The effectiveness of Schema Therapy in decrease anger and hostility among male veterans with chronic posttraumatic stress disorder

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Original Article

Abstract

Introduction: Since the significant impact on anger and hostility is caused by post-traumatic stress disorder (PTSD) on various aspects of individual, family, social, and vocational life of those who suffer from this disorder, it is necessary to target and cure these two devastating symptoms.The aim of this study was to determine the effectiveness of Schema therapy in decrease anger and hostility among male veterans with chronic posttraumatic stress disorder..

Methods: In a semi experimental research 24 male war veterans among veterans with chronic PTSD in Kermanshah Province in 2014 participated in this study. The participants were selected according to the convenient sampling and randomly assigned into experimental and group control. The data were collected by The Post Traumatic Stress Disorder Checklist-Military (PCL-M) and anger and hostility subscales from Buss & Perry aggression questionnaire. Then, the sessions of schema therapy were conducted for the experimental group in 1 hour a week for 14 weeks. Data were analyzed by multivariate analysis of covariance, with 0.95 confidence level and IBM SPSS 22 software was used for data process.

Results: The multivariate analysis of covariance showed that the mean scores of the experimental group comparing to the control group was significantly decreased in anger and hostility ($P < 0.05$).

Conclusion: With regard to the negative consequences of anger and hostility in family, social and vocational relations in veterans with PTSD, effectiveness schema therapy can be used to reduce the symptoms of anger and hostility.

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Introduction:

From its nosological perspective, post traumatic stress disorder has undergone ups and downs. This historical change has initiated from soldiers irritable hearts, railway spine, traumatic neurosis, shell shock and continued to post traumatic syndrome chosen by Abraham Kardiner (1,2). History of the

PTSD diagnosis also has been subjected to changes, so that after its first definition in DSM-III with 12 symptoms and 3 diagnostic criteria, and its place in anxiety disorder category, in diagnostic and statistical manual for mental disorders, fifth edition (DSM-5) in 2013, It not only was omitted from anxiety disorder category DSM-IV and was put in separate diagnostic category called Trauma and stress related disorder, but also its syndrome increases to 17, and its diagnostic criteria increases to 8 criteria (3,4). In DSM-5 eightfold criteria have been introduced by PTSD for adults, adolescents, and children older than 6 years. These include:

A) Exposure to actual or threatened death, serious injury, or sexual violence. **B**) Presence of intrusion symptoms (recurrent, involuntary, and intrusive distressing memories and dreams, dissociative reactions, e.g., flashbacks) associated with the traumatic event(s), beginning after the traumatic event(s). **C**) Persistent avoidance of stimuli associated with the traumatic event(s), beginning after the traumatic event(s) occurred. **D**) Negative alterations in cognitions and mood associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred. **E**) Marked alterations in arousal and reactivity associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred. **F**) Duration of the disturbance (Criteria B, C, D, and E) is more than 1 month. **G**) The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. **H**) The disturbance is not attributable to the physiological effects of a substance (e.g., medication, alcohol) or another medical condition" (5).

Anger as a negative emotional state and hostility are regarded as negative attitudes (6), they both have significantly positive relationship with post traumatic stress disorder (7-10,16). In literature review, Taft et.al. (11) Have done fairly comprehensive study about post traumatic stress disorder, the results of their study showed that there is a linear association between anger, hostility, and PTSD. They effect of its syndrome intensity in additional Veterans with PTSD showed the higher rates of anger comparing to those who didn't suffer from PTSD. Tetan and colleagues (12) studied the association between anger and hostility among male veterans with PTSD. The results of the study revealed that more than 70% of veterans with PTSD, showed impulsive aggression, in comparing to 29% of veterans who didn't suffer from PTSD. It is claimed that aggressions in PTSD resulted from anger and hostility, and not only PTSD, also of the comorbid anger and hostility need to be treated.

Different ways for treatment have been applied to cure veterans who suffer from PTSD, some of which are based on pharmalogica interventions while some others are based on psychological interventions. Some of most common psychological interventions included: prolonged exposure (PE); eye movement desensitization and reprocessing (EMDR); cognitive processing therapies (CPT); stress inoculation training (SIT); exposure therapy using virtual reality (VR); relaxation training; Cognitive behavioral group therapies; psychodynamic psychotherapy; interpersonal psychotherapy (IPT); dialectical behavior therapy (DBT); hypnosis and psychological debriefing(PD) (13). Recently in study done by Koch et.al. (14), relative success has been achieved by using spray of intra nasal oxytosin in the nose of the patients who suffer from PTSD, because the hormone improved social performances, such as increasing confidence in social situations.

However, most interventions mentioned above face some limitations: they are effective just for short period after the occurrence of stressful event (PD); neglecting cognitive mediators due to focusing on classical conditioning principles (PE); their use for single individual and take a lot of expenses (EMDR); lack of experimental evident to support intra nasal oxytosin; failure to treatment patients who are resistant to traditional cognitive therapy.

Based on what has just mentioned, the present study tries to investigate schema therapy as a rather new procedure with high experimental support in reducing anger and hostility among male veterans who suffers from PTSD .According to Hawke et.al. (15) This method of therapy was developed by Young et.al. (1990) as integrative way to treat patients who were resistance to cognitive-behavior therapy, or for those whose course of illnesses was chronic.

Theories based on schema claim that incompatibility between information is related to trauma with pre-existing schema in persons who shows cognitive and affective PTSD, and schemas before, during, and after trauma plays an important role in psychopathology. Among four main concepts in schema therapy (early maladaptive schemas, coping styles, schema domains and schema modes) EMSs schemas, i.e., extremely stable and enduring themes, comprised of memories, emotions, cognitions, and bodily sensations regarding oneself and one's relationship with others, that develop during childhood and are elaborated on throughout the individual's lifetime, and that are dysfunctional to a significant degree are in the heart of this model (17).

When EMSs are aroused, they caused intense emotions, they are self-perpetuating and resistance against every opposed evident and reasoning. Young et.al. (1990) investigated 18 EMSs that the main purpose of schema therapy was improving these EMSs (18).

Cognitive-schema may help us to have a better understanding about psychopathology due to PTSD. In a study done by Cockram et.al. It showed that EMSs in veterans who suffer from PTSD are more active. They play important roles in development and maintenance of PTSD. As a result, schema therapy can reduce syndrome of war veterans with PTSD (19). In another research was carried out by Wright et.al. (20), they studied cognitive schema disruption in victims of sexual and PTSD. The result of the study revealed that cognitive schema acts as a partial mediator in relation with sexual trauma and PTSD. In addition to, these 6 schemas (Self-Intimacy; Self-Safety; Self-Safety; Self-Trust; Other Intimacy; Other Safety; Other Trust) was significantly difference between Trauma group and control group or the group who doesn't suffer from trauma.

Most previous studies were limited to the relationship between EMSs and PTSD or their interventions targeted the syndromes of those disorders. Due to lack of literature review, the present study focuses on the effects of schema therapy on anger and hostility on war veterans with PTSD.

Methods:

The present study is semi-experimental with control group and pre-test posttest design. Accordingly schema therapy was used as an independent variable on each criterion variables (anger and hostility) has been implemented. Participants in this study were all male, and they were selected from Iraq imposed war against Iran in the province of Kermanshah in 2014. They were approved by medical committee as patients who suffer from PTSD. From statistical population, according to the literature of the study for interventional investigations, a sample of 24 males veterans based on convenience sampling were selected and matched based on demographic variables type of injury (physical, chemical, and mixed), and percentage of injury, type of used drugs, the veterans were assigned randomly to control and experimental group. Inclusion criteria were as follow: (1) to be male, (2) married, (3) at least studied for 9 years, (4) his age must be below 70 years, (5) his cut-off score must be higher in Post Traumatic Stress Disorder Checklist-Military (PCL- M) (6) They must consent to participate in therapy period. Exclusion criteria contain: psychotic disorder, bipolar disorder, sever drug addicted, sever self-damage behavior, like committing suicide, and sever aggressiveness, and finally damage level more than.0.70.

The instrument in the present study include: Post traumatic stress disorder checklist-Military (PCL-M). This scale was designed by Weathers et.al. (21). The PCL-M consist of 17 items that measure PTSD symptom, and this self-report instrument is measured based on 5-point Likert (from 1= not at all to 5= extremely).Based on which a total score and the scores of each individual in threesub-scales re-experience, avoidance / numbing, and hyper arousal, can be obtained. In the study done by Weathers et.al .on Vietnam veterans. 0.97 consistency coefficient was reported. In order to take the medical committee approval to diagnose patients with PTSD. Buss and Perry Questionnaire (BPAQ-29) questionnaire was administered before instrument in the present study. Buss and Perry questionnaire in 1992 (22) consist of 29 items, that includes four dimensions of aggression (physical aggression - 9 items; verbal aggression 5- items; anger – 7 items, and hostility –

8 items). Subjects rank certain statements along a 5 point continuum from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me). Buss and Perry (1992) in their research have reported internal consistency and test-retest for total scores of .0.89 and .0.80.

In the present study, two sub-scales (anger and Hostility) were used. The sessions of schema therapy were conducted for experimental group one hour a week for 14 weeks.

Schema therapy was derived according to Young and colleagues' manual (23). After recording data in IBM SPSS version 22 software, MANCOVA analysis was used.

Results:

The mean of age, percentage of injury and the years each individual spent in the front (war), for experimental group was 54.66, 44.16, and 4.03 respectively. This data for control group was 52.83, 45.50, and 4.58.

In table 1, the mean and standard deviation of the experimental and control group on the criterion variables are presented as descriptive variables:

Before performing the Multivariate analysis of covariance, its assumptions were checked out.

Levene's' test was used to check equality of variances, and the Box M test was applied in order to check homogeneity of variance-covariance matrix. Based on the results obtained from these two tests ($P>0.05$), and Shapiro-Wilk- test for assessment of normality of data ($P>0.05$), the main prerequisite for using MANCOVA in post-test stage were provided. To determine whether independent variable affected the dependent variables or not, the results of MANOVA tests should be considered. In table 2 Covariance analysis results are shown:

As it is evident in table 2, all tests are significant at ($F=63.05$, $P<0.001$). Furthermore, it can be inferred that there is significant difference in at least one of dependent variables (anger, hostility). To evaluate significant differences in the dependent variables after controlling for effects of pre-test, the multivariate analysis of covariance MANCOVA was used. The results of MANCOVA of the effects of schema therapy in post-stage are shown in table 3.

Table 3 reveals the means scores of anger [$F(22,1)=108.55$, $P<0.001$] and the means scores of hostility [$F(22,1)=51.174$, $P<0.001$). It shows that there is a significant difference between experimental and control group. In addition, results indicate that .0.83 of anger variation and 0.69 of hostility variation can be explained by schema therapy.

Table 1. The mean and standard deviation of the experimental and control group on the criterion variables

Groups	Pretest/anger	Posttest/hostility	Pretest/ hostility	Posttest/anger
	M (SD)	M (SD)	M (SD)	M (SD)
Exprimental	20.75 (2.63)	30.58 (1.83)	19.08 (1.83)	28.33 (2.26)
Control	31.33 (4.39)	32.08 (3.34)	27.66 (2.18)	28.00 (1.59)

Table 2. MANOVA tests

	Effect	Value	F	Hypothesis DF	Error DF	Sig
Group	**Pillai's Trace**	.857	63.05	2	21	0.001
	Wilks' Lambda	.143	63.05	2	21	0.001
	Hotelling's Trace	6.005	63.05	2	21	0.001
	Roy's Largest Root	6.005	63.05	2	21	0.001

Table 3. Results of covariance analysis of the adjusted mean difference of the scores of the effect of schema therapy on "anger and hostility" of the male veterans with PTSD in experimental and controlled groups

Source	Type III sum of Squares	Df (group, error, total)	Mean Square	F	P-value	Parital Eta Squared
Anger	442.042	1,22,24	442.042	108.557	0.001	.831
Hostility	672.042	1.22,24	672.042	51.174	0.001	.699

Conclusion:

First, in a study done by Renshaw and Kiddie (24) on combat veterans, it was revealed that PTSD is the most common context in which anger and aggression (of course hostility) have been studied, with strong association detected between levels of anger/aggression and severity of PTSD symptoms.

Second, Crowson, Frueh and Synder (25), in an article titled 'Hostility and Hop in Combat-related Post Traumatic Stress Disorders: A look back at combat as compared today', have stated that "anger and hostility related to PTSD are associated with both personal and social problems".

Third, based on clinical observations and clinical research, anger and hostility don't exclusively have negative consequences on the sufferers with PTSD, but it is probable that secondary traumatization would be formed on veterans' children and especially on their wives, due to the effects of these factors.

Finally, Up to now, schema therapy has not been examined on anger and hostility symptoms of PTSD. Based on reasons mentioned above, this semi-experimental study aimed at evaluating the outcomes of cognitive therapy based on schema on reducing anger and hostility among male veterans with PTSD. As it was shown in table 4 schema therapy has significant impact on reducing anger and hostility among participants of the study.

Moosavi and Moosavi Sadat (26) in their research aimed at investigating the effectiveness of schema therapy in reduction of early maladaptive schemas on PTSD male veterans showed that, schema therapy reduced the severity of EMSs in patients who were included in the study. From these findings, it can be concluded this is why schema therapy is effective.

A research conducted by Hamidiet.al. (27) indicated that, subjects who didn't receive schema-focused therapy had more anger and less self-expression. In the explanation of effectiveness of schema therapy based on the book titled "Schema Therapy Clinical Guide" written by Farrell, Resiss and shawin 2014 (28), it can be inferred that: In treatment of patients with psychological disorders, schema therapy has achieved considerable successes, since it is a combination of cognitive, behavioral, and especially experimental interventions.

According to Elbogen et.al. (29), multiple factors are related to anger and hostility in veterans; witnessing of family violence, hostility of abuse, brain injury with certain cognitive deficits, all of which weren't controlled in this study.

On one hand, emotions and attitudes toward self, others and the world affected by cognitions, especially core beliefs or schema. because they are very important for processing, organizing and interpretation of information, negative attitudes and early maladaptive schemas can contribute to maintaining the symptoms of psychiatric disorders (such as hostility and anger) and from other hand, With regard to the negative consequences of anger and hostility in family, social and vocational relations in veterans with PTSD, effectiveness of cognitive therapy based on schema can be used to reduce the symptoms of anger and hostility.

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