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# Improvement in quality of life after exposure therapy, problem solving and combined therapy in chronic war-related post traumatic stress disorder

**Subtitle:** exposure therapy, problem solving and combined therapy in war-related PTSD

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## Abstract

### Introduction

Posttraumatic stress disorder (PTSD) is the one of the most commonly observed psychiatric disorder in veterans. The condition can lead to considerable social, occupational, and interpersonal dysfunction. PTSD occurring after combat injury appears to be strongly correlated with the extent of injury, and develops over several months. Studies have indicated that behavioral and cognitive-behavioral treatments are effective in reducing symptoms of PTSD and depression.

### Methods

In this study we evaluated the efficacy of problem solving in improving Quality of life of 60 Iranian veterans after Iran- Iraq war. After learning sessions and implementing the interventions, patients were evaluated by SF-36 Questionnaire during post-intervention and follow-up measurements.

### Results and conclusion

post-test and follow-up scores were  $50 \pm 4.4$  and  $56.1 \pm 3.8$  in problem solving. Comparing to control group without any treatment, all intervention groups showed significant improvement in quality of life.

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**Keywords:** posttraumatic stress disorder, problem solving, combined therapy, exposure therapy, SF-36, quality of life

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## 1. Introduction

**Background:** war veterans were exposed frequently to a variety of traumatic events and stressors due to their special condition. Posttraumatic stress disorder (PTSD) is the most commonly observed psychiatric disorder in communities affected by disasters and mass violence (Galea, Nandi, & Vlahov, 2005). Three characteristic symptom clusters develop as a result of traumatic exposure. They comprise reexperiencing, hyperarousal and Avoidance symptom clusters (APA, 1994). The pathophysiology of PTSD reflects long-lasting changes in the biological stress

response systems that underlie many of the symptoms of PTSD and other trauma-related disorders (Vermetten & Bremner, 2002).

Post-traumatic stress disorder (PTSD) has been described as "the complex somatic, cognitive, affective and behavioral effects of psychological trauma" (Van der Kolk, 1996). PTSD is characterized by intrusive thoughts, nightmares and flashbacks of past traumatic events, avoidance of reminders of trauma, hyper vigilance, and sleep disturbance, all of which lead to considerable social, occupational, and interpersonal dysfunction. The diagnosis of PTSD can be challenging because of the heterogeneity of the presentation and resistance on the part of the patient to discuss past trauma. About 27% of people, who experienced an awful trauma and have been injured physically, would suffer from PTSD in future (Shalev et al. 1996). In particular, PTSD imparts substantial functional impairment in the exposed and is often comorbid with conditions such as depression, generalized anxiety disorder and substance abuse (Kessler et al., 1999). PTSD occurring after combat injury appears to be strongly correlated with the extent of injury, and develops over several months (Grieger et al., 2006).

Evidence suggests that severity of PTSD is related to the degree of combat exposure and war duration (Sutker et al., 1991; Hermann and Eryavec, 1994; Spiro et al., 1994). Since Iran-Iraq war lasted for 8 years (1982-1989), it has been presumed to burden a variety of uncompensated psychological damages such as PTSD, on both sides. In a study done by anxiety, depression, and PTSD in Iranian survivors of chemical warfare were reported (Hashemian et al., 2006, Ahmadi et al, 2006; Ahmadi et al, 2007). In their investigation the respondents had a mean age of 45 years and were all of Kurdish ethnicity. Among individuals exposed to both high-intensity warfare and chemical weapons, prevalence rates for lifetime PTSD, current PTSD, major anxiety symptoms, and severe depressive symptoms were 59%, 33%, 65%, and 41%, respectively.

Cognitive-behavioral treatment (CBT) comprising interactive psychoeducation, cognitive restructuring and anxiety management training, offers the best outcome supported by RCT studies (Tarrier et al., 1999; Rothbaum et al., 2000; Harvey et al., 2003). Generally, controlled research studies have indicated that behavioral and cognitive-behavioral treatments are effective in reducing symptoms of PTSD and depression (Sherman, 1998).

Problem solving therapy, a short-term, cognitive behavioral intervention, teaches a systematic method for solving current and future problems. Patients acquire new skills for successfully resolving interpersonal difficulties. These skills include the following sequential steps: 1) recognizing the general situation; 2) defining and formulating of the problem and Goal setting; 3) Generating, choosing, and implementing a novel solutions; 4) decision making to continue to the end; and 5) proofreading and evaluating outcomes. By consistently implementing these steps and making them part of their repertoire, patients can cope adaptively with new challenges.

Cognitive avoidance of trauma related material is one of the defining characteristics of posttraumatic stress disorder (APA, 1987). Exposure-based behavioral treatments utilize gradual, systematic, repeated exposure to the feared object or situation to allow patients with anxiety disorders to become desensitized to the feared stimulus. The exposures are predictable and under the patient's control. The patient is taught a variety of adaptive coping strategies to utilize throughout treatment. Some recent studies provide support for exposure therapy for war veterans, although the effects have been small (Ready, 2008).

**Objectives:** Our goals in this study were: To assess the efficacy of problem solving in Quality of life of war-related PTSD in veterans compared to control group,

## 2. Methods

We established an empirical; multiple groups pre- and post- test study. Participants were recruited in Tehran from 120 volunteer veterans, admitted to Bonyad Shahid due to war-related PTSD. They were assigned to interventions in 2 equal groups to receive: 1. problem solving therapy; 2. control group, by using random allocation

**Sample:** The sample for this study was comprised of Iranian veterans in 8 years consecutive Iraq-Iran War combat, who presented with a variety of concerns to the Deployment Health Clinic of Bonyad Shahid and Sepah Pashan between 2005 and 2006 in Tehran. The Deployment Health Clinic is structured to screen for PTSD purely or PTSD with concomitant depression by DSM IV TR (Diagnostic and Statistical Manual of Mental Disorder, Fourth Edition, Text Revision) diagnosis criteria and psychological interview. Participants were a random sample of men, ages 25 to 50 years, with 14 years of education, diagnosed with PTSD merely or PTSD with concomitant depression, who had a recorded profile in Hazrat Abolfazl clinic, Sani Khani clinic, and psychiatric Sadr Bonyad center.

**Sampling:** In the first stage, 60 PTSD patients were selected from among patient's dossiers of clinical centers belonging to Islamic Revolution Guards Corp & Bonyad in Tehran (Baqiyatallah Hospital, Hazrate Aboulfazl clinic, Shahid Sanie Khani clinic & Sadr psychiatry center). Of 60 patients invited after sending written invitation and making phone contact. They were informed about the reason of the invitation, the to-be-done study and its conditions, procedures and treatments. To make up the deficit, the dossiers were checked again, and those absent in the session were invited again. Additionally psychiatrists of the above mentioned clinical centers added new candidates from their new referrals. Before the study begins, all participants filled demographic questionnaires, and gave written informed consent. According to the participants' answers, it has been programmed that patients attend therapeutically sessions twice weekly.

**Instruments:** The following items were employed:

**1) Quality of life questionnaire (QLQ) or SF-36** is a multi-purpose, short-form health survey with only 36 questions. It yields an 8-scale profile of functional health and well-being scores as well as psychometrically-based physical and mental health summary measures and a preference-based health utility index. It is a generic measure, as opposed to one that targets a specific age, disease, or treatment group. Accordingly, the SF-36 has been proven useful in surveys of general and specific populations, comparing the relative burden of diseases, and in differentiating the health benefits produced by a wide range of different treatments.

**2) Symptom Checklist-90-Revised (SCL-90-R)** is a widely used self-report instrument for assessing psychiatric problems (Dragotis, 1983). It assesses a wide range of psychopathic comorbid problems and is brief enough to be taken in only 15-20 minutes. The checklist has many archival databases. It is possible to measure PTSD by this instrument in a wide range of clinical and research settings. We applied Global Severity Index (GSI) of this checklist in this study.

**Problem solving therapy:** 15 therapy sessions were held containing 7 group sessions each lasting 2 hours, and 8 individual sessions each lasting 45 minutes. Patients were trained 5 steps of problem solving therapy by an expert therapist, throughout 7 group sessions. At the end of session 1, patients were assessed by Questionnaires as pre-therapy tests.

Individual sessions were devoted to recognizing the exact stressor situations and memories of each case. Then patients were asked to perform their learning on their own virtual problems and trying to go through each step by therapist assistance. Post-therapy tests were held at the end of 15<sup>th</sup> session and 3 months later.

### 3. Results

Each of two groups of problem solving and control were composed of 25 individuals. Overall mean age was  $42.37 \pm 4.55$  (ranging from 34 to 57 years). Table shows baseline characteristics of the subjects in detail.

Short form of QLQ was applied to assess quality of life. Table 2 demonstrate the total score and sub scores. There was significant increase in the total scores of post-test phase and follow-up period comparing to baseline condition in all three intervention groups. Analysis of the components of SF36 revealed a similar trend in sub scores.

Considering post-test and follow-up measurement among groups it was observed that all interventions were significantly effective in improving the scores. Nevertheless, this impact was more outstanding in exposure therapy with significant difference comparing to problem solving and control group.

Analysis of Global Severity Index (GSI) between groups depicted that all intervention could diminish the scores significantly in post-test phase comparing to pre-test measurement. This decrement was more in subjects who underwent exposure therapy.

Table 1. baseline characteristics of individuals enrolled in the study.

	Exposure therapy	Problem solving	Combined therapy	control
Age	42.9±5.3	41.58±3.9	42.4±5.2	42.52±3.4
Academic education (%)	52	46	35	64
Percent of injury (%)	43	41.5	42.5	42.4

Table 2. Scores of SF36 and GSI in pre-test, post-test and follow-up measurements.

	SF36			GSI		
	Pre-test	Pre-test*	Follow-up*	Pre-test	Post-test*	Follow-up*
Problem solving	36.4±3.2	50±4.4	56.1±3.8	1.78±0.3	1.38±0.2	1.32±0.3
control	45.9±4.6	45.7±3.2	46.1±2.5	1.5±0.3	1.54±0.2	1.3±0.2

SF36: Short Form of Quality of Life Questionnaire, GSI: Global Severity Index

\*post-test and follow-up have significant difference with pre-test measurements.

#### 4. Discussion

Applying pharmacotherapy and psychotherapy for treatment of patients with post traumatic stress disorder was focused in different studies. Among psychotherapy method, cognitive-behavioural therapy appeared to be the first line especially in chronic cases of combat-related PTSD. In this study we evaluate outcome of problem solving in treatment of chronic PTSD in veterans of Iraq-Iran war. To assess adjustment ability of subjects and intervention efficacy, BAQ and GSI were applied as pre-test and post-test measurements. A repeated test after 3 months was used to ascertain long time efficacy.

Our finding showed that problem solving approaches alone is effective in treatment of PTSD in veterans (considering GSI scores). Nevertheless, problem solving seems to have more persistent effects after 3-month evaluation.

Regarding adjustment ability, it was observed that applied approach could improve SF-36 scores. This is consistent with other studies which employed problem solving method as therapeutic approach and implies that assisting patients in finding better solution for their problems is a crucial principle.

Although there were slight differences among results of components of SF-36, the total trend was similar. Findings of this study are consistent with previous works which offered problem solving approaches as effective treatments for PTSD patients. It is often reported that this method of intervention have similar effectiveness. It can be implied that problem solving can provide more effective remedies for victims of psychological trauma to encounter the problems.

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