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The Effects of Attributions in Writing about Traumatic Events on Anxiety Levels

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Abstract

This study combines research on benefits of emotion writing with research about effects of various causal explanations one may attribute to traumatic events. Participants were given the Trauma Specific Inventory (TSI) and the Endler Multidimensional Anxiety Scale for State Anxiety (EMAS-S) as a pretest and posttest. Participants were asked to write continuously about a personal traumatic life event for twenty minutes. One group described the event and their emotions only; the other group described the event and their emotions and gave a causal explanation for the event. A paired t-test revealed anxiety scores for the Cognitive-Worry and Total components of the EMAS-S to be significantly lower following the writing exercise. Anxiety reductions were greater for the description-only group than for the description-and-explanation group. Significant gender differences were found: females experienced greater reductions in Cognitive-Worry anxiety on the EMAS-S. Benefits of emotion writing for non-diagnosed individuals are discussed as well as emotion writing's potential to become an inexpensive and accessible asset to therapy, one that is capable of benefiting a broad range of individuals.
Keywords: Emotion writing, Attribution, Anxiety

1. Introduction

Over the course of a lifetime, everyone experiences things that are difficult or traumatizing to some degree. Sometimes people are left wondering what they can do to help themselves 'get through' the mix of emotions and questions they have. The practice of writing about a traumatic event has recently received increasing attention as a possible method of coping with the trauma. Another area that has been associated with coping effectiveness is attributional style--are certain types of attributions associated with more effective recoveries? This study seeks to combine research on writing as a form of intervention following a traumatic event and the effects of attribution style on recovery after a traumatic event. The research for each area is reviewed separately.

1.2 intervention writing

There have been numerous studies relating to the effects of writing about one's own life events and emotions. Most of these studies have indicated positive effects of writing on health, understanding, and/or anxiety levels. They have involved physiological measures or have utilized questionnaire-formatted tools designed to assess anxiety, stress, depression, etc. Other forms of assessment have included counts of the number of visits to a health-care professional for illness or employment factors, such as job performance or

the number of days before being rehired after being laid off [4, 15]. Most studies obtain a baseline measure of the variable of interest. Then, the writing task is administered (length of time, specific directions, and number of sessions vary between studies) and the variables are reassessed. Significant results have been demonstrated using all these methods and some self-reports have confirmed these effects [1]. In a meta-analytical study by Smyth, it was found that written emotional expression "led to improved reported health, psychological well-being, physiological functioning, and general functioning" (p. 178) [13].

However, these results are not instantaneous. Pennebaker noted in 1997, and it has been replicated in subsequent studies that immediately following a writing exercise, participants writing about traumatic experiences felt more distress than they had prior to writing (this was probably due to the surfacing of negative memories and feelings); however, those negative feelings usually diminished within an hour's time and net positive effects were shown (p. 358) [1]. Some suggest that acute distress is necessary in order to produce the cognitive changes that bring about positive effects. However, the implications of this are up for debate as there presently is no evidence showing degree of benefit to be associated with degree of distress [13].

How does the emotional writing mechanism work and for whom does it work? In the most general of theories, emotional writing is believed to be a method of disclosure [16]. Written disclosure seems to be a growing method of treatment, particularly for those diagnosed with Post-Traumatic Stress Disorder (PTSD) [12]. However, not all agree that disclosure has been shown to bring health benefits. Barrett and Wolfer argue that only the adverse health effects of inhibition have been shown in research--positive health effects of disclosure have yet to be demonstrated [1]. These views, however, appear to be in the minority presently.

Closely tied to disclosure is the possibility that emotion writing serves as a method to integrate the trauma into one's own life narrative [13]. Smyth argues that traumatic memories are "qualitatively different from everyday memories"--they are "encoded differently and are not integrated into the personal narrative. Thus, the memory is stored as sensory perceptions, obsessional ruminations, or behavioral reenactments" (p. 180) [13]. Surely this integrative process includes writings' benefits that one can learn about the event/emotion as he or she writes about it, that writing can serve as a way to organize one's thoughts, and that it may enable one to find 'meaning' in an event that was traumatic [16]. "Just as a trauma disrupts and disorganizes people's lives, writing can help people reestablish order and make meaning of their traumatic experiences" (p. 356) [1].

Evidence seems to suggest that the writing, in order to be effective, must be conducted in certain ways. Writing can be used as a method of emotional regulation; however, "successful regulation of emotion appears to involve the controlled and modulated expression and release of feelings in ways that contribute to an increased understanding of those emotions and their meaning" (p. 60) [10]. Other studies suggest that the interpretation of a traumatic event into narrative form in the writing is a necessary aspect of effective writing [15]. Still others propose that many "positive emotion words" and personal pronouns as well as changes in writing style over time (moving towards greater insight and understanding) are key characteristics of helpful writing (p. 60) [4]. One would assume that the use of personal pronouns is in some way an indication of how 'personal' the writing is. It would make sense that more objective writing would use fewer personal pronouns.

Most instructions for emotion writing (such as Focused Expressive Writing) advise the participant to explore freely her "deepest thoughts and feelings about the most traumatic event of [her] life" (p.228) [15]. Smyth and Pennebaker ask their participants to "write continuously, without regard for spelling or grammar" (p. 361) [1].

A methodological difference that may be associated with benefit is the period of time over which the writing is extended [13]. This is not the same as the number of writing sessions or the length of each session. Only the length of time across sessions was positively correlated with degree of effectiveness. Perhaps this time allows for more cognitive organization or integration into one's person. A second variable is the amount of time elapsed since the trauma written about occurred [13]. Those writing about current traumas showed more beneficial effects of writing than did those who wrote about either a past or current trauma. One would assume that in most cases it is the current trauma that adversely affects our health and well being; most past traumas have already exerted their effects and so influence less in the present.

It seems that every population studied thus far benefits from emotion writing. Because of this rather ecumenical characteristic of emotion writing, its possibilities are very broad. Among its greatest benefits are that it can be self-administered and it's inexpensive and accessible. Emotion writing has possibilities as an intervention especially for those unable to get clinical treatment following a trauma due to access-related or financial reasons.

Emotion writing has great possibilities for treating large numbers of people efficiently and possibly for group therapy or as a preventative therapy [14]. It seems to fit well into cognitive approaches and could be a valuable asset to psychotherapy as well [11]. However, the only research conducted on emotion writing thus far has been in controlled, experimental settings. Pseudo-experimental or non-experimental studies would need to be conducted before the efficacy of emotion writing can be determined for the clinical setting. [14] Smyth and Catley raise some questions of how emotion writing should be conducted in the clinical setting [14]. For example, should writing take place under direct clinician supervision or should writing take place during the patient's spare time? How large of a role does convenience play in this? Is writing appropriate for all patients (i.e. those diagnosed with MDD)? These are surely areas for future research.

1.3 attributional style

When a person experiences something traumatic, he or she will almost always consider reasons of why or how the event occurred--some cause to which the event can be attributed. In fact, people often "expend more cognitive and emotional resources processing traumatic events relative to more ordinary pleasant or unpleasant events"--perhaps due to the salient nature of traumatic events (p. 70) [6]. As a result attributions for traumatic events often stand out as well, differing from the everyday event attributions. This may cause a person's 'normal' attributional style to be possibly unrelated to how he may attribute the cause of a traumatic event [6].

Research has been able to separate different types of attribution on a fairly consistent basis. One style is the pessimistic attributional style and the other is a division of self-blame into two separate categories: characterological and behavioral. The pessimistic attributional style (also referred to as depressogenic attributional style) is often associated with slower recovery rates and greater Post Traumatic Stress Disorder (PTSD) symptoms. It is characterized by internal, stable, and global attributions and often brings a sense helplessness and hopelessness [7, 8]. These types of attributions are those most commonly associated with Major Depressive Disorder [12]. One possible reason for this effect is because such phenomena are relatively set and unchangeable and leaves the person with a low sense of control [8].

The other attribution distinction is related to pessimistic attributional style in that it makes the distinction between causes that are fixed those that are alterable. With this distinction self-blame attributions are split into characterological self-blame and behavioral self-blame. 'Characterological' refers to aspects of one's own personality--things that are unchangeable and therefore cannot be adjusted to prevent a recurrence of the event, while 'behavioral' refers to some aspect of the person's behavior in the situation and can therefore be adjusted to prevent recurrence [2, 8, 9]. Characterological self-blame has typically been associated with poorer rates of recovery, less effective coping, and a higher rate of depressive and PTSD symptoms than behavioral self-blame [2, 8].

In the research I have encountered thus far, there have been no studies that combine the effects of writing with the implications of attributional style. This study seeks to investigate whether the effectiveness of writing is associated with attributional style--whether writing with a specific attribution is more effective than writing about a different type of attribution. For example, one possibility is that if behavioral self blame is included in the writing, it may remind the writer of his or her ability to prevent the event's recurrence and result in greater reductions of anxiety and depressive symptoms, while including characterological self blame in writing may remind a person of his or her lack of control to prevent a recurrence of the event and as a result not have as positive of an effect. More generally, this study also seeks to discover whether the inclusion of an attribution in the writing is associated with more effective results of writing than writing that includes only description. However, this too may be complicated. For example, is the inclusion of an attribution in writing positively effective only when the cause is identifiable (therefore increasing understanding) or is the inclusion of an attribution effective or ineffective regardless? These are some of the questions this study seeks to answer.

2. Methodology

2.1 participants

Thirty-seven participants (15 males and 22 females) were recruited from two rural, midwest churches. Twenty-three participants were attendants of a rural Mennonite church in southern Minnesota. The

remaining fifteen participants attended a rural Mennonite church in central Kansas. All participants labeled themselves as Mennonite with the exception of two who labeled themselves as Christian. One participant was Asian, the rest were Caucasian. Ages ranged from 18 to 91 with a mean age of 52.5.

2.2 instruments

The Endler Multidimensional Anxiety Scale-State (EMAS-S) is a twenty-item questionnaire, created by Endler, Edwards, and Vitelli in 1991. This was used to assess the degree of state anxiety using both cognitive-worry and autonomic-emotional indicators. Internal consistency ratios are high, ranging from .88 to .94 (p. 42) [5].

Also used was the Trauma Specific Inventory (TSI), a 100-item survey created by John Briere in 1995. This instrument is used to assess posttraumatic stress or other maladaptive posttraumatic behaviors (p. 1) [3]. Internal consistency for this instrument ranges from .84 to .87. The prediction rate of PTSD by this instrument is 90%. A debriefing questionnaire created by the researcher was also used, asking for basic sociodemographic information, the participant's reaction to the study and for any hypotheses he or she may have regarding the purpose of the study

2.3 procedure

Participants were asked to sign up for a 1 1/2 hour session. Numbers of participants per session ranged from two to fourteen, averaging around seven. As participants arrived, they were randomly assigned into two groups: Description or Description and Explanation. In addition, each session was randomly assigned as to whether the participants in that session took the TSI as a pre or posttest.

The researcher would begin each session by reading aloud the Psychology Department of Bethel College's Rights and Consent Statement. Then, those sessions which were assigned to take the TSI as a pretest would be given instructions and complete the test. This took approximately 20 minutes. Then, participants would be given the EMAS-S. Those sessions assigned to take the TSI as a posttest would begin the session by taking the EMAS-S. After this was completed, which took approximately five minutes, participants were given writing materials and instructions (formatted after existing examples) and told to write for 20 or 25 minutes (see conclusion). After writing, participants were given a 10 minute break in which they could enjoy refreshments and chat amongst themselves, however, they were asked not to discuss the study. Simply asking participants to recount any mood-altering events that occurred during the break on the Debriefing Sheet controlled effects of the break on results. Following the break the EMAS-S was administered a second time. Then those sessions assigned to take the TSI as a posttest would complete the TSI. After this, the debriefing sheet was completed and participants were free to leave if they had no questions.

3. Data

Results for all instruments are recorded in the form of T-scores. For the TSI clinical measures, a T-score of 65 is 1.5 Standard Deviations above the mean (50), which is above 93.3% of the population (it lies in the upper 6.7% of the population). All tests were conducted with alpha=0.05.

The first test relating to the hypotheses investigated differences between the pretest and posttest scores. The EMAS has three scores, Cognitive-Worry, Autonomic-Emotional, and a Total of the two. Paired t-tests found significant differences between the Cognitive-Worry and the EMAS Total pretest and posttest scores. No significant difference was found between the Autonomic-Emotional pretest and posttest scores; however, the results were in the predicted direction. See table 1 below.

Table 1 Means, Standard Deviations, & p-values for EMAS pretest and posttest scores.

	Pretest Mean	Posttest Mean	Pretest SD	Posttest SD	p-value of difference
Cognitive-Worry	52.2	47.4	9.6	8.9	t=-3.0; df=36; p=0.0046
Autonomic-Emotional	48.4	48.0	9.8	8.3	t=0.3; df=36; p=0.7512
EMAS total	50.8	48.2	9.3	8.7	t=2.0; df=36; p=0.0515

A variable of anxiety reduction was created for each of the EMAS axes by subtracting each individual's posttest score from her pretest score (CW Difference, AE Difference, and EMAS Total Difference). EMAS Total Difference was used to evaluate the effect of the Condition (Description or Description and Explanation), the second hypothesis. Figure 1 is a boxplot of the two means, grouped by Condition. As can be seen in the figure, the differences are in the hypothesized direction; those in the Description group showed greater anxiety reduction on the EMAS Total t-score. A two-sample t-test revealed the difference between the two means to be significant (t (32)=3.13; p=0.0037). Means, standard deviations, and ranges can be seen in Table 2 below.

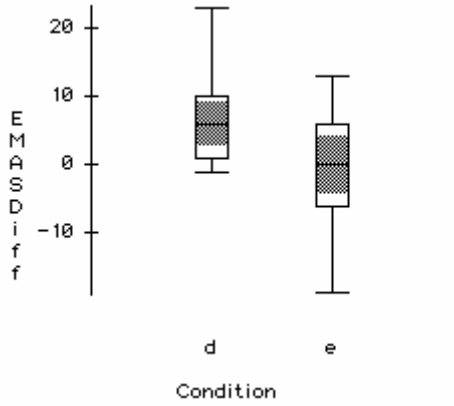

Figure 1 Boxplot of EMAS Total Difference by Conditions (d=Description; e=Description & Explanation)

Table 2 Means, SD's, & Ranges of EMAS Total Difference by Condition

	Mean	SD	Range
Description	6.8	6.4	24
Description & Explanation	-1.3	7.5	32

CW Difference was also analyzed by Condition. Those in the Description Condition showed greater cognitive/worry anxiety reduction than those in the Description and Explanation Condition. The difference between t-score means is significant (t (32)=-2.3, p=0.0262) and can be seen in Figure 2. Means, standard deviations, and ranges can be found in Table 3.

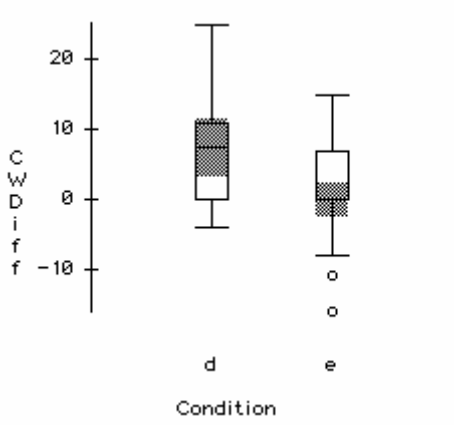

Figure 2 CW Difference by Condition (d=Description, e=Description and Explanation)

Table 3 Mean, SD, and Range of CW Difference by Condition

	Mean	SD	Range
Description	7.1	6.9	29
Description & Explanation	0.7	7.3	31

AE Difference means were compared by Condition as well. Again, the Description Condition showed greater anxious-arousal anxiety reduction than the Description and Explanation group, a t-score difference of 8.0 that is statistically significant (t (32)=3.4, p=0.0017). See Figure 3, Table 4. Notice that the Description and Explanation actually showed an increase in autonomic/emotional anxiety levels.

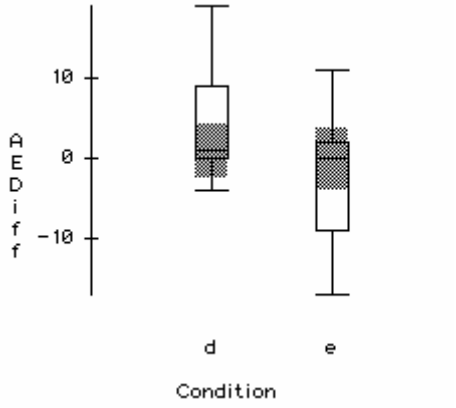

Figure 3 AE Difference by Condition (d=Description, e=Description & Explanation)

Table 4 Mean, SD, and Range of AE Difference by Condition

	Mean	SD	Range
Description	4.6	6.0	23
Description & Explanation	-3.5	7.2	25

Some additional analyses were conducted. An average of the clinical measures on the TSI was created and a correlation between the Clinical Average measure and each of the following separately: EMAS Total Differences, Cognitive-Worry Differences, and Autonomic-Emotional Differences. No relationship was found in any of these correlations or regressions. Correlations between EMAS Total Difference and each individual measure on the TSI were also performed. Little or no relationship was found for most all of these measures.

4. Conclusion

Statistically significant results were found in the differences between the EMAS pretest and posttest T-scores for the cognitive-worry and EMAS Total categories. The fact that Cognitive-Worry scores were significantly lower in the posttest while Autonomic-Emotional scores were not may point to some of the more specific effects of writing about traumatic events. It may indicate that writing does more to cognitively reorganize thoughts and increase understanding (as posited by some theorists) than it does to decrease arousal and physical stress symptoms. However, that difference may only be present in acute results. It seems logical that writing about a traumatic event would increase physical arousal in the short-term. However, it also seems logical that after time has passed, physical arousal would be lower, perhaps as the result of some sort of 'externalization' of the event's emotional significance. Therefore, significant reductions in Autonomic/Emotional stress arousal may be seen in longer-term results (multiple writing sessions over an extended period of time, then retesting). Some research has already been conducted supporting this, but it would be interesting to investigate this further to see if these 'logical' suppositions hold true.

Participants in the Description Condition showed significantly greater anxiety reductions than the Description and Explanation group on all axes of the EMAS. The reason for these differences is unclear. A future analysis of these explanations may give some clues. For example, it's possible that many of these explanations are forms of self-blame, to internal and stable attributes of the individual. It is also possible that in short-term investigation no decrease is shown because participants are left contemplating various possible reasons for the event. Whereas a description of the event and emotions involved is fairly straightforward, explanations may not be as obvious and concrete. As a result, participants would not experience anxiety reductions immediately following the writing exercise because they are still trying to conclude why the event happened. With either of these explanations, it's possible that differences between Conditions would disappear over time. This is certainly an area for future research.

This study was conducted with participants who did not necessarily have any PTSD diagnosis. One advantage to this approach was the investigation into Intervention Writing's benefits for "everyday" people and its efficacy outside a clinical setting. In regards to this, it is interesting to note the lack of correlations found between EMAS Total Difference and each individual clinical measure on the TSI. This would seem to suggest that those whose scores reflected higher PTSD symptoms did not necessarily benefit more from the writing intervention than the others. However, these correlations need to be viewed with skepticism and investigated further since none reached significance. This area of investigation is one that could bring with it many benefits. If the efficacy of intervention writing were shown to be just as great outside a clinical setting and for those outside a clinical diagnosis, then its usefulness would be immense. It could become a coping tool utilized by almost anyone--a free and easily accessible tool. This would most greatly benefit those from low socioeconomic background or without access to a clinician or counselor.

Many of the analyses did not reach statistical significance, although they were generally in the predicted direction. Several factors probably play a part in this. The sample size was small and fairly homogenous (small-town, Mennonite, older adults). Also, since this group was a group with few or no clinical diagnoses, the TSI instrument may not have been the most appropriate instrument, although it still proved helpful. The most crucial factor, however, concerned the methods. In the literature reviewed, participants of those studies were most often asked to write for 20 or 25 minutes. With that information in mind, the Minnesota participants were asked to write for exactly 20 minutes in an effort to protect their already lengthy time involvement due to the length of the TSI and the necessity of a break. However, it was found that 20 minutes was not enough time for many participants to complete their writing. This was adjusted for in the Kansas data collection--writing time was extended to 25 minutes. This creates an obvious methodological difference between the two populations. In addition, Conditions were not balanced between the two data collections. Some participants in the Minnesota population assigned to the Description and Explanation Condition informed the researcher that they did not have enough time to finish

their writing and weren't able to include explanations. After reassessing the Conditions, there was an imbalance between the numbers of participants in each Condition. In an effort to level that imbalance, more participants were assigned to the Description and Explanation Condition that the Description Condition in the Kansas group. Correlations were run between possible population differences (age and gender) and CW, AE, and EMAS Total Difference scores. No relationships were found. This instills confidence in the results; however, the study should be repeated, evenly assigning participants to each condition to see if the relationship is maintained.

Overall, this study has proven to be very fruitful in providing direction for future studies, knowledge about the creation of a successful method, as well as a number of significant results. It seems clear that there is benefit in writing about traumatic events, even for those without a clinical diagnosis of stress disorder. This is an area that deserves much attention in the coming years.

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