

# The Effectiveness of Mindfulness Training in Improving the Quality of Life of the War Victims with Post Traumatic stress disorder (PTSD)

Esfandiar Azad marzabadi,  
PhD<sup>1</sup>  
Seyyed morteza hashemi  
zadeh, MD<sup>1</sup>

<sup>1</sup> Behavioral Sciences Research Center, Baqiyatallah University of medical sciences, Tehran. Iran

**Corresponding author:**  
Esfandiar Azad marzabadi.  
Behavioral Sciences Research Center, Baqiyatallah University of medical sciences, Mollasadra Ave., vanak sq.p.o.Box:19945-581, Tehran, iran  
Tel.02182482489  
Email: esazad@yahoo.com

**Objective:** Those veterans suffering from Post Traumatic stress disorder (PTSD) experience a low quality of life. This study investigated how the quality of life of warfare victims with PTSD was influenced by mindfulness training (MT)

**Method:**

This study followed a randomized controlled trial and included a pre-test, post-test and delayed post- and was conducted in 2012 at Shahid Rajaei Hospital in Isfahan, Iran. The participants were 28 randomly selected male warfare victims with PTSD who were assigned into control and experimental groups. Data were collected using World Health Organization Quality of Life Questionnaire-26 (WHOQOL-26). Repeated measures ANOVA was run to analyze the data .

**Results:**

The findings of this study indicated a statistically significant decrease in the mean score of the experimental group in both post-test and delayed post-test. Also, in comparison with the control group, there was a statistically significant increase in the mean scores of the physical and psychiatric health, social relationship and social setting and condition of the experimental group in the post-test and delayed post-test ( $p < 0.01$ ).

**Conclusion:** The findings of this study lend support to the effectiveness of MT in improving the quality of life of those veterans with PTSD and have significant implications for drawing our attention to mindfulness-based treatments as a way to enhance the quality of life of warfare victims suffering from PTSD.

**Keywords:** *Mindfulness, Quality of Life, War Victims, Post Trauma Stress Disorder*

*Iran J Psychiatry 2014; 9:4: 228-236*

Quality of life is a broad concept including all aspects of life such as health and is associated with physical, social and spiritual dimensions. A high quality of life has been a continuous concern for human beings. Initially, the concept was defined in terms of longevity and welfare (1); there is a positive relationship between the two and the quality of life. However, nowadays, a qualitative dimension has been added to the definition referring to the years of the life spent with satisfaction, happiness and enjoyment (2). It is an index of how an individual views and judges a situation, a number of events, the entire life and/or the whole society during a specific time span (3). According to the definition provided by the WHO, quality of life is a mental issue which is not observable and is based on individuals' understanding of various aspects of life; that is quality of life refers to the mental-welfare dimension of life which indicates commonalities in the ways health and quality of life are defined (4). Historically, investigating health-related issues proposed more

positive criteria for evaluative purposes. These newly proposed criteria informed the way quality of life was defined (5). Sociological and behavioral studies suggest that economic and social settings strongly influence quality of life, and, thus, pave the way for psycho diseases to appear among individuals in general and warfare victims in particular(6).

Directly or indirectly, individuals attending battlefields suffer from psychological and physical problems. Wars are believed to be one of the contributing factors to the incidence rate, occurrence time and development of behavioral and psychological disorders, whose consequences outlive war times (5, 6). An eight-year war with Iraq and its follow-ups have made many Iranian warfare victims and veterans suffer from war-related psychological disorders. The most widespread disorder among Iranian warfare victims has been identified to be post trauma stress disorder (PTSD) (7).

In addition to medical and psychological problems, this disorder decreases the sufferers' quality of life (10, 11). American Association of Psychology (12)

## Mindfulness Training in PTSD victims

defines it as a kind of anxiety disorder experienced after a stressful situation with a threatening or disastrous nature which is accompanied by repeated remembering of an event in thoughts and dreams, avoiding situations which evoke trauma memories and severe arousal. Other symptoms are sudden violent and aggressive behaviors (13), familial and interpersonal problems (14), failure to express feelings (15) and masochism (16). Neuro-psychotic warfare victims have various physical and psychological needs that should be met appropriately. To fulfill this goal, hygienic teams should help these patients to improve their quality of life. Basically, psychological issues such as anxiety, depression and physical problems such as sleep and sexual needs are directly related to battlefield experiences and affect the quality of life of the sufferers (18). Different treatments for PTSD have been tested, among which reference can be made to drug therapy (19), psychotherapy (e.g., cognitive-behavioral treatments) (20, 21), life skills (22) and stress controlling and supportive treatments (23). Although drug-based treatments and psychotherapies may decrease clinical signs of PTSD, they fail to address the whole scope of this disorder. Therefore, in addition to drug therapy, the need for a flexible and complementary psychotherapy for those suffering from the disorder is heavily felt.

Given the high number of warfare victims with PTSD in Iran (8), a quick and collective treatment for the disorder is an urgent issue so as to promote the quality of life of these people. In addition to studying the side-effects of PTSD, mindfulness-based interventions can be a complementary and standard way to gain more insight into the disorder (25, 26). Mindfulness is defined as a conscious, judgeless and specific way of paying attention to the present time. It emphasizes present and immediate experiences like thoughts, excitements, and body feelings in a judgeless manner (28). Available literature suggests that mindfulness training develops life skills of those attending the relevant workshops (29). Also, clinical studies adopt the effectiveness of mindfulness techniques in addressing a gamut of medical and psychological disorders like chronic pains (30, 31), anxiety disorders (31), psychotic side-effects of cancers (32) and depression (33). Moreover, it helps chemical warfare victims be more affectionate and mentally healthier. Recently, applying mindfulness techniques to treat PTSD has gained more momentum. Reports of some case studies can be found in the literature, which support the effectiveness of mindfulness-based interventions to treat stressful and traumatic situations such as sexual abuse and natural disasters. Additionally, available literature indicates that mindfulness-based techniques reduce the symptoms of depression, psychological turmoil and clinical symptoms and increase the quality of life of those suffering from the disorder with different cultural backgrounds (25, 36, 37, 38).

Therefore, although there is enough evidence indicating the effectiveness of mindfulness-based interventions, the present study aimed at investigating the effects of mindfulness training on the quality of life of the warfare victims with PTSD by setting the following research question:

Does mindfulness training affect the quality of life of the warfare victims suffering from PTSD?

## Material and Methods

The study was a randomized controlled trial and included a pre-test, post-test and delayed post-test with a control group. The experimental group received mindfulness training proposed by Kabat-Zinn et al. (39); the control group, however, received no training. The independent variable was mindfulness training and the dependent variable was the quality of life of the warfare veterans with PTSD. All participants of the study were the warfare victims of Iran-Iraq war diagnosed with PTSD. From among the hospitals affiliated to the Foundation of Martyrs and Veterans Affairs of Isfahan, Shahid Rajaei Hospital was randomly selected.

Hidden and confidential assignment to put people in groups of forklift, after being determined by participants, one of the psychologists did not have knowledge of the research process, the Hospital of the spinal cord was called veterans. He is based on the number of people counted in the crash and two group numbers and put the individual couples.

The sample size for group therapy in clinical trials of psychology and counseling of 5 to 12 people is defined (methods of research in psychology and educational sciences, Delaware, 1390). As well as the knowledge and methods of the mindfulness founder Kabat zinn, Segal and Tizdel of the researchers called this the realm of mind-awareness group therapy with the Setup on the volume of 8 to 15 people agree.

In the case of being blind, it is worth noting the participants until after the intervention and control groups is determined (after the post test) had no more information about the research process.

Having administered psychiatric interviews with the aim of diagnosing PTSD according to DSM-IV-TR criteria by the hospital's psychiatrist, 32 individuals were randomly selected and assigned into two equal groups. Besides, the effect of gender was controlled by including only males in the study. The participants had to fall within the age range of 35-60 and have secondary education. Moreover, it was checked whether they suffered any active psychotic disease, showing symptoms of bipolar disorder, borderline personality disorder, anti-social and active suicidal tendencies and drug abuse during the last three months prior to the study (36, 37). Two participants dropped out in each group as the study continued (due to reasons like being discharged from the hospital or stopping participation in the study). In

other words, only 28 individuals participated all through the study.

#### *Mindfulness Intervention Sessions*

The experimental group received mindfulness-based stress reduction (MBSR) training (39). Given the flexibility of mindfulness-based treatments, mindfulness training was designed with regards to the structure and features of the quality of life of the warfare victims with PTSD. On the whole, eight 90-minute mindfulness training sessions were held. The sessions were held twice a week and lasted for one month. The sessions are described as follows:

*First Session:* During the session, a pre-test was administered. Cordial relationship with the participants was established and the intended concepts were explained. Also, the need for mindfulness training was justified and the issue of relaxation was introduced.

*Second Session:* The focus was on training relaxation for 14 muscle groups including forearm, calf, shin, thighs, abdomen, chest, shoulders, neck, lips, eyes, jaws, temples and forehead.

*Third Session:* The participants received relaxation training for the following six muscle groups: hands and arms, feet and thighs, abdomen and chest, neck and shoulders, jaws and forehead and lips and eyes. In addition, the participants were given homework.

*Fourth Session:* mindfulness-based breathing. First, the earlier sessions were reviewed in brief. Then, mindfulness-based breathing was introduced. The Inhale and exhale technique with calmness and no thinking and the breath watching technique were trained. Also, as their homework, the participants were asked to practice mindfulness-based breathing for 20 minutes before going to bed.

*Fifth Session:* In this session, body monitoring technique was presented. The participants were trained how to pay attention to body movements while breathing, to focus on body muscles and their movements, and to trace physical feelings, hearing, taste, etc. They were required to do mindfulness-based eating at home as their homework (i.e., paying attention to the taste and the appearance of foods).

*Sixth Session:* mindfulness-based thinking was trained during this session. The participants were taught how to scan mind, positive and negative thoughts and their desirability and undesirability, to allow positive and negative thoughts into and out their minds without passing any judgment and to pay deep attention to them. As homework, they were asked to write their positive and negative experiences without judging them.

*Seventh Session:* Full Mindfulness. The training sessions four, five and six were repeated for 20 to 30 minutes.

*Eighth Session:* It was a round-up session. In addition, a post-test was administered.

#### *Data Collection Tools*

The following tools were used to collect data.

**Demographic information sheet:** the individual and demographic information of the participants were collected through the demographic information sheet. The items included in the sheet were age, gender, profession, education, marital status, disease history and....

**Clinical interviews:** In order to diagnose PTSD (12) and investigate other criteria for selecting the participants (19, 25) clinical interviews were conducted.

Clinical interviews were administered by the hospital's psychiatrist according to the fourth revised version of Diagnostic and Statistical Manual for Mental Disorders (DSM-IV-TR) (12).

**World Health Organization Quality of Life Questionnaire (WHOQOL-26):** The 26-item questionnaire on the quality of life proposed by the World Health Organization was used. The items were scored based on five-option Likert scale. Questions No. 3, 4, and 26 were given negative scores. The questionnaire tests four categories; namely, hygiene and physical well-being, psychiatric well-being, social life and living environments and conditions. The categories are used as a comprehensive scale and generally, include overall quality of life and general well-being levels. In a study conducted abroad, the validity of the questionnaire was found to be 90% for patients with chronic diseases, and 86% for normal people. The validity of the questionnaire in Iran has been estimated to be 89% (40).

#### *Procedure*

Having explained the aims of the study, the participants' approval for their participation was obtained. In order to take research ethics into the account, the participants were given the option to stop participation whenever they wished. Then the participants were assigned into instrumental and control groups. Both groups took the pre-test and then, the experimental group received eight 90-minute MT sessions. At the end of the treatment, both experimental and control groups took the post-test. Two months later, the groups took the delayed post-test. Also, the control group underwent drug therapy until the delayed-post test was administered. During that time, they were not exposed to any therapeutic intervention. Therefore, to observe research ethics, eight MT sessions were held for them too. The whole study lasted three months. Data were analyzed using the Repeated Measure ANOVA function of SPSS version 17.

According to descriptive statistics, from among the participants assigned to the experimental group, 42.9 per cent % had secondary education, 42.9 per cent % had a high school diploma, 14.2 and 14.2 per cent % had a bachelor's degree. For the control group, the numbers were 57.1, 35.8, and 7.1 respectively for secondary education, diplomas, and bachelor

## Mindfulness Training in PTSD victims

degrees. In terms of marital status, 92.9 per cent % of the participants in the experimental group was married and 7.1 per cent % was divorced. For the control group, 71.1 per cent% of the participants were married, 7.1 per cent % was single, and 21.4 per cents % were remarried. The employment statistics of the experimental group indicated 57.1 per cent % employed, 35.7 per cent % unemployed, and 7.1 per cent % retired. The same statistics for the control group were 64.3 per cent%, 28.6 per cent%, and 7.1 per cent %respectively for the employed, unemployed, and retired, respectively. The mean and standard deviation for the experimental and control groups were respectively  $84/3 \pm 50$  and  $26/4 \pm 57/49$ , respectively. With regards to the type of paralysis, 92.9 per cent % of the participants in the experimental group was nero-psycho and the rest (7.1 percent%) were suffering from a mixture of paralyses (nero-psycho, physical, and chemical). 64.3; 64.3 percent % of the participants in the control group was were suffering from nero-psycho paralysis and the rest were suffering from a mixture of paralyses (Table 1).

Table 2 shows demonstrates the mean and standard deviation of the investigated variables for both the experimental and control groups in the pre-test, post-test, and delayed post-test.

As the Table 2 Presents, demonstrates, there was not a statistically significant difference for the quality of Life and its relevant dimensions based on Box and Levin tests. The results of the repeated measures ANOVA showed a statistically significant difference for the quality of life and its relevant dimensions between the means of pre-test, post-test, and delayed post-test for the experimental and control groups. Moreover, the effect size was found to be 0.689 (eta squared = 0.698) which shows the effectiveness of the treatment. The interactive effect was significant for all the variables, too (Table 3.). Therefore, given the mean scores, it can be said that there was a decrease in the post-test and delayed post-test scores for the experimental group in comparison with that of the control group.

## Results

The results of the Bonferroni test showed a decrease in the scores of the quality of life and its relevant dimensions in both the post-test and delayed post-test for the experimental group. Also, for the control group, there was a statistically significant difference between the mean scores of the post-test. However, it

was much less in comparison with that of the experimental group (Table 3).

## Discussion

The present study aimed at investigating how mindfulness training would influence the quality of life of warfare veterans with PTSD. The results of the repeated measures ANOVA indicated a decrease in the scores of the quality of life and its relevant dimensions for the experimental group in both post-test and delayed post-test. Also, the results of the Post Hoc showed a drop in the scores of the quality of life and its relevant dimensions in the post-test and delayed post-test in comparison with the pre-test for the experimental group.

The results of the study are similar to those of earlier studies supporting the effectiveness of the mindfulness-based interventions in reducing the symptoms of psychological disorders and medical conditions (30), anxiety disorders (30), cancers (31), depression (32) on the one hand and improving affection and temperament (34) and mental health (35) on the other. Also, since the previous researches have shown the effectiveness of mindfulness training in ameliorating depression, psychological disorders, anxiety and the quality of life of those experiencing stressful and traumatic situations (25, 38, 37, 36), it can be claimed that the results of the present study confirm the earlier body of research.

Quality of life is a multidimensional concept informed by different diseases. PTSD produces changes in the feelings and behaviors of the sufferers such as an increase in their intimacy, social and sexual activities, feeling of detachment and alienation and affective and excitement coldness (19, 20). Therefore, employing effective therapeutic and rehabilitative strategies to reduce the resultant problems can improve and promote the quality of life of the warfare veterans with PSTD.

Findings of the study indicated a significant relationship between the effectiveness of mindfulness techniques and other dimensions of life such as mental health which is similar to the findings of earlier studies. Some studies have reported the effectiveness of mindfulness training in improving mental well-being and health (20, 22, 24). Also, the results of this study showed that mindfulness techniques can boost physical health. From this perspective, the findings confirm those of earlier studies (21, 23). The same positive effects are supported by the results of the study in terms of social relationships which have already been reported by other studies (16, 20, 25).

**Table 1- Part 1-Demographic characteristics of participants (baseline characteristics)**

Groups	sampling	Sample size	pretest	Intervention (training the mindfulness)	Post test	Follow up
test	R	14	1T	1X	T2	T3
Control	R	14	1T	-	T2	T3

Table 1- part 2- Demographic characteristics of participants (baseline characteristics)

Groups	Variables	Mindfulness group		Control group	
		f	%	f	%
Marital status	Married	13	92.9	10	71.4
	Unmarried	-	-	1	7.1
	divorced	1	7.1	-	-
	Remarriage	-	-	3	21.4
age	35-45	8	57.1	5	35.7
	55-46	5	35.8	9	64.3
	60-56	1	7.1	0	00.0
Level of education	guidance	6	42.9	8	57.1
	diploma	6	42.9	5	35.7
	Bsc	2	14.2	1	7.1
Job status	Employed	8	57.1	9	64.3
	Un Employed	5	35.7	4	28.6
	Retired	1	7.1	1	7.1
The type of injury	mental	13	92.9	9	64.3
	Physical and mental	1	7.1	5	35.7

Table 2: The Mean and Standard Deviation of the Quality of Life and its Relevant Dimensions for the Experimental and Control Groups

Variable	Group	Pre-test	Post-test	Delayed post-test
The Quality of Life (total)	Mindfulness Training	43/71±8/77	69/92±7/24	68/42±6/53
	Control	44/85±6/88	54/99±12/82	48/78±11/32
A-Health and Physical hygiene	Mindfulness Training	11/42±2/84	19/71±2/05	19/64±1/78
	Control	12/21±2/19	14/92±3/47	12/42±3/17
B-Psychological health	Mindfulness Training	10/07±1/63	17/14±1/95	16/00±1/79
	Control	10/28±2/16	13/21±3/62	11/92±3/04
C-Social relationship	Mindfulness Training	5/50±1/65	8/78±1/18	7/64±1/73
	Control	5/21±0/97	6/85±1/95	5/71±1/43
D-Social setting and condition	Mindfulness Training	13/14±3/08	19/42±2/13	20/64±2/23
	Control	13/92±2/78	15/85±3/63	15/28±3/66

Table 3: The Results of Repeated Measure ANOVA. Pre-test, Post-Test, and Delayed Post-Test for the Experimental and Control groups

Variable	Source	SS	Df	MS	F	Mindfulness Training effectiveness
The quality of life	Period	2871/446	1	2871/446	57/611**	0/689
	Error	1295/893	26	49/842	-	-
	Group	2618/583	1	2618/583	14/807**	0/363
	Error	4598/119	26	176/851	-	-
	period*group	1512/161	1	1512/161	30/339**	0/539
A-Health and Physical hygiene	Period	248/643	1	248/643	46/725**	0/642
	Error	138/357	26	5/321	-	-
	Group	293/440	1	293/440	24/252**	0/483
	Error	314/495	26	12/100	-	-
	period*group	224/000	1	224/000	42/094**	0/618
B-psychological health	Period	200/643	1	200/643	39/801**	0/605
	Error	131/071	26	5/041	-	-
	Group	141/440	1	141/440	13/137**	0/336
	Error	279/929	26	10/776	-	-
	period*group	64/286	1	64/286	12/752**	0/329
C-Social relationship	Period	24/446	1	24/446	11/033**	0/298
	Error	57/607	26	2/216	-	-
	Group	40/048	1	40/048	11/105**	0/299
	Error	93/762	26	3/606	-	-
	period*group	9/446	1	9/446	4/263**	0/141
D-social setting and condition	Period	274/571	1	274/571	39/148**	0/601
	Error	182/357	26	7/014	-	-
	Group	154/714	1	154/714	9/092**	0/259
	Error	442/429	26	17/016	-	-
	period*group	132/701	1	132/701	18/830**	0/420

P: Note&lt; 0.01, P&lt;05

**Table 4: The Results of the Post Hoc test. The clinical Symptom Scores of PTSD for the Experimental and Control Groups**

Variable	Group	The mean difference for each period		
		Period	Post test	Delayed post-test
Quality of life	Mindfulness Training	Pre test	-26/214	-24/714
		Post test	-	1/500
	Control	Pre test	-10/701	-3/929
		Post test	-	6/143
A -Health and Physical hygiene	Mindfulness Training	Pre test	-8/286	-8/214
		Post test	-	0/071
	Control	Pre test	-2/714	-/214
		Post test	-	/500
B-Psychological health	Mindfulness Training	Pre test	-7/071	-5/929
		Post test	-	1/143
	Control	Pre test	-2/929	-1/643
		Post test	-	-1/286
C-Social relationship	Mindfulness Training	Pre test	-3/286	-2/143
		Post test	-	1/143
	Control	Pre test	-1/643	0/500
		Post test	-	1/143
D-Social setting and condition	Mindfulness Training	Pre test	-6/286	-7/500
		Post test	-	1/214
	Control	Pre test	-1/929	-1/357
		Post test	-	0/571

**P\*Note<0.01: P< 0.05**

As shown before, positive and statistically significant changes in the quality of life of the warfare veterans with PTSD was documented in this study. This can be accounted for by the idea that since mindfulness trainings modify judgeless feelings, it may bring about more physical and psychological consciousness, and may help a judgeless acceptance of excitement and physical phenomena (41), and it can also play an important role in improving the quality of life of warfare veterans. This conclusion is defensible when seen in the light of the findings of the previous studies which show the potentials of mindfulness trainings for modifying negative thoughts and behaviors that lead to positive health-related changes (42). Moreover, attending mindfulness workshops causes individuals to change their thoughts in a way that helps them to conceive thoughts as just mental and transient phenomena rather than unchangeable realities (43). To put it simply, it can be noted that since mindfulness training raises the individuals' consciousness of psychological and physical feelings, it results in a realistic acceptance of life events and confidence, deep sympathy and love toward others (44).

Post and Veid believe that the effectiveness of mindfulness-based treatments is due to the intervention of spiritual and religious beliefs. In general, the researchers have a positive orientation towards the effectiveness of those psychotherapy-oriented treatments in which the focus is on religion, mindfulness and praying, or religious trainings (36). Reducing stress by means of mindfulness techniques significantly increases psychotherapy-based well-being and mindfulness and decreases stress and physical signs. The time spent in practice sessions is connected to an

improvement in well-being and mindfulness level. Therefore, mindfulness can be considered as a mediator which ameliorates psychological performance and reduces stress (28). It has been proved that mindfulness training is effective in decreasing depression and anxiety of PTSD sufferers and improving their quality of life (16, 27, 28, 29). Also, there are reports of the efficacy of the method in heightening affection, temperament and mental health of chemical warfare victims (25, 26). In general, mindfulness-based interventions have been effective in decreasing temperament and anxiety problems, bipolar and borderline personality disorders, chronic pains and cancers (37).

Directly and indirectly, mindfulness training improves health within a biological-psychological-social framework (45). Since mindfulness training helps individuals to understand their feelings, direct their attention, accept experiences as they are and prevent passing judgments on their thoughts, it is likely that the method can reduce the symptoms of those suffering from PTSD. Indirectly, mindfulness techniques such as body monitoring can lead to a better understanding of signals and a decrease in unrealistic judgments through making the sufferers more capable of recognizing their feelings (25). Although individuals have their own idiosyncrasies, a mindfulness training team paves the way for them to understand and learn more about their feelings, thoughts, excitements and the people around them. Consequently, this makes them capable of leading a more efficient life when they are out of the groups (28).

Often, PTSD sufferers selectively misinterpret their feelings and physical experiences. This increases their

sensitivity and mistrust and keeps them fearful; this state, in turn, causes individuals to obsessively and relentlessly think of past and future events (36). In such cases, practicing conscious breathing as the locus of attention and reference can help such people to get back to their normal condition. Getting back to oneself is experienced once individuals ponder over their past or future and operate according to their thoughts and feeling patterns (33).

PSTD sufferers have problems with controlling their annoyance, and this negatively influences their marital relationship and affection and reduces family performance and leads to low quality of life. Mindfulness practices improve mental ability in a way that getting back to the normal state even in stressful situations becomes possible (33). In fact, conscious attention to the present time teaches individuals new ways of understanding and responding to all intrinsic feelings and thus they develop the ability to identify feelings, experiences and thoughts (27). Paying conscious attention to the present time is composed of two concepts: Self-management attention and acceptance which is accompanied by a tendency towards experiencing (27). Actually, acceptance is getting rid of judging an experience (39). The concept of acceptance consists of three stages: Observing psychological events, freeing oneself from a tendency to a change in form or the frequency of the event, and finally distinguishing between reality and psychological experiences. In other words, acceptance as a main component of mindfulness-based treatments helps individuals look at psychological events as understandable and transient states instead of considering them as disastrous, intolerable and unavoidable (33). The members of the experimental group reported an increase in their daily performance and activity during the workshop and the period following that. This can be due to a decrease in the number of avoiding experiences and experience-seeking motivation in them. It is supposed that mindfulness-practices encourage participants to keep a positive attitude towards curiosity and openness to experiences (38). In addition, the practices develop accuracy and clarity, enhance understanding and insight towards incompatible, destructive and automatic behaviors, and make it possible for individuals to respond or stop the behavior instead of reacting to it (30, 27, 25).

The new research trend exploring the pathological roots of psychological disorders based on evaluating mindfulness shows the inadequacy of this ability in a number of patients with psychiatric problems. Also, available literature suggests that mindfulness-based treatments play a role in reducing and ameliorating the symptoms of anxiety and depression. By considering mindfulness as a social cognition ability of the brain, researchers believe that employing strategies for assessing and training social cognition to treat patients suffering from psychiatric disorders is a necessity (46).

It can be claimed that since mindfulness training draws the attention and consciousness of individuals to physical and psychological feelings, it can help them to identify their abilities to cope with stress, to become professionally influential and to interact and cooperate with other members of the society (34). This is due to the fact that one of the main dimensions of mindfulness-based treatments is that individuals learn to accept their negative emotions and thoughts without judging them and experience mental events in a positive way (42). Another point which should be borne in mind with regards to mindfulness-based treatments is the mental re-presentation of real life objects which are out of the control of human beings. This is trained through training deep breathing and thinking. Hence, mindfulness and its training can play a significant role in improving the quality of life of those warfare veterans with PTSD and can modify the social behaviors stemming from their neuro-psycho problems. Mindfulness training is one of the therapeutic methods working through psychotherapy and stress reduction. In this method, individuals are trained to re-present objects in their mind which are out of immediate control. This is made possible through breathing and thinking (47). Actually, the method is a combination of body relaxing and mindfulness (27). Rayon and Dosy (as cited in 35) showed that mindfulness help individuals to modify negative behavioral patterns and automatic thoughts, resulting in adaptive positive health-related behaviors. Also, it should be noted that one of the positive dimensions of mindfulness is the increase in the amount of individuals' attention to thoughts, excitements and tendencies, causing adaptive and positive psychiatric behaviors to coordinate. Additionally, it can improve the abilities of individuals in a way that directs them to individual and social activities and raises their interest in them (42). Therefore, providing mindfulness training for the PTSD warfare veterans, who suffer from neuro-psycho, professional and inter-individual problems due to the experiencing damaging and traumatic situations, can have instructive effects .

Like all research projects, this study had limitations, some of which were the small number of the participants, the short interval between the post-test and delayed post-test and gender (females were not included). Therefore, further research is required to consider other factors. Larger samples, longer intervals between post-tests and delayed post-tests and inclusion of females with PTSD can make the findings of the present study more generalizable and reliable.

### **Acknowledgment**

We would like to thank the research section of University of Social Welfare and Rehabilitation Sciences, Tehran, Iran. We also would like to appreciate the mothers of children with cerebral palsy for their participation.

### Conclusion

Attending war zones and facing stressful events cause physical problems and psychological disorders and may reduce the quality of life of the people experiencing such events. The findings of the study suggest that mindfulness training can improve the quality of life of such people.

### References

1. Felce D. Defining and applying the concept of quality of life. *J Intellect Disabil Res* 1997; 41 ( Pt 2): 126-135.
2. Seligman MEP. What is the good life. Available at: American Psychology Association. 1998; 29: 1.
3. Testa MA, Simonson DC. Assessment of quality-of-life outcomes. *N Engl J Med* 1996; 334: 835-840.
4. Burckhardt CB, Anderson KL. The QOLS: Reliability, Validity and utilization. *Health and quality of life outcomes* 2003; 264-269.
5. Pais-Ribeiro JL. Quality of life is a primary endpoint in clinical settings. *Clin Nutr* 2004; 23: 121-130. Oliver J. Quality of life and mental Health services, First Edition. New York; 1997.
6. Klaric M, Franciskovic T, Obrdaj EC, Petric D, Britvic D, Zovko N. Psychiatric and health impact of primary and secondary traumatization in wives of veterans with posttraumatic stress disorder. *Psychiatr Danub* 2012; 24: 280-286.
7. Sherman MD, Perlick DA, Straits-Troster K. Adapting the multifamily group model for treating veterans with posttraumatic stress disorder. *Psychol Serv* 2012; 9: 349-360.
8. Ahmadzadeh G, Malekian A. [Aggression , anxiety & social development in adolescent children of war veterans with PTSD versus those of nonveterans (Persian)] . *Yafteh* 2004; 5: 63-69.
9. Kosor Krnic E, Gagro A, Kozaric-Kovacic D, Vilibic M, Grubisic-Ilic M, Folnegovic-Smalc V, et al. Outcome of influenza vaccination in combat-related post-traumatic stress disorder (PTSD) patients. *Clin Exp Immunol* 2007; 149: 303-310.
10. Peraica T, Vidovic A, Petrovic ZK , Kozaric-Kovacic D. Quality of life of Croatian veterans' wives and veterans with posttraumatic stress disorder. *Health Qual Life Outcomes* 2014; 12: 136.
11. American Psychiatric Association. Diagnostic and Statistical Manual, 4eds. Washington, DC; Text Revision.: 2000
12. Reardon AF, Hein CL, Wolf EJ, Prince LB, Ryabchenko K , Miller MW. Intermittent explosive disorder: associations with PTSD and other Axis I disorders in a US military veteran sample. *J Anxiety Disord* 2014; 28: 488-494.
13. Cano A, Scaturo DJ, Sprafkin RP, Lantinga LJ, Fiese BH , Brand F. Family Support, Self-Rated Health, and Psychological Distress. *Prim Care Companion J Clin Psychiatry* 2003; 5: 111-117.
14. Heinzelmann M, Reddy SY, French LM, Wang D, Lee H, Barr T, et al. Military personnel with chronic symptoms following blast traumatic brain injury have differential expression of neuronal recovery and epidermal growth factor receptor genes. *Front Neurol* 2014; 5: 198.
15. Johnson Agbakwu CE, Allen J, Nizigiyimana JF, Ramirez G, Hollifield M, Mental health screening among newly arrived refugees seeking routine obstetric and gynecologic care. *Psychol Serv*. 2014 Nov;11(4):470-476.
16. Brillhart. Studying the quality of life and life satisfaction among persons with spinal cord injury undergoing urinary management. *Rehabilitation Nursing*. 2004; 29: 122-127.
17. Schreuder BJ, van Egmond M, Kleijn WC , Visser AT. Daily reports of posttraumatic nightmares and anxiety dreams in Dutch war victims. *J Anxiety Disord* 1998; 12: 511-524.
18. Benjamin J, Sadock, Virginia A, Sadock. *Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry*, Eleventh Edition, volter cluwer, August 2014.
19. Bisson JI, Ehlers A, Matthews R, Pilling S, Richards D, Turner S. Psychological treatments for chronic post-traumatic stress disorder. *Br J Psychiatry* 2007; 190: 97-104.
20. Mueser KT, Rosenberg SD, Xie H, Jankowski MK, Bolton EE, Lu W, et al. A randomized controlled trial of cognitive-behavioral treatment for posttraumatic stress disorder in severe mental illness. *J Consult Clin Psychol* 2008; 76: 259-271.
21. Richardson JD, Long ME, Pedlar D, Elhai JD. Posttraumatic stress disorder and health-related quality of life among a sample of treatment- and pension-seeking deployed Canadian Forces peacekeeping veterans. *Can J Psychiatry* 2008; 53: 594-600.
22. Schnurr PP, Lunney CA. Exploration of gender differences in how quality of life relates to posttraumatic stress disorder in male and female veterans. *J Rehabil Res Dev* 2008; 45: 383-393.
23. Lombardo TW, Gray MJ. Beyond exposure for posttraumatic stress disorder (PTSD) symptoms: broad-spectrum PTSD treatment strategies. *Behav Modif* 2005; 29: 3-9.
24. Kimbrough E, Magyari T, Langenberg P, Chesney M, Berman B. Mindfulness intervention for child abuse survivors. *J Clin Psychol* 2010; 66: 17-33.
25. Simpson TL, Kaysen D, Bowen S, MacPherson LM, Chawla N, Blume A, et al. PTSD symptoms, substance use, and vipassana meditation among incarcerated individuals. *J Trauma Stress* 2007; 20: 239-249.
26. Kabat-Zinn J, *Wherever you go, there you are: Mindfulness meditation in everyday life* (1st ed.). New York: Hyperion; 1994.
27. Ludwig DS, Kabat-Zinn J. Mindfulness in medicine. *JAMA* 2008; 300: 1350-1352.
28. Baer RA, Smith GT, Lykins E, Button D, Krietemeyer J, Sauer S, et al. Construct validity of the five facet mindfulness questionnaire in

- meditating and nonmeditating samples. *Assessment* 2008; 15: 329-342.
29. Kabat-Zinn J, Lipworth L, Burney R, & Sellers, W. Four-year follow-up of a meditation-based program for the self-regulation of chronic pain: Treatment outcomes and compliance. *The Clinical Journal of Pain* 1987; 2: 159-173.
  30. Morone NE, Greco CM, Weiner DK. Mindfulness meditation for the treatment of chronic low back pain in older adults: a randomized controlled pilot study. *Pain* 2008; 134: 310-319.
  31. Carlson LE, Speca M, Patel KD, Goodey E. Mindfulness-based stress reduction in relation to quality of life, mood, symptoms of stress, and immune parameters in breast and prostate cancer outpatients. *Psychosom Med* 2003; 65: 571-581.
  32. Teasdale JD, Segal ZV, Williams JM, Ridgeway VA, Soulsby JM, Lau MA. Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *J Consult Clin Psychol* 2000; 68: 615-623.
  33. Narimani M, Ariapooran S, Abolghasemi A, Ahadi B. [Effectiveness of mindfulness-based stress reduction and emotion regulation training in the affect and mood of chemical weapons victims (Persian)]. *AMUJ* 2012; 15: 107-118.
  34. Narimani M, Ariapooran S, Abolghasemi A, Ahadi B. [Effectiveness of mindfulness-based stress reduction and emotion regulation training in the Mental health of chemical weapons victims(Persian)]. *Iran J Clinical Psychology* 2010; 4: 61-72.
  35. Thompson BL, Waltz J. Mindfulness and experiential avoidance as predictors of posttraumatic stress disorder avoidance symptom severity. *J Anxiety Disord* 2010; 24: 409-415.
  36. Vujanovic AA, Youngwirth NE, Johnson KA, Zvolensky MJ. Mindfulness-based acceptance and posttraumatic stress symptoms among trauma-exposed adults without axis I psychopathology. *J Anxiety Disord* 2009; 23: 297-303.
  37. Mitmansgruber H, Beck TN, Höfer S, Schüßler G. When you don't like what you feel: Experiential avoidance, mindfulness and meta-emotion in emotion regulation. *Person and Individual Differences* 2009; 46: 448-453.
  38. Kabat-Zinn J, Massion AO, Kristeller J, Peterson LG, Fletcher KE, Pbert L, et al. Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *Am J Psychiatry* 1992; 149: 936-943.
  39. Nejat S, Montazeri A, Holakouee C, Mohammad K, Majdzade Reza. [Standardization of the World Health Organization Quality of Life Questionnaire; translation and psychometric Iranian species (Persian)]. *J of Public Health, School of Health Research*. 2006; 4: 1-12.
  40. Brown KW, Ryan RM. The benefits of being present: mindfulness and its role in psychological well-being. *J Pers Soc Psychol* 2003; 84: 822-848.
  41. Bohlmeijer E, Prenger R, Taal E, Cuijpers P. The effects of mindfulness-based stress reduction therapy on mental health of adults with a chronic medical disease: a meta-analysis. *J Psychosom Res* 2010; 68: 539-544.
  42. Bishop SR. What do we really know about mindfulness-based stress reduction? *Psychosom Med* 2002; 64: 71-83.
  43. Mace C. Mindfulness and mental health: therapy, theory, and science. New York: Routledge Press; 2008.
  44. Bernstein A, Tanay G, Vujanovic AA. Concurrent relations between mindful attention and awareness and psychopathology among trauma-exposed adults: Preliminary evidence of transdiagnostic resilience. *Journal of Cognitive Psychotherapy* 2011; 25: 99-113.
  45. Nejati V, Amini R, ZabihZadeh A, Masoumi M, Maleki G, Shoaie F. [Mindfulness as effective factor in quality of life of blind veterans(Persian)]. *Journal (IJWPH)*. 2011; 3: 1-7.
  46. Kieviet-Stijnen A, Visser A, Garssen B, Hudig W. Mindfulness-based stress reduction training for oncology patients: patients' appraisal and changes in well-being. *Patient Educ Couns* 2008; 72: 436-442.