

# A Randomized Controlled Trial of the Efficacy of Expressive Writing as an Intervention for War-Exposed Iraqi Adolescents in Basrah

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**Abstract---** *Expressive writing is a new psychological treatment and it is currently under study by many researchers in mental health. The aim of the present study is to test the efficacy of expressive writing as a psychological therapeutic intervention.*

*A sample of 106 students from two intermediate schools, in Basra was included in this study and as follow: AL-Ashaar for girls and Al-Rashideen for boys, the data were collected during the period from 15th of November to 10th of December in 2011. Those students randomly allocated to two groups, one write in emotional way and the other write on neutral topics. Those students were assessed one week prior to the intervention and two weeks after it using the four types of questionnaires viz. Modified War Trauma Questionnaire (WTQ), Spence Children Anxiety Scale (SCAS), Birlson's Depression Self Rating Scale for Children (DSRS-C) and Children Revised Impact Events scale-8 (CRIES-8). The maximum level of effects was observed in PTSD students who did emotional expressive writing. The males were found to be more affected than the female. Similar results were obtained from the GAD study. The GAD occupied 2nd degree in the beneficial level. No significant effect was shown in Depressed students. The present research trials has beneficial outcomes on physical and psychological health. The expressive writing is not cost-effective, not time consuming, easy to administer, there is actual need to conduct further researching in the future to determine the beneficial outcomes in order to involve it in mental health therapy. In order to obtain better outcomes in prospective similar study, it is important to give more time for follow up from at least 6 months post intervention and to recruit a sufficient sample number of participants.*

**Keywords---** *Emotional, Expressive writing, War-exposed Iraqi adolescences, Anxiety, Trauma.*

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## INTRODUCTION

Stressful events frequently provoke psychiatric disorders. Such events can also provoke emotional reactions that are distressing, but not of the nature or severity required for the diagnosis of an anxiety disorder or a mood disorder. The response to stressful events has three components viz. emotional response, coping strategies and defense mechanism<sup>1</sup>. Acute stress reaction in international statistical classification of diseases and mental disorders-10 (ICD-10) and acute stress disorder in diagnostic and statistical manual of mental disorders text revision (DSM-IV) captured different phases of the psychological response to stress<sup>2,3</sup>.

Post - traumatic stress disorder is a prolonged and abnormal response to exceptionally intense, stressful circumstances such as a natural disaster or a sexual or other physical assault<sup>4</sup>. Iraq has been exposed to many violent

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traumas in the last eight years<sup>5</sup>. Iraqis witnessed and still witnessing the painful bloody and horrible sequence of explosive cars which causes death of hundreds of Iraqi people and many injuries in the country. In addition to explosion many events happened in the last eight years such as murder, armed robberies, torture, rape, kidnapping for ransom and sectarian conflict<sup>5</sup>. A child may personally be the victim of violent trauma, or his parent, sibling and other relatives may be killed, injured or may disappear from his life without explanation. The war effect children in many ways like, loss of basic resource, disturbed family relationship which includes children have family members who are kidnapped or killed, pessimistic outlook and normalization of the violence<sup>5</sup>. However, these disorders frequently go unrecognized by medical professionals. This is a critical problem. Since a younger age of onset and severity of illness result in poor outcomes in adolescents and adults<sup>6,7</sup>.

The failure to identify these disorders early in life lead also to increase rates of anxiety disorders, depression as well as educational under achievement<sup>8</sup>. When an individual experiences a trauma, acute neurophysiological and psychological reactions, usually occur whose nature and intensity are influenced by the type of trauma, perceived level of threat, trauma context and pre traumatic conditions<sup>9,10</sup>. Although children can be astonishingly resilient even in the face of severe disasters and atrocities, high levels of traumatic events increase the risk of developmental difficulties and psychological disorders. Many studies have shown increased rates of mental disorders in children affected by world war III<sup>11</sup>.

The exact cause of post-traumatic stress disorder (PTSD) is unknown, but psychological, genetic, physical and social factors are involved<sup>12,13</sup>. There is evidence to suggest that childhood anxiety disorders are not transient phenomena for many children and that, if left untreated may persist through adolescence and adulthood<sup>14,15</sup>. Thus, it is important that clinically anxious children are identified as early as possible and provided with appropriate intervention<sup>16</sup>. The principal treatment modality of PTSD is some type of psychotherapy, such as supportive, psychodynamic, cognitive behavioral, and others, with medication use to augment the psychotherapy and help reduce symptoms.

With this background, in the present study, we aim to test the efficacy of expressive writing as a psychological therapeutic intervention, and assessing its capability to reduce the post-traumatic stress symptoms, depression symptoms and generalized anxiety symptoms and to compare it with neutral writing.

## **METHODOLOGY**

### **Participant enrollment**

The study was conducted at two intermediate schools for both genders, students during November 2011 to December 2011. The Al-Ashar intermediate school for girls (total number of students=445) and Al-Rashidine intermediate school for boys (total number of students=246) in Al-Tuwaisa district was selected for this study. Third year intermediate students (n=106) we recruited for this study.

### **Study design**

The enrolled students (age 14-17 years) were randomly divided into the two groups viz. Emotional writing group and neutral writing group. In the emotional writing group, students were allocated to write emotionally about their

traumatic experience(s) (expressive writing) and in the neutral writing group was allocated to write about a neutral topics i.e. not related to any psychological trauma(s) or emotions(s) (control group). The control group students write on neutral topics without revealing their emotions or opinions. Participants in both conditions were instructed to complete two structured writing exercises of 15 minutes each per day for three consecutive days with 10 minutes break between two writing exercises.

The pre intervention baseline assessment was a one week prior to writing. The intervention was implemented with the help of social workers, volunteer teacher. During these 3 consecutive days at the same time (about 3pm) all participants received A4 paper and pencil. After the adolescent students were finished with the 3-days writing exercises, their writing was collected for analysis.

Two weeks later, the post intervention assessment was done. Types and extent of psychological traumas were assessed by checklists as shown in appendix 1. Comparison between the results of both pre intervention and post intervention assessments in relation to type of psychological disorder and extent or severity of the symptoms for both the gender was carried out.

### Statistical analysis

Statistical Package for Social Sciences (SPSS) version-18 was used in this study. Student-t-test for two independent means or paired means and Pearson Chi-square test was used in the data analysis.

## RESULTS

In the present study, expressive writing group (n=54) was compared with neutral writing group (n=52) (control). Comparisons were done according to the gender and according to the sum of the total scores of symptom regardless type of intervention after the discrimination of the types of events that caused traumas. Table 1 summarizes the number of participants and the types of events that caused traumas.

**Table 1: Number of participants and the types of events that caused traumas**

Type of events	No. of Students
Witnessed car explosion or bombing	7
Forced by violence to leave home	16
Home destroyed or looted as a result of violence	18
Family member killed	17
Family received threat to life	28
A friend had been killed	13
Physical injury as a result of violence	16
Friends had been kidnapped	35
Had been kidnapped	06
Family member had been kidnapped	18
Not exposed to trauma	00

SPENCE, DSRSC and CRIES-8=PTSD analysis for emotional and neutral writing is depicted in the Table 2. In the emotional writing group, SPENCE-GAD test was found to be  $17.15 \pm 6.46$  and it significantly decreases ( $p=0.0001$ ) to  $11.06 \pm 6.90$ . In the neutral writing group, before SPENCE, GAD was  $15.00 \pm 6.30$  and it also decreases ( $p=0.238$ ) to  $14.04 \pm 6.77$  (Table 2).

In the emotional writing group, before and after DSRSC, depression ( $p=0.074$ ) was found to be  $13.96 \pm 5.73$  and  $12.56 \pm 6.01$ , respectively. In the neutral writing group, before and after DSRSC, depression ( $p=0.916$ ) was found to be  $12.63 \pm 5.76$  and  $12.71 \pm 5.68$ , respectively.

In the emotional writing group, before and after CRIES-8, PTSD ( $p=0.0001$ ) was found to be  $18.20 \pm 11.32$  and  $12.15 \pm 9.83$ , respectively. In the neutral writing group, before and after CRIES-8, PTSD ( $p=0.063$ ) was found to be  $15.54 \pm 10.09$  and  $12.54 \pm 10.35$ , respectively.

**Table 2: SCAS, DSRSC and CRIES-8 analysis of emotional and neutral writing**

		Emotional writing(range)	Neutral writing(range)
SCAS=GAD	Before	$17.15 \pm 6.46(0-30)$	$15.00 \pm 6.30(0-28)$
	After	$11.06 \pm 6.90(0-28)$	$14.04 \pm 6.77(0-26)$
	P value	0.0001*	0.238
DSRSC=Depression	Before	$13.96 \pm 5.73(1-28)$	$12.63 \pm 5.76(1-26)$
	After	$12.56 \pm 6.01(2-29)$	$12.71 \pm 5.68(3-28)$
	P value	0.074	0.916
CRIES-8=PTSD	Before	$18.20 \pm 11.32(0-38)$	$15.54 \pm 10.09(0-32)$
	After	$12.15 \pm 9.83(0-38)$	$12.54 \pm 10.35(0-32)$
	P value	0.0001*	0.063

\*Significant difference using Students-t-test for two independent means or paired means at 0.05 level of significance.

SCAS: Spence Children Anxiety Scale; GAD: Generalized anxiety disorder; DSRS-C: Depression Self Rating Scale For Children; CRIES-8: Children Revised Impact Event Scale-8; PTSD: Post Traumatic Stress Disorder

In the SPENCE-GAD test, emotional writing ( $n=54$ ) and neutral writing ( $n=52$ ). Gender wise distribution of both the groups for SCAS-GAD test is depicted in the Table 3.

Table 3: Gender wise distribution of both the groups for SCAS-GAD test

		Emotional writing( $n=54$ )		Neutral writing( $n=52$ )	
		Boys( $n=26$ )	Girls( $n=28$ )	Boys( $n=26$ )	Girls( $n=26$ )
<b>Before</b>	<b>GAD</b>	21(80.8)	28(100)	21(80.8)	25(96.2)

	<b>No</b>	05(19.2)	-	05(19.2)	01(3.8)
<b>After</b>	<b>GAD</b>	12(46.2)	27(96.4)	18(69.2)	22(84.6)
	<b>No</b>	14(53.8)	1(3.6)	08(30.8)	04(15.4)
	<b>P value</b>	<b>0.010*</b>	-	<b>0.337</b>	<b>0.158</b>

\*Significant difference using Pearson Chi-square test at 0.05 level of significance.

SCAS: Spence Children Anxiety Scale; GAD: Generalized anxiety disorder; DSRSC-C: Depression Self Rating Scale For Children; CRIES-8: Children Revised Impact Event Scale-8; PTSD: Post Traumatic Stress Disorder

SPENCE (SCAS), DSRSC and CRIES-8 analysis of emotional and neutral writing is depicted in the Table 4. In the intervention group, before and after SPENCE, GAD was found to be 49(90.7%) and 39(72.2%), respectively. In the non-intervention group, before SPENCE, GAD was decreased (p=0.7) to 46(88.5) while after SPENCE, GAD increased (p=0.579) to 40 (76.9) (Table 4).

In the intervention group, before and after DSRSC, depression (p=0.433) was found to be 24(44.4%) and 20(37.0%), respectively. In the non-intervention group, before DSRSC, depression was decreased (p=0.532) to 20(38.5%) while after DSRSC, depression was increased (p=0.724) to 21(40.4%).

In the intervention group, before and after CRIES-8, PTSD (p=0.0001) was found to be 32(59.3%) and 15(27.8%), respectively. In the non-intervention group, before CRIES-8, PTSD was decreased (p=0.338) to 26(50.0%) while after CRIES-8, PTSD increased (p=0.334) to 19(36.5%).

**Table 4: SPENCE, DSRSC and CRIES-8 analysis of emotional and neutral writing**

			<b>Emotional writing (%) (n=54)</b>	<b>Neutral writing (%) (n=52)</b>	<b>P value</b>
<b>SPENCE</b>	Before	GAD	49(90.7)	46(88.5)	<b>0.700</b>
		No	05(9.3)	06(11.5)	
	After	GAD	39(72.2)	40(76.9)	<b>0.579</b>
		No	15(27.8)	12(23.1)	
	P value		<b>0.013*</b>	<b>0.120</b>	
<b>DSRSC</b>	Before	Depression	24(44.4)	20(38.5)	<b>0.532</b>
		No	30(55.6)	32(61.5)	
	After	Depression	20(37.0)	21(40.4)	<b>0.724</b>
		No	34 (63.0)	31(59.6)	
	P value		<b>0.433*</b>	<b>0.841</b>	
<b>CRIES-8</b>	Before	PTSD	32 (59.3)	26(50.0)	<b>0.338</b>
		No	22 (40.7)	26(50.0)	
	After	PTSD	15(27.8)	19(36.5)	<b>0.334</b>

	No	39(72.2)	33(63.5)
P value		<b>0.0001*</b>	<b>0.166</b>

\*Significant difference using Pearson Chi-square test at 0.05 level of significance.

SCAS: Spence Children Anxiety Scale (SPENCE); GAD: Generalized anxiety disorder; DSRSC: Depression Self Rating Scale For Children; CRIES-8: Children Revised Impact Event Scale-8; PTSD: Post Traumatic Stress Disorder

In the emotional writing, i.e intervention, SCAS tests showed a reduction in symptoms scores such as in the female it was more than one hundred. While, in males it was about hundred. In the DSRSC test, female symptom score decreased less than a half hundred and male decreased about a quarter hundred of the scores. In the CRIES-8 test, female score reduced about 3 quarters of hundred and male decreased more than one hundred.

In the neutral writing group (control), the SCAS test symptom scores showed reduction in both gender less than quarter of hundred. In the DSRSC test, increased in female more than a half of hundred and male for 3 scores were observed. In the CRIES-8 test, decreased for both, female more than a half of hundred and male about half was observed. The total scores of the symptoms before and after intervention is shown in Table 5.

**Table 5: The total scores of the symptoms before and after intervention**

Parameter(No. of student)	Total scores before intervention	Total scores after intervention
SCAS(106)	1438	1287
DSRS-C(106)	1422	1380
CRIES-8(106)	1728	1435

## DISCUSSION

Research published in the 1997, summarized the results of many expressive writing experiments in Psychological Science paper entitle as “writing about emotional experiences as a therapeutic process”<sup>17</sup>. The first article was published in the 1986, then after many research articles has been published which had clinical as well as theoretical implementation<sup>18-23</sup>. In the present study, we compared the emotional writing and the neutral writing in the post-traumatic stress symptoms individuals.

Depression self rating scale for children was used to measure the depression in the enrolled students. The same unit was used previously by many authors<sup>24</sup>. In the present study, the emotional writing group showed decreased in the depression after emotional writing. While in the neutral writing group, before and after writing, the DSRSC was remain unchanged. Similar results were obtained from the SPENCE and CRIES-8=PTSD analysis. Our results are

accordance with the previous reports.

The expressive writing is cost-effective, not time consuming, easy to administer. There is need to conduct further research in the future regarding the expressive writing to determine the beneficial outcomes in order to involve it in mental health therapy. The study should be conducted with maximum sample size and more followup i.e. for at least 6 months. Adolescent students should need more psychological support and treatment of PTSD, depression and GAD. We can reactivate the role of school social workers and counselors through establishing rehabilitation training centers for those by cooperation and collaboration between ministry of Education, Health, and Higher Education.

## CONCLUSIONS

The study can be concluded that the rates of GAD, PTSD and depression in students who live in Basra are higher as compare to the other Iraqi cities likes Baghdad. The maximum level of the effect was clearly noticed in PTSD adolescent students of emotional expressive writing group. The boys were found to be affected more than girls. In GAD adolescent students, effect of expressive writing group was significant. While, no significant effect was observed in depressed adolescent students.

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## Ethical Issues

The protocol was approved by the Iraqi board for medical specializations, and approval to conduct this study in intermediate schools by authority of education in Al-Basra province and sent to the headmasters of schools to facilitate the implementation of the study. Consents from student families were taken. A meeting was held with volunteers who were the teachers from both school in addition to director social workers from Sara for PTSD treatment, then the mission of research was explained for them.

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