Emotional Expression and Depth Processing in HIV-Positive Gay Males and HIV-Positive Straight Males: Effects on Depression and PTSD Symptoms

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EMOTIONAL EXPRESSION AND DEPTH PROCESSING
IN HIV-POSITIVE GAY MALES AND HIV-POSITIVE STRAIGHT MALES:
EFFECTS ON DEPRESSION AND PTSD SYMPTOMS

By

Jonathan Atwood

A THESIS

Submitted to the Faculty
of the University of Miami
in partial fulfillment of the requirements for
the degree of Master of Arts

Coral Gables, Florida

May 2010
UNIVERSITY OF MIAMI

A thesis submitted in partial fulfillment of
the requirements for the degree of
Master of Arts

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IN HIV-POSITIVE GAY MALES AND HIV-POSITIVE STRAIGHT MALES:
EFFECTS ON DEPRESSION AND PTSD SYMPTOMS

Jonathan Atwood

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Emotional Expression and Depth Processing in HIV-Positive Gay Males and HIV-Positive Straight Males: Effects on Depression and PTSD Symptoms

Abstract of a thesis at the University of Miami.

Thesis supervised by Professor Gail Ironson.
No. of pages in text (90).

The expressive writing (EW) paradigm developed by Pennebaker (1985) has been found to provide health benefits in populations with medical and psychological conditions. Several theories have been proposed to explain the effectiveness of EW such as: the inhibition theory, increased social connections theory, the cognitive adaptation theory, and the exposure/emotional processing theory. Some studies have suggested that the effects of EW on health outcomes are mediated by varying degrees of depth processing (DP). The present study examines differences in emotional expression (EE) and DP in self-identified gay (GM) and straight men (SM), and assesses changes in levels of depression and PTSD symptoms from pre- to post-intervention. It was hypothesized that GM would display higher levels of EE, and consequently DP, in their written essays. This hypothesis was based on the notion that GM are behaviorally and emotionally more similar to women, who typically display higher levels of EE. Lower levels of depression and PTSD symptoms at follow-ups sessions were expected because theories to explain the effectiveness of EW address several common life experiences of GM. Results showed that GM expressed significantly more negative emotion words and were significantly more involved in the writing process than SM. However, when education was controlled for, the findings were no longer significant. The two groups did not differ
from each other in their slope of change in levels of depression and PTSD symptoms from pre- to post-intervention, although the SM group displayed a significant within-group reduction in PTSD symptoms. It appears that EW may actually be more beneficial for HIV-positive SM than GM in alleviating PTSD symptoms. Interpretations and implications for future research are also discussed.
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LIST OF ABBREVIATIONS

AIDS Acquired Immunodeficiency Syndrome
ANOVA Analysis of variance
CD(3, 4, 8) Cluster of differentiation (3, 4, 8)
CPP Chronic pelvic pain
CS Conditioned stimulus
DTS Davidson PTSD Scale
D-Group Daily (control) group
DP Depth processing
EE Emotional expression
EW Expressive writing
F(1, 6, 12) Follow-up appointment at (1-month, 6-months, 12-months)
GM Gay men
HAART Highly active antiretroviral therapy
HIV Human Immunodeficiency Virus
HRSD Hamilton Depression Rating Scale
NegEE Negative emotional expression
PosEE Positive emotional expression
PTSD Post-Traumatic Stress Disorder
SM Straight men
T-Group Trauma (experimental) group
UCS Unconditioned stimulus
W(1, 2, 3, 4) Writing session (1, 2, 3, 4)
Chapter 1: Introduction

Thirty-three million people are estimated to be living with human immunodeficiency virus (HIV) worldwide with 1.2 million people infected in the United States (UNAIDS Report on the Global AIDS Epidemic, 2008). Even more alarming, roughly 2.1 million deaths occurred globally due to acquired immunodeficiency syndrome (AIDS) last year, while nearly 22,000 deaths occurred in the United States alone (UNAIDS Report on the Global AIDS Epidemic, 2007). Although at an exceptionally high frequency, the global HIV epidemic has been stabilizing over the past few years with new infection rates dropping from an estimated 3.0 million people in 2001 to approximately 2.7 million people in 2007 (UNAIDS Report on the Global AIDS Epidemic, 2008). HIV is a chronic disease and, on the most basic level, works by attacking the immune system which leaves the infected person susceptible to opportunistic diseases.

As the HIV/AIDS pandemic continues to be one of the greatest health crises of our time, researchers from various disciplines are investigating methods of preventing, treating, and understanding the disease. In recent years, researchers have made exceptional strides in the treatment of HIV/AIDS with the introduction of highly active antiretroviral therapy (HAART), which has drastically extended the average life expectancy of HIV-positive individuals from a near death sentence to almost that of the general population (Pence, 2009). Even with the aid of powerful medication therapies such as HAART, coping and dealing with a chronic illness and the ensuing trauma can prove a life-long process. The effectiveness of numerous methods of dealing with the disease (e.g. coping with depression, post-traumatic stress disorder (PTSD), anxiety, etc.)
has been examined and continues to be explored by researchers today. Expressive writing (EW) has been suggested as one such coping method (Rivkin, Gustafson, Weingarten, & Chin, 2006; Petrie, Fontanilla, Thomas, Booth, & Pennebaker, 2004).

The focus of this paper will be twofold: 1) to view differences in emotional expression (EE) and levels of depth processing (DP) between HIV-positive gay men (GM) and straight men (SM) through EW; and 2) to determine whether EW appears more beneficial for HIV-positive gay or straight men in reducing depression and PTSD symptoms. EE, particularly in men, and the reasons for examining such expression in gay and straight men will be discussed following a review of the expressive writing literature.

Development of Expressive Writing

In the 1980s evidence had accumulated which indicated that not disclosing extremely personal and traumatic experiences over a long period of time may be related to poor health due to the inhibition of the emotions surrounding such an experience (Pennebaker & Beall, 1986). Unfortunately, many traumatic experiences such as physical or sexual abuse and illegal or illicit acts cannot be easily discussed with others. In response to this obstacle, Pennebaker and Beall (1986) developed the EW paradigm as a safe and therapeutic process to release inhibited feelings related to a distressing experience. Pennebaker (1985) proposed that to inhibit one’s behavior requires physiological work, which in turn, places stress on the body and thus increases the likelihood of stress-related diseases. By releasing inhibited feelings through writing, long-term stress and the probability of stress-related diseases should be reduced.
In the original pilot study by Pennebaker and Beall (1986), participants’ physiological arousal increased following the writing sessions, but frequency of health center visits among participants were fewer at the six-month follow-up. This reduction in health care utilization may have been associated with emotional disclosure stress reduction and appeared promising for future research on the subject. Several studies of the EW paradigm have been conducted, along with theoretical attempts at explaining the mechanisms behind the paradigm’s proposed effectiveness.

*Theories of Effectiveness*

In addition to the emotional inhibition theory, Pennebaker and Graybeal (2001) suggested that EW may be beneficial because it results in changes in social and linguistic behaviors, which in turn, result in increased social connections. Variations of the cognitive adaptation theory, the notion that the processing of a traumatic experience requires changing existing schemas, have also been suggested in explaining the benefits of EW. Smyth, True and Souto (2001) as well as Pennebaker (1997) have suggested that writing about a traumatic event may allow an individual to organize and structure the traumatic memory which may not have initially occurred. Such changes are hypothesized to result in decreased stress. Horowitz (1986) proposed another view of the cognitive adaptation theory, which suggested that people seek to match trauma-related memories with their inner schemas and actively do so when recovering from a traumatic life experience. If the trauma information is inconsistent with existing internal schemas, then the inner schemas are altered. Still, Janoff-Bulman (1992) offered another variation of the cognitive adaptation theory as it relates to the benefits of EW. Janoff-Bulman (1992) suggested that individuals embrace three core beliefs: we are invulnerable, the
world is meaningful and comprehensible, and we view ourselves in a positive light. When a traumatic event occurs these beliefs are threatened which results in inconsistencies between such beliefs and the real world. The individual must work to either assimilate the traumatic experience into the set of core beliefs or the beliefs must be changed to accommodate the traumatic experience.

The exposure/emotional processing theory is another popular theory that attempts to explain the effectiveness of EW. This theory has its roots in learning theory, specifically Mowrer’s two-factor theory (Mowrer, 1960). Mowrer’s (1960) theory suggested that a negative unconditioned stimulus (UCS) provokes an unconditioned response (fear and arousal). Other neutral stimuli become paired (conditioned stimuli (CS)) with the UCS so that previously neutral stimuli come to elicit a conditioned response (again, fear and arousal). According to Mowrer (1960), this conditioned fear is supposed to result in behavior whose function is to avoid or escape the stimuli which produce the conditioned fear response. Based on this theory, EW is proposed to serve as a context in which an individual can be exposed to the negative stimuli which have previously been avoided. This repeated exposure (EW) may allow for the extinction of the UCS-CS association.

In a review by Sloan and Marx (2004), all three theories (emotional inhibition, cognitive adaptation, exposure/emotional processing) were examined as possible explanations for the effectiveness of EW. Although supporting evidence was found for each theory, so was contradicting evidence. Sloan and Marx (2004) were unable to conclude any one theory as fully explaining the beneficial effects of the EW paradigm.
Expressive Writing Protocol

EW traditionally involves randomly assigning participants to one of two or more groups in which participants write for three to five consecutive days, for 15 to 30 minutes each day. Writing is generally done in the laboratory with no verbal or written feedback given. Participants in the experimental group typically write about a past or recurrent traumatic event, specifically the feelings and emotions which surround that event. Control participants generally write about neutral topics such as day-to-day activities (Pennebaker & Beall, 1986).

Meta-Analyses of Expressive Writing Studies

The effectiveness of EW has been examined in several populations and results show a general, although mixed, trend toward positive benefits. In one such meta-analysis, Harris (2006) examined randomized trials comprised of 2,294 participants to determine whether EW led to less health care utilization. Studies were separated into three groups: healthy samples (13 studies), samples with pre-existing medical conditions (six studies), and samples prescreened for psychological criteria (10 studies). Harris’s meta-analysis showed that writing about stressful experiences led to less health care visits for healthy samples, but not in samples with medical problems, or samples exposed to stress or other psychological factors. Frisina, Borod and Lepore (2004) also conducted a meta-analysis to examine the effects of EW on health outcomes in people with physical or psychiatric disorders. Frisina et al. (2004) concluded that EW significantly improved health on objective and subjective measures in samples such as asthma and arthritis patients, and renal, breast and prostate cancer patients. However, only nine studies were used in the analysis. Frattaroli (2006) conducted a much larger review consisting of 146
randomized studies. Results showed that experimental disclosure provides beneficial effects which are moderated by such variables as participants’ physical health problems, history of trauma or stressors, and previous disclosure of such traumas, among others. Still, another synthesis was conducted by Smyth (1998) which examined the relationship between a written EE task and subsequent health. Thirteen studies were included for the review. Results showed that written EE produces significant health benefits in healthy populations on four measures: reported physical health, psychological well-being, physiological function, and general functioning.

On the other hand, a small number of systematic reviews showed little or no benefits associated with EW. In a meta-analysis by Meads and Nouwen (2005), 61 trials were included with fewer than 100 participants enrolled in most of the studies. No clear benefits were found for emotional disclosure participants compared with controls in objectively measured physical health and most other outcomes assessed. Similarly, Mogk, Otte, Reinhold-Hurley and Kröner-Herwig (2006) conducted a meta-analysis of 30 studies and found that EW has minor or no effects on subjects’ health. Despite a few null findings, the majority of meta-analyses reported a general trend toward positive health benefits in response to EW. Next, individual studies in populations with medical (including HIV) and psychological (including depression and PTSD) conditions will be examined.

*Expressive Writing in Populations with Medical Conditions*

The efficacy of EW has been examined in different populations with medical conditions (fibromyalgia, metastatic renal cell carcinoma, asthma, rheumatoid arthritis, lupus, breast and prostate cancer, etc.), and findings show a relatively consistent general
trend toward positive benefits. Broderick, Junghaenel and Schwartz (2005) examined the
effects of EW on subsequent health in a sample of 92 patients diagnosed with
fibromyalgia. Participants were assigned to one of three groups: a group which wrote
about a past or recurrent traumatic event, a control group which wrote about neutral day-
to-day activities, or a second control group which did not write. The experimental group
experienced significant reductions in pain, fatigue and better psychological well-being
compared to the control groups at the four-month follow up. However, these benefits
were not maintained at the 10-month follow-up.

Danoff-Burg, Agee, Romanoff, Kremer and Strosberg (2006) also examined the
effects of EW on a chronic pain population, namely patients with rheumatoid arthritis in
addition to patients with lupus. Specifically, Danoff-Burg et al. (2006) examined the
effects of benefit finding, which requires that participants focus on possible benefits
derived from the traumatic experience (e.g. increased closeness in personal relationships,
a new purpose in life). Participants wrote for four sessions and were assigned to one of
three groups: benefit finding, standard EW or a control group. At the three-month
follow-up fatigue was lower in both experimental groups than in the control group.
Interestingly, benefit finding appeared most effective in reducing pain levels for high-
anxiety participants, while standard writing appeared effective for low-anxiety
participants.

Smyth, Stone, Hurewitz and Kaell (1999) examined the effects of EW on a
population of patients with either rheumatoid arthritis or asthma and found similar
results. Participants were assigned to either an experimental group that wrote about
traumatic events or a control group which wrote about neutral daily events. At the four-
month follow-up, rheumatoid arthritis patients who wrote expressively showed a significant decline in rheumatic disease activity, and asthma patients in the experimental group showed improvements in lung function, while both samples in the control groups showed no change.

One other study by Norman, Lumley, Dooley and Diamond (2004) also examined the effects of emotional disclosure on a chronic pain population, specifically females diagnosed with chronic pelvic pain (CPP). Norman et al. (2004) examined three variables that previous research suggested potentially moderate the success of disclosure: ambivalence over EE; pain catastrophizing, which is the tendency to focus on and exaggerate the threat level of painful stimuli and to negatively evaluate one’s ability to cope with pain (Rosentiel & Keefe, 1983); and negative affect. Results found that writing about the stressful effects of CPP led to lower levels of evaluative pain compared with writing about positive experiences. Specifically, women who showed ambivalence about expressing emotions, who engaged in pain catastrophizing or who were high on negative affect before writing showed the most improvement in positive affect or disability at the two-month follow-up compared to women without these characteristics who wrote about stress and to women with these characteristics who wrote about positive events.

The effects of EW were also examined in a group of 42 patients with metastatic renal cell carcinoma, a form of kidney cancer (De Moor et al., 2002). Participants were either assigned to an experimental group that wrote about their cancer or to a control group, which wrote about health behaviors. Although the study did not measure direct
health markers, patients in the experimental group reported less sleep disturbances, better 
sleep quality and duration, and less daytime dysfunction compared with the control 
group.

Stanton et al. (2002) examined health benefits of EW in a population of early-
stage breast cancer patients. Standard EW and benefit finding were explored. 
Participants’ cancer-related avoidance was tested as a possible variable affecting outcome 
variation, in which avoidance was described as “intentional attempts to avoid thoughts 
and feelings regarding cancer” (Stanton et al., 2002, p. 4,161). Participants wrote for four 
sessions about one of the following topics: their deepest thoughts and feelings regarding 
breast cancer (standard experimental group), positive thoughts and feelings regarding 
their experience with breast cancer (benefit finding experimental group), or the facts of 
their breast cancer experience (control group). Standard EW appeared effective for 
women low in avoidance, while benefit finding appeared more effective for women high 
in avoidance. At the three-month follow-up, women in the standard experimental group 
reported significantly fewer physical symptoms compared to the control group. 
Additionally, compared with the control group, participants in both experimental groups 
had significantly fewer medical appointments for cancer-related morbidities.

Creswell et al. (2007) also examined the benefits of EW in early stage breast 
cancer patients. Self-affirmation, cognitive processing and discovery of meaning were 
explored as potential mediators of the effects. A content analysis of the essays showed 
that self-affirmation was associated with fewer symptoms at the three-month follow-up,
while no associations were found between health improvements and cognitive processing or discovery of meaning. Creswell et al. (2007) concluded that self-affirmation fully mediated the beneficial effects of EW.

Lastly, Rosenberg et al. (2002) examined the effects of EW on thirty prostate cancer patients. Participants were either assigned to an experimental group that wrote about their prostate cancer and other traumatic events or to a control group which wrote about day-to-day activities. Compared to the control group, experimental participants showed improvement in physical symptoms as well as health care utilization.

As evident in the literature, EW appears to be a promising therapeutic intervention by positively affecting disease activity, reducing pain symptoms and fatigue, and improving psychological functioning in populations with medical conditions. Prior research on expressive writings’ effects on HIV-positive individuals will now be discussed.

Expressive Writing in HIV-Positive Individuals

Rivkin et al. (2006) examined the health benefits of EW in HIV-positive individuals. Seventy-nine participants either wrote expressively about their deepest thoughts and feelings about living with HIV or neutrally about their activities in their last 24 hours. No significant effects were found, although experimental participants who included more social and insight words in their writing had better immune function and reported more positive changes at follow-ups. Although the study failed to find significant differences between the groups, the results suggest that cognitive processing and changes in social interaction may be critical to the benefits of the EW paradigm.
O’Cleirigh et al. (2003) and O’Cleirigh, Ironson, Fletcher and Schneiderman (2008) supported this claim that the depth of cognitive processing in written emotional disclosure is critical to eliciting benefits. In a written EE intervention, O’Cleirigh et al. (2003) had participants write about their understanding of past traumatic events. Two HIV-positive groups were compared; long-term survivor patients (LTS) who had survived for at least four years past an AIDS diagnosis prior to starting antiretroviral medications, and a comparison group with no prior AIDS defining illnesses and an absolute CD4 cell count in the range of 150 to 500. In addition to examining EE, O’Cleirigh et al. (2003) examined four subscales of DP which were found to relate to health status and psychosocial variables in HIV-positive individuals. The four subscales were adaptive/realistic cognitive appraisal (ability to draw causal inference about the stressor and develop insight), self-esteem (increased confidence and acceptance of self through understanding of the stressor), approach-oriented problem solving (implementation of adaptive coping and problem solving techniques), and experiential involvement (extent of involvement in discussing the trauma without detachment). EE and DP were significantly greater in the LTS group compared to the comparison group. Both EE and DP were related to long-term survival, but it was found that DP actually mediated the relationship between EE and survival. These findings were further supported by a cross-sectional group comparison design by O’Cleirigh et al. (2008) in which it was found that a rare group of HIV-positive individuals (AIDS-related symptom-free despite poor immune system function and lack of medication) had
significantly higher levels of emotional disclosure present in their trauma-related essays than their HIV-positive comparison group. Again, the level of DP appeared to mediate this effect.

Petrie et al. (2004) also examined the health effects of EW in 37 HIV-positive participants and found significant results. Writing sessions lasted for 30 minutes and occurred on four days in which participants either wrote expressively about their most traumatic and emotional experiences or neutrally about how they used their time. Viral load and CD4 counts were taken at baseline and at two weeks, three- and six-months post-intervention. Viral load refers to the number of copies of HIV per unit in an individual’s blood in which a lower count represents a lower concentration of the virus in the bloodstream and is indicative of better health. CD4 cells (cluster or differentiation 4; also known as T-helper cells) are lymphocytes which are responsible for activating and directing other immune cells to attack foreign antigens. Higher absolute levels of CD4 cells are signs of good immune function. With regard to Petrie et al. (2004), participants in the experimental group showed an increase in CD4 counts throughout follow-ups, but showed no significant change in viral load levels. As evident in the literature, EW appears to be rather beneficial in most populations with medical conditions, including HIV-positive populations. However, compelling findings from O’Cleirigh et al. (2003) indicate that the beneficial effects of EW may actually be mediated by an increase in DP.
Expressive Writing in Populations with Psychological Conditions

The beneficial health effects of EW have also been explored in populations with psychological conditions and findings show the same general trend toward positive benefits. Due to the focus of the present paper, only studies specifically examining the effects of EW on depression and PTSD symptoms will be discussed.

Expressive Writing and Depression

The effects of EW on symptoms of depression have also been studied in both populations of depressed and non-depressed individuals. Sloan, Marx, Epstein and Dobbs (2008) examined whether the effects of expressive writing were moderated by rumination which is defined as a mode of coping with distress in which the individual repeatedly and passively focuses on distress and its potential causes and consequences (Nolen-Hoeksema, 1998). Researchers have defined two types of rumination: brooding, which focuses on the abstract and prevents the individual from overcoming the problem; and reflective pondering in which the individual purposely turns inward to engage in adaptive problem solving (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Brooding rumination has been found to increase the risk for depression (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008) and has been considered a maladaptive ruminative style (Sloan et al., 2008). In Sloan et al. (2008), 69 first-year college students were assessed for ruminative style and depression symptoms, and were randomized to either an EW or control group. Although assessed for symptoms of depression, the presence of such symptoms was not a prerequisite for inclusion in the study. Follow-up assessments measuring depression symptoms were conducted at two, four and six months later. Results showed that participants with high brooding scores reported significantly fewer
depression symptoms at follow-up assessments compared to low-brooding individuals. Therefore, brooding ruminative style appeared to moderate the therapeutic effects of EW with regard to depression. Reflective pondering ruminative style did not act as a moderator.

Lepore (1997) also explored the effects of EW on similar intrusive thoughts, specifically whether EW enhances emotional adaptation to a stressful event by reducing intrusive thoughts related to such an event or by desensitizing people to such thoughts. Seventy-four participants were examined who were scheduled to take a graduate entrance exam (i.e. the stressful event) which was the only requirement for inclusion in the study. Participants in the experimental group wrote about their deepest thoughts and feelings related to the exam while the control group wrote about trivial topics. Experimental participants reported significantly fewer symptoms of depression from one month to three days before the exam, while no significant change was found for control participants. Lepore (1997) noted that expressive writing appeared to desensitize participants to their intrusive and depression thoughts, but did not lower them in frequency.

Gortner, Rude and Pennebaker (2006) also examined the effects of EW in a depression-vulnerable (i.e. past symptoms of depression) population of college students. Participants wrote for three consecutive days either expressively about current or past emotional events or neutrally about time management. Results showed that participants elevated in emotional suppression (e.g., “I keep my emotions to myself”) showed significantly lower symptoms of depression at the six-month follow-up for experimental participants compared to control participants. Again, benefits appeared to be mediated by changes in brooding ruminative style, but not reflective pondering ruminative style.
A study by Petrie, Booth and Pennebaker (1998) examined the immunological effects of such thought suppression among 65 first-year medical students. Depression symptoms were not required for inclusion. Participants were asked to write either expressively about personal emotional topics or neutrally about activities completed in the past 24 hours. Furthermore, participants in both groups were asked to either suppress or not suppress the topics and ideas of what they had disclosed in their writing for five minutes upon completion. Writing consisted of three sessions in which blood was drawn immediately before and after. Results indicated that participants who wrote expressively showed a significant increase in CD4 cells and total lymphocytes, while thought suppression caused a significant decrease in CD3 cells (cluster of differentiation 3) and a marginal decrease in CD8 cells (cluster of differentiation 8) and total lymphocytes (all important agents of the immune system). Difficulty in suppressing thoughts appeared much more difficult for the EW participants than for their neutral counterparts.

Koopman et al. (2005) examined the effects of EW on depression symptoms in a sample of 47 women who had survived intimate partner violence. Again, symptoms of depression were not required for inclusion. Women were assigned to either write expressively about a traumatic event or neutrally about a trivial topic. Findings showed that among depressed women in the sample, those assigned to EW showed a significantly greater drop in depression symptoms compared to women in the control group.

In one further study, although not focused on clinical depression or symptoms of depression, Soliday, Garafalo and Rogers (2004) examined the effects of EW on somatic symptoms, distress and positive psychological functioning in 106 adolescents. Participants were assigned to write for three days either expressively about personal
issues, emotions or stress, or neutrally about the weekend, the school building or class projects. Although results showed no effect on somatic symptoms and medical visits, in the experimental group, optimism scores increased, negative-affect scores decreased and positive-affect words increased in the students’ essays.

As the cumulative data shows, EW appears to be at least moderately beneficial in lowering depression in college students, victims of intimate partner violence and adolescents. This effect seems to occur through changes in brooding ruminative style. Unfortunately, none of the previous studies focused on clinical depression and it remains unclear whether EW will prove effective in lowering clinical depression symptoms.

Expressive Writing and PTSD

Deters and Range (2003) examined the effects of EW on PTSD symptoms among 57 college students who were previously screened for traumatic experiences. Participants completed four 15-minute writing sessions over a two week period either about a traumatic event or a trivial topic. Surprisingly, results indicated that participants in both groups reported less severe PTSD symptoms, impact, and dissociation, and fewer health visits at the two-month follow-up. On PTSD symptoms and impact, the pattern of improvement was quite different between the two groups. Experimental participants became worse at post-testing, but improved to a “better-than-initial state” by the two-month follow-up, whereas control participants improved by post-testing and maintained improvement at the two-month follow-up. In this study, writing in general appeared to benefit participants negatively affected by trauma.
Bugg, Turpin, Mason and Scholes (2009) found similar inconclusive results among 67 traumatic injury patients at risk for developing PTSD. Participants were either assigned to write for three sessions about emotional aspects of their trauma or to a non-writing control group. One-, three-, and six-month follow-ups were completed. Results showed that between-group difference were not significant, although subjective ratings of the usefulness of writing were high.

Likewise, a study by Smyth, Hockemeyer and Tulloch (2008) found only limited benefits of EW on PTSD symptoms. Twenty-five participants diagnosed with PTSD wrote either expressively about their traumatic experience or neutrally about a trivial topic. Although no changes in PTSD diagnosis or symptoms were observed, significant improvements in mood and post-traumatic growth were observed in the experimental participants. Smyth et al. (2008) noted that although experimental patients continued to display the central features of PTSD, their capacity to regulate those responses appeared enhanced following EW.

Surprisingly, Gidron, Peri, Connolly and Shalev (1996) found quite negative results for eight Israeli trauma victims who participated in an EW experiment. Participants in the experimental group were asked to write about their most traumatic experiences for 20 minutes for three consecutive days, and subsequently to orally elaborate about their single most traumatic experience. Control participants were asked to write about their daily agenda. At the five-week follow-up, participants reported relatively large increases in health care visits and avoidance symptoms compared to controls. The very small sample size of eight participants and the additional oral elaboration should, of course, be noted in the significance of these findings.
Conversely, King and Miner (2000) found that not only does writing about traumatic events increase health, but writing about the perceived benefits of trauma (benefit finding) also increases overall health. The study was conducted on 118 individuals who had previously experienced a traumatic event. Participants were assigned to write about one of four topics: writing about perceived benefits or not writing about perceived benefits, and writing about trauma or not writing about trauma. Although writing about trauma or the perceived benefits provided beneficial results, writing about both the trauma and perceived benefits in the same session did not yield similar findings. It is noted that this may be due to the inhibition effect, in that the participants were asked to open up about a traumatic event, but then asked to also focus on the positive aspects. King and Miner (2000) state the analogy of someone whose friends are tired of hearing about the traumatic event and are pushing the person to look on the bright side.

In light of previous inconsistent findings, Gebler and Maercker (2007) examined a new component of EW by adding an existential dimension. As noted before, a traumatic experience often shatters one’s self-image and understanding of the world (Janoff-Bulman, 1992). In response to this, Gebler and Maercker (2007) included prompting questions in the protocol that directed participants to write expressively about such things as the meaning of life, reasons for suffering and one’s relationship with God. Gebler and Maercker (2007) hypothesized that writing instructions that extend to existential thoughts are more effective in terms of reducing PTSD symptoms and depression. Seventeen participants (mostly middle-aged women) were recruited from clinician offices and the internet and were assigned to either write in standard EW form or in the existentially
extended form. Participants wrote for four sessions for 20-30 minutes each session. Results showed a trend toward a better effectiveness of the existential writing instruction for trauma symptoms and depression. However, in terms of posttraumatic growth and existential frustration, the results were less clear. Additionally, the small sample size of 17 women drastically reduced the significance of this finding.

It is unclear from previous research whether EW has any effect on participants’ PTSD symptom levels. Although some support shows that EW may help participants to regulate their responses to PTSD symptoms, the symptoms themselves do not appear to be affected.

Emotional Expression

Simply put, EE can be viewed as observable verbal and nonverbal behavior that communicates feelings. Common assumptions and stereotypes surrounding emotions are present in nearly all cultures around the world. The “fact” that women are both more emotional and emotionally expressive is pervasive throughout most cultures (Fischer & Manstead, 2000), while EE in males has traditionally been viewed more negatively. Consistently, women typically view themselves as more expressive, while men view themselves as less (Gross & John, 1998). Although essentially stereotypes and opinions, these assumptions have been at least moderately supported through empirical research.

Global self-report measures such as the Affect Intensity Measure (Diener, Sandvik & Larsen, 1985) have indicated that females across most cultures express both positive and negative emotions more intensely than males (Brody, 1997). Similarly, in a study in which participants had to write a response story to a scenario in which they had to deal with an obstructive travel agent, females wrote significantly more about feelings
and emotions than did their male counterparts (Girdler, Turner, Sherwood, & Light, 1990). Cross and Madison (1997) have suggested that this difference in emotional expression between genders may be due to differing interpersonal processes between males and females which include the ways in which anxiety and conflict are regulated and the types of self-schemas that are maintained. One researcher, Manstead (1991), has gone so far to suggest that men are simply “internalizers,” (i.e. they show physical arousal symptoms with no obvious EE), and women are “externalizers,” (i.e. they show clear outward emotional expression with no corresponding physical arousal). Manstead (1991) also hypothesized that males in individualistic cultures, such as the United States, are especially likely to minimize EE because it may threaten the façade of control which is vital to their status as independent males.

Brody (1997) stated that contrary to stereotypes, gender differences in EE occur only in certain situations, in specific cultures and among certain individuals. Brody (1997) argued that gender differences in emotional expression depend on how important the social context is for men and women’s expected roles. For men, maintaining a sense of control may be associated with emotional expressiveness, while for women empathic distress may be associative agent. Levels of EE appear to depend more on expected social roles than on actual biological differences (Brody, Hay & Vandewater, 1990). This is supported by studies in which men have gender roles which are atypical of males (e.g. being the primary caretaker of one’s children or working in childcare). For example, men who engage in childcare display emotional expressiveness which is typically associated with women, and men who take primary responsibility for raising their children express more nurturance, affection and disclose more feelings than men
who do not (Hanson, 1988; Radin, 1994). It is also widely evident that in American culture boys and girls are socialized to have different social roles and play patterns and to express emotions differently (Brody, 1996).

Emotional Expression in Gay Men

So how does this all relate to differences in EE between HIV-positive GM and SM? The majority of self-identified GM are typically thought of as more feminine than their SM counterparts in nearly all behavioral aspects, including EE, by mainstream American culture. Research has indeed found GM to be relatively feminine (Pillard, 1991). It is important to stress the difference between self-identified GM and men who have sex with other men. Self-identified GM typically associate with gay culture and accept their sexuality as part of their identity. Men who have sex with men, but do not identify as being gay, typically attempt to conform to the societal role of how a man “should” behave. Therefore, if expected social roles are the actual force limiting EE in men as Brody, Hay and Vandewater (1990) claim, then self-identified GM should display an increased level of EE because they are not necessarily adhering to the same societal role as straight men or men who do not identify as being gay. Therefore, it is reasonable to assume that GM will exhibit levels of emotional expressiveness closer to that of females than their SM counterparts.

Typical life events of GM and SM are often quite different. Although both GM and SM spend most of their early lives subjected to the previously discussed socialization of gender roles and norms, these roles often drastically conflict with the natural tendencies of young male homosexuals. Additionally, GM are exposed to hostile and negative attitudes towards homosexuality ranging from the indictment of gays as diseased
or criminal to pure denial that homosexuality even exists. Intolerance of differences, intense peer pressure to inhibit homosexual feelings or feminine tendencies, and rejection are also common stressors faced by GM. Add these stressors to the stigmatization encountered by the HIV infected population, and a group becomes apparent which faces an extremely high level of adversity. Sadly, suicide attempts and completed suicides are much higher among gay teens than their straight counterparts (Gibson, 1989). This is often due to depression, physical abuse, and hopelessness, typically associated with a lack of perceived or actual social support. This lack of perceived social support was actually found to mediate the relationship between victimization, mental health problems and suicide (Hershberger & D’Augelli, 1995). The lack of perceived social support found in many GM can have other detrimental effects on health.

One study by Surgoner and Joseph (2000) found a direct association between the number of life events and psychological distress in samples with low social support, but not in samples with high social support. These results provide evidence consistent with the view that perceptions of social support availability act as a defense against the psychological effects of life events (Payne & Jones, 1995). However, a large social network does not always entail a high level of perceived social support. Semple et al. (1996) found that although HIV-positive GM tend to have larger social networks than their lesbian counterparts, they still perceive lower levels of social support which weighs more heavily. HIV-positive GM also scored higher on loneliness scales compared to their lesbian counterparts.
Due to fear of rejection and lack of social support, many GM choose to “stay in the closet” until exposed to a moderately excepting peer group, but often remain “closeted” throughout their lives. This can produce quite negative health effects. Cole, Kemeny, Taylor, Visscher and Fahey (1996) examined 80 HIV-positive GM who were otherwise healthy at study entry over a period of nine years. After controlling for health practices, sexual behavior, medication, depression, anxiety, social support and repressive coping style, HIV infection advanced more rapidly in relationship to the degree participants concealed their homosexual identity.

However, “coming out” is not usually an easy process and often produces more long-term negative consequences if done too early. Friedman, Marshal, Stall, Cheong and Wright (2008) examined the relationship between the timing of gay-related developmental “milestones,” early abuse and health in adulthood among 1,383 gay and bisexual men. Participants were coded into three groups as either developing early, in the middle range or developing late based on the time of gay-related events such as the age of disclosure of orientation. Men who were “early developers” were more likely, compared to the other two groups, to experience forced sex and gay-related harassment before reaching adulthood. They were also more likely to be HIV-positive, victimized because of orientation, and were also more likely to be subject to partner abuse and depression during adulthood. These unfortunate findings suggest that childhood and adolescent attacks against gay and bisexual males helps to explain the heightened rate of serious mental and medical health problems among gay adult males.
Summary and Conclusions

Pennebaker (1985) has stated that not disclosing personal and traumatic events may be related to poor health due to the inhibition of emotions. Cole et al. (1996) supported this observation through a study of homosexual orientation disclosure inhibition. Conversely, disclosing emotions regarding one’s homosexual orientation too early in life may increase the risk of physical abuse, trauma and psychological distress such as depression in adulthood (Friedman et al., 2008). As a population, common experiences of HIV-positive GM touch upon each of the theories which attempt to explain the benefits of EW. As a population often forced to inhibit emotions and behaviors, EW could work as a safe means for disclosure and may be beneficial for GM based on Pennebaker’s (1985) inhibition theory. Additionally, EW may elicit favorable benefits for HIV-positive GM due to Janoff-Bulman’s (1992) variation of the cognitive adaptation theory. Because this group is commonly subjected to harassment, their positive self-images can often become shattered. By deeply exploring one’s trauma and writing emotionally about feelings surrounding the event, one’s positive self-image may be reworked. EW may also be beneficial for this group if the intervention purportedly increased social connections (Pennebaker & Graybeal, 2001) which buffers against psychological effects of life events (Payne & Jones, 1995). Also, based on the exposure/emotional processing theory, gay men may benefit due to typical subjection to trauma and the ensuing PTSD symptoms, which can cause previously neutral stimuli to provoke a conditioned response such as fear and arousal. By addressing traumas in writing, GM may be able to extinguish the UCS-CS association. Lastly, the known positive benefits of EW on symptoms of depression (Sloan et al., 2008; Lepore, 1997;
Gortner et al., 2006; Petrie et al., 1998; Koopman et al., 2005; Soliday et al., 2004) and to a lesser degree PTSD symptoms (Smyth et al., 2008; Deters & Range, 2003; King & Miner, 2000) indicate that EW may be beneficial for HIV-positive GM, as they are highly vulnerable to such depression and PTSD symptoms. With so much emotional and behavioral inhibition, subjection to harassment and trauma, and vulnerability to depression and PTSD symptoms, HIV-positive GM appear to be an ideal population to benefit from the EW paradigm.
Chapter 2: Objectives

The purpose of the present study is to examine whether writing expressively about traumatic life events, and the levels of emotional expression (EE) and depth processing (DP) present in such essays, provide mental health benefits to participants. Specifically, a sample of HIV-positive gay males (GM) will be compared to a sample of HIV-positive straight males (SM) to determine whether one group displays higher levels of EE and DP, and whether one group displays a higher decline in depression and PTSD symptoms across all time points.

Aims, Hypotheses and Proposed Analyses

There are three main hypotheses being tested: 1) the GM group will differ significantly from the SM group in their levels of written EE; 2) the GM group will differ significantly from the SM group in their levels of DP; and 3) the GM and SM groups will vary significantly in their levels of depression and PTSD symptoms from baseline to one- and six-month follow-up (F1 and F6, respectively).

Aim 1: To determine whether HIV-positive GM and SM differ in their levels of written EE (i.e. the number of positive and negative emotion words present in each essay).

Hypothesis 1: The GM group will use significantly more positive and negative emotion words in comparison to the SM group.
**Analysis 1:** The number of positive emotion words present in each of the four writing sessions (W1, W2, W3 and W4) will be averaged to achieve a mean positive emotion word count for each participant. Negative emotion words will be totaled in the same manner. A 2 x 2 Analysis of Variance (ANOVA) will be performed to access for significance of difference between the GM and SM groups on these three variables.

**Aim 2:** To determine whether HIV-positive GM and SM differ in their levels of DP. The four subscales of DP include: adaptive/realistic cognitive appraisal, self-esteem, approach-oriented problem solving, and experiential involvement.

**Hypothesis 2:** The GM group will display significantly higher levels of DP on each of the four subscales in comparison to the SM group.

**Analysis 2:** For each participant, an average score will be calculated for each of the four DP subscales over the four writing sessions. A 2 x 4 ANOVA will be performed to access for significance of difference between the GM and SM groups on all four DP subscales.

**Covariates for Analyses 1 and 2:** First, analyses will be performed to assess whether GM and SM differ on three major demographic variables (education, ethnicity and age) and on the severity and topic of traumas discussed. Independent-samples t-tests will be used for age, and severity of traumas. Chi-squares will be used for education, ethnicity, and topics of traumas discussed. If the GM and SM are found to differ significantly on any of these variables, then those variables will be tested as potential covariates. Bivariate correlations (age, education, and severity of traumas) or ANOVAs (ethnicity and topic of traumas) will be used to examine the relationship between each potential covariate and any of the six dependent variables (positive,
emotional expression (PosEE), negative emotional expression (NegEE), adaptive/realistic cognitive appraisal, self-esteem, approach-oriented problem solving, and experiential involvement) found to differ significantly between the GM and SM. If relationships are found to be significant, partial correlations will be conducted controlling for such covariates.

Aim 3: To determine whether HIV-positive GM and SM differ in their change of levels of self-reported depression and PTSD symptoms from baseline to F1 and F6.

Hypothesis 3: The GM group will benefit significantly more than the SM group with regard to self-reported depression and PTSD symptoms following the writing intervention. Specifically, GM will display a significantly higher decline in self-reported depression and PTSD symptom levels from baseline to F1 and F6 in comparison to SM.

Analysis 3: Two (depression and PTSD symptoms) 2 x 3 Repeated Measures ANOVAs will be performed to access for significance of difference in change between the GM and SM groups from baseline to F1 and F6 for both depression and PTSD symptoms.
Chapter 3: Methods

Participants

HIV-positive individuals were recruited and enrolled between 2004 and 2009 in South Florida (Miami-Dade and Broward Counties) for the present study. All individuals enrolled voluntarily and were monetarily compensated for their time. Recruitment was conducted via presentations, flyers and word of mouth in such locations as physician offices, specialty clinics, community organizations and gay social gathering scenes.

Inclusion and Exclusion Criteria

Initially, individuals enrolled in the study must have been HIV-positive with a CD4 count between 100 and 600 cells/ul. The reasons for this range are twofold: 1) by excluding exceptionally healthy individuals (i.e. those with a high CD4 count), a ceiling effect is eliminated; and 2) by excluding individuals in advanced stages of HIV (i.e. those with low CD4 counts), the risk of having intervention results overshadowed by advanced, and often irreversible, illness is lessened. However, in order to recruit enough participants for the study, the CD4 inclusion parameters were eventually broadened. Still, approximately 77 percent of participants had a baseline CD4 count between 100 and 600 cells/ul. Viral load was not a prerequisite for inclusion in the study, and participant’ viral load levels ranged from undetectable (48.5%) to a maximum assay count of 750,000 copies/ml (0.4%).

Other exclusion criteria included: 1) individuals younger than 18 and older than 60 years of age; 2) less than an eighth grade education or inability to write at an eighth grade level; 3) non-English speaking/writing; 4) active systemic diseases or disorders that would interfere with participation (e.g. heart, lung, kidney, liver, diabetes, cancer, stroke,
seizures, psychotic disorders, obesity, malnutrition, surgery in the past six months, pregnancy, deafness and blindness); 5) current alcohol or drug dependence; 6) a change in HIV-medications in the past three months or a plan to change HIV-medications in the next six months; 7) initiating use of antidepressant medications within one month prior to study enrollment; 8) and current use of psychological therapy.

For the purposes of the present study, participants were included in analyses if they were male, self-identified as either exclusively/predominately gay or exclusively/predominately straight at the baseline interview, completed a six-month follow-up interview, and were assigned to the experimental “trauma” writing group.

**Randomization**

Individuals who meet inclusion criteria were asked to come in for an initial baseline assessment and were equally randomized into two groups: the experimental “trauma” (T) group or the control “daily” (D) group. Participants were stratified by gender and block randomized by use of HAART/no HAART and education, so that each treatment group would have equal representation of both medication use and education level.

**Interview and Writing Procedures**

Participants were asked to come in for a baseline interview followed by four writing sessions (W1, W2, W3 and W4), as well as a one-, six- and 12-month follow-up (F1, F6 and F12, respectively). At baseline participants were randomized to one of two groups (T or D) and were asked to complete a battery of demographic and psychosocial measures. Blood and urine samples were also collected. Participants were explained confidentiality issues and were also asked to sign an informed consent form.
For the following four sessions participants in the D-group were asked to write objectively about daily activities, while the T-group was asked to write for 30 minutes about a past traumatic event. Specifically, the D-group was asked to write objectively and descriptively and not to include any emotions or feelings in their writing, while the T-group was asked to delve into their deepest thoughts, feelings and emotions in their writing. During the four writing sessions, participants were also asked to complete a small battery of psychosocial measures. Salivary samples were also collected pre- and post-writing.

For the first 20 minutes of each writing session, the D-group wrote about daily activities as follows: W1) what (s)he did yesterday; W2) what (s)he did today; W3) what (s)he plans to do later today; and W4) what (s)he plans to do next week. For the last 10 minutes of each writing session, the D-group wrote about daily activities as follows: W1) what (s)he did today; W2) what (s)he plans to do tomorrow; W3) again, what (s)he plans to do tomorrow; and W4) what (s)he did last week.

The T-group was asked to write about the same topic for the first 20 minutes of each writing session: emotions and feelings surrounding his/her most traumatic or upsetting experiences. For the last 10 minutes of each writing session participants were probed on particular dimensions of depth processing (DP): W1) how (s)he makes sense of the trauma; W2) how the trauma has affected his/her self-esteem; W3) how the trauma has helped him/her to cope with future stressors; and W4) again, how (s)he makes sense of the trauma (see Appendices A and B for D- and T-group writing instructions, respectively).
Following the writing sessions, participants were asked to come in for an F1, F6 and F12 appointment. At each follow-up appointment, participants were asked to complete a battery of psychosocial measures. Blood and urine samples were also collected. At F1 and F12 appointments participants were also asked to read over the essays they had written during the writing sessions for 30 minutes. Saliva was collected pre- and post- reading session. Saliva is also collected once during the F6 appointment. At the end of the 12-month follow-up, participants were debriefed about the nature of the study.

All study sessions were implemented by a team of master’s, doctoral, or post-doctoral level students and were supervised by a licensed clinical psychologist. Study clinicians and a psychologist were available during all sessions to answer questions as they arise and to provide brief counseling when necessary. Referrals to appropriate resources (i.e. clinical psychologists in the community) were provided for participants who needed additional attention after the session. The interaction of the study clinicians and participants were kept at a minimum unless the participant became upset or needed assistance.

Measures

With regard to the present study, three measures were examined: 1) a revised version of the Emotional/Cognitive Processing Scale (O’Cleirigh & Ironson, 2004); 2) the Hamilton Depression Rating Scale (HRSD; Hamilton, 1960; Leserman et al., 1997); and 3) the Davidson PTSD Scale (DTS; Davidson et al., 1997). A short demographic questionnaire was also completed.
Emotional/Cognitive Processing Scale (see Appendix C): The Emotional/Cognitive Processing Scale measures levels of DP and emotional expression (EE) in written essays. The DP portion consists of four subscales: 1) adaptive/realistic cognitive appraisal; 2) self-esteem; 3) approach-oriented problem solving; and 4) experiential involvement. Originally, this scale assessed changes in DP within essays, but has now been revised to only evaluate the overall level of each DP subscale present in each essay. For each 20-minute essay, all four subscales are scored using a seven-point Likert scale with a score of seven representing the highest level of DP. Because the 10-minute essays probe on specific aspects of DP, only the corresponding subscale for each time point is scored as follows: W1) adaptive/realistic cognitive appraisal; W2) self-esteem; W3) approach-oriented problem solving; and W4) again, adaptive/realistic cognitive appraisal. Experiential involvement is also scored for each 10-minute essay as it can be assessed regardless of the probe.

The EE portion of the scale counts the number of positive and negative emotion words present in each essay which are predicated on the writer. Aside from standard emotion words (i.e. happy, sad, angry), phrases that convey such emotional states (e.g. “feel on top of the world,” “want to die,” “my blood boiled”) are also counted. In addition to DP and EE, the severity of the trauma is scored for each 20-minutes essay using a seven-point Likert scale with a score of seven representing the most serious traumas (e.g. death of child or spouse). The severity scale was borrowed from Miller and Rahe’s (1997) Life Changes Scale with a few additional events added to the list, which are particular to the present study’s population. Items were assigned a severity value from one to seven based on group consensus among four graduate level research
assistants. Topic of trauma is also recorded and assigned to one of five groups: death, childhood trauma, adulthood sexual or physical abuse, HIV-related trauma, and other (e.g. relationship or financial problems). Whether the trauma occurred in the past or continues in the present and whether the trauma occurred in childhood or adulthood are also reported.

Inter-Rater Reliability: Two master’s level graduate students previously trained in scoring essays for EE and DP scored 50 essays to obtain a sufficient level of inter-rater reliability. Essays were chosen from the larger sample in order to achieve equal representation across several dimensions. First, the sample was divided into thirds based on gender and sexual orientation: one-third straight women ($n = 18$); one-third straight men ($n = 17$); and one-third gay men ($n = 17$). Within each of these groups, approximately one half of the participants had DTS scores below 30 ($n = 27$), while the other half had DTS scores equal to or above 30 at baseline ($n = 23$). A score of 30 on the DTS is indicative of a high level of PTSD symptoms. Of the 50 essays scored, 30 were 20-minute essays and 20 were 10-minute essays separated further by time point (W1, $n = 12$; W2, $n = 14$; W3, $n = 12$; and W4, $n = 12$). Since only two subscales are scored for each 10-minute essay (the subscale which corresponds with the time point and experiential involvement), the number of essays used for inter-rater reliability varies accordingly (minimum $n = 35$). An inter-rater reliability of $p < .01$ was obtained on all measures of the Emotional/Cognitive Processing Scale (see Table 1).

A second round of inter-rater reliability was conducted on 20-minute essays ($n = 30$) at the halfway point of scoring. Again, the sample was divided into thirds based on gender and sexual orientation: one-third straight women ($n = 10$); one-third straight men
(n = 10); and one-third gay men (n = 30). Within each group, half of the participants had DTS scores below 30 (n = 15), while half had DTS scores equal to or above 30 at baseline (n = 15). As with the first round, an inter-rate reliability of p < .01 was obtained on all measures (see Table 2).

Essays were scored in an order to limit rater biases based on previous essays. Specifically, all W1 20-minute essays were scored before continuing to W2, W3 and W4 essays, respectively. The same ordering method was employed for all 10-minute essays to ensure that scores on a participant’s previous essays did not influence scores on subsequent essays. The two scorers alternated between scoring even and odd participant numbers to also limit scorer biases from over-exposure to participants’ essays.

*Hamilton Depression Rating Scale* (HRSD; see Appendix D): The HRSD is a 17 item interviewer-based instrument that measures both affective and somatic symptoms experienced in the past week. Scores range from zero to 52 with higher scores representing a higher amount and/or severity of depression symptoms.

*Davidson PTSD Scale* (DTS; see Appendix E): The DTS is a 17 item interviewer-based instrument that measures levels of PTSD-related symptoms such as re-experiencing (items 1-5), avoidance (items 6-12) and arousal (items 13-17). Each item asks a question about PTSD-related symptoms experienced in the past week, which are endorsed from zero (not at all) to four (everyday). Additionally, each question is scored for frequency and severity, both on a zero to four point scale. Subscales are summed for frequency, severity and both. A total score is also computed.
Chapter 4: Results

The purpose of this study was to examine whether exclusively/predominately gay males (GM) and exclusively/predominately straight males (SM) differ in their levels of written emotional expression (EE) and depth processing (DP) in essays pertaining to the participants’ most traumatic life events. In addition, change in levels of depression and PTSD symptoms from baseline to one- and six-month follow-ups (F1 and F6, respectively) were compared between the GM and SM groups. EE and DP were measured using a revised version of the Emotional/Cognitive Processing Scale (O’Cleirigh & Ironson, 2004). Depression symptoms were measured using the Hamilton Depression Rating Scale (HRSD; Hamilton, 1960; Leserman et al., 1997), and PTSD symptoms were measured using the Davidson PTSD scale (DTS; Davidson et al., 1997).

Participant Characteristics

Fifty-six participants from a “parent” trauma-writing intervention (P.I., Gail Ironson) met the inclusion criteria for the present study (i.e. males that self-identified as either exclusively/predominately gay or exclusively/predominately straight, completed a F6 appointment, and were assigned to the “trauma” writing group). The GM group included 32 exclusively GM and three predominately GM, while the SM group consisted of 20 exclusively SM and one predominately SM. Data on three demographic variables (age, ethnicity and education; see Table 3), as well as severity and topic of traumas discussed, were obtained and analyzed as potential covariates.

Participants ranged from 25 to 58 years old ($M = 41.9$) in the GM group, and from 24 to 60 years old ($M = 47.0$) in the SM group. Age was found to differ significantly between the two groups ($t(54) = 2.533, p = .014$), with a higher average age in the SM
group. As for ethnicity, the GM group consisted mostly of Caucasian (approx. 34%) and Hispanic (approx. 43%) participants, while the SM group included mostly African American (approx. 76%) participants. Ethnicity was also found to differ significantly between the two groups ($\chi^2(3, N = 56) = 27.810, p < .001$). Because ethnicity was almost completely confounded between the two groups, it was no longer possible to control for ethnicity in the analyses.

Education level was also disproportionately represented in the two groups. In the GM group, most participants were high school graduates or received some higher education (approx. 86%), while nearly 52 percent of participants in the SM group did not graduate from high school. As with age and ethnicity, the two groups also differed significantly in education level ($\chi^2(2, N = 56) = 14.908, p = .001$). The severity of traumas discussed did not differ significantly between the two groups ($t(54) = -.399, p = .692$; see Table 4), and neither did topic of traumas ($\chi^2(4, N = 56) = 8.457, p = .076$; see Table 5). There was, however, a trend for SM to write more about HIV-related traumas and for GM to write more about death.

Analyses of Emotional Expression

The first hypothesis stated that the GM and SM groups would differ significantly in their levels of EE. Specifically, it was hypothesized that the GM group would display significantly higher levels of positive emotional expression (PosEE) and negative emotional expression (NegEE) than the SM group in their trauma-related essays. The emotion word counts were averaged across the eight essays (four 20-minute and four 10-minute essays). A $2 \times 2$ ANOVA was used to examine whether the two groups were significantly different in their levels of EE. As predicted, the GM group expressed
significantly higher levels of NegEE than the SM group \((F(1, 54) = 6.975, p = .011)\), but expressed only marginally higher levels of PosEE \((F(1, 54) = .752, p = .390)\), which was not significant. Both groups expressed more negative than positive emotions words on average. See Table 6 for descriptives of NegEE and PosEE analyses. Also, see Figures 1 and 2 for NegEE and PosEE averages, respectively, for each writing session.

Since the GM and SM groups were found to differ significantly in NegEE, bivariate correlations were conducted to assess for significant relationships between NegEE and the demographic covariates. A significant relationship was not found between NegEE and age \((r = .060, p = .660)\); however, education level was found to significantly relate with NegEE \((r = .451, p < .001)\). After conducting a partial correlation controlling for education level, the difference in NegEE between the GM and SM groups was no longer significant \((r = .139, p = .312)\).

Furthermore, it was considered that NegEE could be largely dependent on the total number of words used across all writing sessions. That is, the more a participant writes the more likely he will be to use more negative emotion words. The total number of negative emotion words was divided by the total number of words used to achieve a NegEE proportion. On average, the GM group wrote significantly more in their essays \((M = 2055.2)\) than the SM group \((M = 1460.0)\). After analyzing NegEE as a proportion to total words, the two groups no longer differed significantly \((F(3, 52) = .062, p = .980)\;\text{again, see Table 6).}
Analyses of Depth Processing

The second hypothesis predicted that the GM and SM groups would differ significantly in their levels of DP. Specifically, it was hypothesized that the GM group would score higher on all four dimensions of DP. An average score was computed for each DP subscale across all writing sessions for which that subscale was scored. A 2 x 4 ANOVA was used to examine whether the two groups differed significantly in their levels of DP. Results indicate that SM displayed marginally higher levels of adaptive/realistic cognitive appraisal than GM ($F(1, 54) = .336, p = .565$; see Figure 3), as well as higher levels of self-esteem ($F(1, 54) = .398, p = .531$; see Figure 4), although neither of these findings were statistically significant. On the other hand, the GM group scored higher on approach-oriented problem solving compared to the SM group ($F(1, 54) = .347, p = .558$; see Figure 5), although this finding was also not statistically significant. Finally, as predicted, the GM group scored significantly higher than the SM group on experiential involvement ($F(1, 54) = 4.169, p = .046$; see Figure 6). See Table 7 for descriptives of DP analyses.

As with NegEE, bivariate correlations were used to examine whether age or education significantly correlated with experiential involvement. Age did not significantly correlate with experiential involvement ($r = .0124, p = .984$); however, education did significantly correlate ($r = .405, p = .002$). A partial correlation was conducted controlling for education which rendered the significant difference between the GM and SM on experiential involvement to become non-significant ($r = .076, p = .582$).
Analyses of Depression and PTSD Symptoms

The third hypothesis posited that the GM and SM groups would differ significantly in their change of levels of depression and PTSD symptoms across time points. Specifically, it was hypothesized that the GM group would report a significantly higher decline in both depression and PTSD symptoms from baseline to F1 and F6. Contrary to the hypothesis, the GM group did not display a significantly higher decline in depression symptoms compared to the SM ($F(2, 49) = .176, p = .839$; see Figure 7); and neither the GM group ($F(2, 30) = .058, p = .944$), nor the SM group ($F(2, 18) = .299, p = .745$) experienced a significant reduction in depression symptoms. As for PTSD symptoms, the two groups did not differ significantly from each other in their levels of change from pre- to post-intervention ($F(2, 50) = .558, p = .576$; see Figure 8). However, although the GM group did not experience a significant reduction in PTSD symptoms ($F(2, 32) = 2.103, p = .139$), the SM group did experience a significant reduction ($F(2, 17) = 3.994, p = .038$). Four participants were missing depression scores, and three participants were missing PTSD scores at one or more time points. These participants were not included in the corresponding analyses.
Chapter 5: Discussion

The main goal of this study was to examine differences in levels of emotional expression (EE) and depth processing (DP) between HIV-positive gay males (GM) and HIV-positive straight males (SM) in trauma-related essays. Additionally, differences in change of levels of depression and PTSD symptoms were measured from baseline to one- and six-month follow-ups (F1 and F6, respectively). To date, no studies in the available literature have examined sexual orientation as potentially influencing EE and DP, and none have explored sexual orientation’s relationship to depression and PTSD symptoms in response to expressive writing (EW).

It was hypothesized that GM would express significantly more positive and negative emotion words than SM in their trauma-related essays. This hypothesis was guided by prior findings that women are more emotionally expressive than men (Brody, 1997; Girdler et al., 1990), and that GM have been found to be behaviorally more feminine than their SM counterparts (Pillard, 1991). Therefore, GM may be more similar to women than SM in their emotional expressiveness. Additionally, expected social roles have been found to greatly influence EE (Brody et al., 1990; Hanson, 1988; Radin, 1994), and since GM may not be conforming to the same “masculine” social roles as SM, they may be less inhibitory in their expressiveness.

As hypothesized, the GM group displayed higher levels of both positive and negative emotional expression (PosEE and NegEE, respectively), although only NegEE differed significantly between the two groups. Additionally, both the GM and SM groups displayed approximately two times the amount of NegEE than PosEE in their essays. This was an expected outcome considering that participants were asked to write about
their most traumatic life experiences. Age, ethnicity, and education, as well as the severity and topic of traumas discussed, were considered as potential covariates of NegEE. Age, ethnicity and education all differed significantly between the GM and SM groups, while severity and topic of traumas discussed did not. Ethnicity was ultimately determined to be complete confounded between the two groups and it was not possible to control for in analyses. Finally, education was found to be significantly correlated with NegEE, and when controlled for, the difference in NegEE between the two groups was no longer significant.

Levels of DP (adaptive/realistic cognitive appraisal, self-esteem, approach-oriented problem solving, and experiential involvement) were also hypothesized to differ between the GM and SM groups. It was assumed that levels of EE would positively correlate with levels of DP based on prior research by O’Cleirigh et al. (2003; 2008) and Rivkin et al. (2006). Since it was expected that GM would express more emotions than SM, levels of DP were also expected to be higher in the GM group compared to the SM group.

The two groups did not differ significantly in adaptive/realistic cognitive appraisal, self-esteem or approach-oriented problem solving. Only experiential involvement (i.e. extent of involvement in discussing the trauma without detachment) was found to significantly differ between the two groups, with the GM group being more involved in the writing process than the SM group. As was the case with NegEE, education was found to significantly correlate with experiential involvement, and once controlled for, the finding was no longer significant.
A quite plausible explanation for education’s relationship to NegEE and experiential involvement is that higher levels of education may better equip individuals to express emotions and engage more thoroughly in the writing process. This is strongly supported by the finding that the GM group wrote significantly more words across all writing sessions compared to the SM group. However, since the two groups did differ on three major demographic variables, and have probably had very different life experiences, it would be unlikely that education could account for all the variation in levels of NegEE and experiential involvement between GM and SM.

Perhaps, GM are both more emotionally expressive and better able to express such emotions, due to higher levels of education, than SM. Also, because GM were found to be more involved in the writing task than SM, maybe GM are also more willing to be emotionally expressive. Furthermore, since GM are often forced to inhibit their feminine tendencies (Brody, 1996), which includes EE; the EW task may provide a safe environment for the GM to be more emotionally expressive than they normally would be in a non-controlled environment. Alternatively, GM may simply be more expressive than SM which is reflected in their trauma-related essays.

The final hypothesis predicted that GM would display a significantly higher decline in depression and PTSD symptoms than SM from baseline to follow-ups. This hypothesis was largely guided by theories that attempt to explain the effectiveness of EW, and how GM characteristically experience life events that touch upon each of these theories. Specifically, EW was predicted to benefit GM through the expression of inhibited emotions (Pennebaker, 1985); the rebuilding of a shattered self-image (Janoff-Bulman, 1992); increased social connections (Pennebaker & Graybeal, 2001); and
through classical conditioning which is thought to exterminate associations between fear and neutral stimuli. Furthermore, the known positive benefits of EW on symptoms of depression (Sloan et al., 2008; Lepore, 1997; Gortner et al., 2006; Petrie et al., 1998; Koopman et al., 2005; Soliday et al., 2004) and PTSD symptoms (Smyth et al., 2008; Deters & Range, 2003; King & Miner, 2000) also indicate that EW may be beneficial for GM, as this population is highly vulnerable to such depression and PTSD symptoms.

Contrary to the hypothesis, the groups did not differ significantly in their change in levels of depression and PTSD symptoms from baseline to F1 and F6. With regard to depression, both the GM and SM groups displayed “no to slight depression” at all three time points, according to the Hamilton Depression Rating Scale (Hamilton, 1960), although the GM group experienced slightly higher levels of depression at each time point measured. Although the GM group experienced a decrease in depression symptoms from baseline to F1, these changes were not maintained at F6. The SM group experienced a drop in depression symptoms at F1, and a further decline by F6.

With regard to PTSD symptoms, both groups scored at a sub-clinical level on the Davidson Trauma Scale at each time point measured (Davidson et al., 1997); and surprisingly, the SM group, and not the GM group, displayed a significant decline in PTSD symptoms from pre- to post-intervention. This finding is interesting because prior research has shown a positive relationship between EE and health benefits, and this study found a greater reduction in PTSD symptoms among the less expressive group. It is possible that in contrast to prior assumptions, the SM group is actually more inhibited in their display of EE than the GM group, and the EW task provided a rare opportunity to truly “open up” about undisclosed feelings and emotions. The relationship of EE and DP
to health benefits may actually be more dependent on a heightened level of EE and DP during EW in comparison to daily levels of EE. The GM group may simply have higher levels of EE on a daily basis, and therefore, EW may not provide the same outlet for expression as it might for the SM group.

Another interesting finding was that the decline in PTSD symptoms was greater than the decline in depression symptoms for both groups. The literature provides relatively clear evidence for EW’s benefits on depression symptoms (Sloan et al., 2008; Lepore, 1997; Gortner et al., 2006; Petrie et al., 1998; Koopman et al., 2005; Soliday et al., 2004), and very mixed results for EW’s effects on PTSD symptoms (Smyth et al., 2008; Deters & Range, 2003; King & Miner, 2000). However, this observation is not entirely surprising considering that participants in both groups have arguably experienced at least one relatively traumatic life experience (i.e. an HIV-positive diagnosis).

Additionally, EW serves as a type of exposure therapy which is the standard technique today in treating patients affected by trauma (IOM, 2008). Neither group displayed high levels of depression symptoms at baseline which left little room for significant improvement. As a population diagnosed with a chronic and potentially traumatic illness, EW may be more therapeutic in targeting PTSD than depression symptoms. The results of this study indicate that EW may be more beneficial in alleviating PTSD symptoms than depression symptoms in HIV-positive GM and SM. Specifically, EW may be particularly beneficial for HIV-positive SM in providing a unique opportunity to express thoughts and emotions surrounding a traumatic life event.
Study Limitations

The results of this study indicate that GM express more negative emotion words and engage more thoroughly in the EW process. Higher education appears to greatly influence the higher levels of EE and DP displayed by the GM. Additionally, ethnicity was completely confounded between the two groups. It is important to note that HIV affects various demographic groups differently, and this study’s sample may actually be representative of the larger HIV-positive population in the United States. Specifically, HIV diagnoses have continued to increase disproportionately among African American SM, while Caucasian GM still account for a large proportion of new infections (UNAIDS Report on the Global AIDS Epidemic, 2008). It is not clear whether GM and SM actually differ in EE and DP, or if higher levels in these dimensions simply reflect levels of education.

Another limitation of this study was the small sample size. Participants were drawn from a larger study that recruited both men and women who were assigned to either an EW group or a control group. Only men in the trauma group who self-identified as either exclusively/predominately gay or exclusively/predominately straight were included in the present study. Participants in the control group, as well as women and bisexual men in the EW group, were excluded in the present study’s sample. Additionally, nine GM and six SM did not complete their F6 appointment and were not included in this study’s analyses.

A third limitation of this study lies in the use of relatively weak statistical analyses. Although the SM group experienced a significant reduction in PTSD symptoms, this result is neither causative nor predictive. Therefore, causal relationships
between EE, DP and PTSD symptoms cannot be inferred. Additionally, the significant decline in PTSD symptoms in the SM group may have simply been a factor of time. Control subjects are needed to test this theory. However, that is beyond the scope of this paper. Furthermore, although the SM group experienced a significant decline in PTSD symptoms, there are several confounding factors which taint this finding. The SM group was comprised mostly of African Americans with little higher education, while the GM group was largely Caucasian and Hispanic with relatively high levels of education; therefore, it is unclear whether sexual orientation or demographic variables bear more relation to the decline in PTSD symptoms. Lastly, other factors (e.g. life stress, health status) were not included as covariates in the present study and may have an impact on EE, DP and change in levels of PTSD symptoms.

Directions for Future Research

Future studies should aim to match samples of HIV-positive GM and SM on demographic variables such as education, ethnicity and age. Specifically, increased effort should be implemented in the recruitment of SM who are Caucasian and have obtained higher levels of education, and GM who are African American with lower levels of education. Control participants should also be compared to the two trauma-writing groups to determine whether EW actually alleviates PTSD symptoms or if the decline is simply a function of time.

Clinical Implications

The SM group experienced a significant reduction in PTSD symptoms from pre- to post-writing intervention. It may be inferred that while EW may not be an adequate replacement therapy for standard techniques (e.g. cognitive behavioral therapy such as
exposure therapy); it may be appropriate for use as an adjunct therapy as a channel to release and process inhibited emotions and feelings, particularly for HIV-positive SM. EW may be particularly therapeutic for SM because this group is often socialized to inhibit EE which makes them look weak or less masculine (Brody, 1996). Furthermore, although the GM did not experience any significant reductions in either depression or PTSD symptoms, EW may still prove beneficial if implemented consistently and over a longer period of time. Similar to SM, GM typically inhibit EE that is viewed as “gay” or “feminine” (Brody, 1996) and EW may serve as a channel to release undisclosed homosexual thoughts and feelings. The EW task could likely be implemented in various ways such as daily journaling or designated writing sessions with a trained therapist.

Conclusions

This study indicates that GM not only expressed more emotion words (particularly negative) than SM, but were also more involved in the writing process. Despite higher levels of NegEE and experiential involvement in the GM group, only the SM group experienced a significant decline in PTSD symptoms, while neither group displayed a significant decline in depression symptoms. Additionally, although education significantly related to levels of NegEE and experiential involvement, and ethnicity was completely confounded, it is unclear whether these demographic variables directly relate to EE and DP. Further research is needed to examine the relationships of education and ethnicity with EE and DP. Lastly, future studies are warranted to explore potential causal relationships of EE and DP with reductions in PTSD symptoms among HIV-positive GM and SM.
Bibliography


Figure 1

Negative Emotional Expression Averages for Each Writing Session
Figure 2

Positive Emotional Expression Averages for Each Writing Session
Figure 3

Adaptive/Realistic Cognitive Appraisal Scores for Each Writing Session
Figure 4

Self-Esteem Scores for Each Writing Session

![Bar chart showing self-esteem scores for different writing sessions.
Legend: GM Group, SM Group.
Writing Session: W1 20min, W2 20min, W2 10min, W3 20min, W4 20min.
Mean Score range from 0 to 7.]
Figure 5

Approach-Oriented Problem Solving Scores for Each Writing Session
Figure 6

Experiential Involvement Scores for Each Writing Session

![Bar chart showing experiential involvement scores for each writing session. The chart compares two groups: GM Group and SM Group. The scores range from 0 to 7, with writing sessions labeled W1 to W4 and durations of 20min and 10min.]
Figure 7

Hamilton Depression Rating Scores across Time Points

![Graph showing mean depression scores across time points for GM and SM Groups. The x-axis represents time points: Baseline, 1-mo Follow-up, 6-mo Follow-up. The y-axis represents mean depression score. The GM Group shows a slight decrease in mean depression score, while the SM Group shows a more pronounced decrease.]
Figure 8

Davidson PTSD Scale Scores across Time Points
Table 1

*Emotional/Cognitive Processing Scale: Inter-Rater Reliability Round 1*

<table>
<thead>
<tr>
<th>Construct Scored</th>
<th>n</th>
<th>r</th>
<th>W&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severity of Trauma</td>
<td>30</td>
<td>.993**</td>
<td>.984**</td>
</tr>
<tr>
<td>Emotional Expression</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Words</td>
<td>50</td>
<td>.968**</td>
<td>.923**</td>
</tr>
<tr>
<td>Negative Words</td>
<td>50</td>
<td>.988**</td>
<td>.951**</td>
</tr>
<tr>
<td>Total Words</td>
<td>50</td>
<td>.986**</td>
<td>.932**</td>
</tr>
<tr>
<td>Cognitive/Emotional Processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptive/Realistic Cognitive Appraisal</td>
<td>39</td>
<td>.855**</td>
<td>.744**</td>
</tr>
<tr>
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<td>36</td>
<td>.921**</td>
<td>.849**</td>
</tr>
<tr>
<td>Approach-Oriented Problem Solving</td>
<td>35</td>
<td>.893**</td>
<td>.837**</td>
</tr>
<tr>
<td>Experiential Involvement</td>
<td>50</td>
<td>.901**</td>
<td>.831**</td>
</tr>
</tbody>
</table>

*<sup>a</sup>p < .05, **<sup>a</sup>p < .01
*<sup>a</sup>Kendall’s tau
Table 2

Emotional/Cognitive Processing Scale: Inter-Rater Reliability Round 2

<table>
<thead>
<tr>
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<th>r</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severity of Trauma</td>
<td>28</td>
<td>1.000**</td>
<td>1.000**</td>
</tr>
<tr>
<td>Emotional Expression</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Words</td>
<td>30</td>
<td>.977**</td>
<td>.947**</td>
</tr>
<tr>
<td>Negative Words</td>
<td>30</td>
<td>.993**</td>
<td>.969**</td>
</tr>
<tr>
<td>Total Words</td>
<td>50</td>
<td>.986**</td>
<td>.932**</td>
</tr>
<tr>
<td>Cognitive/Emotional Processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptive/Realistic Cognitive Appraisal</td>
<td>30</td>
<td>.920**</td>
<td>.868**</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>30</td>
<td>.891**</td>
<td>.816**</td>
</tr>
<tr>
<td>Approach-Oriented Problem Solving</td>
<td>30</td>
<td>.962**</td>
<td>.917**</td>
</tr>
<tr>
<td>Experiential Involvement</td>
<td>30</td>
<td>.932**</td>
<td>.878**</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01
*Kendall’s tau
Table 3

Sample Characteristics

<table>
<thead>
<tr>
<th>Demographic</th>
<th>GM Group</th>
<th>SM Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;8th grade, some HS</td>
<td>11.4%</td>
<td>52.4%</td>
<td>26.3%</td>
</tr>
<tr>
<td>HS graduate, trade school, some college</td>
<td>45.7%</td>
<td>42.9%</td>
<td>43.9%</td>
</tr>
<tr>
<td>College graduate, graduate school</td>
<td>42.9%</td>
<td>4.8%</td>
<td>29.8%</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>34.3%</td>
<td>0.0%</td>
<td>21.1%</td>
</tr>
<tr>
<td>African American</td>
<td>20.0%</td>
<td>76.2%</td>
<td>40.4%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>42.9%</td>
<td>4.8%</td>
<td>29.8%</td>
</tr>
<tr>
<td>Other</td>
<td>2.9%</td>
<td>19.0%</td>
<td>8.8%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>M = 41.89</td>
<td>M = 47.00</td>
<td>M = 43.80</td>
</tr>
<tr>
<td></td>
<td>(7.62)</td>
<td>(6.76)</td>
<td>(7.67)</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01
Table 4

Severity of Traumas Discussed in Essays

<table>
<thead>
<tr>
<th>Severity of Trauma</th>
<th>GM Group</th>
<th>SM Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 (most severe)</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>6</td>
<td>25.7%</td>
<td>14.3%</td>
<td>21.4%</td>
</tr>
<tr>
<td>5</td>
<td>34.3%</td>
<td>57.1%</td>
<td>42.9%</td>
</tr>
<tr>
<td>4 (moderately severe)</td>
<td>8.6%</td>
<td>9.5%</td>
<td>8.9%</td>
</tr>
<tr>
<td>3</td>
<td>8.6%</td>
<td>4.8%</td>
<td>7.1%</td>
</tr>
<tr>
<td>2</td>
<td>22.9%</td>
<td>9.5%</td>
<td>17.9%</td>
</tr>
<tr>
<td>1 (least severe)</td>
<td>0.0%</td>
<td>4.8%</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01
Table 5

Topic of Traumas Discussed in Essays

<table>
<thead>
<tr>
<th>Topic of Trauma</th>
<th>GM Group</th>
<th>SM Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death</td>
<td>22.9%</td>
<td>9.5%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Childhood Trauma</td>
<td>0.0%</td>
<td>9.5%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Adulthood Physical/Sexual Assault</td>
<td>11.4%</td>
<td>19.0%</td>
<td>14.3%</td>
</tr>
<tr>
<td>HIV-Related Trauma</td>
<td>20.0%</td>
<td>38.1%</td>
<td>26.8%</td>
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<tr>
<td>Other</td>
<td>45.7%</td>
<td>23.8%</td>
<td>37.5%</td>
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*p < .05. **p < .01
Table 6

Negative and Positive Emotional Expression: Group Averages across All Writing Sessions

<table>
<thead>
<tr>
<th>Dimension of EE</th>
<th>GM Group</th>
<th>SM Group</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Emotional Expression</td>
<td>3.420</td>
<td>2.226</td>
<td>$F(1, 54) = 6.975^*$</td>
</tr>
<tr>
<td></td>
<td>(1.86)</td>
<td>(1.16)</td>
<td></td>
</tr>
<tr>
<td>Positive Emotional Expression</td>
<td>1.136</td>
<td>0.946</td>
<td>$F(1, 54) = 0.752$</td>
</tr>
<tr>
<td></td>
<td>(0.90)</td>
<td>(0.56)</td>
<td></td>
</tr>
<tr>
<td>Total Words</td>
<td>2055.171</td>
<td>1459.952</td>
<td>$F(1, 54) = 10.023^{**}$</td>
</tr>
<tr>
<td></td>
<td>(730.38)</td>
<td>(588.00)</td>
<td></td>
</tr>
<tr>
<td>Proportion of Negative Emotional Expression to Total Words</td>
<td>0.014</td>
<td>0.013</td>
<td>$F(1, 54) = 0.221$</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td></td>
</tr>
<tr>
<td>Proportion of Positive Emotional Expression to Total Words</td>
<td>0.004</td>
<td>0.006</td>
<td>$F(1, 54) = 2.827$</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05. **p < .01
**Table 7**

*Depth Processing: Group Averages across All Writing Sessions*

<table>
<thead>
<tr>
<th>Dimension of EE</th>
<th>GM Group</th>
<th>SM Group</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptive/Realistic Cognitive Appraisal</td>
<td>3.864</td>
<td>4.028</td>
<td>$F(1, 54) = 0.336$</td>
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<tr>
<td></td>
<td>(1.01)</td>
<td>(1.04)</td>
<td></td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>3.526</td>
<td>3.705</td>
<td>$F(1, 54) = 0.398$</td>
</tr>
<tr>
<td></td>
<td>(1.01)</td>
<td>(1.05)</td>
<td></td>
</tr>
<tr>
<td>Approach-Oriented Problem Solving</td>
<td>4.160</td>
<td>4.010</td>
<td>$F(1, 54) = 0.347$</td>
</tr>
<tr>
<td></td>
<td>(0.93)</td>
<td>(0.91)</td>
<td></td>
</tr>
<tr>
<td>Experiential Involvement</td>
<td>4.636</td>
<td>4.140</td>
<td>$F(1, 54) = 4.169^*$</td>
</tr>
<tr>
<td></td>
<td>(0.91)</td>
<td>(0.83)</td>
<td></td>
</tr>
</tbody>
</table>

*$p < .05. **p < .01$
Appendix A

Control (Daily) Group Writing Instructions

Writing Session 1
20-Minute
In today’s writing, I want you to describe what you did yesterday from the time you got up until the time you went to bed. Avoid writing about your emotions or opinions. Rather try to be as objective as possible. For example, you might start when your alarm went off and you got out of bed. You could include the things you ate, where you went, which buildings or objects you passed by as you walked from place to place. The most important thing in your writing, however, is for you to describe your day as accurately and as objectively as possible. I would like you to begin writing when I leave the room. Please write for 20 minutes on what you did yesterday. I will tell you when the time is up.

10-Minute
Write for 10 minutes on the topic below:
I want you to describe what you did today from the time you woke this morning. The most important thing in your writing is for you to describe what you did as accurately and with as much detail as possible. I will tell you when the time is up.

Writing Session 2
20-Minute
In today’s writing, I want you to describe what you did today from the time you woke up. Avoid writing about your emotions or opinions. Rather try to be as objective as possible. For example, you might start when your alarm went off and you got out of bed. You could include the things you ate, where you went, which buildings or objects you passed by as you walked from place to place. The most important thing in your writing, however, is for you to describe your day as accurately and as objectively as possible. I would like you to begin writing when I leave the room. Please write for 20 minutes on what you did today. I will tell you when the time is up.

10-Minute
Write for 10 minutes on the topic below:
I want you to describe what you plan to do tomorrow from the time you wake up. The most important thing in your writing is for you to describe what plan to do as accurately and with as much detail as possible. I will tell you when the time is up.
Writing Session 3
20-Minute
In today’s writing, I want you to describe in detail what you plan to do as soon as you are finished with the study today. For example you might start by noting that you will walk out of the door, and describe where you go next. In your writing I want you to be as objective as possible. Avoid writing about your emotions or opinions. The most important thing in your writing, however, is for you to describe your day as accurately and as objectively as possible. I would like you to begin writing when I leave the room. Please write for 20 minutes on what you will do today after the study visit. I will tell you when the time is up.

10-Minute
Write for 10 minutes on the topic below:
I want you to describe what you plan to do tomorrow from the time you wake up. The most important thing in your writing is for you to describe what plan to do as accurately and with as much detail as possible. I will tell you when the time is up.

Writing Session 4
20-Minute
In today’s writing, I want you to describe what you plan to do during the next week. In your writing I want you to be as objective as possible. Avoid writing about your emotions or opinions. Rather try to be as objective and as detailed as possible. The most important thing in your writing, however, is for you to describe what you plan to do next week as accurately and as objectively as you can and that you write for the whole time. I would like you to begin writing when I leave the room. Please write for 20 minutes on what you plan to do next week. I will tell you when the time is up.

10-Minute
Write for 10 minutes on the topic below:
I want you to describe what you did last week. The most important thing in your writing is for you to describe what you did as accurately and with as much detail as possible. Please write for the whole time. I will tell you when the time is up.
Appendix B

Experimental (Trauma) Group Writing Instructions

Writing Sessions 1, 2, 3 and 4

20-Minute

During the four writing days, please write about your most traumatic or upsetting experiences of your entire life. In your writing I want you to really let go and explore your very deepest emotions and thoughts.

- Although I prefer that you write about a major trauma in your life, instead you may choose to write about major conflicts of problems that you have experienced or are experiencing right now.
- It is best if you write about the same experience on all four days. But if you decide to write about a different experience that’s okay too.
- I prefer that you write about significant trauma or conflicts that you have not discussed in great detail with others.

Try to make your memories of the event as real as possible, remembering what you were thinking and feeling at the time and what you were experiencing physically.

In your writing you may relate your personal experience to other parts of your life. For example, how is it related to your childhood, your parents, people who love you, who you are or who you want to be? Be sure to examine your deepest emotions and thoughts.

Whatever you decide to write about please write continuously for 20 minutes. It is very important that you write for the whole 20 minutes. If you run out of things to write about you can repeat what you have already written.

Remember I want you to really let go and explore your very deepest emotions and thoughts.
Please begin writing now. I will tell you when the time is up.

Writing Sessions 1 and 4

10-Minute

Write for 10 minutes on the topic below:

Please write for 10 minutes about how you’ve tried to understand the experience(s) that you have just written about and how you make sense of it. If the experience you’ve written about does not make sense to you please write about how you are trying to understand or make sense of it.
I will tell you when the time is up.
Writing Session 2
10-Minute
Write for 10 minutes on the topic below:
Please write for 10 minutes about how the traumatic experience(s) that you have just written about effect your feelings about yourself, your self-worth and your self-esteem? Does the experience change the way you feel about yourself?
I will tell you when the time is up.

Writing Session 3
10-Minute
Write for 10 minutes on the topic below:
Please write for 10 minutes about how the traumatic experience(s) that you have just written about effect your ability to solve problems, to meet future challenges or to deal with day-to-day stress?
I will tell you when the time is up.
Appendix C

Emotional/Cognitive Processing Scale
(Measurement/Scoring Definitions)

ESSAY RATING FORM

A. Instructions

Essay Rating Procedures

Step 1: Record subject number, your initials and the date at the top of the scoring sheet.
Step 2: Read the essay through completely
Step 3: Read the essay through one more time to get a feel for the content.
Step 4: Answer questions 1-4 thoughtfully on the scoring sheet (Remember you must identify specific evidence in the text of the essay (or supportable clinical inference) to support each of the ratings that you assign.

B. Scoring

1. To what extent did the material show realistic cognitive appraisals of the event, a reflection on the problem, a deeper understanding of the problem, reviewing the problem in a more adaptive way, or identifying causal relationships?

2. To what extent did the material show a change in the person’s view of him/her self? To what extent did the material show movement toward positive feelings about self such as a restoration of self-esteem?
3. To what extent did the material indicate problem solving or adaptive sort of behavior? To what extent was there evidence that the subject has adopted an approach oriented response to the stressor?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>no evidence</td>
<td>aware of/ specifies stressor</td>
<td>thinking of solutions/ intentions to change behavior</td>
<td>planning/ preparation</td>
<td>implements 1 solution strategy</td>
<td>implements &gt; 1 solution strategy</td>
<td>evidence of efficacy/ stressor less toxic</td>
<td></td>
</tr>
</tbody>
</table>

4. To what extent was the person involved in discussing the various aspects of the traumatic or stressful event?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only</td>
<td>Minimally Involved</td>
<td>Moderately Involved</td>
<td>Fully Involved</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Did the participant follow the directions? Yes  No
   If No, what did they write about? ________________________________

6. How serious was the event discussed? How do you think the patient saw it?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all Serious</td>
<td>Moderately Serious</td>
<td>Very Serious</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. What was the most severe stressor/trauma written about?

_______________________________________________________

8. Was the most severe stressor/trauma written about:
   Past (>6 mos)  Present (<6 mos)  Unknown

9. Did the most severe stressor/trauma written about occur during:
   Child(<18)  Adult (>18)  Unknown

Emotion Word Count

<table>
<thead>
<tr>
<th>Positive Emotion Words</th>
<th>Negative Emotion Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>______________________</td>
<td>______________________</td>
</tr>
<tr>
<td>______________________</td>
<td>______________________</td>
</tr>
<tr>
<td>______________________</td>
<td>______________________</td>
</tr>
<tr>
<td>______________________</td>
<td>______________________</td>
</tr>
</tbody>
</table>

Total Pos. Words ___  Total Neg. Words ___

Total Emotion Words ___
Emotional/Cognitive Processing
(Measurement/Scoring Definitions)

Adaptive/Realistic Cognitive Appraisal

To what extent did the material show realistic cognitive appraisals of the event, a reflection on the problem, a deeper understanding of the problem, reviewing the problem in a more adaptive way, or identifying causal relationships?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distorted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appraisal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Realistic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appraisal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Operational Definition
Realistic Cognitive Appraisal is measured by the person’s current reactions to the stressor.

In addition to the person’s direct account of their appraisals of the stressor and current appraisals of the stressor may also be inferred from:

a) the description in the essay of the patients responses to the stressor,

Examples:
   i) “I just couldn’t deal with it. I went out and smoked crack for 2 days.”
   ii) “I’ve been coping with diabetes for 10 years so I’m used to doctors appointments and medications. I found myself a HIV doctor and started learning about HIV.”
   iii) “I knew I was going to need help so I told my mother and my boyfriend”

b) the reported effects of the stressor,

Examples:
   i) “When I told my boyfriend I had HIV kicked me out of our apartment and changed the locks”
   ii) “After my lover passed away I became very ill and had to quit my job”
   iii) Finding out I was HIV positive was a shock but it was also the wake up call I needed to go into rehab and quit doing drugs”

c) or reported emotional states.

Examples:
   i) “I felt like my life was over”
   ii) “I locked my self in my bedroom and I cried for 3 days”
   iii) “I felt that God was punishing me”

Distorted/Negative Appraisals
Generally, extremely negative appraisals are characterized by a view of the stressor as highly toxic (i.e., dangerous), uncontrollable, catastrophic (i.e., worst thing in the world ever vs. manageable & not end of the world), and may reflect evidence of distorted thinking and would indicate a starting point of 1 (the lowest point on the scale).
Realistic/Positive Appraisals
In contrast, positive appraisals are those that are first and foremost realistic (see list below), positive, and indicate a level of control over the stressor, and may reflect benefit finding. Appraisals that are both positive and realistic would score a 7 (the highest point on the scale). However, raters should be sensitive to appraisals that are so overly optimistic or positive that they are not realistic and may reflect denial or avoidance of the realities of the stressor and should be scored accordingly (e.g., “My doctor says I have HIV but I know that they’ll find a cure before I get sick”, “I think people worry too much about HIV, it’s not that big a deal”, “I’m not going to change my life just because I have HIV. I’m not stressing out about it. People just need to stop talking about it.”)

Characteristics of positive and negative appraisals are listed below.

<table>
<thead>
<tr>
<th>Characteristics of Negative/Distorted Appraisals</th>
<th>Characteristics of Positive/Realistic Appraisals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic</td>
<td>Benign</td>
</tr>
<tr>
<td>Uncontrollable</td>
<td>Controllable</td>
</tr>
<tr>
<td>Unpredictable</td>
<td>Predictable</td>
</tr>
<tr>
<td>Non-Acceptance</td>
<td>Something to be accepted</td>
</tr>
<tr>
<td>Catastrophizing</td>
<td>Realistic Appraisal</td>
</tr>
<tr>
<td>Distorted Thinking</td>
<td>Realistic Thinking</td>
</tr>
<tr>
<td>Meaningless</td>
<td>Meaningful</td>
</tr>
<tr>
<td>Negative Reframing</td>
<td>Positive Appraisal</td>
</tr>
<tr>
<td>Random (Unlucky)</td>
<td>Caused</td>
</tr>
<tr>
<td>Denying Responsibility</td>
<td>Accepting Responsibility</td>
</tr>
<tr>
<td>Not Understandable</td>
<td>Understandable</td>
</tr>
<tr>
<td>Causing distress</td>
<td>A problem to be solved</td>
</tr>
<tr>
<td>Something to be avoided</td>
<td>Something to be approached</td>
</tr>
</tbody>
</table>
Emotional/Cognitive Processing
(Measurement/Scoring Definitions)

Self-Esteem

To what extent did the material show a change in the person’s view of him/her self? To what extent did the material show movement toward positive feelings about self such as a restoration of self-esteem?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative View of Self</td>
<td>Neutral View of Self</td>
<td>Positive View of Self</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(explicit statements in 2+ areas or suicidal ideation)</td>
<td>(inferred, no explicit statement)</td>
<td>(no evid. of pos/ neg or equal pos &amp; neg statements)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(inferred, no explicit statement in 1 area)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(unequivocal; explicit statements in 2+ areas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Operational Definition
Self-Esteem Enhancement is assessed from information that directly or indirectly concerns the person’s current view of self that is supportable with explicit information from the text of the essay or by supportable clinical inference. This should be the individual’s terminal view of self; where they are at now.

Below are listed characteristics of negative and positive self-esteem appraisals which should guide raters in estimating the level of self esteem in relation to the stressor.

<table>
<thead>
<tr>
<th>Negative Self-Esteem</th>
<th>Positive Self-Esteem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sick</td>
<td>Healthy</td>
</tr>
<tr>
<td>Not Capable</td>
<td>Able</td>
</tr>
<tr>
<td>Source of Infection</td>
<td>Educated/Informed</td>
</tr>
<tr>
<td>Alone</td>
<td>Connected</td>
</tr>
<tr>
<td>Defective</td>
<td>Okay as I am</td>
</tr>
<tr>
<td>Feeling shunned/rejected</td>
<td>Feeling accepted/loved</td>
</tr>
<tr>
<td>Perverted/Addict</td>
<td>Responsible Adult</td>
</tr>
<tr>
<td>Self Blame</td>
<td>Takes responsibility</td>
</tr>
<tr>
<td>Toxic to others</td>
<td>Nurturing/loving and caring of others</td>
</tr>
<tr>
<td>Suicidal</td>
<td>Life/Self affirming</td>
</tr>
<tr>
<td>Helpless</td>
<td>Self sufficient</td>
</tr>
<tr>
<td>Burden to others</td>
<td>Support to others</td>
</tr>
<tr>
<td>Useless</td>
<td>Useful</td>
</tr>
<tr>
<td>Self hate</td>
<td>Self love/self-respect</td>
</tr>
</tbody>
</table>
Emotional/Cognitive Processing  
(Measurement/Scoring Definitions)

Approach-Oriented Problem Solving

To what extend did the material indicate problem solving or adaptive sort of behavior? To what extent was there evidence that the subject has adopted an approach oriented response to the stressor?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no evidence</td>
<td>aware of/ specifies stressor</td>
<td>thinking of solutions/ intentions to change behavior</td>
<td>planning/ preparation</td>
<td>implements 1 solution strategy</td>
<td>implements &gt; 1 solution strategy</td>
<td>evidence of efficacy/ stressor less toxic</td>
</tr>
</tbody>
</table>

**Operational Definition**

Approach-Oriented Problem Solving is measured by the extent to which the person has moved through the problem solving steps identified above beginning with an awareness of the problem/stressor through thinking of solutions, planning to implement a solution, and implementing solution(s) in such a way that the toxicity of the stressor may be reduced.

Individuals who score at the lowest end of this scale (i.e., ‘1’) provide no evidence that they are aware that any problem exists: the writing may reflect denial or avoidant thinking and any identification of specific stressor or problem is absent. Persons who score in the mid range of this scale (i.e., ‘4’) have shown through their writing an awareness of the stressor/problem, contemplation of solutions, and are preparing, or have a plan to implement a solution. Persons scoring at this level have not yet mounted/enacted a solution-based response to the problem. Those scoring at the highest end of the scale (i.e., ‘7’) have presented evidence that they have implemented multiple problem solving strategies and that at least one of these strategies has impacted positively on the stressor. This may be inferred from evidence that the stressor is perceived as less toxic. The problem-solving strategies do not have to be self-referent (e.g. writing a letter to a state representative about concerns for all HIV+ individuals; helping friend, family, or society, not just oneself).

The individual must meet the criteria of all lower scores in order to receive a higher score. For example, a score of ‘4’ must show evidence of planning/preparation, but also must show evidence of thinking of solutions/intention of behavior change (i.e., score ‘3’) and awareness of specifics of stressor (i.e., score ‘2’). However, the evidence of lower levels may not be explicit in the essay, and can often be reasonably inferred.
Emotional/Cognitive Processing
(Measurement/Scoring Definitions)

Experiential Involvement

To what extent was the person involved in discussing the various aspects of the traumatic or stressful event?

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Only Minimally Involved</td>
</tr>
<tr>
<td>2</td>
<td>Moderately Involved</td>
</tr>
<tr>
<td>3</td>
<td>Fully Involved</td>
</tr>
</tbody>
</table>

Experiential Involvement refers to the extent to which the patient is involved in discussing or presenting (in the essay) seven central aspects of the traumatic event, its precursors, or its consequences. The essay should be scored for the presence (1) or absence (0) of each of these aspects. The first three aspects of involvement reflect ‘lower level involvement’ relating to involvement in discussing events, behaviors, emotions, and cognitions. The final 3 aspects tap into higher levels of involvement in processing and assessing the impact of the trauma (intentions/motivations, interpretations/insights, and interpersonal dynamics). Lower scores tend to be just reporting or telling a story about the stressor, while higher scores show evidence the individual is really getting into the task of emotional expression and processing.

On this scale, the individual does not need to meet the criteria of lower scores to obtain a higher score. For example, if the essay shows definite evidence of disclosure of emotions it will be scored ‘4’ even if the essay does not include evidence of disclosure of cognitions/beliefs (i.e., score ‘3’) or score ‘2’ criteria. The highest level at which the essay fully meets criteria is the score that will be assigned.

Operational Definition

1. Nothing
   (no description of events or behaviors related to the trauma or stressful event)

2. Description of events
   (full or detailed description of events)
   -AND/OR-
   Disclosure of behaviors
   (e.g., what I did, what others did, what happened)
   -AND/OR-
   Disclosure of physical reactions/responses
   (e.g., injuries sustained, behavioral responses such as crying, nightmares, symptoms of shock, sleeping difficulties, flashbacks)

3. Disclosure of cognitions/beliefs
   (e.g., autonomy, control, self-worth, self-blame)
4. Disclosure of emotions
   (e.g., anxiety, fear, self-esteem, guilt)
   -AND/OR-
   Distinguishing emotions
   (e.g., legitimate fear from neurotic anxiety, humiliation from embarrassment,)

5. Questioning
   (e.g., why did this happen to me? Why am I in this situation?)
   -AND/OR-
   Intentions
   (e.g., what I want to happen, what I wanted to happen)
   -AND/OR-
   Motivations
   (e.g., why I did what I did (check for insight and/or causal relationships)
   (e.g., self-blame, accepting responsibility, denying responsibility)

6. Interpretations/Insights
   -AND/OR-
   Thoughts/beliefs about self in relation to the traumatic event
   -AND/OR-
   Thoughts/beliefs about others in relation to the traumatic event
   (e.g., blaming others, anger toward others)
   -AND/OR-
   Thoughts/beliefs about the world in relation to the traumatic event

7. Disclosure of interpersonal relationship dynamics/Description of Interpersonal Interactions
   (e.g., what impact the trauma had on my ability to interact with others, what effect it had on other people’s perceptions of me)

Example (to distinguish between a score of 6 vs. 7)

Score 6: “I lost my friends because of my past drug use. It makes me angry and I don’t understand why this happened and why they won’t talk to me anymore.”

Score 7: “Now that I have gone through rehab for my past drug use, I have lost many old friends. I realize this was because of my behaviors while on drugs. Now maybe I need to make amends and apologize or just try to move on and make new friends. I can understand why my old friends needed to distance themselves from me and why they see me differently now.”
Trauma/Stressor Severity Rating Scale

How serious was the event discussed? How do you think the patient saw it?

1 2 3 4 5 6 7
Not at all Moderately Very
Serious Serious Serious

Score = 7
- Death of child
- Death of spouse/partner

Score = 6
- Death of sibling
- Death of parent
- Divorce
- Childhood sexual abuse
- Childhood physical abuse
- Kidnapping/hostage situation
- Homicide of family member or close friend

Score = 5
- Loss of job-fired from work
- Adult physical abuse (e.g. domestic violence, physical assault)
- Adult sexual abuse (e.g. rape, sexual assault)
- Military/combat trauma
- Attempted suicide of family member or close friend
- Abandonment by parent/adoption/foster care (minor child)
- Diagnosis or ongoing status of life-threatening/chronic terminal illness (e.g., HIV, cancer)

Score = 4
- Separation from spouse due to marital problems
- Being held in jail
- Injury or illness (kept you in bed for 1 week or more or sent you to the hospital)
- Death of close friend
- Loss of job-laid off from work
- Pregnancy
- Birth or adoption of a child
- Miscarriage/stillbirth/abortion
- Act of violence on close family member or friend
- Child custody issues (e.g. regaining or losing custody)
- Victim of crime with threat to life (e.g. robbed at gunpoint w/out physical harm sustained)
- Prostitution
Score = 3
- Decreased income
- Major business adjustment
- A relative moving in with you
- Divorce of your parents
- Foreclosure on mortgage or loan
- Investment and/or credit difficulties
- Major change in health or behavior of a family member (including family member drug addiction)
- Separation from spouse due to work
- Retirement
- Change to a new type of work
- Major decision regarding your immediate future
- Change in arguments with spouse
- Parents remarriage
- Your own marriage
- An accident
- Drug abuse/dependence treatment or rehab
- Natural disaster (e.g. hurricane)
- Witnessing act of violence on a stranger
- Sexual identity crisis/disclosure
- Disclosure of potentially stigmatizing disease (e.g. HIV)
- Incarceration of family member or close friend
- Victim of non-violent crime (e.g. robbery or mugging without weapon, vandalism)

Score = 2
- Move to a different town, city, or state
- “Falling out” of a close personal relationship
- Spouse beginning or ending work
- Engagement to marry
- Child leaving home for other reasons
- Sexual difficulties
- An injury or illness which was less serious than “74”
- Birth of grandchild
- Loss or damage of personal property
- Major change in living conditions (including homelessness)
- Demotion at work
- Child leaving home to attend college
- Child leaving home due to marriage
- Girlfriend or boyfriend problems (including break-up of relationship)
- Increased income
- In-law problems
- Beginning or ending school or college
- New, close, personal relationship (including new romantic relationship)
• Major purchase
• Major personal achievement
• Troubles at work with co-workers
• Troubles at work with persons under your supervision
• Change of school or college
• Change in your work hours or conditions
• Arrest of family member or close friend
• Being bullied as a child
• Loss of pet
• Discrimination (e.g. racial, sexual orientation, HIV status, gender, etc.)

Score = 1
• Work transfer
• Promotion at work
• Change in religious beliefs
• More responsibilities at work
• Troubles with your boss
• Major change in your usual type/amount recreation
• Other work troubles
• Major change in eating habits
• Change in social activities
• Change in personal habits
• Major dental work
• Major change in sleeping habits
• Move within the same city or town
• Change in family get-togethers
• Change in political beliefs
• Vacation
• Fewer responsibilities at work
• Moderate purchase
• Minor violation of the law
• Correspondence course to help you in your work
### Appendix D

**Hamilton Depression Rating Scale**

#### Depressed Mood

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Absent</td>
</tr>
<tr>
<td>1</td>
<td>Found only on questioning</td>
</tr>
<tr>
<td>2</td>
<td>Spontaneously reported verbally</td>
</tr>
<tr>
<td>3</td>
<td>Communicated non-verbally, weeping voice</td>
</tr>
<tr>
<td>4</td>
<td>Virtually only feeling communicated</td>
</tr>
</tbody>
</table>

#### Feelings of Guilt

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Absent</td>
</tr>
<tr>
<td>1</td>
<td>Self reproach; has let people down</td>
</tr>
<tr>
<td>2</td>
<td>Rumination over past errors</td>
</tr>
<tr>
<td>3</td>
<td>Illness as punishment/delusional guilt</td>
</tr>
<tr>
<td>4</td>
<td>Auditory/visual hallucinations accusing</td>
</tr>
</tbody>
</table>

#### Suicide

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Absent</td>
</tr>
<tr>
<td>1</td>
<td>Feels like life is not worth living</td>
</tr>
<tr>
<td>2</td>
<td>Wishes self dead</td>
</tr>
<tr>
<td>3</td>
<td>Suicidal ideation</td>
</tr>
<tr>
<td>4</td>
<td>Serious attempt at suicide</td>
</tr>
</tbody>
</table>

#### Early Insomnia

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No difficulty falling asleep</td>
</tr>
<tr>
<td>1</td>
<td>Occasional difficulty &gt; 30 minutes</td>
</tr>
<tr>
<td>2</td>
<td>Nightly difficulty</td>
</tr>
</tbody>
</table>

#### Middle Insomnia

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No difficulty</td>
</tr>
<tr>
<td>1</td>
<td>Restless, disturbed during the night</td>
</tr>
<tr>
<td>2</td>
<td>Wake during the night, out of bed</td>
</tr>
</tbody>
</table>

#### Late Insomnia

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No difficulty</td>
</tr>
<tr>
<td>1</td>
<td>Waking in early hours, goes back to sleep</td>
</tr>
<tr>
<td>2</td>
<td>Unable to get back to sleep if wakes</td>
</tr>
</tbody>
</table>

#### Work and Activities

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No difficulty</td>
</tr>
<tr>
<td>1</td>
<td>Thoughts, feelings of incapacity</td>
</tr>
<tr>
<td>2</td>
<td>Loss of interest, indecision</td>
</tr>
<tr>
<td>3</td>
<td>Decrease in time spent in activities</td>
</tr>
<tr>
<td>4</td>
<td>Too depressed to participate in activities</td>
</tr>
</tbody>
</table>
**Insight** (if patient no depressed score 0)
8  
0  Acknowledges being depressed  
1  Partially acknowledges depression  
2  Denies being depressed

**Retardation**
9  
0  Normal speech and thought  
1  Slight retardation at interview  
2  Obvious retardation at interview  
3  Interview difficult  
4  Complete stupor

**Agitation**
10  
0  None  
1  Fidgetiness  
2  Playing with hands, hair, etc.  
3  Moving about; can’t sit still

**Psychic Anxiety**
11  
0  No difficulty  
1  Subjective tension  
2  Worrying about minor matters  
3  Apprehensive attitude in face and speech  
4  Fears expressed without questioning

**Somatic Anxiety**: Shown by dry mouth, flatulence, diarrhea, constipation, palpitations, headaches, sighing, cramps, etc.
12  
0  Absent  
1  Mild  
2  Moderate  
3  Severe  
4  Incapactiy

**Gastrointestinal Somatic Symptoms**
13  
0  None  
1  I Loss of appetite, but food intake normal  
2  Need encouragement to eat less food intake

**General Somatic Symptoms**
14  
0  None  
1  Heaviness of limbs; aches; low energy  
2  Any clear cut symptoms
Genital Symptoms (loss of libido, interest)

15
0 Absent
1 Mild
2 Severe

Hypochondriasis

16
0 Not present
1 Self-absorption (bodily)
2 Preoccupation with health
3 Frequent complaints, requests for help
4 Hypochondriacal delusion

Loss of Weight

17
0 No weight loss
1 Probable weight loss (mood related)
2 Definite weight loss (mood related)
Appendix E

Davidson PTSD Scale

Please identify the trauma or traumas that are most disturbing to you.

<table>
<thead>
<tr>
<th>The following questions ask you about a specific symptom. For each question, consider how often in the last week the symptom troubled you and how severe it was. In the two boxes beside each question, circle the number from 0 to 4 to indicate the frequency and severity of the symptom. <strong>The event refers to those traumas listed above.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency this last week</strong></td>
</tr>
<tr>
<td>0= Not At All</td>
</tr>
<tr>
<td>1= Once Only</td>
</tr>
<tr>
<td>2= 2-3 Times</td>
</tr>
<tr>
<td>3= 4-6 Times</td>
</tr>
<tr>
<td>4= Every Day</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>IN THE PAST WEEK:</strong></th>
<th><strong>Circle one</strong></th>
<th><strong>Circle One</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you ever had painful images, memories, or thoughts of the event (trauma listed above)?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>2. Have you ever had distressing dreams of the event (trauma listed above)?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>3. Have you felt as though the event was recurring? Was it as if you were reliving it?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>4. Have you been upset by something that reminded you of the event?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>5. Have you been physically upset by reminders of the event? (This includes sweating, trembling, racing heart, shortness of breath, nausea, or diarrhea.)</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>6. Have you been avoiding any thoughts or feelings about the event?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Question</td>
<td>Score 0</td>
<td>Score 1</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Have you been avoiding doing things or going into situations that remind you of the event?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Have you found yourself unable to recall important parts of the event?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Have you had difficulty enjoying things?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Have you felt distant or cut off from other people?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Have you been unable to have sad or loving feelings?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Have you found it hard to imagine having a long life span and fulfilling your goals?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Have you had trouble falling asleep or staying asleep?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Have you been irritable or had outbursts of anger?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Have you had difficulty concentrating?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Have you felt on edge, been easily distracted, or had to stay “on guard”?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Have you been jumpy or easily startled?</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
</tbody>
</table>