

Journal Writing Intervention to Reduce Distress Among UW-Stout Students

by

Daniel Duane Regnier

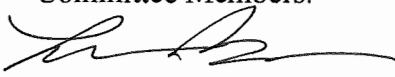
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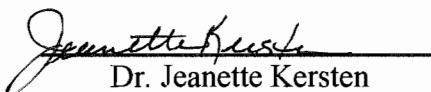
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**Abstract**

This study examines the effectiveness of a journal writing intervention to reduce distress levels among University of Wisconsin-Stout students. A secondary purpose of the study is to understand the impact of ‘the Big Five personality traits’ in moderating emotional disclosure intervention effectiveness. Information was collected from sixty-three students via self-report distress and personality measures. Students completed pre-assessment General Health Questionnaire-12 (GHQ-12) and International Personality Item Pool measures. Participants were randomly assigned to either an experimental or control condition. Students within the experimental condition were required to journal regarding their recent stresses, emotions, thoughts, sources of stress, and plans to deal with their stress. Students within the control condition were required to journal concerning trivial topics. All participants were required to journal for six consecutive days, for fifteen minutes each day. Two weeks following completion

of the journaling exercise, participants completed a second GHQ-12 measure. Pre- and post-test results revealed partial support for the research hypotheses. A significant reduction in distress was found for participants in the experimental condition who were low in Emotional Stability. However, significant reductions in distress (pre-test to post-test) were not found for any other participants. Moreover, Extroversion, Agreeableness, Conscientiousness, and Intellect/Imagination were not found to moderate intervention effectiveness. Limitations and recommendations for future research are further discussed.

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## **Chapter I: Introduction**

Lazarus and Folkman (1984) defined distress as “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well being” (p. 19). Individuals may feel a variety of distress within their daily lives. Teenagers, college students, and older adults may all be impacted by stressful events. In the workforce, job stress can be a major impact upon an employee’s success (Murphy & Sauter, 2003). An employer may utilize a variety of strategies to reduce stress among employees’ (Landy & Conte, 2010). However, college student stress is also a factor that may not be as focused upon as job stress.

### **Statement of the Problem**

Many college students may be impacted by stressful situations (Ross, Niebling, & Heckert, 1999). Ross et al. (1999) identified the top sources of college stress to be changes in sleeping habits, vacations/breaks, changes in eating habits, increased work load, and new responsibilities. As a great deal of research has been conducted within the domain of stress, a variety of methods exist for stress reduction. A top medical clinic in the United States, The Mayo Clinic in Rochester, Minnesota, advises the following ways to reduce distress: exercise, meditation, laughter, social support, yoga, appropriate amounts of sleep, listening to music, counseling, and journaling (Mayo Clinic, n.d.). Overall, as college students have been identified as being impacted by stressful situations, endorsement of a stress management technique may be utilized to promote better student health.

### **Purpose of the Study**

A stress management technique, journal writing, will be utilized to understand its effectiveness in reducing distress levels for University of Wisconsin-Stout students’. A variety of studies have examined journal writing to reduce distress (Alford, Malouff, & Osland, 2005;



Hemenover, 2003; Horneffer & Jamison, 2002; Ireland, Malouff, & Byrne, 2007). Journal writing interventions have greatly shown to reduce psychological distress, and to have multiple beneficial effects for college students and other individuals (Frattaroli, 2006). Although various research has been conducted with journal writing, more information is needed to identify the generalizability of results, the possible impact upon the University of Wisconsin-Stout, and how individual factors moderate the effectiveness of the journal writing paradigm.

### **Assumptions of the Study**

The first assumption of this study concerns that participants should not theoretically differ from all other college students in regards to background, educational attainment, distress levels, etc. Although minor differences in personal factors may occur, it is assumed these factors did not impact study findings. Also, a variety of titles have been utilized to describe journal writing interventions, including: written emotional expression (Smyth, 1998), experimental disclosure (Frattaroli, 2006), expressive writing (Dalton & Glenwick, 2009), etc. A second study assumption is that these previous titles refer to the same concept regarding journal writing interventions, and are therefore used interchangeably throughout the current study.

### **Definition of Terms**

**Stress/Distress:** “Psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well being” (Lazarus & Folkman, 1984, p. 19).

**Extroversion:** “Traits associated with it [Extroversion] include being sociable, assertive, talkative, and active” (Barrick & Mount, 1991, p. 3).

**Agreeableness:** “Traits associated with this dimension [Agreeableness] include being courteous, flexible, trusting, good-natured, cooperative, forgiving, soft-hearted, and tolerant” (Barrick & Mount, 1991, p. 4).

**Conscientiousness:** “Conscientiousness pertains to reliability, dependability, punctuality, and discipline” (Muchinsky, 2006, p.327). “Conscientiousness indicates an individual’s degree of organization, persistence, hard work, and motivation in the pursuit of goal accomplishment” (Zhao & Seibert, 2006, p. 261).

**Intellect:** “Traits commonly associated with this trait [Intellect] include being imaginative, cultured, curious, original, broad-minded, intelligent, and artistically sensitive” (Barrick & Mount, 1991, p. 5).

**Emotional Stability/Neuroticism:** “Common factors associated with this trait [Emotional Stability/Neuroticism] include being anxious, depressed, angry, embarrassed, emotional, worried or insecure” (Barrick & Mount, 1991, p. 4).

**Experimental/Control Conditions:** “The condition in which the treatment is present is commonly called the experimental condition; the condition in which the treatment is absent is called the control condition” (Shaughnessy, Zechmeister, & Zechmeister, 2006, p.32).

**T-Test:** “A test using the *t*-statistic that establishes whether two means collected from the same sample (or related observations) differ significantly” (Field, 2009, p.784).

**Analysis of Variance (ANOVA):** “An analysis that estimates the difference between groups on a posttest. The ANOVA could estimate the difference between a treatment and control group (thus being equivalent to the *t*-test) or can examine both main and interaction effects in a factorial design” (Trochim, 2005, p. 234).

**Analysis of Covariance (ANCOVA):** “Analysis of variance that controls for the effect of one or more unwanted additional variables” (Aron & Aron, 2003, p.677).

**Covariate:** “Variable controlled for in an analysis of covariance” (Aron & Aron, 2003, p.678).

**Moderator:** “In an experiment, a variable that influences the effects of treatment” (Shadish, Cook, & Campbell, 2002, p. 509).

### **Limitations of the Study**

Limitations of the study may have impacted research results. The procedures utilized, sample size, and timing of the study may have influenced study results. Therefore, study findings must be taken with consideration to identified limitations.

### **Methodology**

The methodology included collecting quantitative data in a pre- and post-test design. All participants were assessed with pre-test distress and personality measures. All participants were then divided between two groups: experimental and control conditions. Participants in the experimental condition were required to journal regarding their recent stresses, emotions, thoughts, sources of stress, and plans to deal with their stress. Participants in the control condition were asked to journal concerning what they did each previous day. Upon completion of the journaling exercise, all participants completed post-test distress measures. Data was then analyzed to determine the effectiveness of a distress reduction technique, and to determine if individual personality factors moderated intervention effectiveness. Repeated measures *t*-tests, univariate Analysis of Variance (ANOVA), and univariate Analysis of Covariance (ANCOVA) tests were used to determine intervention effectiveness.

## **Chapter II: Literature Review**

Previous studies examining journal writing have shown that participants displayed improved psychological and physical effects (Sloan & Marx, 2004a), fewer visits to campus healthcare centers (Cameron & Nicholls, 1998), increased grade point averages (Lumley & Provenzano, 2003), and found jobs more quickly when compared to control groups (Spera, Buhrfeind, & Pennebaker, 1994). Journal writing interventions first began with Pennebaker and Beall's (1986) traumatic events experiment. Participants in the experimental condition were required to write regarding traumatic experiences that have occurred in their lives, whereas participants in the control condition were told to write concerning trivial topics. All participants wrote for four consecutive days, for approximately fifteen minutes each session. Results indicated improved physical health, fewer days of illness, and fewer visits to the student health center for the experimental versus control group (Pennebaker & Beall, 1986).

Since 1986 when Pennebaker and Beall's experiment was first conducted, a variety of other researchers have tested the paradigm and found similar results. Smyth's (1998) meta-analysis of emotion expression interventions revealed typical interventions varied in length from one twenty minute session, to one session, per week, for four weeks. Interventions also greatly varied in the specific content that participants were required to journal (Smyth, 1998). Experiments by Pennebaker typically required participants to journal regarding traumas, whereas experiments by other researchers focused upon other factors (i.e. recent stresses, emotions, and related thoughts and plans) (Pennebaker, 1997; Alford et al., 2005). Many outcome variables have also been assessed throughout previous interventions, including: reported health, psychological well-being, physiological functioning, and general functioning (Smyth, 1998). Finally, Smyth's (1998) meta-analysis further revealed an effect size of approximately one-half

standard deviation of difference ( $d = 0.47$ ), or a 23% improvement of the experimental group compared to the control group.

A review by Pennebaker (1997) further examined the issue of journal writing interventions. Pennebaker stated that the standard procedure required participants to write about assigned topics for three to five consecutive days, for approximately fifteen to thirty minutes each day. Participants in the control condition were asked to journal regarding superficial topics, whereas those in the experimental condition were given the following directions (Pennebaker, 1997):

For the next few days, I would like for you to write about your very deepest thoughts and feelings about an extremely important emotional issue that has affected you and your life. In your writing, I'd like you to really let go and explore your very deepest emotions and thoughts. You might tie your topic to your relationships with others, including parents, lovers, friends, or relatives; to your past, your present, or your future; or to who you have been, who you would like to be, or who you are now. You may write about the same general issues or experiences on all days of writing or on different topics each day. All of your writing will be completely confidential. Don't worry about spelling, sentence structure, or grammar. The only rule is that once you begin writing, continue to do so until your time is up (Pennebaker, 1997, p. 162).

Pennebaker (1997) further stated emotional disclosure interventions do not necessarily need to reflect traumatic situations, but can be more broadly defined and relate to important issues within the participants' life (i.e. freshmen student's experiences with college). Moreover, time management and assessment of future plans have shown to be effectively credible as an

experimental condition (Radcliffe, Lumley, Kendall, Stevenson, & Beltran, 2007; Lumley & Provenzano, 2003).

Emotional disclosure interventions have utilized a variety of different populations as participants. Participants have included college students, HIV infected individuals, retired community members, etc. However, college students have been used most frequently due to easy accessibility (Frattaroli, 2006).

Smyth's (1998) meta-analysis further revealed emotional disclosure interventions were effective for both males and females, but slightly more effective for males. Student participants were also found to have significantly higher outcome effects than non-students (Smyth, 1998). Most importantly, Smyth (1998) found that few participants reported difficulty dealing with negative emotions created by the writing intervention. Smyth's findings suggested relatively little harm should accrue towards participants in an emotional disclosure intervention, and the potential gains outweigh potential harm.

Moreover, Pennebaker, Colder, and Sharp (1990) identified that an intervention for college freshman concerning their thoughts and feelings about entering college, yielded similar results whether students wrote during their first week of college or the fourth month of college. This finding suggests the intervention created significant improvements for participants regardless of the specific timing of the experiment. Previous interventions have also found no distinct patterns reflecting individual differences for who does versus who does not benefit from the writing paradigm (Pennebaker, 1997).

Frattaroli's (2006) meta-analysis also found preliminary evidence suggesting that revealing positive events may be as beneficial as disclosing negative situations. However, more research is needed to verify this assumption. Additionally, no statistical differences were found

among studies that required participants to hand write, type, or verbally speak about the disclosure topics (Frattaroli, 2006).

Frattaroli (2006) further suggested that participants with higher stress levels, poorer physical health, or lower optimism levels showed greater health benefits from emotional disclosure interventions. The meta-analysis also found follow-up periods of one month or less to show greater benefits than follow-up periods of more than one month (Frattaroli, 2006). This finding may suggest that journal writing interventions do not help individuals cope with psychological effects in the long-term, but more adequately in the short-term. However, dealing with short-term psychological effects may greatly affect other individual aspects for long-term sustainability.

Many forms of measurement exist to understand research findings. Francis and Pennebaker (1992) utilized participant blood analysis to measure stress levels, whereas Pennebaker, Hughes, and O'Heeron (1987) used skin resistance levels to measure participant inhibition levels. However, a variety of researchers also utilized self-report survey measures to understand paradigm effectiveness (Alford et al., 2005; Ireland et al., 2007; Hemenover, 2003; Horneffer & Jamison, 2002).

### **Paradigm Explanations**

Many theories exist concerning how and why the writing paradigm is effective. Multiple theorists believe the paradigm results in a reduction of participant inhibition and thus lead to the desired outcomes (Pennebaker et al., 1987). However, many researchers also believe writing affects the way participants think about the event, their emotions, and themselves. In follow-up interviews, participants reported the intervention changed the way they viewed the situation, or helped them realize their true feelings towards the event (Pennebaker & Graybeal, 2001).

Pennebaker and Segal (1999) suggested the most beneficial writing includes high levels of positive emotion words and a moderate level of negative emotion words. Thus, participants who used many or few negative emotional words benefited less from the intervention. It was also a necessity for the participant to disclose not only the event, but also the emotions produced by the event (Pennebaker et al., 1987). Most critical, the topic of writing must be important to the individual for the writing intervention to be effective (Burton & King, 2004).

Pennebaker and Seagal (1999) further suggested the writing paradigm creates a source of narrative meaning. Thus, when the participant creates a coherent narrative, it helps him/her gain a richer understanding of the experience. This theory also suggests that writing about the event changes the way the participant manages and reflects upon the situation, and also alters the participant's reactions to the experience. Overall, the narrative allows the participant to forget or move beyond the stressful event (Pennebaker & Seagal, 1999). Francis and Pennebaker (1992) also stated that confronting individual experiences helped participants work through their thoughts and feelings towards the event, and created a much higher level of understanding.

Two other main theories exist concerning why emotional expression interventions are effective. The first, Cognitive Adaption Model, suggests when memories were stored in a nonverbal fashion, effective processing did not occur. However, when nonverbal memories were transferred into a verbal form, reorganization of the memory occurred, which may result in diminished stress (Pennebaker & Francis, 1996; Dalton & Glenwick, 2009).

The last main theory concerning the effectiveness of emotional disclosure interventions is the Exposure Model. This model states that memories related to a traumatic experience produce a fear response an individual may try to avoid. The intervention forces the participant to examine the fear response, and the individual's fear is then diminished. Habituation of the



reduced fear causes a reduction of distress for the participant (Dalton & Glenwick, 2009; Sloan & Marx, 2004b). Although the previous models reviewed may provide evidence for effectiveness, no one model can explain all occurring aspects within an emotional disclosure intervention (Dalton & Glenwick, 2009). However, a meta-analysis conducted by Frattaroli (2006) found the Exposure Model receives the most support.

### **Distress**

Psychological distress has been examined throughout various studies. Multiple studies revealed that when participants were asked to journal regarding traumas or stressful situations, a reduction in distress occurred (Pennebaker & Beall, 1986; Alford et al., 2005; Hemenover, 2003). Frattaroli (2006) further stated that emotional disclosure interventions significantly reduce distress among participants ( $r = .10, p < .05$ ).

Alford et al. (2005) conducted an emotional disclosure intervention with child protective service officers. The experimenters found evidence confirming significant improvements in psychological distress in the experimental versus control condition. Sixty-five participants assisted with the study, and wrote for fifteen to twenty minutes for three consecutive days. Experimental participants were asked to write concerning their recent stresses, emotions, and related thoughts and plans. A self-report distress measure, the General Health Questionnaire-12 (GHQ-12), was utilized to measure pre- and post-test distress levels in participants immediately after the third writing period.

Ireland et al. (2007) conducted an expressive writing intervention with sixty-seven police officers. Written instructions required participants in the experimental condition to journal concerning their emotions related to their work, and what they planned to do about their emotions. All participants wrote for fifteen minutes, each day, for four days. Post-test results

suggested individuals in the experimental condition experienced significantly lower levels of stress and anxiety than control participants three weeks after initial disclosure occurred.

Hemenover (2003) also conducted an expressive writing intervention; however, his intervention focused upon college students. Fifty students participated with the study. Students in the experimental condition were asked to write concerning a traumatic event they have experienced, whereas individuals in the control condition were asked to record their plans for tomorrow. All participants were asked to write for twenty minutes, each day, for three days. Experimental results suggested a significant decrease in distress levels in the experimental versus control condition.

Horneffer and Jamison (2002) also focused upon distress within a college population. One hundred sixty-two college students participated with the intervention. Students in the experimental condition were asked to journal regarding a current or previous stressful event, whereas participants in the control condition were asked to describe their plans for the day. Interestingly, both the experimental and control groups displayed significant decreases in distress when pre- and post-test measures were compared. However, the experimental group experienced significantly greater declines in distress than the control condition. This study demonstrates that although both groups decreased in distress, journaling about stressful events again proved to benefit participants.

Various similar studies further demonstrated the effectiveness of expressive writing interventions. Lepore (1997) performed an emotional disclosure study with seventy-four examinees taking one of the following tests in the upcoming month: Medical College Entrance Examination (MCAT), Graduate Record Examination (GRE), Law School Admissions Test (LSAT), Graduate Management Admissions Test (GMAT) or the National Council Licensing

Exam (NCLEX). Examinees in the experimental condition wrote in regards to their deepest thoughts and feelings concerning the upcoming test, whereas participants in the control condition wrote their daily activities in the past twenty-four hours. Again, the experimental group significantly decreased in distress, pre- to post-test, compared with the control condition four weeks after the writing intervention.

Nandagopal (2008) further discovered paradigm effectiveness with Indian International college students two months prior to handing-in their final dissertation or project. Nandagopal required students to journal for twenty minutes for three consecutive days. Participants in the experimental condition were asked to journal concerning their most stressful and frustrating experiences related to their present college life, whereas individuals in the control condition were instructed to write regarding their daily activities. Findings illustrated the effectiveness of the paradigm as experimental participants significantly decreased in perceived stress compared to control participants four weeks after the journaling process.

Furthermore, an expressive writing study conducted by Wong and Rochlen (2009) showed paradigm effectiveness even when writing instructions were slightly altered. One hundred fifty-eight male college students participated with the experimental disclosure study. Experimental participants wrote concerning how their lives would be different if they had the best possible emotional connectedness with a romantic partner, whereas control participants wrote regarding human relationships that were non-emotional. All individuals wrote for three days, for twenty minutes each day. Results revealed a significantly greater reduction in distress, pre- to post-test, for the experimental versus control condition four weeks after the writing intervention.

Finally, Lestideau and Lavallee (2007) demonstrated the importance of developing plans to deal with a stressful situation. In their study, sixty-four undergraduates wrote on three different occasions. The results indicated that those who wrote about planning (i.e. writing about the options to deal with the situation and selecting the best appropriate action) significantly experienced less negative affect, pre- to post-test, than those who did not write regarding planning.

Based upon the previous literature reviewed, the expected results of the study are that the experimental group will significantly show decreases in psychological distress when compared with the control condition. Significant differences should arise once the intervention is complete and post-test measures have been assessed.

*H1: Participants in the experimental condition will significantly decrease in distress levels (pre-test to post-test) two weeks after the journaling exercise.*

*H2: After controlling for pre-test distress, participant post-test distress will be significantly higher in the control condition than in the experimental condition.*

## **Personality**

After a review of relevant literature, very few studies were identified that reviewed personality moderating the effectiveness of the writing paradigm. No studies were found that specifically measured all of the ‘Big Five personality traits.’ The ‘Big Five personality traits’ have been reviewed by a variety of researchers, and measure the domains of Extroversion, Agreeableness, Emotional Stability, Conscientiousness, and Intellect/Imagination (Digman, 1990). Also, no studies were identified that used the International Personality Item Pool (IPIP; “International Personality,” n.d.) to measure personality traits within the writing paradigm.

Although little research regarding personality and the writing paradigm has been conducted, mixed results have been found. Frattarioli's (2006) meta-analysis regarding emotional disclosure interventions, suggested Neuroticism was not found to significantly moderate the relationship between expressive writing and personality. Horneffer and Jamison (2002) also found Extroversion to not significantly moderate the relationship between personality and expressive writing. However, Sheese, Brown, and Graziano (2004) found Extroversion to moderate emotional disclosure intervention effectiveness in relation to health. Participants who were asked to journal regarding traumatic experiences gained more health benefits if they were extroverted rather than introverted individuals. Furthermore, Sheese et al. (2004) also identified Agreeableness, Conscientiousness, and Intellect/Imagination as not moderating paradigm effectiveness in relation to health.

Moreover, research conducted on similar aspects to personality suggests journal writing may be beneficial. For example, Pennebaker and Francis (1996) found that the more positive emotion words used, the more participant health improved in the experimental condition. Given the inconclusive findings and limited research, this study will examine the effectiveness of the writing paradigm while considering the personality traits of Emotional Stability, Extroversion, Agreeableness, Conscientiousness, and Intellect/Imagination as possible moderators. The purpose of measuring the personality traits previously described is to gain a further understanding regarding how individual characteristics may impact intervention effectiveness. The 'Big Five personality traits' are described below:

#### **Emotional stability.**

Individual traits associated with low Emotional Stability include being anxious, depressed, angry, embarrassed, emotional, worried or insecure (Barrick & Mount, 1991). Key

personality researchers, Costa and McCrae (1992), also state that individuals low in Emotional Stability are characterized with being impulsive, hostile, and vulnerable. Individuals high in Emotional Stability are associated with being calm, relaxed, and self-confident (as cited in Zhao & Seibert, 2006).

#### **Extroversion.**

Individual traits associated with Extroversion include being sociable, assertive, talkative, and active (Barrick & Mount, 1991). Costa and McCrae (1992) also state other individual traits as being dominant, energetic, and enthusiastic (as cited in Zhao & Seibert, 2006).

#### **Agreeableness.**

Individual's high in Agreeableness are associated with being courteous, flexible, trusting, good-natured, cooperative, forgiving, soft-hearted, and tolerant (Barrick & Mount, 1991). Costa and McCrae (1992) also state agreeable individuals are associated with being caring, altruistic, and gullible (as cited in Zhao & Seibert, 2006).

#### **Conscientiousness.**

Conscientiousness is associated with reliability, dependability, punctuality, and discipline (Muchinsky, 2006). Conscientiousness also signifies an individual's persistence, hard work, and motivation (Zhao & Seibert, 2006).

#### **Intellect/imagination.**

Individuals with Intellect or Imagination are associated with being imaginative, cultured, curious, original, broad-minded, intelligent, and artistically sensitive (Barrick & Mount, 1991).

### **Chapter III: Methodology**

The goal of this research is to measure the effectiveness of a written emotional disclosure intervention regarding UW-Stout students' distress levels. As previously discussed, college students are often impacted by distressful situations (Ross et al., 1999). A variety of methods exist to reduce distress, including journaling. Previous studies examining journal writing have found paradigm effectiveness with beneficial effects for participants (Frattaroli, 2006). This study will seek to replicate results of previous studies and also examine the effect of personality moderating paradigm effectiveness.

#### **Subject Selection and Description**

Participants for the journal writing intervention involved undergraduate students from Psychology classes at the University of Wisconsin-Stout. Students were enrolled in one of three main classes, including: Human Resource Management, Recruitment and Selection of Employees, and Interpersonal Effectiveness. Participants received extra credit within their class for participating. Most participants were Caucasian with ages ranging from seventeen through twenty-five. The study sample size included  $N = 63$  students.

#### **Instrumentation**

Demographic information, the General Health Questionnaire-12 (GHQ-12), and the International Personality Item Pool (IPIP) measures were utilized for this intervention. Demographic information included participant academic year, grade point average, age, and gender.

The second measure, the GHQ-12, has shown to be an adequate assessment tool to measure psychological distress (Alford et al., 2005; Frattaroli, 2006; Goldberg, 1972). The GHQ-12 consists of 12 distress related questions concerning participants' thoughts, feelings, and abilities over the past few weeks. The GHQ-12 is scored on a Likert scale ranging from 0 - 3,

where higher scores indicate more distress. Individual total scores on the GHQ-12 can range from 0 – 36. The measure is scored by taking the average score among all 12 questions. Participants provide their responses to the 12 questions using the following rating scale: 0 = Less so than usual, 1 = No more than usual, 2 = Rather more than usual, 3 = Much more than usual (Goldberg, 1972).

The GHQ-12 has high internal reliability with a coefficient alpha between .85 through .89 (Hardy, Shapiro, Haynes, & Rick, 1999; Banks et al., 1980). Test-retest reliabilities are also high with a reliability of .73. Evidence for good concurrent and divergent validity has been found as the GHQ-12 is most correlated with other health measures, and least correlated with non-health measures (Hardy et al., 1999).

The third measure, the IPIP, is used to measure the personality traits of Agreeableness, Extroversion, Emotional Stability, Conscientiousness, and Intellect/Imagination. The IPIP consists of 50 questions concerning participant's personality. For example, sample questions on the measure include the following: 'I am the life of the party' or 'I am relaxed most of the time' ("International Personality," n.d.).

The IPIP is scored on a Likert scale ranging from 1 - 5, where total scores can range anywhere from 50 - 250. Each subscale of the measure is individually scored with 10 questions per domain. A cumulative composite is created by combining the ten scores within each subscale. Each subscale is individually analyzed to understand individual traits. Participants provide their responses to the 50 questions using the following rating scale: 1 = Very inaccurate, 2 = Moderately inaccurate, 3 = Neither inaccurate nor accurate, 4 = Moderately accurate, 5 = Very accurate ("International Personality," n.d.).



The IPIP has shown evidence for high reliability with a coefficient alpha between .79 through .87. Scores slightly range because multiple versions of the IPIP measure exist. Moreover, evidence for good divergent validity has been found as the IPIP subscale measures (Extroversion, Agreeableness, Emotional Stability, Conscientiousness, and Intellect/Imagination) are not significantly correlated with one another (“International Personality,” n.d.).

### **Materials**

Each participant was provided with the initial survey measures (implied consent, demographic information form, IPIP measure, and a pre-assessment GHQ-12 measure), journaling packet, and post-assessment GHQ-12 questionnaire.

### **Data Collection Procedures**

Chosen Psychology classes were visited by the experimenter during the fourth week in October, 2010. The experimenter explained to students that a study was being conducted to learn more about writing and psychology. The experimenter further explained to students that they had the option to participate in the current study, and extra credit would be offered for their participation. All students were then told the experiment would take a total of one hour and forty-five minutes over the course of seven days. Students interested in participating were required to attend their next class period as further instructions were given at that point.

The experimenter again visited each Psychology section involved with the study during the beginning of the first week in November, 2010. Students participating in the study were again informed that the purpose of the study was to learn more about writing and psychology. Students were given implied consent, and notified their responses would be kept confidential and only the experimenter would have access to their information (see Appendix A).

Once implied consent was gained from the students, participants were required to complete the demographic information form, the GHQ-12, and the IPIP measure (see Appendix B). All forms were completed via an online survey tool, Qualtrics, or with paper copies. Qualtrics was utilized as the priority method for survey completion. All students in the study were sent an email identifying the purpose of the experiment, and hotlinks to complete the survey measures (see Appendix G). Students who did not have their computers in class to receive the email were given paper copy forms to complete. Upon completion of the survey measures, a journaling packet enclosed in a manila envelope was given to each student. The journaling packet outlined each participant's writing topic.

Students within each section were randomly divided into control and experimental groups. Students in the experimental condition were asked to journal regarding their recent stresses, emotions, thoughts, sources of stress, and plans to deal with their stress (see Appendix E). Students in the control condition were asked to write concerning what they did each previous day from the time they woke until they went to bed (see Appendix F). All students were asked to journal for fifteen minutes, each day, for six consecutive days (see Appendix D). The researcher sent all participants a reminder email, each day, notifying them to complete the journaling exercise (see Appendix H).

Upon completion of the sixth journaling day, the experimenter returned to all four classes to collect the journaling packets. Two weeks after the journaling packets were collected, the experimenter again returned to all sections to issue a post assessment GHQ-12 questionnaire (see Appendices C & I). Again, Qualtrics was utilized as the primary method for survey completion. Students who did not have their computers in class were again given paper copies to complete

the survey. Upon completion of the post-assessment, the experimenter debriefed students regarding the true purpose of the study and thanked students for participating (see Appendix J).

### **Data Analysis**

All participant journals were assessed by the experimenter to ensure each participant performed the journaling exercise. The experimenter used individual judgment to determine no journaling days were missed. Specifically, the experimenter skimmed each page of each participant's journal to ensure no pages were blank.

The experimenter also used individual judgment to ensure participants wrote the proper amount on the identified topics. Although subjective, the experimenter could easily identify participant's who wrote for a significant amount of time (approximately fifteen minutes) and those who did not write for a large amount of time. Participant's who did not write for a significant amount of time only had a few sentences of writing, and their thoughts were not well outlined; whereas those who did write for a significant amount of time, had many sentences of writing and well thought out sentences. If a journal did not meet the experimenter's requirements, the participant was removed from the study.

Moreover, data analysis only occurred on the demographic data, GHQ-12 surveys, and the IPIP measures; the journals were not analyzed. Demographic information was only analyzed to gain a greater understanding regarding the types of participants who assisted with the study. GHQ-12 scores were gained by computing individual average composite scores across the twelve questions assessed. IPIP scores were assessed by computing individual cumulative composite scores for each of the five domains.

To determine intervention effectiveness, a statistical analysis program, PASW 18.0, was utilized to analyze research findings. Repeated measures *t*-tests and an univariate Analysis of

Covariance (ANCOVA) test were used to compare pre- and post-test assessments regarding experimental and control condition distress levels. Univariate Analysis of Variance (ANOVA) and ANCOVA tests were also utilized to measure personality's moderating role regarding paradigm effectiveness.

### **Limitations**

Methodological weaknesses may have limited the research design. Study procedures, sample size, timing, and measures utilized may have impacted intervention effectiveness.

Although all possible pre-cautions were considered, the previous four factors listed may have affected study success. The study limitations are further described within the Discussion section or Chapter V. Recommendations are also provided to avoid the given limitations.

## **Chapter IV: Results**

A variety of research has demonstrated the effectiveness of written emotional disclosure to reduce distress (Frattaroli, 2006); therefore, a research study was conducted to replicate previous findings and to understand personality's moderating role concerning paradigm effectiveness. One hundred eight students from the University of Wisconsin-Stout participated with the research study. However, because a significant amount of participants did not complete either the pre/post-assessment, or the journaling process, a total of  $N = 63$  usable responses were gained from students in the experimental ( $n = 29$ ) and control conditions ( $n = 34$ ). The sixty-three usable responses resulted in an approximate response rate of fifty-nine percent.

Participants were given pre- and post-test assessments regarding distress measures, and a pre-test assessment concerning personality measures. Students within the experimental condition were asked to journal regarding their recent stresses, emotions, thoughts, sources of stress, and plans to deal with their stress. Students within the control condition were asked to write concerning the trivial topic of what he/she did each previous day. Repeated measures  $t$ -tests and univariate Analysis of Variance/Covariance tests were used to outline study results.

### **Distress**

#### **Main analysis.**

Main analyses indicate that students in both the experimental and control conditions were experiencing 'slightly more stress than usual' before the experiment began, ( $M = 1.43$ ,  $SD = 0.33$ ) and ( $M = 1.45$ ,  $SD = 0.47$ ), respectively. Analyses also indicate the intervention did not statistically reduce distress in the control condition [ $t(33) = 0.73$ ,  $p = .42$ ]. Moreover, analyses indicate the intervention did not statistically reduce distress in the experimental condition [ $t(28) = 0.91$ ,  $p = .37$ ]. Analyses also displayed that participant post-test distress was not significantly higher in the control versus experimental condition after controlling for pre-test distress levels

$[F(1,60) = 0.00, p = .95]$ . Furthermore, students in both the experimental and control conditions were experiencing ‘slightly more stress than usual’ upon post-test assessment, ( $M = 1.38, SD = 0.28$ ) and ( $M = 1.39, SD = 0.50$ ), respectively. Also, post-assessment effect size ( $d = 0.02$ ) showed to greatly vary from Smyth’s (1998) meta-analytical finding ( $d = 0.47$ ). The previous findings do not provide evidence to support hypotheses 1 and 2.

### **Personality**

A variety of information was also gained from examination regarding the personality variables of Emotional Stability, Extroversion, Conscientiousness, Agreeableness, and Intellect/Imagination. To properly assess each personality variable, a median split was performed among the responses for each individual construct. Each variable was split between two groups: high and low scores. Table 1 further outlines the median response for each personality variable, and grouping requirements for high and low scores.

Table 1

*Median, Low, and High Scores Among Personality Variables*

<b>Personality Variable</b>	<b>Median Score</b>	<b>Low Scores</b>	<b>High Scores</b>
Extroversion	35	0 - 35	36 - 50
Agreeableness	40	0 - 40	41 - 50
Conscientiousness	37	0 - 37	38 - 50
Emotional Stability	30	0 - 30	31 - 50
Intellect/Imagination	35	0 - 35	36 - 50

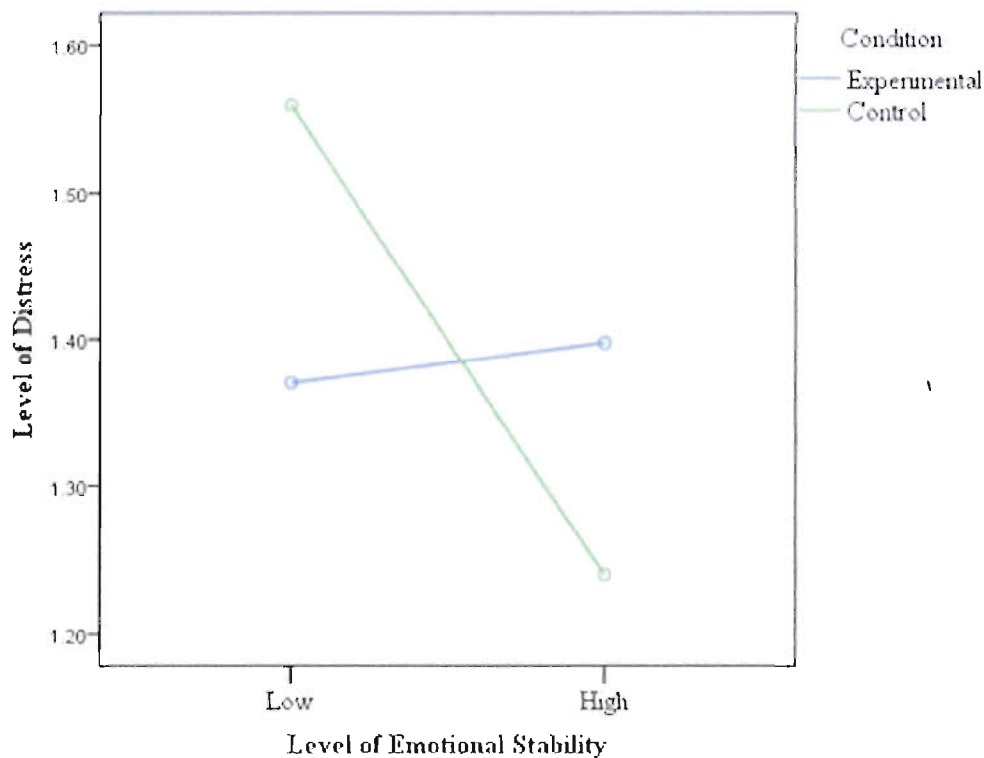
### **Main analysis.**

Emotional Stability significantly moderated the effect of the experimental versus control condition, on post-assessment distress levels, after controlling for pre-assessment distress levels

$[F(1,58) = 4.58, p = .04]$ . As can be seen from Figure 1, students with low Emotional Stability levels reported lower post-test distress if they were in the experimental versus control condition. However, students with high emotional stability levels reported lower post-test distress if they were in the control versus experimental condition.

*Figure 1*

*Emotional Stability as a Moderator of Post-Assessment Distress Controlling for Pre-Test Distress*



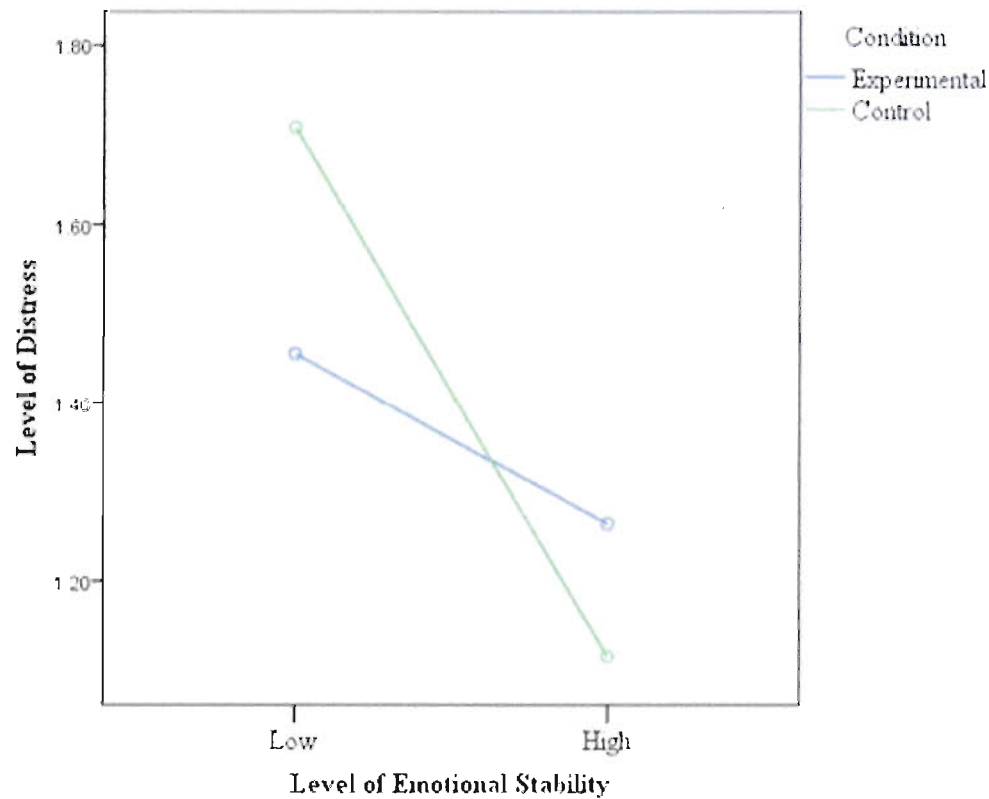
Additionally, participants in the experimental condition, who were low in Emotional Stability, were found to significantly decrease in distress levels (pre-test to post-test) due to the journaling exercise [ $t(16) = 2.36, p = .03$ ]. However, participants in the control condition, who were low in Emotional Stability, were not found to significantly decrease in distress levels (pre-test to post-test) due to the journaling exercise [ $t(15) = 0.31, p = .77$ ]. The effect size for participants low in Emotional Stability ( $d = 0.66$ ) showed to be slightly higher than Smyth's

(1998) meta-analytical finding ( $d = 0.47$ ). Moreover, participants high in Emotional Stability did not significantly decrease in distress levels (pre-test to post-test) due to the journaling exercise in either the experimental or control condition, [ $t(11) = -1.46, p = .17$ ] and [ $t(17) = 0.77, p = .45$ ], respectively. Students high in Emotional Stability, in the experimental condition, showed a very slight increase in distress (pre-test to post-test) due to the journaling exercise, whereas students in the control condition showed a very slight decrease in distress (pre-test to post-test) due to the journaling exercise. Overall, the effect size for participants high in Emotional Stability ( $d = 0.44$ ) showed to be similar to Smyth's (1998) meta-analytical finding ( $d = 0.47$ ). The previous findings provide partial support for hypothesis 1.

Furthermore, Emotional Stability also significantly moderated the effect of the experimental versus control condition, on post-assessment distress levels, when pre-assessment distress levels were not controlled [ $F(1,59) = 4.99, p = .03$ ]. Figure 2 shows that students low in Emotional Stability, in both the experimental and control conditions, displayed higher post-test distress levels than students, in both the experimental and control conditions, higher in Emotional Stability.



Figure 2

*Emotional Stability as a Moderator of Post-Assessment Distress*

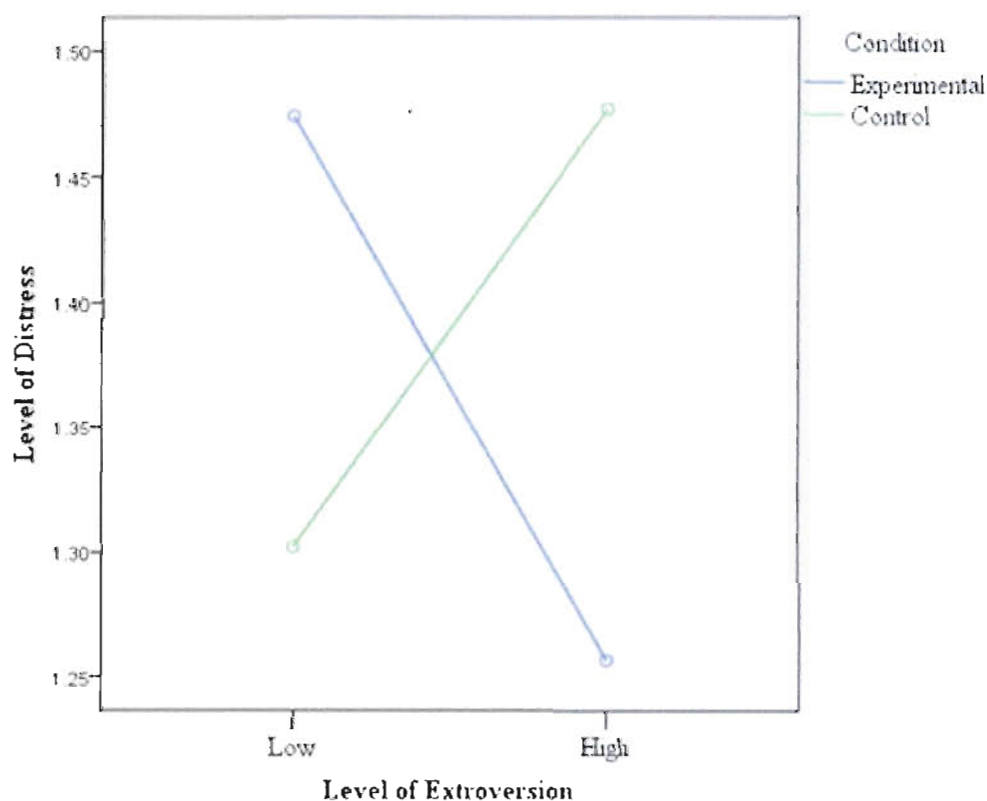
Moreover, Extroversion did not significantly moderate the effect of the experimental versus control condition, on post-assessment distress levels, after controlling for pre-assessment distress levels [ $F(1,58) = .32, p = .57$ ]. Additionally, Extroversion also did not significantly moderate the effect of the experimental versus control condition, on post-assessment distress levels, when pre-assessment distress levels were not controlled [ $F(1,59) = 3.56, p = .06$ ].

However, the relationship between the experimental and control conditions on post-assessment distress levels, when pre-assessment distress levels were not controlled, may be considered a trend, because statistical significance may have been found with a larger sample size. Figure 3 displays the previously described relationship. As can be seen from Figure 3, introverts in the control condition displayed lower levels of post-test distress than introverts in

the experimental condition. However, extroverts in the experimental condition displayed lower distress levels than extroverts in the control condition.

*Figure 3*

*Extroversion as a Moderator of Post-Assessment Distress*



Furthermore, analyses indicate that Agreeableness did not significantly moderate the effect of the experimental versus control condition, on post-assessment distress levels, after controlling for pre-assessment distress levels [ $F(1,58) = .02, p = .90$ ]. Additionally, Agreeableness also did not significantly moderate the effect of the experimental versus control condition, on post-assessment distress levels, when pre-assessment distress levels were not controlled [ $F(1,59) = .62, p = .43$ ].

Conscientiousness also did not significantly moderate the effect of the experimental versus control condition, on post-assessment distress levels, after controlling for pre-assessment

distress levels [ $F(1,58) = .22, p = .64$ ]. Additionally, Conscientiousness did not significantly moderate the effect of the experimental versus control condition, on post-assessment distress levels, when pre-assessment distress levels were not controlled [ $F(1,59) = .43, p = .52$ ].

Finally, students' Intellect/Imagination scores did not significantly moderate the effect of the experimental versus control condition, on post-assessment distress levels, after controlling for pre-assessment distress levels [ $F(1,58) = .25, p = .62$ ]. Additionally, Intellect/Imagination did not significantly moderate the effect of the experimental versus control condition, on post-assessment distress levels, when pre-assessment distress levels were not controlled [ $F(1,59) = .09, p = .77$ ].

## **Chapter V: Discussion**

The purpose of this study was to examine the effectiveness of a written emotional disclosure intervention to reduce distress levels among University of Wisconsin-Stout students. A secondary purpose of the study was to understand the impact of personality moderating paradigm effectiveness. This chapter discusses the results of the study, and implications of the research. Further discussed also includes study limitations, recommendations for future research, and conclusions.

Emotional disclosure interventions have been studied for more than twenty years, with a majority of research revealing paradigm effectiveness (Frattaroli, 2006). The paradigm reveals effectiveness in a variety of areas, such as: improved psychological and physical effects (Sloan & Marx, 2004a), fewer visits to campus healthcare centers (Cameron & Nicholls, 1998), and increased grade point averages (Lumley & Provenzano, 2003). A major area of study also includes the construct of distress. Many studies have examined distress in relation to written emotional disclosure, and have again found paradigm effectiveness (Alford et al., 2005; Frattaroli, 2006).

The basic instructions of an emotional disclosure intervention require participants to journal for short period of time for a few consecutive days (Pennebaker, 1997). Participants are typically required to journal regarding stressful or traumatic experiences (Frattaroli, 2006). The current study replicated these basic paradigm dimensions, while also studying ‘the Big Five personality traits’ (Digman, 1990). The current study required participants in the experimental condition to journal regarding their recent stresses, emotions, thoughts, sources of stress, and plans to deal with their stress, whereas participants in the control condition were required to journal concerning a trivial topic. All participants wrote for six consecutive days, for fifteen

minutes each day. Determination of paradigm effectiveness was gained from pre- and post-test distress measures and a pre-test personality measure.

### **Distress**

Results revealed partial support for the research hypotheses and the moderating effect of personality. Evidence to support hypothesis 1 was partially found through the research study. Overall, participants in the experimental condition did not significantly decrease in distress levels (pre- to post-test) two weeks after the journaling exercise. However, supporting evidence for hypothesis 1 was found for students low in Emotional Stability. Participants low in Emotional Stability reported significantly lower post-test distress levels when involved with the experimental versus control condition.

Additionally, supporting evidence was not found for the second hypothesis. When pre-assessment distress levels were controlled, post-test distress was not significantly higher in the control versus experimental condition. Overall, implications from these two hypotheses reveal that in relation to distress, only students low in Emotional Stability were affected by the emotional disclosure intervention. Writing regarding what students did each previous day, did not significantly affect participant distress levels. However, students who wrote regarding their recent stresses, emotions, thoughts, sources of stress, and plans to deal with their stress also did not significantly decrease in pre- to post-test distress unless they were low in Emotional Stability. Although many studies have identified an overall decrease in participant distress due to written emotional disclosure (Alford et al., 2005; Ireland et al., 2007; Hemenover, 2003), the current study's findings were not extremely consistent with previous literature. The limitations described below may have impacted intervention effectiveness.

A possible reason for non-significant results within the experimental condition may be due to students not accurately completing the required task. Participants within the experimental condition were required to journal regarding their recent stresses, emotions, thoughts, sources of stress, and plans to deal with their stress. As assessed by the researcher, all participants fully and adequately completed the journaling exercise; however, some students may have fully divulged information, whereas other students may have provided the minimal requirement. Students who divulged more specific information may have benefited more from the intervention than those who revealed only basic information.

Moreover, the description of plans to deal with individual stress also frequently varied by each participant, and may have impacted intervention effectiveness. Some participant's greatly described their plans, while other student's minimally portrayed how they would deal with their stress. Participants who did not fully describe their plans to deal with their stress, may not have benefited as greatly as those who did fully describe their plans. Inconsistent disclosure from each student may have limited intervention effectiveness.

### **Personality**

A variety of information was gained from measuring the moderating effect of personality on paradigm effectiveness. As previously stated, Emotional Stability significantly moderated the effect of the experimental versus control condition on post-assessment distress levels. This finding is contrary to previous literature reviewed. A meta-analytical review by Frattaroli (2006) did not find Neuroticism to moderate emotional disclosure effectiveness from six main studies examined. However, although Frattaroli (2006) did not find Neuroticism to moderate emotional disclosure effectiveness, he did find related research suggesting that participants with higher

stress levels, or lower optimism levels, showed greater health benefits from emotional disclosure interventions.

In the current study, when pre-assessment distress levels were controlled, post-test distress levels for students in the experimental condition minimally changed across Emotional Stability levels. However, students in the control condition, who were low in Emotional Stability, experienced more post-test distress than students high in Emotional Stability. As previously stated, students who were low in Emotional Stability experienced a significant decrease in distress (pre- to post-test) for those involved with the experimental versus control condition. This finding may be similar to what one might expect as individuals low in Emotional Stability may have found great benefit from expressing their emotions and feelings.

Moreover, when pre-assessment distress levels were not controlled, Emotional Stability again moderated the effect of the experimental versus control condition on post-assessment distress levels. Students in both the control and experimental conditions, low in Emotional Stability, experienced higher post-test distress than students higher in Emotional Stability. This relationship is slightly expected as individuals who have higher Emotional Stability levels may be functioning more adequately than those with lower Emotional Stability levels.

A student's level of Extroversion also had an interesting impact upon the moderating effect of intervention success. Extroversion did not significantly moderate paradigm effectiveness. However, when pre-assessment distress levels were not controlled, Extroversion may have moderated the relationship if a larger sample size was utilized. This finding may be contrary to previous findings by Horneffer and Jamison (2002), who found Extroversion did not significantly moderate the relationship between personality and expressive writing. However, Sheese et al. (2004) found Extroversion did moderate emotional disclosure intervention

effectiveness in relation to health. Sheese et al. (2004) measured health through the use of self-report survey measures.

The personality constructs of Agreeableness, Conscientiousness, and Intellect/Imagination did not significantly moderate emotional disclosure effectiveness. Non-significant findings for Agreeableness, Conscientiousness, and Intellect/Imagination are consistent with Sheese et al. (2004) who also identified these factors not moderating the effectiveness of written emotional disclosure in relation to health. As no other previous literature could be identified regarding these three factors, the current study suggests a student's level of Agreeableness, Conscientiousness, and Intellect/Imagination does not impact written emotional disclosure effectiveness.

Current personality findings may be somewhat expected as the writing instructions may have pertained much more closely to an individual's level of Emotional Stability and Extroversion, rather than their Agreeableness, Conscientiousness, and Intelligence levels. Also, it is possible results were found due to testing effects. Students within the control condition may have consciously and sub-consciously modified survey results because they believed distress changes were supposed to occur from pre- to post-assessment. Students modified survey results may have then lead to the moderating effects that were found. However, more information is needed to make definitive claims regarding written emotional disclosure and personality's moderating role. Personality findings may have also been affected by study limitations.

### **Limitations**

A variety of limitations may have impacted research results. A major limitation may involve the procedures utilized. Although students were given a sealed manila envelope that contained writing instructions, and asked not to discuss their writing topic with other class



members, students may have had discussions and discovered the true study purpose. All participating classes were split with half of students receiving experimental condition instructions, while the other half received control condition instructions. As the study required one week's worth of participation, students may have revealed their writing topics to other study participants. Once students realized writing differences, conscious and sub-conscious effects may have occurred, and modified survey results.

A second limitation concerns the study sample size. As one hundred and eight students were requested to assist with the study, only sixty-three usable responses were gained. The sixty-three responses allowed results from twenty-nine students in the experimental condition, and thirty-four students in the control condition. A larger sample size may have shown greater paradigm effectiveness and moderating effects. Participants in the control condition may have been slightly more apt to complete the journaling exercise as writing regarding what one did each previous day may have been easier and less revealing than journaling concerning one's recent stresses, emotions, thoughts, sources of stress, and plans to deal with the stress.

A third limitation may regard the timing in which the study occurred. Although all participants were surveyed upon the same time in November, 2010, Thanksgiving break and end of the semester stress may have impacted intervention effectiveness. Due to Thanksgiving break, an extra three days without school related activities may have modified distress levels in participants. These modified levels may have then been represented inappropriately on survey measures. Also, since surveys were completed towards semester end, some students may have felt much greater stress compared to other similar participants.

A fourth limitation may concern the participants used for the research study. Psychology students from the University of Wisconsin-Stout were the only individuals who participated with

the research study. Utilizing participants from other majors/universities would have triangulated research findings, and provided further support for study conclusions. Furthermore, participant gender, race, ethnicity, etc. was not controlled for in the current study. Individual participant traits may have affected study outcomes, and may be assessed for future research.

A final study limitation involves that students may have perceived questions on the distress survey measure inappropriately, and therefore answered questions incorrectly. As the General Health Questionnaire-12 is a global distress scale, a distress scale specifically focused upon college student distress may have been more appropriate. A focused scale may have shown greater changes between students within the experimental and control conditions.

### **Recommendations**

Recommendations for future research include utilizing a larger/more diverse sample, preventing timing conflicts, and using a focused distress scale. As previously discussed, main study limitations may have occurred due to these constraints. Paradigm effectiveness may have been found if these factors were focused upon more closely.

Further research recommendations include modifying experimental instructions to understand the impact regarding other journaling topics. As the majority of research has focused upon journaling concerning traumatic or distressful situations, writing regarding other experiences may provide benefit to participants. For example, Burton and King (2004) found journaling regarding intensely positive experiences provided positive effects. Future research may involve multiple writing scenarios to identify the degree of paradigm effectiveness.

Future research may also examine paradigm moderating variables. As the current study identified Emotional Stability as moderating paradigm effectiveness, and Extroversion as a near moderating variable, further research should be conducted to understand why study findings

occurred. Further research should identify if any further personality characteristics affect paradigm effectiveness, the extent of effect, and reasoning behind research results. Upon identification of moderating variables, the researcher(s) could focus upon the factors that cause certain variables to moderate the relationship. Reasoning behind moderating variables may provide insight for future intervention application.

Future research should also focus upon moderating variables other than personality characteristics. An individual may utilize written emotional disclosure without the realization of its effects. Through the use of advanced technology, an individual may express his/her feelings through Facebook, Twitter, blogging, journals, etc. Previous individual experience regarding social networking sites may affect intervention effectiveness. Future research could seek to understand the degree to which individuals utilize social networking sites, and the impact in regards to decreased distress.

## **Conclusions**

A variety of research has identified that when participants journal regarding stressful or traumatic experiences, multiple health benefits occur. One important identified health benefit regards a reduction in distress (Fratraroli, 2006). Multiple studies have demonstrated the effectiveness of a written emotional disclosure intervention to reduce distress in college populations (Hemenover, 2003; Horneffer & Jamison, 2002; Lepore, 1997). College students are impacted by a variety of stressful situations (Ross et al., 1999), and may be prime candidates for a stress management technique to reduce distress. Although multiple studies have examined written emotional disclosure, few studies have identified personal factors that may moderate intervention effectiveness. Minimal research has been conducted regarding personality's moderating role with intervention success. Therefore, this study sought to assess participant's

distress levels upon completion regarding a journaling exercise. Also assessed was personality's moderating role within intervention effectiveness.

Undergraduate Psychology students at the University of Wisconsin-Stout participated with the current research study. Sixty-three usable responses were gained to determine intervention effectiveness. All students completed pre- and post-test distress measures and pre-test personality measures. All participants were required to journal for six consecutive days, for fifteen minutes each day. Participants were randomly divided between experimental and control conditions. Students within the experimental condition were required to journal regarding their recent stresses, emotions, thoughts, sources of stress, and plans to deal with their stress. Students within the control condition were required to journal concerning what they did each previous day.

Results revealed that students in the experimental condition did not display significantly reduced distress levels after journaling completion unless their Emotional Stability levels were low. Moreover, Extroversion, Conscientiousness, Agreeableness, and Intellect/Imagination were not found to moderate intervention success. A variety of study limitations may have impacted research results, and recommendations have been made for future research.

Overall, the written emotional disclosure intervention conducted at the University of Wisconsin-Stout was only found effective at reducing students' distress levels for students low in Emotional Stability. Although students stress levels may be high, students' may consider alternative forms of stress reduction: exercise, mediation, laughter, social support, yoga, appropriate amounts of sleep, listening to music, and counseling (Mayo Clinic, n.d.). Preventative stress treatment methods may differ across individuals, and every person may need to determine the best treatment method for himself/herself.

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## Appendices

### Appendix A: Implied Consent to Participate in Approved Research

#### UW-Stout Implied Consent Statement for Research Involving Human Subjects Consent to Participate In UW-Stout Approved Research

**Title:** Journal Writing Intervention

**Investigator:**

Daniel Regnier  
regnierd@my.uwstout.edu  
(507) 828-5066

**Research Sponsor:**

Mitchell Sherman  
319 McCalmont Hall  
(715) 232-2658  
shermanm@uwstout.edu

**Description:**

This study is an extremely important project looking at writing. Over the next six days, you will be asked to write about one or several different topics for 15 minutes each day. This project is being used as a thesis project in the Master of Science in Applied Psychology program. There are also three survey measures involved with this project. The first involves identification of demographic information, the second entails responses to 12 health related questions, and the third involves responses to how you currently see yourself.

**Risks and Benefits:**

There are minimal risks to you participating. However, minor risks may occur. These risks include:

- The journaling exercise may cause slight discomfort by aroused memories.
- You may feel slightly sad or depressed while completing the journaling exercise.

If at any point in time you feel that the writing intervention has caused your distress to exceed a capacity you are able to handle, immediately stop the journaling process and contact the counseling center. The contact information for the counseling center is as follows: 410 Bowman Hall, 715-232-2468.

There are direct benefits for participating. Your participation will assist with the continued development of literature regarding writing.

**Special Populations:**

No special populations will be used with this study.

**Time Commitment and Payment:**

The survey measures are expected to take approximately 15 minutes to complete. The writing portion will take 15 minutes each day for six consecutive days. In total, the experiment is expected to take approximately 1 hour and 45 minutes to complete. Extra credit will be provided for participation.

**Confidentiality:**

Your name will not be included on any documents or reports. Only your ID number, that you will create, will link your documents together. Only the researcher will have access to your survey data, and will generate an overall report among all completed surveys.

There may be a chance that you can be identified due to the personal nature of the journal and your writing. However, the journal information will only be disclosed to the researcher. Your information will be kept completely confidential unless one exception occurs. If you indicate either verbally or in your written journal that you intend to harm yourself or others, the matter will be brought to higher authorities.

**Right to Withdraw:**

Your participation in this study is entirely voluntary. You may choose not to participate without any adverse consequences to you. Should you choose to participate and later wish to withdraw from the study, you may discontinue your participation at this time without incurring adverse consequences.

**IRB Approval:**

This study has been reviewed and approved by The University of Wisconsin-Stout's Institutional Review Board (IRB). The IRB has determined that this study meets the ethical obligations required by federal law and University policies. If you have questions or concerns regarding this study please contact the Investigator or Advisor. If you have any questions, concerns, or reports regarding your rights as a research subject, please contact the IRB Administrator.

**Investigator:** Daniel Regnier, (507) 828 -5066,

regnierd@my.uwstout.edu

**Advisor:** Mitchell Sherman,

(715) 232 – 2658, shermanm@uwstout.edu

**IRB Administrator**

Sue Foxwell, Director, Research Services

152 Vocational Rehabilitation Bldg.

UW-Stout Menomonie, WI 54751

715-232-2477

foxwells@uwstout.edu

**Statement of Consent:**

By completing the following surveys you agree to participate in the project entitled, *Journal Writing Intervention*.

## Appendix B: Pre-Assessment Survey Measures

### Journal Writing Surveys

- Please answer each question as honestly as possible.
- Your answers will be kept confidential and only the researcher will have access to survey data.
- Your individual responses will not be shared with your professor or any class members.

### Identification Code

Please create a 5-10 digit code that is unique to you. Also, please write this code down in a location where it can be identified only by you, but can be easily retrieved. Please ensure you keep this code, as you will need to provide it on future documents. Please ensure that your code is unique, and that you believe is different from all other participants (ex. do not use 12345).

The following questions ask about your health. Please answer the following questions as honestly as possible using the phrase "have you recently" before each question.

Please answer the questions using the following scale:

- 0 = Less so than usual
- 1 = No more than usual
- 2 = Rather more than usual
- 3 = Much more than usual

Have you recently...	Rating
1. Been able to concentrate on whatever you're doing?	
2. Lost much sleep over worry?	
3. Felt that you are playing a useful part in things?	
4. Felt capable of making decisions about things?	
5. Felt constantly under strain?	
6. Felt you couldn't overcome your difficulties?	
7. Been able to enjoy your day-to-day activities?	
8. Been able to face up to your problems?	
9. Been feeling unhappy and depressed?	
10. Been losing confidence in yourself?	
11. Been thinking of yourself as a worthless person?	
12. Been feeling reasonably happy all things considered?	

The following questions ask about how you currently see yourself.

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Indicate for each statement whether it is 1. Very Inaccurate, 2. Moderately Inaccurate, 3. Neither Accurate Nor Inaccurate, 4. Moderately Accurate, or 5. Very Accurate as a description of you.

	Very Inaccurate	Moderately Inaccurate	Neither Accurate Nor Inaccurate	Moderately Accurate	Very Accurate
1. Am the life of the party.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Feel little concern for others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Am always prepared.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Get stressed out easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Have a rich vocabulary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Don't talk a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Am interested in people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Leave my belongings around.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Am relaxed most of the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Have difficulty understanding abstract ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Feel comfortable around people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Insult people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Pay attention to details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Worry about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Have a vivid imagination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Keep in the background.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Sympathize with others' feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Make a mess of things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Seldom feel blue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Am not interested in abstract ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Start conversations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Am not interested in other people's problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Get chores done right away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Am easily disturbed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Have excellent ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Have little to say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Have a soft heart.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Often forget to put things back in their proper place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Get upset easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Do not have a good imagination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Talk to a lot of different people at parties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Am not really interested in others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Like order.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Change my mood a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. Am quick to understand things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. Don't like to draw attention to myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. Take time out for others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. Shirk my duties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. Have frequent mood swings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. Use difficult words.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. Don't mind being the center of attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. Feel others' emotions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Follow a schedule.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. Get irritated easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. Spend time reflecting on things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. Am quiet around strangers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. Make people feel at ease.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. Am exacting in my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. Often feel blue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. Am full of ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Demographic Information

- The following questions regard your demographic information.



Academic year:

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Graduate Student
- ☐ Other (please specify)

Grade Point Average (GPA) \_\_\_\_\_

Age \_\_\_\_\_

Gender

- ☐ Male
- ☐ Female
- ☐ Transgender

This is the end of the survey questionnaire. Thank you for your time and efforts.

## Appendix C: Post Assessment Survey Measure

### Identification Code

Please list the 5 – 10 digit code that you created for your previous surveys.

---

Please answer the following questions as honestly as possible using the phrase "have you recently" before each question.

Please answer the questions using the following scale:

- 0 = Less so than usual
- 1 = No more than usual
- 2 = Rather more than usual
- 3 = Much more than usual

Have you recently...	Rating
1. Been able to concentrate on whatever you're doing?	
2. Lost much sleep over worry?	
3. Felt that you are playing a useful part in things?	
4. Felt capable of making decisions about things?	
5. Felt constantly under strain?	
6. Felt you couldn't overcome your difficulties?	
7. Been able to enjoy your day-to-day activities?	
8. Been able to face up to your problems?	
9. Been feeling unhappy and depressed?	
10. Been losing confidence in yourself?	
11. Been thinking of yourself as a worthless person?	
12. Been feeling reasonably happy all things considered?	

This is the end of the survey questionnaire. Thank you for your time and efforts.

### **Appendix D: Study Overview Given to Participants**

This study is an extremely important project looking at writing. Over the six days, you will be asked to write about one or several different topics for 15 minutes each day. The only rule I have about your writing is that you write continuously for the entire time. If you run out of things to say, just repeat what you have already written. In your writing, don't worry about grammar, spelling, or sentence structure. Just write. Because we are trying to make this a tight experiment, I ask that you not talk with anyone about the experiment. Once the study is complete, however, I will tell you everything. Another thing is that sometimes people feel a little sad or depressed after writing. If that happens, it is completely normal. Most people say that these feelings go away in an hour or so. If at any time over the course of the experiment you feel upset or extremely distressed, please contact the counseling center.

Your writing is completely anonymous and confidential. Please do not write your name in the journal. I promise that none of the experimenters, including me, will link your writing to you. The one exception is that if your writing indicates that you intend to harm yourself or others, we are legally bound to match your ID with your name. Above all, I will respect your privacy. Also, please ensure that you are journaling on the appropriate topics for the appropriate amount of time.

Upon completion of all six days of the journaling exercise, please place your journals back in the envelop provided to you. Please bring your journals and envelope back to class in two class periods to be handed back into the researcher.

We greatly appreciate your willingness to complete the journals.

Thank you for your time and efforts.

Daniel Regnier  
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Mitchell Sherman  
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## **Appendix E: Experimental Condition Writing Instructions**

### **Directions:**

For today, and the next five consecutive days, I would like you to write about your recent stresses, emotions, thoughts, sources of stress, and plans to deal with your stress. You can write about the same experience on all six journaling days, or about different experiences each day. Whatever you choose to write, however, it is critical that you really delve into your deepest emotions and thoughts. Ideally, I would also like you to write about significant experiences that you have not discussed in great detail with others. Remember that you have six days to write. You might tie your personal experiences to other parts of your life. How is it related to your childhood, your parents, people you love, who you are, or who you want to be. Again, in your writing, examine your deepest emotions and thoughts.

Please write at approximately the same time each day. Find a place where you can write for 15 minutes each day without interruption. Please ensure that you complete today's journaling process by midnight tonight.

## **Appendix F: Control Condition Writing Instructions**

### **Directions:**

What I would like you to write about today, and the next five consecutive days, is what you did each day. In your writing, I want you to be as objective as possible. I am not interested in your emotions or opinions. Rather I want you to try to be completely objective. Feel free to be as detailed as possible. In your writing, I want you to describe what you did yesterday from the time you got up until the time you went to bed. 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 days as accurately and as objectively as possible.

Please write at approximately the same time each day. Find a place where you can write for 15 minutes each day without interruption. Please ensure that you complete today's journaling process by midnight tonight.

## **Appendix G: Email provided to students to access initial survey measures**

### **Introduction/Initial Measures**

As previously discussed last week, we are conducting a study looking at writing. For this study, we are asking that you complete survey measures today, and then journal for 15 minutes each day for the next six consecutive days.

For today we are asking you to complete an implied consent form for the experiment, and survey measures assessing demographic information, health related information, and information regarding how you currently see yourself.

Your survey answers are completely anonymous and confidential. No questions on the surveys will assess your identity.

Today's survey measures will take approximately 10 – 15 minutes to complete.

Please click on the survey link below to begin today's survey.

[https://uwstout.qualtrics.com/SE/?SID=SV\\_cUaGI1e4ThHAndi](https://uwstout.qualtrics.com/SE/?SID=SV_cUaGI1e4ThHAndi)

We greatly appreciate your willingness to complete the survey.

Thank you for your time and efforts.

Daniel Regnier  
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(507) 828-5066

Mitchell Sherman  
319 McCalmont Hall  
(715) 232-2658  
shermanm@uwstout.edu

**Appendix H: Reminder email sent to participants each day of the study**

Reminder-

For those of you participating in the journal writing study, please do not forget to complete your journal writing processes today. Please find a place where you can write for 15 minutes each day without interruption. Please write at approximately the same time for each of the six days. Your writing topic and further instructions are given in the journal that was handed-out to you in class.

Please ensure that you code your journal with the 5-10 digit code that you created for your previous surveys.

Your writing is completely anonymous and confidential. Please do not write your name in the journal. I promise that none of the experimenters, including me, will link your writing to you. The one exception is that if your writing indicates that you intend to harm yourself or others, we are legally bound to match your ID with your name. Above all, I will respect your privacy. Please ensure that you are journaling on the appropriate topics for the appropriate amount of time.

We greatly appreciate your willingness to complete the journal. Please complete today's journaling process by midnight tonight.

Thank you for your time and efforts.

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**Appendix I:** Email provided to students to access post-assessment survey measures

Thank you for all your hard work regarding the journal writing study that you participated with a few weeks ago. As a last request, we are asking that you complete one last survey measure. This measure should take less than 5 minutes to complete.

If you are not attending class today, please complete the survey measures by midnight tonight.

Your writing is completely anonymous and confidential. No questions on the surveys will assess your identity.

Please click on the survey link below to begin today's survey.

[https://uwstout.qualtrics.com/SE/?SID=SV\\_eyZ7moXo2QkHXNi](https://uwstout.qualtrics.com/SE/?SID=SV_eyZ7moXo2QkHXNi)

We greatly appreciate your willingness to complete the survey.

Thank you for your time and efforts.

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## Appendix J: Scripts utilized throughout study

### *Introduction*

This study is an extremely important project looking at writing. Over the next six days, you will be asked to write about one or several different topics for 15 minutes each day. There are also three survey measures involved with this project. The first involves identification of demographic information, the second entails responses to 12 health related questions, and the third involves responses to how you currently see yourself. The survey measures will be completed in class today, and are expected to take approximately 15 minutes to complete. The journals will be completed outside of class. The journals will take 15 minutes, each day, for the next six days to complete. In all, this project will take approximately 1 hour and 45 minutes to complete.

Do you still wish to participate?

Please begin by logging into your email account. You should have just received an email regarding the study I have just described. Within that email is a qualtrics survey link that we will use to begin the study. Please begin by reading the implied consent form and pressing 'I accept' if you agree to the conditions outlined throughout the form. By pressing 'I accept' you are agreeing to participate in this study.

Next, please create a 5-10 digit code that is unique to you. Also, please write this code down in a location where it can be identified only by you, but can be easily retrieved. Please ensure you keep this code, as you will need to provide it on future documents. Please ensure that your code is unique, and that you believe is different from all other participants (ex. do not use 12345).

Next, please complete the survey measures that follow. These survey measures assess your demographic information, health related information, and how you currently see yourself.

(Once all survey measures have been completed)

Here are your journaling packets for the next six days (hand-out journaling packets). Directions are outlined throughout the packets regarding your specific journaling topic. Please do not discuss this experiment with any other individuals and do not open the envelopes in this class, please open them at a later point in time. Please bring your journaling packets back to class in two class periods so they can be collected by the researcher. Please ensure that you are journaling on the appropriate topics for the appropriate amount of time. Also, please code the journaling packets with the same code you just created on the surveys.

Also, your writing is completely anonymous and confidential. Please do not write your name on any of your documents. I promise that none of the experimenters, including me, will link your writing to you. The one exception is that if your writing indicates that you intend to harm yourself or others, we are legally bound to match your ID with your name. Above all, I will respect your privacy.

Another thing is that sometimes people feel a little sad or depressed after writing. If that happens, it is completely normal. Most people say that these feelings go away in an hour or so. If at any time over the course of the experiment you feel upset or extremely distressed, please contact the counseling center.

- Participants who did not have a computer were given hand-written forms to complete. Students were instructed to place their hand-written forms in their envelop, and to hand all pieces in when the journals are collected.

#### *Directions to Journal Packet Collection*

Thank you for completing your journaling processes this past week. Soon I will have you hand-in your journaling packets. Before I do that, please ensure that your journaling packets have been coded with the same code that you created for the survey measures last week. If you forgot your code from last week, please ensure that you created a new code for the journaling packets. Please indicate on the front sheet of the packets that your code does not match the surveys previously completed. For all participants, please remember and record your identification code because in two weeks you will be required to provide additional information, and you will need to re-enter your identification number. At this time, please record your identification code in a place where it can be accessed only by you, but easily retrieved. Again, because we are trying to make this a tight experiment, I ask that you not talk with anyone about the experiment.

#### *Directions for Follow-up Assessment*

Thank you for all your hard work regarding the journal writing study that you participated with a few weeks ago. As a last request, we are asking that you complete one last survey measure. This measure involves health related questions. This measure should take less than 5 minutes to complete.

As always, your writing is completely anonymous and confidential. No questions on the surveys will assess your identity.

Please begin by logging into your email account. You should have just received an email regarding the survey I have just described. Within that email is a qualtrics survey link that we will use to access the survey. Please complete the health related survey.

- Participants who do not have a computer were given a hand-written form to complete. The hand-written form was then handed into the researcher.

#### *Debriefing*

The general purpose of this project was to explore the effectiveness of journal writing on reducing college student distress levels. A variety of research shows that journal writing has beneficial effects for participants, including a reduction in distress. Half of the participants were told to write for four consecutive days regarding their recent stresses, emotions, thoughts, sources of stress, and plans to deal with their stress. The other half of the participants were told

to write about what they did each previous day from the time they woke, until they went to bed. This study will seek to understand if the participants who wrote about their recent stresses, emotions, thoughts, sources of stress, and plans to deal with their stress significantly decreased in distress levels compared to students who wrote about what they did each day. Also assessed were your personality factors. This study will also seek to understand if agreeableness, extroversion, emotional stability, conscientiousness, and intellect/imagination impact the effectiveness of the writing paradigm.

Do you have any questions?

Thank you for participating in the study. In you feel that this study has increased your distress levels to a capacity that you are unable to handle, please contact the counseling center.