

WRITTEN EMOTIONAL EXPRESSION ON ANXIETY AND FEAR OF DEATH AMONG ADOLESCENT SURVIVORS OF EARTHQUAKE IN EASTERN AZERBAIJAN, IRAN

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ABSTRACT

Natural disasters such as earthquakes can impact on mental health and personal development of adolescents. This study is to evaluate the effectiveness of written emotional expression in reduce the anxiety and fear of death among adolescent survivors of earthquake in Eastern Azerbaijan, Iran. This quasi-experimental research was carried out on the 80 adolescents who diagnosed with anxiety and fear of death after the earthquake resides in villages of Heris. Participants in the experimental group (n=40) were asked to write about previously undisclosed personal and emotional events for 3 days and participants in the control group (n=40) did not write. Research instruments were Depression Anxiety and Stress Scales (DASS-21) and Death Anxiety Scale (DAS). All subjects were participated in the pre-test, post-test and follow-up, and they completed their data using analysis of ANCOVA were analyzed. Findings shows that written emotional expression has influence on anxiety of adolescent survivors of earthquake and has not influence on their fear of death. So, we can definitely say that written emotional expression had significantly reduced anxiety scores of adolescent survivors in experimental group. The results indicate that treatment of anxiety by written emotional expression task among adolescent survivors of natural disasters is effective in reducing it. This method can be used as an inexpensive and self-help technique to be used in both genders. Also in relation to reducing the fear of death needs to be further investigated in the future.

Key words: Earthquake, Adolescents, Anxiety, Fear of Death and Written Emotional Expression.

INTRODUCTION:

The 2012 East Azerbaijan earthquakes occurred near the cities of Ahar, Heris and Varzaqan in Iran's Eastern Azerbaijan Province, on August 11, 2012, at 16:53 Iran Standard Time. The two quakes measured 6.4 and 6.3 on the moment magnitude scale and were separated by eleven minutes. The epicenter of the earthquakes was 60 kilometers (37 miles) from Tabriz city. At least 306 people died and more than 3000 others were injured, primarily in the rural and mountainous

areas to the northeast of Tabriz. The worst damage and most casualties were in villages near the towns of Varzaqan and Heris.

Written emotional Expression is a brief psychological intervention that has yielded health benefits in a variety of populations. It was initially tested in college students; those randomly assigned to disclose their deepest thoughts and feelings about a personal trauma experienced significant reductions in visits to the health center and self-reported symptoms in subsequent months compared with students instructed to write about neutral topics (Pennebaker and Beall, 1986; Cameron and Nicholls, 1998; Greenberg, Wortman and Stone, 1996; King and Miner, 2000).

Studies evaluating disclosure of past traumatic events to a significant other or professional are well documented (e.g., Shalev, Bonne, & Eth, 1996; Smith & Glass, 1977). Also, a number of studies have focused on the efficacy of written emotional expression (e.g., Pennebaker & Susman, 1988; Smyth, 1998). These studies usually involve a progressive writing task across three to five days. Variations exist in the method of inducing the writings but the studies all have a common goal - to test the power of disinhibition. It has been found that college students randomly assigned to write about personally upsetting topics in an emotional manner for three to five consecutive days subsequently evidenced fewer physician visits than a control group who wrote about superficial topics (Greenberg & Stone, 1992; Pennebaker, Colder & Sharp, 1990). For example, Pennebaker and Beall (1986) found that writing about the emotions surrounding a traumatic experience resulted in health benefits whereas simple unemotional disclosure did not. Studies using variations of this writing technique also found enhanced immune functioning (e.g. Pennebaker, Kiecolt-Glaser & Glaser 1988). Written emotional expression has also produced clinically relevant changes in health status in sufferers of moderate to severe asthma and those with rheumatoid arthritis (Smyth, Stone, Hurewitz, & Kaell, 1999). In addition, targeting participants who have experienced a recent relationship break-up and giving them the opportunity to write about their deepest thoughts and feelings improved upper respiratory levels and lowered levels of fatigue and tension in comparison to controls (Greenberg & Lepore, 1999). Prior to these latest studies positive outcomes were confirmed in a meta-analytic review of the

written emotional expression literature. Smyth (1998) found that health was enhanced across a number of different types of outcome variables. These included physical health (self-reported, which may or may not have been substantiated by objective clinic visit records), self-reported psychological well-being, physiological functioning (immune system functioning) and academic or employment functioning.

The study sought to replicate the findings of previous written disclosure studies (e.g., Pennebaker & Beall, 1986) using a village-based intervention design. The study had one main objective. It is to examine whether changes in anxiety levels differed by writing group over time. We expected participants in the written emotional expression (trauma writing) group to experience fewer negative emotions about fear of death.

METHODOLOGY:

Sample: According to the available census, the population of Ahar, Heris and Varzaqan (residents, excluding aid workers) was about 149000 people (Ahar 67000, Heris 40000 and Varzaqan 42000) before the earthquake. The Crisis Intervention Committee (CIC) divided worst – affected region into 3 separate zones for management of mental health service delivery. One zone was selected randomly for sample collection (zone number 2 – Heris to Varzaqan). The person whose his or her age was between 12 to 17 years was requested to take part in the interview. A total of 197 interviews (eight villages) were carried out with this procedure. Final data from 80 participants (Forty subjects in experimental group and 40 in control group) were entered into the analyses (117 were dropped from analysis due to incomplete or unreliable data, according to the clinical judgment of the interviewers). All participants were examined in their tent or place of temporary residence. An expert clinical psychologist carried out the interviews on a one-on-one basis and filled in the questionnaires after establishing therapeutic neutral rapport.

MEASURES: Demographic Data Sheet : The Demographic Questionnaire measures features such as gender, age, years of formal education, the duration of time being in Azerbaijan, the level

of earlier experiences for rescue operations, the history of previous physical or psychiatric disorders.

The Depression Anxiety and Stress Scales (DASS-21): The Depression Anxiety and Stress Scales is a widely used screening tool to assess symptoms of depression, anxiety, and stress in community settings. This instrument comprises three sub-scales: (1) the Depression sub-scale which measures hopelessness, low self-esteem, and low positive affect; (2) the Anxiety scale which assesses autonomic arousal, musculo-skeletal symptoms, situational anxiety and subjective experience of anxious arousal; and (3) the Stress scale which assesses tension, agitation, and negative affect. The DASS consists of 21 items that yield three validity scales.

The Death Anxiety Scale (DAS): DAS is a death anxiety measuring instrument of efficient applications which was developed by Templer (1970). It consists of 15 questions and answers which are based on Yes-No options while each question has a score of one or zero. Thus, total score is between maximum 15 and minimum zero. Some of the questions are prepared in a way that directly measure death anxiety and its related issues; the other questions measure events such as sudden diseases, world war, speed of time passing, shortness of life, and fear of a painful death.

PROCEDURE:

In the initial session, participants were approached during seminar classes and informed that we wished to recruit participants for a study whose purpose was to "examine the effects of writing about earthquake." Non-participants were asked to withdraw from the room for 20 minutes to allow participants to complete the questionnaire packs in privacy. Following completion of the initial questionnaires, a researcher, blinded to randomization, distributed papers containing three sets of instructions depending on the experimental condition. Participants assigned to the control group were given the following instructions: "three days after you have completed the questionnaires in the seminar class, we would like you to complete the brief questionnaires included in the envelope. The next day we would like you to return these questionnaires". Three days after the initial seminar session these participants completed the set of questionnaires.

Measures were administrated in a standard order as follows: Demographic Data Sheet, The Depression Anxiety and Stress Scales (DASS-21) and The Death Anxiety Scale (DAS).

Ethics:- The study has been approved by the Crisis Intervention Committee (CIC) of Iranian Psychological Association (IPA) and informed consent was obtained from each participant.

RESULTS:

In this research, a total number of 80 subjects took part in eight villages of the survey, of whom 45 (56.2%) were females. The demographic characteristics are presented in Table 1. During the study, 197 adolescents were selected and 80 of these fitted the study sample criteria for inclusion: (i) diagnosed as earthquake-related anxiety; (ii) older than 12 years of age; (iii) literate in Azeri or Persian; (iv) willing to participate in the study; (v) no other diagnosed psychotic disorder; (vi) no recent psychological treatment (including medication and psychotherapy); (vii) no brain injury. Excluded patients were: those who had experienced other traumatic events such as combat, sudden loss of a loved one, or traffic accidents; those with co-morbid psychiatric disorders and those who did not fit the inclusion criteria.

Continuous variables were described with means and standard errors, and categorical variables were described with frequencies and percentages. To increase power to detect effects, participants were included in analyses if they completed the initial questionnaires, the intervention and at least one set of follow-up questionnaires (including immediately post-writing task). Attention initially focused on various selection biases: whether there were any differences in initial measures between those included in any analyses (i.e., those participants completing at least one follow-up) and those not included; whether participants who completed each of the three follow up stages differed from those who did not; and whether there were differences in anxiety and fear of death measures between the groups. Differences in anxiety and fear of death between the experimental group and control group at each of the follow-up sessions were then examined using ANCOVAs (initial values were entered as covariates). Finally, the efficacy on

the emotionality of the written disclosure and changes in anxiety and fear of death in response to writing, and to health status were examined using ANCOVA.

Table 1. The pre-test, post-test and follow-up of Anxiety and fear of death among adolescents in control and experimental groups

Statistical Indicators		Mean		Standard Deviation		Curvature		Kurtosis	
		Anx*	FoD**	Anx	FoD	Anx	FoD	Anx	FoD
Experimental Group	Pre-test	16.3	8.5	3.65	1.79	1.17	0.76	3.79	0.35
	Post-test	11.1	7.6	4.12	2.02	1.1	0.91	2.9	1.54
	Follow-up	10.6	7.5	3.57	1.74	1.4	0.88	1.12	1.03
Control Group	Pre-test	17.7	7.8	4.88	1.48	0.57	0.39	0.23	0.93
	Post-test	17.4	7.5	4.14	1.48	0.2	0.39	0.29	0.48
	Follow-up	17.3	6.9	4.39	1.62	0.58	0.08	0.7	0.89

*Anx = Anxiety

**FoD = Fear of Death

Results show that the mean scores of anxiety in the experimental group were in pre-test 16.3, post-test 11.1 and follow-up 10.6. Also, the mean scores of anxiety in the control group were in pre-test 17.7, post-test 17.4 and follow-up 17.3. In the other hand, the mean scores of fear of death in the experimental group were in pre-test 8.5, post-test 7.6 and follow-up 7.5 as well as the mean scores of fear of death in the control group were in pre-test 7.8, post-test 7.5 and follow-up 6.9.

The pre score of adolescents with anxiety in experimental group was 16.3, which had been reduced to 11.1. From the mean values, it is evident that written emotional expression had a reduction of 5.2 in scores (From 16.3 to 11.1). But, the pre score of adolescents with fear of death in experimental group was 8.5, which only had been reduced to 7.6. From the mean values, it is evident that written emotional expression had a little reduction of 0.9 in scores (From 8.5 to 7.6).

Table 2. Results of ANCOVA for mean pre and post anxiety scores of subjects in experimental groups.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Pre	520.06	1	520.06	92.04	0.001	0.7.1
Error	435.09	77	5.65	-	-	-
Total	18576	80	-	-	-	-

A significant decrease ($F=92.04$; $P=0.001$) in the mean anxiety scores were observed from pre to post test situation irrespective of the groups (Table 2). So, one can definitely say that written emotional expression had significantly reduced anxiety scores of adolescent survivors in experimental group.

Table 3. Results of ANCOVA for mean pre and post fear of death scores of subjects in experimental groups.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Pre	0.239	1	0.239	0.079	0.001	0.297
Error	233.95	77	3.04	-	-	-
Total	4836	80	-	-	-	-

There is no significant decrease ($F=0.079$; $P=0.001$) in the mean fear of death scores were observed from pre to post test situation irrespective of the groups (Table 3). This scores show that a small difference, which is not very significant. So, one can definitely say that adolescent survivors with fear of death in experimental group had not significantly reduced fear of death scores after written emotional expression.

Totally, analysis of results illustrates the following as the "main findings". Written emotional expression has influence on anxiety of adolescent survivors of earthquake and has not influence on their fear of death.

DISCUSSION:

Adolescents in the experimental group wrote about highly personal and upsetting events after the earthquake. The events that adolescents disclosed were similar in nature to those in past studies (e.g., Cameron & Nicholls 1998; King & Miner 2000), and included concerns about coming to school, voice of wild animals, death of a relative or friend, fear of seasonal floods, parental conflicts, individual troubles during living in tent and injury or illness. Further, adolescents in the experimental group reported they had thought more about what they wrote, and had a tendency to find the writing sessions more meaningful than participants in the control group. Subjects in the experimental group also reported reduced anxiety on the first writing day relative to participants in the control group. Although there were no apparent shifts in fear of death, the finding that interventions was significantly affected points to some level of anxiety being induced by the writing procedure, a common finding within written disclosure studies (Greenberg & Lepore 1999; Smyth 1998). However, in contrast to most previous studies, no differences in fear of death were observed between the experimental groups (Pennebaker & Susman 1988; Smith & Glass 1977).

The study demonstrates that emotional writing may provide benefits for adolescents with anxiety. But, the mechanisms that link emotional disclosure to changes in fear of death markers are not clear. Perhaps, as if the first shock was not bad enough, for months the area was shaken by aftershocks, for example aftershocks still were coming about once every 15 hours past one year. So, the fear of death that this continual shaking caused was considerable.

Hence, the fear of death is not a neurotic anxiety; it is a real anxiety and decrease only in the consistency and continuity in long time intervention as well as on other family supports. Alternatively, differences between our study and previous studies may have resulted in the different patterning of our data. Unlike past studies, the present writing intervention took place at

destroyed villages rather than in the city, and so, we had little control over the choice of topic, recency of trauma or length of writing period. Rather the participants could choose what, when, and for how long they wished to write. Perhaps the use of more powerful treatments in the field, such as existential psychotherapy with written emotional expression has positive effect in reducing the fear of death among adolescent survivors of earthquake.

The limitations to this study should be noted. Although this study provided useful information on the said-issue, however the generalizability of our findings to all survivors of the Eastern Azerbaijan earthquake is limited by modest sample size and the non-probabilistic recruitment strategy. Future studies should include larger sample sizes and more powerful designs.

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