapy (MBCT) on reducing irrational beliefs, cognitive emotion regulation, coping styles in patients with tension headaches and migraines in Najaf Abad Township. ANCOVA was used for analyzing data because the groups were independent. According to the following table, no significance difference is observed between treatment groups (p>0.05). The impact of the pretest (F=0.70, P>0.05) had no significant effect and by controlling it in the posttest (F=25.82, P<0.05) the difference is significant. That is, treatment interventions have caused significant difference between the two groups. With a brief view of mean scores and SD of groups, it can be observed that irrational beliefs, cognitive emotion regulation in the posttest stage reduced and coping styles of patients suffering from tension headaches increased.

Table 1: mean scores and SD of the two groups in the posttest stage

<table>
<thead>
<tr>
<th></th>
<th>Control group</th>
<th>(MBCT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td>4/99</td>
<td>20/46</td>
</tr>
</tbody>
</table>

According to the above table, mean scores in the two treatment groups have differences, but it is not clear that whether these differences are significant or not. According to Levene’s table in SPSS as follows, the assumption of equality of error variances is available because sig. =0.37 (p>0.05). Therefore, the between-subjects effects table is referred to and its results are investigated.

Table 2: Levene’s table (assumption of equal variances)

<table>
<thead>
<tr>
<th>Sig.</th>
<th>df</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0/37</td>
<td>4</td>
<td>1/01</td>
</tr>
</tbody>
</table>

Table 3: the results of ANCOVA for the effect of interventional methods in obsessive-compulsive disorders in the pretest and posttest stages

<table>
<thead>
<tr>
<th>Statistical power</th>
<th>Impact size</th>
<th>(Sig)</th>
<th>F</th>
<th>df</th>
<th>Indices</th>
</tr>
</thead>
<tbody>
<tr>
<td>0/13</td>
<td>0/017</td>
<td>0/40</td>
<td>0/70</td>
<td>1</td>
<td>Pretest</td>
</tr>
<tr>
<td>1/000</td>
<td>0/05</td>
<td>0/001</td>
<td>25/82</td>
<td>2</td>
<td>Posttest</td>
</tr>
</tbody>
</table>

In this table, there are two rows: the first row is the pretest variable (F=0.70, sig. =0.40, and p>0.05) indicating that there is no significant difference between treatment and control groups in the pretest stage. When its impact on the dependent variable (in posttest) is controlled, F=25.82, sig. =0.001, and p<0.05 indicate significant differences between the control and experimental group.

Table 4: paired comparison of the two control and treatment groups in the posttest stage
## Group Mean difference Standard error Sig. 95% Confidence Interval for Difference

<table>
<thead>
<tr>
<th>Group</th>
<th>Group</th>
<th>Mean difference</th>
<th>Standard error</th>
<th>Sig.</th>
<th>Lower limit</th>
<th>Higher limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>-7/43</td>
<td>1/64</td>
<td>0/001</td>
<td>-10/75</td>
<td>4/11</td>
<td></td>
</tr>
<tr>
<td>MBCT</td>
<td>5/50</td>
<td>1/64</td>
<td>0/002</td>
<td>2/18</td>
<td>8/82</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>-12/93</td>
<td>1/80</td>
<td>0/001</td>
<td>-16/59</td>
<td>9/28</td>
<td></td>
</tr>
<tr>
<td>MBCT</td>
<td>5/50</td>
<td>1/64</td>
<td>0/002</td>
<td>-8/82</td>
<td>2/18</td>
<td></td>
</tr>
</tbody>
</table>

According to the above table, paired comparison (sig. =0.001 and sig. = 0.002 in p<0.05) indicates significant differences in the two MBCT and control groups.

### Discussion

The present study with the hypothesis of effectiveness of the effectiveness of the intervention of mindfulness based cognitive therapy (MBCT) on reducing irrational beliefs, cognitive emotion regulation, coping styles in patients with tension headaches and migraines in Najaf Abad Township. The results obtained from the present study is consistent with the research hypothesis indicate that MBCT results in significant reduction in irrational beliefs in patients. As stated in then section of findings, interventions in this study conducted on patients suffering from tension and migraine headaches in the experimental group indicate significant reduction in irrational beliefs after the finish of interventional program compared in the control group and the pretest stage. In addition, findings indicate that the factor or training or intervention in the present study, without considering the effect of groups, irrational beliefs, cognitive emotion regulation, and coping styles, has reduced scores in the posttest significantly compared to the scores of pretest. These findings indicate high effectiveness of this intervention on reducing irrational beliefs, cognitive emotion regulations, and coping styles of the subjects. It seems that training skills of MBCT, by persuading individuals with frequent exercises of focused attention to neutral stimuli and intentional consciousness on the body and mind can make them be protected from preoccupation with thoughts of fear and anxiety about performance and everyday stress. That is these skills result in reducing worry and physiological tensions by increasing individuals’ consciousness of experiences of the present time and returning attention to the cognitive system.

### Conclusion

The results of the present study indicated that the treatment approach is effective on reducing irrational beliefs of patients with tension headaches and migraine. MBCT causes that individuals improve via a new relation with their thoughts. Therefore, due to MBCT as an effective and efficient method alternative for behavioral or cognitive methods on reducing irrational beliefs, cognitive emotion regulations, and coping styles of patients with tension headaches and migraine.
References


