

CHANGES IN PSYCHOLOGICAL WELL-BEING  
AFTER DISCLOSING NEGATIVE AUTOBIOGRAPHICAL MEMORIES

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## DECLARATION OF ORIGINALITY

I, Nazike Mert, certify that

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## ABSTRACT

### Changes in Psychological Well-Being After Disclosing

### Negative Autobiographical Memories

Emotional disclosure of negative experiences has long been associated with improvement in physical and psychological health (Pennebaker, 1997). The present study has three main goals: First, to test whether disclosure of previously undisclosed autobiographical memories (AMs) is more beneficial than disclosed memories. Second, to find whether disclosing shame and guilt memories differs in terms of health consequences. Third, to determine the predictors of well-being. To achieve these goals, participants were randomly assigned to three groups: undisclosed shame, guilt or disclosed negative memory, and attended three writing sessions. Well-being measures were collected before, immediately after writing and one month after the writing sessions. Results revealed that, contrary to our hypotheses, immediate psychological and physical symptoms decreased through writing sessions. However, in long term psychological and physical health deteriorated. Shame and guilt memories did not show any difference, but undisclosed memory groups were affected more negatively by emotional disclosure than disclosed memory group. Finally, negative affect and resolution were found to be significant predictors of well-being. Overall, the present study failed to replicate previous studies with shame and guilt memories. Moreover, the reverse effect demonstrated that benefits of emotional disclosure might be more restricted to certain types of memories and health outcomes.

## ÖZET

### Olumsuz Otobioyografik Anıların Anlatılmasından Sonra

#### Psikolojik İyi Olma Halindeki Değişiklikler

Olumsuz deneyimlerin duygusal olarak ifade edilmesi uzun yıllar boyunca fiziksel ve psikolojik sağlıkla ilişkilendirilmiştir (Pennebaker, 1997). Bu çalışmanın üç temel amacı vardır: 1) Daha önce anlatılmamış otobiyografik anıların açığa vurulmasının daha önce anlatılmış anılara göre daha yararlı olup olmadığını test etmek. 2) Utanç ve suçluluk anılarının anlatılmasının sağlık sonuçları açısından farklılık gösterip göstermediğini bulmak. 3) İyi olma halini belirleyen etkenleri saptamak. Bu hedeflere ulaşmak için katılımcılar rastgele üç gruba ayrılmış (daha önce anlatılmamış utanç, suçluluk anısı ve anlatılmış olumsuz anı) ve her biri 20 dk. süren yazma seanslarına katılmışlardır. İyi olma hali yazma deneyiminden önce, hemen sonrasında ve 1 ay sonrasında ölçülmüştür. Sonuçlar anlık psikolojik ve fiziksel semptomların azaldığını, uzun vadede ise kötüleştiğini göstermiştir. Utanç ve suçluluk anıları farklılık göstermemiş ancak daha önce anlatılmamış anı yazan grup anlatılmış anı yazan gruba göre yazma deneyiminden olumsuz bir şekilde etkilenmiştir. Son olarak, olumsuz duyguların ve olayın çözümlenmesinin iyi olma halini belirlediği bulunmuştur. Bu çalışma utanç ve suçluluk anılarıyla önceki çalışmaların bulgularını elde edememiştir. Ayrıca, ters yönde bulunan etki bu yöntemin yararlarının belirli türden anılar ve sağlık ile sınırlı olabileceğini göstermiştir.

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# CHAPTER 1

## INTRODUCTION

*“There is no greater agony than bearing an untold story inside you.”*

*Maya Angelou*

### 1.1 Emotional disclosure paradigm

Staying silent about stressful and traumatic life events have long been considered harmful for the well-being of a person and disclosure has been thought to be one of the most powerful methods to alleviate the pain caused by the traumatic event (e.g. Worden, 2002). On the other hand, silences, for instance, about loss of a family member, may also help to reconstruct a well-functioning narrative and family identity (Baddeley & Singer, 2010).

The effects of self-disclosure on psychological well-being is observed extensively in psychotherapies where people unfold the most untold parts of themselves or a stressful event to a counselor and experience the positive outcomes, such as relief or enlightenment about their situation. According to Jourard (1971) self-disclosure opens up the way for a person to know oneself better. By learning about oneself better through disclosing to others one can also lead his/her own way.

Besides psychotherapeutic use of disclosure, substantial research also demonstrated that disclosing stressful or traumatic events increases both physical and psychological health. The general procedure in those empirical studies were to ask participants either to talk or to write about events expressively in an experimental setting. Based on the effectiveness of expressive writing Pennebaker developed the

Emotional Disclosure Paradigm in order to systematically assess the relationship between disclosure of events and well-being. The general procedure in this paradigm and other similar expressive writing methods was to have participants write about their traumatic events for three to five consecutive days for 15 to 30 minutes and collect well-being information prior to and after writing sessions (Pennebaker, 1997). In this procedure both the physical and the psychological well-being were measured through variables, such as number of doctor visits, symptom checklists, self-reports of psychological and physical well-being, or even GPA scores. The studies which employed this paradigm revealed that people do disclose even their most personal aspects and their traumatic experiences, such as loss of loved ones or sexual and physical abuse, if they were given such opportunities (e.g. Kearns, Edwards, Calhoun, & Gidycz, 2010).

Several theories were proposed to explain the mechanisms through which experimental disclosure benefits people (Frattaroli, 2006). One of the theories, the inhibition theory, was based on Freudian view on catharsis. According to this theory, inhibited thoughts and feelings cause uneasiness and harm to people. The stress that originated from repressed feelings and thoughts about past traumatic experiences result in stress-related diseases in body. When these thoughts and feelings are disclosed and being let go, people experience relief and improvement in their health. Jourard (1971) mentions that this was the most obvious case with Freud's neurotic patients who avoided revealing themselves first but get to know themselves and felt better once they had the opportunity to disclose themselves.

The first study that employed this theory was conducted by Pennebaker and Beall (1986) and tested whether writing about traumatic events can reduce levels of

stress associated with the inhibition of these events. They had one group of participants who wrote about trivial subjects provided by the experimenter; one group wrote about their feelings about a traumatic event; one group wrote only about the facts surrounding a traumatic event; and the last group wrote about a traumatic event focusing both on facts and feelings for the following four consecutive days. Experimenters measured the heart rate, blood pressure and self-reported negative mood (e.g. nervousness, sadness, guilt, unhappiness, discontent, fatigue, and anxiety) and physical symptoms (e.g. racing heart, upset stomach, headache, backache, dizziness, shortness of breath, cold hands, sweaty hands, pounding heart) both prior to and after the writing sessions. They also looked at the long-term effects by having participants fill out a questionnaire about their health and by collecting doctor visit records from health centers for the next four and six months after the experiment. Short term implications of writing showed that participants' blood pressure decreased from first writing session to the last in all conditions. The largest decreases were in control and trauma-fact conditions. There were no differences in heart rates and diastolic blood pressures of participants before and after the writing sessions. In terms of physical symptoms, there were also no difference prior to and after the writing sessions or over the course of the experiment. However, participants reported an increase in the negative mood both immediately after writing essays and over the course of experiment (i.e. from the first day to the last day). For the long-term effects of disclosing, the number of health center visits due to injury, illness, check-up or psychiatry, self-report of health problems, and health related behaviors, such as alcohol and tobacco use and aspirin consumption were measured. The long-term effects of writing about traumatic events were more complex. While none of the groups' health center visits changed after the experiment, trauma-combination and trauma-

emotion groups reported a decrease in health-related problems. Overall, Pennebaker and Beall's study successfully demonstrated that writing about traumatic events were effective in experiencing relief after the inhibition. Moreover, it was the first study to show that one does not have to orally disclose to a "real" person to experience this alleviation, but the action of writing itself was enough.

Despite similar studies supporting the inhibition view, this theory was not fully explaining why this paradigm was beneficial, since for instance, not all the forms of emotional expressions, such as dancing, benefited the participants as much as the writing did (e.g. Krantz & Pennebaker, 1995). Moreover, writing about imaginary emotional events was also beneficial even though these emotions were not authentically experienced (e.g. Greenberg, Wortman, & Stone, 1996). Thus, to address these issues another theory was proposed to explain the effectiveness of emotional disclosure paradigm: cognitive-processing theory. This theory asserted that expressive writing is beneficial if people make a meaning out of the events they are writing about (Frattaroli, 2006). Lessons learned and insights gained through writing helped people to integrate the event with their identity. This theory was supported by Pennebaker's (1993) findings that people who benefited the most from writing about traumatic experiences were those who used more causation, insight and other cognition related words in writing about memories. In one study Pennebaker and Francis (1996) asked first year college students to either write about their experiences of coming to college or about a trivial event and then their essays were assessed in terms of schematic judgement, accessibility of related concepts and language properties as indicators of their cognitive processing. For schematic judgement task participants decided whether an emotion or relevant or irrelevant word was related to coming to college. For accessibility of related concepts,

they generated as many words as possible to the phrases “having a birthday” and “coming to college”. For language properties, both Linguistic Inquiry and Word Count (LIWC) program (Pennebaker, Francis, & Booth, 2001) and raters’ judgements were used to analyze emotion and cognitive processing words. Results showed that schematic judgements of participants did not change before and after the writing sessions. They were still faster in deciding whether a neutral word was related to coming to college or not, showing that some degree of college related constructs was available. There was also no change in number of words generated before and after writing in any of the groups. The use of negative emotional words was unrelated to long-term health outcomes (i.e. health center visits). However, for participants who wrote about coming to college, higher use positive emotion words predicted better health after writing contrary to the control group. There was also an association between the use of insight-related and causal words and increased health conditions in experimental group but not in the control group. Overall, the study showed that some degree of cognitive processes reflected through insight and causation related words in narratives were related to improvement in well-being.

The third theory that attempted to explain the mechanism behind expressive writing was self-regulation theory. This theory suggested that emotional disclosure helped to improve physical and psychological health by providing opportunity to regulate emotions, cognitions and behaviors through writing (Pavlidis, 2015). Writing increased feelings of control and self-efficacy over negative emotions, which in turn, were suggested to reverse these negative emotions. The theory was derived from the findings that it was possible to observe an improvement in mental and physical health without experiencing short-term negative effects of expressive writing (Frattaroli, 2006).

In these studies, writing about benefits of a trauma or solutions to a problem helped people to see that they can control and regulate their emotions related to this trauma and develop effective coping strategies. For instance, King and Miner (2000) tested the use of self-regulatory process in writing and its effects on health outcomes by comparing writing about the benefits of trauma or the traumatic event itself. Participants were divided into four groups: the first group wrote only about the trauma event, the second group was told to think about a traumatic event and write only about the benefits of this event, the third group wrote about the traumatic event for the first 10 min and about the benefits for the next 10 min, and the last group wrote about mundane topics such as their daily plans or shoes. Participants' moods, health center visits and content of the events were analyzed. The results revealed that there were no differences between writing about trauma, writing about perceived benefits and writing both about the event and benefits in terms of emotionality, sadness and importance. All three groups decreased their health center visits in three-month follow-up period while the control group's remained the same. However, perceived benefit group wrote more cognitive processing words and positive emotion words than that of the trauma group, while trauma group narratives were more negative and lacked resolution. More importantly, when regression analyses were conducted with mood and content analysis variables in all groups, higher use of insight related words in perceived benefit narratives predicted the decline in health center visits after three months. None of the other variables were associated with fewer visits in any other groups. Overall, this study demonstrated that writing about positive effects (e. g. growth, meaning etc.) of a traumatic event was as effective as writing about the trauma itself in terms of improvement in physical health. Moreover, one did not have to go through negative emotions or experience stress again by writing about the trauma.



There are also two other relatively new and less studied theories that provide explanation for expressive writing: exposure theory and social integration theory (Frattaroli, 2006). Exposure theory was derived from the observation of conditional learning of fear in response to trauma experience, and suggests that repeated confronting, thinking about and relieving the same experience over several days by writing help people overcome the detrimental effects of trauma, just like in exposure therapy (Frattaroli, 2006; Pavlides, 2015). In that sense, expressive writing sets the ground for confronting avoided thoughts and feelings. Exposure theory also provides an explanation for the increase in the negative affect immediately after writing traumatic experience (Pavlides, 2015). Social integration theory, on the other hand, asserts that emotional disclosure changes the way people interact with their social environment, and this in turn affects their well-being (Frattaroli, 2006).

Although the benefits of expressive writing was demonstrated with significant number of studies, using this methodology with different types of populations revealed conflicting results about the health benefits. While some studies found positive effects of disclosure, some demonstrated negative effects and others revealed no effect at all especially with people with psychological problems. (Frattaroli, 2006). Studying with more specific populations with certain traumatic experiences showed that employing this procedure did not yield long-term benefits. For instance, Kearns, Edwards, Calhoun and Gidycz (2010) demonstrated that sexual assault victims who either wrote about their experience of it or wrote about daily routines did not differ in psychological distress, physical health complaints and traumatic stress at one month follow-up assessment. That is, both groups demonstrated reductions in psychological and physical complaints within one month. In addition, contrary to previous findings, sexual assault victims showed

decrease in their negative mood over 4-day of writing sessions. Similar results were obtained by Deters and Range (2003) who asked undergraduate trauma survivors (e.g. witnessed death of a loved person, sexually abused etc.) to write about either their trauma or a trivial topic found that both groups demonstrated decrease in PTSD symptoms and groups did not differ at follow-up. Moreover, in another study, participants with PTSD symptoms reported decrease in well-being (Gidron, Peri, Connolly and Shalev, 1996). These studies suggested that emotional disclosure might not be effective with populations with a history of specific kind of trauma but population with general stressful life events.

The reasons for mixed effects of emotional disclosure can be explained by the fact that all these studies examined the phenomenon with different participant or test characteristics. The review of previous studies showed that the effectiveness of expressive writing depended on many variables, such as the population being studied, incentives provided to participants, length of the writing sessions etc. (Frattaroli, 2006). For the present study, two of these variables are of specific interest; one is the previous disclosure of the events and the other one is the theme (topic) of the event, which are combined and presented as writing topics.

## 1.2 Undisclosed memories and their functions

In the study of autobiographical memories, especially when studying functions or phenomenological properties, usually no distinctions were made between shared and non-shared memories. For instance, in a widely used questionnaire assessing functions of autobiographical memories (i. e. Thinking About Life Experiences by Bluck and

Alea, 2011), although the participants are asked the frequency of talking and thinking about events in their lives at the beginning of the questionnaire, participants are instructed to respond to the following questions by considering these two cases together. This might be because it was generally assumed that memories are meant to be shared. However, there are also many instances in which people think about their personal memories and not share them with others. As a support for this naïve observation, Bluck and Alea (2009) found that people think more about their memories than they talk about them. This observation was independent of age and gender. These “experiences that people have not told to anyone and do not intend to tell, but still remember” (Pasupathi, McLean, & Weeks, 2009, pg.4) are denoted as silent or unshared memories.

#### 1.2.1 Types of undisclosed memories

Unshared memories are as much important as shared memories and are part of individuals’ identity. According to Fivush (2004), autobiographical life story of a person is affected by one’s place and power in the society. Cultural, individual and situational factors affect what is told and not told. For instance, views that represent the culturally acceptable norms are “voiced” while views that are marginal from cultural standpoint are “silenced”; talking about emotional memories is voiced for women, but silenced for men; and while some topics are voiced when talking with certain groups of people, other topics might be silenced. Fivush (2004) asserted that what we choose to tell and not to tell is determined by the process of interacting and reminiscing with other people. This conceptualization created a classification of autobiographical memories which contain two dimensions; voice and silence as one dimension and self and others as the other. In self-voiced memories the teller has the power on his/her autobiographical narrative and

these narratives are corroborated by the listener. For instance, during reminiscing of an event the child might challenge mother's version of the story by saying things contradictory to what she remembers. In such a case, the mother accepts the child's version and validates what the child is saying. In other-voiced memories listener has the power on directing and evaluating the narrative where the owner of the story has little impact in reminiscing. Other-silence memories are the ones in which listener negates the particular parts of the story and the teller's perspective is invalidated. For instance, during reminiscing of an event, when the child challenges mother's version of the story, the mother denies what the child is saying and tries to change the topic. Finally, self-silence memories are too painful that the teller chooses not to remember and avoids thinking and talking about the event. Fivush stated that through these four types of interaction, one develops autobiographical memory.

In terms of silence in autobiographical memories, Alea (2010) also went beyond the basic dichotomous distinction of memories in which they were either remembered and disclosed or were remembered but not disclosed. Instead, she classified silent memories into two dimensions according to frequency of recall and whether they were shared or not. This classification yielded three types of memories: "disclosed", "silent" and "socially silent". Disclosed memories are memories which people both frequently recall and share with other people and they are the most studied type in the autobiographical memory research among these three types. Silent memories are not recalled frequently and consequently they are not shared frequently. Contrary to silent memories, socially silent memories are recalled frequently but not shared with others for various reasons. Alea (2010) did not define the fourth type of memories, which were

infrequently recalled but shared, by claiming that these types of memories are very uncommon.

In two different experiments, Alea (2010) demonstrated characteristics of these memories. In the first experiment, both younger and older adults told two positive memories, one about a vacation and the other about a romantic evening. They reported how often they thought or talked about these memories, and then rated their significance, vividness and emotional quality. The prevalence of disclosed, socially silent and silent memories was 40%, 34% and 25%, respectively; however, these differences were not significant. Moreover, disclosed and socially silent memories did not differ in terms of significance and emotional quality. However, disclosed and socially silent memories differed from silent memories, such that both were rated as more significant than silent memories, and socially silent memories were rated more emotional than silent memories. In the second experiment, young, middle-age and older adults told both positive and negative relationship memories differently from first experiment. They also filled out modified version of Autobiographical Memory Questionnaire (Rubin, Schrauf, & Greenberg, 2003) to assess the significance, vividness, valence and emotional intensity, and questions about visceral reactions. The results revealed that the positive memories were disclosed more frequently than expected, and they were kept silent or socially silent less than expected. Interestingly, disclosed positive and socially silent positive memories did not differ in quality except for visceral reactions. In contrast to positive memories, negative memories were kept silent more than expected but were less socially silent than expected. Again, there was no difference between disclosed and socially silent memories in terms of quality and both types were more significant, vivid, emotionally intense and yielded more visceral reactions than silent memories. This study

demonstrated that the valence of memories matter while studying the disclosed and undisclosed memories since negative memories were more likely to be kept silent while positive ones were disclosed. However, this valence did not affect the quality of the memories. Although there was not much difference between disclosed and socially silent memories in terms of quality, the methodology used in this experiment to determine silent and disclosed memories might have masked the true difference between socially silent and disclosed memories. That is, rating frequency of thinking and talking about a memory after telling it in an experiment might not yield characteristics of silent memories which were purposefully kept private and not told to anyone.

#### 1.2.2 Functions of undisclosed memories

The reasons for silences have attracted many researchers from different disciplines, such as sociology (Zerubavel, 2006) and human communication (Bruneau, 1973; Jensen, 1973). Motivations for keeping some memories private might vary and they may also serve various functions in our lives just like telling memories do. However, functional approach to silent memories in autobiographical memory research is very limited. One exception to this is a study by Pasupathi, McLean and Weeks (2009). In this study, Pasupathi and colleagues asked participants to keep daily diaries for one-week and investigated what kind of memories were disclosed or kept silent in their daily lives. Contrary to one would expect, results revealed that 85% of transgressions and 83% of traumatic experiences were disclosed after some time. However, as Pasupathi (2009) explained these reported transgression and traumatic events were very trivial and usually interesting events to tell someone in daily life. In the second experiment, different methodology was employed, and participants were asked to generate four types of

memories: important told and not told, and unimportant told and not told events. In addition to some other measurements they also indicated the reasons for not telling undisclosed memories. Only important memories were analyzed in the study. The events described in disclosed memories were about achievement, while undisclosed memories were about transgressions, which was the opposite of the results of the first study. Moreover, the valence of undisclosed memories was more negative than positive. The reasons that participants reported for not disclosing memories were classified into three categories. These categories were social consequences, lack of social opportunity and avoidance. Social consequences motive included reasons like embarrassment, fear of getting in trouble, fear of upsetting others and fear of not to be supported by others. Second category was lack of opportunity to disclose and not being asked about the event. The last category was avoidance and main motive behind this category was “not to upset the self”. Motives for not telling transgressions were found to be related to social consequences.

### 1.2.3 Undisclosed memories and well-being

Research suggests that the relationship between undisclosed memories and well-being might be influenced by the cause or type of experience. For instance, trauma memories were usually neglected or avoided in society and victims could not find an opportunity to express their experiences and feelings (Enns, McNeilly, Corkery, & Gilbert, 1995), or these types of memories are too disturbing such that even the victim do not prefer to remember (Elson, 2001). Fivush (2010) named these types of silent memories self or other imposed silences and suggested that not disclosing these memories may lead to psychological and physical problems. On the other hand, when silence is in the form of

mutual or shared silence it may have healing effects. In these moments people share similar emotions and feel bonded (Fivush, 2010; Elson, 2001).

As mentioned above, inhibition theory asserts that the mechanism that leads to improvement in well-being is in fact the disclosure of inhibited or previously undisclosed memories. Therefore, undisclosed memories were also of interest to some expressive writing researchers. For instance, Greenberg and Stone (1992) compared health benefits of disclosing traumatic events by manipulating previous disclosure status (previously disclosed vs. previously undisclosed) and by checking for severity of the events (high vs. low). Physical and psychological health of participants were measured by Southern Methodist University Health Questionnaire, Positive and Negative Affect Schedule (PANAS), Pennebaker's (1982) Negative Mood and Physical Symptom Scales and number of doctor visits. Researchers hypothesized that the effects would be higher for undisclosed-trauma memory group than those of disclosed-trauma memory and control groups. However, the results showed the opposite effect. In terms of immediate effects, disclosed-trauma group showed increased physical symptom and negative mood and decreased positive mood compared to that of the undisclosed-trauma group. With regard to long term effects (2 months after the study) there was no difference between three groups in any health measures. The results also revealed that disclosed-traumatic and undisclosed-traumatic events did not differ in severity. When disclosure groups were collapsed across trauma severity and divided into severe and non-severe groups, no differences were found in immediate physical symptoms and negative mood. As for the long-term effects, severe trauma group reported fewer physical symptoms than non-severe and control groups, which did not differ. Three groups did not differ either in positive or negative mood. Content analysis of disclosed - undisclosed and severe – non-



severe traumatic events revealed differences only between severe - non-severe events, such that severe trauma participants were more likely to write about death and divorce-parental conflict, and less likely to write about physical-sexual abuse or attack. This study demonstrated that severity of the traumatic events might be a better predictor of health outcomes of disclosure than previous disclosure status.

In another study by Paez, Velasco and Gonzalez (1999), college students wrote either disclosed trauma, undisclosed trauma or recent social events for 20 minutes for 3 consecutive days. Results revealed that content of trauma events (e.g. death of someone, conflict with romantic partner or relatives, fight etc.) did not differ between disclosed and undisclosed events. Collapsed trauma group showed more immediate negative affect as measured by Positive Affect and Negative Affect Schedule (PANAS) than control group after writing narratives. However, there was no difference between disclosed and undisclosed trauma groups. Both groups reported decreased positive affect and increased physical symptoms (e.g. headache, increased heart rate, etc.) immediately after writing their memories. With regard to long-term effects, writing about traumatic events resulted in more positive mood and less negative affect evoked by remembering the event than writing about recent social events. Negative valence of the event, that is finding the writing experience upsetting and feeling worse, was lower especially in undisclosed trauma group after writing.

Although inhibition theory of expressive writing would predict that writing about undisclosed memories would be more beneficial, research showed that previously disclosed and undisclosed memories might not be that much different in terms of benefits to well-being upon disclosure. In the present study this theory was further investigated with previously undisclosed shame and guilt memories.

### 1.3 Shame and guilt

Regarding inhibition theory, Lepore and Greenberg (2002) suggested that traumas including shame or social stigma are the best candidates for disclosure since they are inhibited the most. Therefore, previously undisclosed shame and guilt memories were used in the present study to further assess the validity of this paradigm.

Shame and guilt are two emotions that have many characteristics in common. They both elicit feelings of responsibility, sense of violation of moral norms and wish to right things (Tangney et al., 1996). Moreover, the type of situations that elicit these emotions are usually the same (Tangney & Dearing, 2002). For instance, a case of cheating might induce feelings of shame for some people, but the very same experience might induce guilt for other people.

Although shame and guilt are usually used interchangeably because of these commonalities and people are not much aware of the differences between these emotions (Gilbert, & Andrews, 1998), there are key dimensions that differentiate shame and guilt.

One of the most important dimensions between these two emotions concerns the role of the self. According to Lewis (1971), although both shame and guilt center around negative appraisals, the focus is on the *self* in shame experiences and it is on the *things* done or undone in guilt experiences (as cited in Tangney et al., 1996). Moreover, Lewis states that while the motivation behind shame is to escape from the situation, the motivation behind guilt is to fix the situation. She further asserts that guilt is not as severe and destroying as shame is. Furthermore, since emphasis is not on the self, guilt inducing behaviors do not harm identity or self-concept.

Based on people's narratives of shame, guilt and embarrassment experiences Tangney et al. (1996) examined phenomenological properties, emotions associated with these three concepts, perceptions about the events and social contexts the events occurred. Since it is not the focus of this thesis, the results regarding embarrassment are not reported here. However, it should be noted that the clear differences emerged between embarrassment and shame and guilt rather than between shame and guilt. Shame and guilt most obviously differed in terms of phenomenological properties. Shame related events were perceived to be more intense and aversive than guilt. These events were also associated more with feelings of inferiority, isolation, physiological change and need to escape from the event. In contrast with the common view, shame and guilt was found to occur equally in social contexts (i.e. when audiences were present). However, in shame related events people focused more on others' thoughts of themselves rather than their own thoughts.

One of the controversial issues in guilt and shame research is the distinction between private or public experience of these emotions. As mentioned above Tangney et al. (1996) found that shame and guilt did not differ in terms of social contexts they are experienced. However, some other studies found that the issue might be more complex. In a series of studies Smith, Webster, Parrott and Eyre (2002) examined the difference between shame and guilt in terms of public exposure and event type (moral vs. nonmoral). In the first study, participants read three different wrongdoing (a moral cause) scenarios in which publicity and moral status of the event was manipulated. In some of the scenarios the actor had high moral beliefs and in others low moral beliefs. Similarly, in some of the scenarios the story ended by mentioning someone witnessed the wrongdoing (explicit public condition), mentioning someone who would not disapprove

of but did not directly witness the event (implicit public condition) or no mention of someone else (private condition). After reading each passage participants were asked how ashamed or guilty would they feel in these scenarios. Results revealed that participants felt more shame in explicit public conditions than implicit public and private conditions. They also felt more shame in high moral beliefs condition than low moral beliefs condition. The effect of high moral beliefs was more pronounced in private condition rather than implicit and explicit public conditions. In contrast to shame, feelings of guilt was not affected by publicity of the event, instead only low moral beliefs were associated with lower guilt. Interestingly, although shame was reported less in private and implicit public conditions than guilt, these two emotions were reported equally high in explicit public conditions. In the second study, participants read an account of uncontrollable attribute such as inferiority (a nonmoral cause) instead of a wrongdoing. In this type of account participants reported that shame would be higher than guilt. Moreover, although shame was higher than guilt both in private and public conditions, the difference was greater in public exposure condition. The first two studies clearly showed that manipulating publicity of the event affected feelings of shame, but had no effect on guilt. The third and fourth studies supported the results of the previous studies. That is, both examining literary accounts of shame and guilt (study 3) and asking personal experiences of participants (study 4) demonstrated that shame was more prevalent in public conditions than guilt. Smith et al. concluded that shame was related to both moral and nonmoral and publicly experienced events, while guilt was associated with moral and privately experienced events.

One primary distinction between shame and guilt is the responsibility dimension. While one has to admit responsibility for the negative event in order to feel guilty,

responsibility is not a must to feel ashamed (Izard, 1977; Bedford, & Hwang, 2003). After reviewing shame and guilt related studies, Miceli and Castelfranchi (2018) also concluded that responsibility of attitudes and behaviors was one of the prominent distinctions between guilt and shame. More specifically, they stated that while in guilt situations one feels responsible for his or her behaviors, goals and traits, in shame situations one does not focus on such responsibilities but on incongruity between actual and ideal self even when moral issues seem to be in question. From self-evaluation perspective, they claimed that a negative self-evaluation that results in guilt arises from feelings of responsibility from harmful behavior. The person should have some sort of control and power over the things to be able to feel guilty of wrongdoing. On the other hand, a negative self-evaluation of inadequacy, lacking necessary skills or attitudes, is associated with feelings of shame.

To sum up, guilt and shame are shown to be distinct emotions with regard to focus of evaluation (self vs. behavior), responsibility, intensity (severe vs. mild), motivation (hide vs. repair) and morality (moral vs. nonmoral).

Difference between shame and guilt was also observed in expressive writing studies. For instance, based on the premise that guilt feelings lead to reparative behavior while shame feelings lead to devaluing the self and risky behaviors, Rodriguez et al. (2015) investigated how guilt and shame would mediate the relationship between emotional disclosure about negative, positive or neutral alcohol drinking experience and reducing alcohol consumption intentions. In this study, contrary to classical emotional disclosure procedure, participants wrote their experiences only once and no writing duration was mentioned in the article. Participants completed Test of Self Conscious Affect scale to indicate guilt and shame related changes after writing. Results revealed

that there was a positive relation between guilt/shame and readiness to change, and negative relation between guilt/shame and drinking intentions. Writing about negative experiences but not positive experiences of drinking was related to intention of drinking less in the future. Moreover, guilt-reparative behavior subscale mediated the relationship between writing about negative drinking experience and readiness to change. However, shame did not have an effect on either readiness to change or intention to reduce drinking.

In another study Dickerson, Kemeny, Aziz, Kim and Fahey (2004) investigated the relationship between self-blame related emotions and cognitions and immunological changes (i.e. inflammatory response) by employing emotional disclosure method. Experimental group was instructed to write about a traumatic or upsetting event which participants blamed themselves about the event and that they did not share with other people in detail. Control group participants were instructed to write about their past 24 hours and objectively discuss only the facts. Mood and hormonal and immunological measures were collected before and after each writing session. Shame and guilt specifically were measured with guilt subscale of Derogatis Affects Balance Scale and this subscale was further divided into shame and guilt subscales. Results revealed that writing about self-blame indeed increased the feelings of shame and guilt from pre writing to post writing on each day. Moreover, participants who showed an increase in shame also showed an increase in immune activation (i.e. sTNF $\alpha$ RII, but not in cortisol or  $\beta$ 2M) which may lead to rheumatoid arthritis or cardiovascular disease in long run. However, guilt and other negative emotions were not related to any immunological changes. This study supported the idea that guilt and shame are two distinct emotions.

But more importantly, it demonstrated that specifically inducing shame but not guilt in participants through expressive writing has deleterious effects after disclosure.

#### 1.4 The Present study

Based on the aforementioned issues, the present study aims to investigate three different questions. The first question concerns how writing about previously disclosed and previously undisclosed memories affect psychological well-being. Expressive writing helps in the sense that it leads to relief from burden of keeping a memory as a secret and provides a non-judgmental ground for disclosure since it is a non-social modal of disclosure (Lepore, & Greenberg, 2002). According to inhibition theory writing about undisclosed memories should benefit people more. However, studies demonstrated conflicting results regarding the premises of this theory. While some studies found that writing about undisclosed event decreased negative affect (e.g. Paez et al. 1999), some others could not find any difference between disclosed and undisclosed memories in terms of health outcomes (e.g. Greenberg and Stone, 1992). These results demonstrate that further research is needed in order to understand whether emotional disclosure is indeed more effective with undisclosed memories. Therefore, the present study aims to clarify the contradictory results by testing both previously undisclosed and disclosed negative memories with a focus on shame and guilt emotions.

The second aim is to examine the potential differential effects of disclosure of shame and guilt memories on psychological well-being. Extensive research about these emotions revealed that shame and guilt are distinct emotions and they have different health consequences. As noted above, shame is more self-oriented and intense feeling

with motivations to avoid the situation. Therefore, confronting such an emotion should have better health consequences than guilt. Moreover, shame is experienced more in public situations than guilt (Smith et al., 2002). In light of these distinctions, we propose that participants in shame condition should benefit more from writing. Those participants' emotions will be more intense when their memories are made open to other people and writing should alleviate this high emotionality. On the other hand, since public exposure does not affect feelings of guilt, participants in that condition will not benefit from writing as much as participants in the shame condition. Moreover, since inducing shame has more harmful consequences than guilt, participants should benefit more from "letting go" this emotion. To our knowledge, this is the first study that compares undisclosed shame and guilt related memories with emotional disclosure paradigm.

The last aim of the present study is to identify predictors of change in well-being after disclosure. Cognitive processing theory of emotional disclosure asserts that meaning taken from experiences, insights gained are core elements of improving health upon expressive writing. Thus, one of the goals of the present study is to identify additional narrative characteristics that reflect cognitive processing and contribute to better health outcomes. The narrative characteristics differ according to types of memories recalled. For instance, King and Miner (2000) showed that trauma narratives lacked resolution compared to benefit of trauma narratives. Thus, it was expected that undisclosed and disclosed memories and shame and guilt memories would have different narrative characteristics and contribute to well-being at different levels.

Hypotheses of the present study are as follows:



1. Participants in the undisclosed memory condition are expected to show higher negative mood and physical symptoms immediately after writing than disclosed memory condition.
2. Participants who disclose shameful memories are expected to demonstrate higher immediate negative mood and physical symptoms after writing than participants who disclose guilt memories.
3. Immediate effects are expected to increase from first writing session to the last session for undisclosed and shame memory groups. No change is expected for disclosed and guilt memory groups.
4. With regard to long term effects of writing it is expected that undisclosed memory group will show higher improvement in well-being compared to disclosed memory group.
5. Participants who disclose shame memories are also expected to show an increase in well-being compared to participants who disclose guilt memories.
6. Since insight and causation related words are found to increase well-being, narrative characteristics such as meaning making, autonomy, growth and resolution are expected to predict an increase in well-being.

## CHAPTER 2

### METHOD

#### 2.1 Participants

Seventy-eight Boğaziçi University students participated the first session of the study and completed well-being measures. Data from seven participants were eliminated for various reasons: One participant did not want to continue the study after reading autobiographical memory instructions and one another participant could not continue with second and third writing sessions due to inappropriateness of his/her schedule. One other participant did not attend the last session. After inspection of narratives the data of four participants were excluded from the analyses since three of them were already disclosed while they were supposed to be previously undisclosed and one other participant told someone else's shameful experience rather than participant's own. Final sample consisted of 71 participants,  $M_{\text{age}} = 20.86$ ,  $SD = 1.33$ , Range = 19-24, with 50 females and 23 males. Two of the participants marked their gender as "other" and one participant as "prefer not to say".

Participants were randomly assigned to three groups: shame, guilt and control. There were 25 participants in the previously disclosed memory (control) condition (16 females, 7 males, 2 other,  $M_{\text{age}} = 20.80$ ,  $SD = 1.16$ ), 24 in the guilt condition (17 females, 7 males,  $M_{\text{age}} = 20.83$ ,  $SD = 1.61$ ) and 22 participants in the shame condition (14 females, 7 males, 1 other,  $M_{\text{age}} = 21$ ,  $SD = 1.23$ ). Complete demographic information of participants in each condition is presented at Appendix A.

## 2.2 Measures

### 2.2.1 Self-Compassion scale

Self-Compassion Scale (SCS) was developed by Neff (2003) in order to measure the construct of self-compassion which is defined as “being open to and moved by one’s own suffering, experiencing feelings of caring and kindness toward oneself, taking an understanding, nonjudgmental attitude toward one’s inadequacies and failures, and recognizing that one’s own experience is part of the common human experience” (pg. 224). Self-Compassion Scale was employed in this study to assess whether participants would develop negative emotions and how tolerant and understanding they would be to themselves upon recalling negative experiences.

The scale consists of 26 items that assess how people behave toward themselves when they face difficult situations (see Appendix B). Participants rate how often they act in manners described in the items on a 5-point Likert type scale where 1 indicates “almost never” and 5 indicates “almost always”. The original version of the scale includes 6 highly correlated subscales (i.e. “self-kindness”, “self-judgement”, “common humanity”, “isolation”, “mindfulness” and “over-identification”) that made it possible to measure single composite score of self-compassion. The scale’s internal consistency was .92 and test-retest reliability was .93 (Neff, 2003). Construct validity of the scale was demonstrated by the negative relationship with Self-Criticism subscale of Depressive Experiences Questionnaire ( $r = -.65$ ) and a positive relationship with Social-Connectedness scale ( $r = .41$ ). The scale was adapted to Turkish by Deniz, Kesici and Sümer (2008). Turkish version of the scale consists of 24 items (two items were dropped since their factor loadings were below .30) with single factor loading. Participants

receive a total score between 24 and 120. This version of the scale also had good internal consistency and test-retest reliability, .89 and .83, respectively. The scale was also established to have good criterion-related validity.

### 2.2.2 Negative mood regulation scale

Negative Mood Regulation Scale (NMRS) measures individuals' generalized expectancies to regulate their negative mood, that is, attempts to cope with stressful and difficult situations (Catanzaro, & Mearns, 1990). The scale consists of 30 items which are rated on 5-point Likert type scale ranging from "strong disagreement" (1) to "strong agreement" (5). Internal consistency of the scale ranged from .86 to .92 when tested with five different samples. The scale was also a valid measure of the construct demonstrated by its negative correlation with Rotter's Internal-External Locus of Control (-.35) and with Beck Depression Inventory (women  $r = -.39$ , men  $r = -.58$ ). The scale was adapted to Turkish by Bahadır (2006). Internal consistency of Turkish version was .88 and test-retest reliability was .85. The scale also had good criterion related validity when assessed with the same measures mentioned above. -.48 and -.39, respectively. While the original form had three factor model (i.e. Cognitive, Behavioral and General), Turkish version was best explained with four factor model (i.e. Moving Away from Negative Feelings, Active Effort, Confrontation and Social Support). The total NMR score was calculated by adding up the individual scores after reverse scoring negative items. Possible scores range from 30 to 150. Higher scores indicate higher expectancy of coping with negative mood (see Appendix C).

### 2.2.3 Positive affect and negative affect schedule

Positive Affect and Negative Affect Schedule (PANAS), developed by Watson, Clark and Tellegen (1988) is a mood scale that measures affect on two broad dimensions; positive and negative. The scale can be used to assess mood in different time scales. In the present study, it was used in order to assess both immediate mood by asking for last 1-2 days and general mood by asking mood “in general”. The scale includes 10 positive affect (PA) and 10 negative affect (NA) adjectives that describes these two constructs. Participants are instructed to indicate how they felt during last 1-2 days and in general on a 5-point Likert type scale where 1 refers to “very slightly or not at all” and 5 refers to “extremely”. The scoring of the scales is computed by adding up the scores for each subscale separately. Scores range from 10 to 50. Higher scores on PA scale represents higher levels of positive affect, and lower scores on NA scale represents lower levels of negative affect. The reliability and validity tests revealed good internal consistency, test-retest reliability, convergent validity and discriminant validity. The Turkish adaptation of scale was done by Gençöz (2000). Reliability and validity studies of the Turkish version demonstrated similar pattern as the original version (see Appendix D).

### 2.2.4 Centrality of events scale

This scale was developed by Berntsen and Rubin (2006) in order to measure how stressful life events are integrated into one’s identity and life and become reference or turning points. The short version of the scale consists of 7 items and its reliability was .88. Turkish adaptation of the scale had one-factor structure and good reliability and validity (Boyacığlu & Aktaş, 2018) (see Appendix E).

### 2.2.5 Psychological mood and physical symptoms

Psychological mood and physical symptoms of the participants were assessed with six statements about psychological mood (e.g. upset, angry, tired etc.) and six statements about physical symptoms (e.g. headache, nausea, racing heart etc.) (see Appendix F for full list of symptoms). These items were adapted from Pennebaker's Negative Mood and Physical Symptoms Scale that were used in previous studies (e.g. Pennebaker and Beall, 1986; Greenberg & Stone, 1992). Participants rated how intensely they felt these items on a 7-point Likert type scale where 1 indicated "not at all" and 7 indicated "extremely". Mean of ratings were computed separately to construct average psychological mood and physical symptom scores.

### 2.2.6 Demographic information

Participants responded to demographic information questions, such as age, gender, income etc. Full list of questions can be found in Appendix G.

## 2.3 Autobiographical memory task

Participants' autobiographical memories were collected on three separate days. One group recalled undisclosed guilt memory, one group recalled undisclosed shame memory, and one group recalled disclosed negative memory, and typed their memories on computer. They were instructed to write about the same event during writing sessions but to focus on different aspects on each day. On the first day, they described the event as objectively as possible. On the second day, they focused on emotions and thoughts about the event. Finally, on the third day, they wrote about anything that came to their mind related to the event (see Appendix H).

### 2.3.1 Coding of narratives

Narratives were coded for characteristics that might differentiate between guilt and shame memories or predict change in well-being.

#### 2.3.1.1 Content

The content of the memories was coded according to Manual for Coding Events in Self-Defining Memories by Thorne and McLean (2001). According to this manual, events are classified into seven categories; life threatening events, recreation/exploration, relationship, achievement/mastery, guilt/shame, drug/alcohol/tobacco use and events not classifiable which do not fall into any of the former categories. Since the primary interest in the present study was already on shame and guilt memories, this category was not included in our coding. If a narrative was coded as relationship in the first round of content coding, it was further coded for conflict and relationship type, such as separation and intimacy/closeness, following the Manual for Coding Relationship Narratives (McLean and Thorne, 2001).

#### 2.3.1.2 Situation types

Situation types (Silfver, 2007) were coded in order to classify situations that cause one to feel guilty or ashamed. In essence, they serve the same purpose as content codings developed by McLean and Thorne (2001). However, this coding scheme was developed specifically after examination of guilt and shame memories; thus, they were expected to capture more relevant content categories for these types of memories. This coding scheme had four categories. Narratives were coded as interpersonal situations if guilt and shame emotions were caused by not being a good friend, parent or partner, or not

being nice to other people in general. Achievement or performance was coded for guilt and shame feelings stemmed from not working or studying hard enough, not struggling to achieve a goal. These types of behaviors especially cause feelings of inadequacy and discomfort for the person. Narratives were coded as norm violations if they referred to any behavior that was against the societal or religious norms even if it was not directly caused harm to the person. Finally, narratives were coded as victimization if the person felt guilt or shame because of being a victim of physical, psychological or sexual harassment, or suffered from an illness.

#### 2.3.1.3 Coping strategies

This coding scheme was also adapted from Silfver (2007) and it was developed to classify coping strategies specifically used in guilt and shame memories. Coping strategies refer to any method people adopt in order to manage a difficult situation. The categories were reparative behavior, chronic rumination and defenses. If the narrative did not imply any coping strategy, it was coded as not applicable. Reparative behavior referred to any action taken in order to correct the behavior that caused guilt or shame. The examples include apologizing for a wrongdoing, prosocial behaviors, or intending to behave differently when encounter with similar situations in the future. Chronic rumination referred to cases when the person was continuing to think about the event and the emotions and thoughts related to the event were still disturbing. Defenses were the cases when the participant evaded responsibility, avoided thinking about the event or underestimate the importance of the event.



#### 2.3.1.4 Meaning making

Meaning making is the process of understanding and learning something from the event. In the present study the coding system developed by McLean and Thorne (2001) was used in order to determine the meaning derived from the events. This coding system includes two categories: lesson learning and gaining insight. If participant clearly states that he or she has learned a specific lesson after the event, the narrative was coded as lesson learning. If the participant implied the event had substantial effect and that he or she has gained insight which also applied to other areas of life and/or self and not just the specific event, the narrative was coded as gaining insight. If the participant did not mention any meaning making, the narrative was coded as not applicable.

#### 2.3.1.5 Autonomy

Autonomy refers to the role of participants during the events they reported. Following the procedure used by Mutlutürk and Tekcan (2016), autonomy was coded as present, absent or ambiguous according to participants' references on having some sort of control in starting, changing, maintaining or ending the event.

#### 2.3.1.6 Growth

Growth refers to the lasting impact of the event on the person or more broadly the person's interpretation of the meaning of the event (Mansfield, Pasupathi, & McLean, 2015). Growth coding scheme was adopted from Mansfield, McLean and Lilgendahl (2010). The impact of the event might be in the form of changes in characteristics, lessons learned etc. Growth might be either growth promoting or growth limiting. Growth promoting refers to events that have positive and healthy impacts and useful

lessons to take from for the actor while growth limiting refers to events that have negative and unhealthy impacts on the actor. Five-point rating was used to determine participants' standing on growth. A rating of one was given to growth limiting events which profoundly affected the person in negative and unhealthy ways and blocked the personal growth. A rating of two was given for somewhat growth limiting events in which participants referred to negative but not so much profound impacts. If the interpretations included both positive and negative impacts the event was coded as neutral. Events were coded as growth promoting if they had positive and healthy effects on participants, such that the participants discovered new and strong aspects of their selves. A rating of 4 was given for mild growth promoting connections and a rating of 5 was given for very strong growth promoting connections.

#### 2.3.1.7 Resolution

Resolution refers to the extent that the person has formed a coherent and positive conclusion about an experience which is emotionally resolved in the present. The closure of an event implies that the event has finished or was completed in the past, and is not disturbing for the person anymore. Resolution was coded following the Manual for Coding Complexity and Resolution in Trauma and Transgression Narratives (Mansfield, & McLean, 2008). Narratives were analyzed for signs of closure, completeness and lack of distress in the present caused by the event. The level of resolution was coded on a scale from one to five. When there was at least one explicit statement of no resolution a score of one was given. A score of two was given for narratives when there was no explicit statement of resolution and the event was still affecting the person, but some amount of resolution has started being processed by the

person. If there were no reference to resolution or the person mentioned mixed indicators of resolution a score of three was given. A score of four indicated that the person is very close to resolution, but there are some ongoing influences, too and the event is not totally closed. Finally, a score of five indicated a complete resolution, and given for explicit statements and/or implicit messages that convey the information that the event was in the past and is closed for the person.

## 2.4 Procedure

All participants were tested in individual cubicles in Cognitive Processes Laboratory at Boğaziçi University. Participants signed consent forms before starting the experiment. Then they were randomly assigned to one of the three conditions: guilt, shame or control. The study consisted of four sessions, which were conducted on four separate days. First session of the experiment was always conducted on Mondays and the second and the third sessions were completed by the end of the same week. The second and the third sessions were arranged at participants' and experimenter's convenience. The fourth session was conducted exactly one month after the third session.

Participants were instructed to write about the same memory for each day in order to enable them to form a coherent story, process the event and gain insight.

The procedure for the three sessions were as follows:

### Session 1:

In the first half of the first session, participants were seated in front of a computer and asked to fill out well-being measures and demographic information questions first. In the second half of the first session, autobiographical memory task was given. According to the condition participants were assigned, instructions for the task

was explained verbally. They also read more detailed instructions on the computer screen once the experiment started.

For the first writing session, participants were instructed to focus on defining the event as objectively as possible.

Participants in the guilt condition read the following instructions:

Some negative personal memories might lead to feelings of guilt and this kind of feelings might restrain disclosure of these memories to other people. We would like you to write about an event that you did not share with anybody in the past because of the feelings of guilt. For 3 days, write about your feelings and thoughts about the event as honestly and openly as possible. Please try to let yourself feel free by releasing yourself as you type. Write everything in your mind uncensored and without judgment. Once you start writing do not worry about spelling and continue to write.

The instructions for participants in the shame condition was:

Sometimes people might feel ashamed because of the negative personal memories, think that people will not understand or will misjudge them. Such reaction that can come from the listeners might prevent these memories from being shared with other people. We would like you to write about an event that you did not share with anybody in the past because of the feelings of shame or fear of misunderstanding or misjudgment. For 3 days, write about your feelings and thoughts about the event as honestly and openly as possible. Please try to let yourself feel free by releasing yourself as you type. Write everything in your mind uncensored and without judgment. Once you start writing do not worry about spelling and continue to write.

The instructions for participants in the control condition was:

People may face various difficulties throughout their lives. Sometimes, they might not want to share these difficulties with other people and sometimes they might want to keep these difficulties to themselves. We would like you to write about a difficult event or situation you experienced for any reason and that you previously shared with other people. For 3 days, write about your feelings and thoughts about the event as honestly and openly as possible. Please try to let yourself feel free by releasing yourself as you type. Write everything in your mind uncensored and without judgment. Once you start writing do not worry about spelling and continue to write.

Participants also read sample questions that they might think of while writing. For the first, session sample questions included “Where did the event take place?” and “How long did the event last?”. After participants indicated that they were ready to write, pre-set duration of 20 min for writing the memories started. When the time was finished, participants were presented with Centrality of Events Scale, psychological mood and physical symptom items and memory quality questions (see Appendix I) and indicated the date of the event and provided opinion on the experience of writing. First session lasted about 50 minutes.

#### Session 2:

For the second writing session, participants were told to focus on emotions and thoughts surrounding the event and how it affected their relationship with family or friends.

All groups read the same instruction for the second session:

Today what you are asked to do is to continue to write about the event you have experienced. You are asked again to let yourself go and write sincerely. Unlike the first

day, today you are asked to focus on the feelings and thoughts that the event has evoked rather than the event itself.

The sample questions that they might think of while writing included “What did I feel when I was experiencing this?” and “What did it change in my life?”. After writing their autobiographical memories, they again answered CES, psychological and physical symptom items and questions about memory quality and writing experience. Second session lasted about 25 minutes.

### Session 3:

For the last writing session, participants were free to write anything that come to their mind about the event.

All groups read the same instruction for the third session:

Today what you are asked to do is to continue to write about the event you have experienced. You are asked again to let yourself go and write sincerely. Today focus on the content of the event as well as the feelings and thoughts it has evoked. Try to mention the details, feelings and thoughts regarding the event that you did not mention on the previous days. As you can remember from the previous days, the following questions only aim to give you an idea.

Sample questions for third session included “How did it affect the relationship between me and my family or my friends?” and “What marks has this event left in my life today?”. After writing their autobiographical memories, they again answered CES, psychological and physical symptom items and questions about memory quality and writing experience.

In the last writing session participants answered an additional short questionnaire assessing their general attitudes and mood towards the whole writing experience (see Appnedix J). Third session lasted about 25 minutes.

#### Session 4:

Exactly one month after the last writing session, participants were invited to laboratory for the fourth time to fill the same well-being measures they filled out at the first session. Nine of the participants completed the last session online. The fourth session lasted about 20 minutes.

Well-being scales (i.e. SCS, NMRS and PANAS) and demographic information questions were administered with Google Forms. Autobiographical memory task and follow-up questions were administered by using E-prime 2.0 software (Psychology Software Tools, Pittsburgh, PA). Institutional review board approval was obtained from The Ethics Committee for Master and PhD Theses in Social Sciences and Humanities at Boğaziçi University. Participants were debriefed when all data collection was finished.

## CHAPTER 3

### RESULTS

In this section, I first present findings regarding memory characteristics associated with three types of memories. Second, I examine the immediate effects of writing on psychological mood and physical symptoms; and on well-being in the one-month follow up. Lastly, I present the findings regarding narrative characteristics of the memories and their effects on predicting well-being.

Data were screened for univariate and multivariate outliers. There were two multivariate outliers in “first time sharing” and physical symptoms, and one multivariate outlier in “frequency of thinking” and PANAS recent NA scores. Outliers were removed before continuing with further analyses and the analyses were conducted with 69 and 70 participants, respectively for these measures.

#### 3.1 Manipulation check

Two raters coded 21% of undisclosed guilt and shame memories for emotion and disclosure status as manipulation check. For this manipulation check, raters examined any references to emotion and disclosure in the narrative. More specifically, they tracked down any mention of “guilt” or “shame” related words in the narratives. According to presence of these words, narratives were coded in one of the following categories: guilt, shame, both or none. For disclosure status, raters examined participants’ statements about having disclosed or not beforehand. Disclosure status check included categories of completely undisclosed, disclosed to few people, partially disclosed, distorted disclosure and not applicable. Narratives were coded as “completely undisclosed” if the participant



mentioned that he or she has never told the memory before. They were coded as “disclosed to few people” if the participant mentioned telling the memory only to one or two people. If only certain parts of the memories were disclosed to other people, they were coded as “partially disclosed”. If the memories were previously disclosed by changing some parts of the event, they were coded as “distorted disclosure”. Finally, narratives were coded as “not applicable” if they were in disclosed memory category or if no reference was given to disclosure status. The agreement between raters was Cohen’s  $\kappa = .300$  for emotion coding and  $\kappa = .774$  for disclosure status. Disagreements were resolved by discussion.

Chi-square test of independence was used in order to check whether there were associations between conditions that participants were assigned and emotion and disclosure status codings. These tests allowed us to examine whether participants complied with their condition instructions. The categories “both” and “none” were excluded from the analysis of emotion since only one event was coded as “none” and 50% of the cells had expected count less than 5. A chi-square test of independence between emotion and condition revealed a significant relationship, ( $\chi^2 (1, N = 36) = 16.20, p < .001$ , Cramer’s  $V = .67$ ). In the guilt condition 88.9% of memories were coded as guilt and 11.1% as shame by the raters. In the shame condition 77.8% of the memories were also coded as shame and 22.2% were coded as guilt by the raters. These results demonstrated that our instructions were successful at triggering shame and guilt memories.

For disclosure status, “disclosed to few people”, “partially disclosed” and “distorted disclosure” categories were collapsed as “other” category because three of the cells had zero observation and two cells had only one observation. A chi-square test of

independence was conducted to examine the relationship between participants' assigned conditions and raters' inspection of references to disclosure. The analysis revealed significant association,  $\chi^2 (2, N = 71) = 40.68, p < .001$ , Cramer's  $V = .76$ . In the disclosed memory condition 96% of memories were coded as not applicable by raters, which means they were already disclosed. In the undisclosed memory condition 59% of the memories were coded as completely undisclosed and 24% were coded in "other" category. That is, 59% of the participants disclosed autobiographical memories that they had never told anyone before and 24% of the participants either told only some parts of the memory in the past, told only few people or disclosed by changing the story. These results showed that our instructions were somehow successful at revealing completely undisclosed memories.

### 3.2 Memory characteristics

After each day of writing, participants filled out the Centrality of Events Scale (CES), answered memory quality questions and indicated the date of the memory and how easy it was to retrieve the memory. Results regarding these information and length of the narratives are reported in following sections.

#### 3.2.1 Centrality of events

A 3 (writing session: day 1, day 2 and day 3) X 3 (condition: control, guilt and shame) repeated measures ANOVA was conducted to examine the differences in participants' CES ratings across the writing sessions. Means and standard deviations of CES scores in each condition and for each writing session are reported in Table 1. Participants' ratings of centrality did not change across writing sessions [ $F (1.493, 101.538) = .15, p = .80$ ,

$MSE = .27$ ], but there was main effect of condition,  $F(2, 68) = 3.46, p < .05, MSE = 2.99, \eta_p^2 = .09$ . LSD Post Hoc analysis revealed that control group participants reported higher centrality of events ( $M = 3.34, SE = .20$ ) than previously undisclosed guilt ( $M = 2.66, SE = .20$ ) and shame ( $M = 2.71, SE = .21$ ) conditions. There was no difference between guilt and shame conditions. There was also no interaction,  $F(2.985, 101.538) = 1.83, p = .15, MSE = .27$ .

Table 1. Means and Standard Deviations of CES Scores

	Shame	Guilt	Control
	Mean (SD)	Mean (SD)	Mean (SD)
Day 1 CES Score	2.60 (.91)	2.63 (1.20)	3.44 (1.06)
Day 2 CES Score	2.70 (.94)	2.69 (1.06)	3.39 (1.14)
Day 3 CES Score	2.82 (.85)	2.67 (1.12)	3.18 (1.18)
Average of 3 Days	2.71 (.82)	2.66 (1.05)	3.34 (1.08)

### 3.2.2 Memory Quality Questions

A 3 (writing session: day 1, day 2 and day 3) X 3 (condition: control, guilt and shame) repeated measures ANOVA was conducted for each memory quality and effects question. For analyses where Mauchly's Test of Sphericity indicated that assumption was violated, Greenhouse-Geisser correction was used. Means and standard deviations of memory quality questions in each condition and for each writing session are displayed in Appendix K. There were 10 variables that assessed memory quality. Only significant effects are reported here.

For "significance" variable main effects of writing session,  $F(1.709, 116.192) = .56, p = .55, MSE = .90$  and condition,  $F(2, 68) = .67, p = .52, MSE = 3.66$  were not

significant. However, there was a significant interaction,  $F(3.417, 116.192) = 3.26, p < .05, MSE = .90, \eta_p^2 = .09$ . Simple effects analysis revealed that participants in the control group rated their memories as more important and meaningful ( $M = 6.00, SE = .28$ ) than participants in the shame group at first writing session ( $M = 5.09, SE = .30$ ),  $p < .05$ .

There was main effect of writing session for reporting “deep feelings”,  $F(1.811, 123.124) = 4.12, p < .05, MSE = 1.23, \eta_p^2 = .06$ . Participants expressed deeper feelings at the second writing session than at the first writing session ( $M = 5.18, SE = .17$ ),  $p < .05$ , which makes sense for second day instructions prompted participants to focus on emotions and thoughts. Main effect of condition ( $F(2, 68) = 1.56, p = .22, MSE = 2.92$ ) and interaction [ $F(3.621, 123.124) = .67, p = .60, MSE = .23$ ] were not significant.

For “first time sharing” variable there were main effects of both condition ( $F(2, 66) = 14.80, p < .001, MSE = 4.20, \eta_p^2 = .31$ ) and writing session ( $F(1.685, 111.196) = 6.65, p < .001, MSE = 1.59, \eta_p^2 = .09$ ). Pairwise comparisons revealed that participants both in guilt ( $M = 5.25, SE = .25$ ) and shame ( $M = 6.08, SE = .26$ ) conditions wrote about emotions and thoughts that they had not share before more than participants in the control condition ( $M = 4.19, SE = .24$ ),  $p < .01$  and  $p < .001$ , respectively. Moreover, participants in the shame condition disclosed marginally more emotions and thoughts than participants in the guilt condition,  $p = .07$ . Participants also disclosed these emotions and thoughts more at the second session ( $M = 5.54, SE = .16$ ) than the first ( $M = 4.82, SE = .20$ ), and third sessions ( $M = 5.15, SE = .19$ ),  $p < .01$  and  $p = .06$ , respectively. Interaction of writing session and condition was not significant,  $F(3.370, 111.196) = .60, MSE = 1.59, p = .63$ .

For “wish to have shared in the past” there was main effect of writing session,  $F(1.771, 120.455) = 4.64, p < .05, MSE = 2.53, \eta_p^2 = .06$ . Participants indicated that they

wished to have shared their second day narratives in the past ( $M = 4.36$ ,  $SE = .24$ ) more than first day narratives ( $M = 3.60$ ,  $SE = .27$ ). Condition main effect [ $F(2, 68) = .11$ ,  $p = .90$ ,  $MSE = 8.52$ ] and writing session-condition interaction [ $F(3.543, 120.455) = .84$ ,  $p = .49$ ,  $MSE = 2.53$ ] were not significant.

For “refrained from sharing in the past” variable there was main effect of condition,  $F(2, 68) = 6.88$ ,  $p < .01$ ,  $MSE = 7.69$ ,  $\eta_p^2 = .17$ . and main effect of writing session,  $F(2, 136) = 5.97$ ,  $p < .01$ ,  $MSE = 1.24$ ,  $\eta_p^2 = .08$ . Participants in the guilt ( $M = 4.63$ ,  $SE = .33$ ) and shame ( $M = 5.15$ ,  $SE = .34$ ) conditions held back from sharing their memories more than participants in the control condition ( $M = 3.48$ ,  $SE = .32$ ),  $p < .05$  and  $p < .01$ , respectively. Participants also reported that they refrained sharing about the things they wrote at the first session ( $M = 4.70$ ,  $SE = .23$ ) and second session ( $M = 4.50$ ,  $SE = .21$ ) more than about the things they wrote at the third session ( $M = 4.06$ ,  $SE = .22$ ),  $p < .01$  and  $p < .05$ , respectively. Interaction of writing session and condition was not significant,  $F(4, 136) = .29$ ,  $p = .88$ ,  $MSE = 1.24$ .

For “morality” there was main effect of condition  $F(2, 68) = 7.47$ ,  $p < .01$ ,  $MSE = 9.05$ ,  $\eta_p^2 = .18$  and writing session  $F(1.789, 121.652) = 8.06$ ,  $p < .01$ ,  $MSE = 1.71$ ,  $\eta_p^2 = .11$ . Memories of participants in control condition were morally righter ( $M = 4.43$ ,  $SE = .35$ ) than memories of participants in guilt condition ( $M = 2.53$ ,  $SE = .36$ ),  $p < .01$ . Moreover, participants in the shame condition rated their memories ( $M = 3.74$ ,  $SE = .37$ ) marginally higher on morality than participants in guilt condition, too,  $p = .06$ . There was no difference between control and shame conditions. In terms of writing session, participants evaluations of morality of the events increased from first ( $M = 3.10$ ,  $SE = .25$ ) to second ( $M = 3.68$ ,  $SE = .24$ ) and third writing sessions ( $M = 3.91$ ,  $SE = .24$ ),  $p < .05$  and  $p < .01$ , respectively. However, second and third session evaluations did not

differ. That is, after the first session of revealing their memories they judged them morally righter. Interaction was not significant,  $F(3.578, 121.652) = .15, p = .95, MSE = 1.71$ .

Finally, there was main effect of writing session on “frequency of thinking about the event”,  $F(2, 134) = 7.70, p < .01, MSE = .26, \eta_p^2 = .10$ . Participants reported higher frequency of thinking about first day narratives ( $M = 2.65, SE = .14$ ) than second ( $M = 2.35, SE = .13$ ) and third day narratives ( $M = 2.36, SE = .13$ ),  $p < .01$  and  $p < .05$ , respectively. Main effect of condition,  $F(2, 67) = 1.45, p = .24, MSE = 3.27$ , and interaction were not significant,  $F(4, 134) = .11, p = .98, MSE = .27$ .

To sum up, participants in the guilt and shame conditions reported that in the experiment, they have shared their emotions and thoughts that they had not shared before more than participants in the control condition. They also reported that they held back from sharing these memories in the past more than control group. These results also demonstrate that our manipulation was successful.

Shame and disclosed negative memories were judged to be more immoral than guilt memories, but shame and disclosed negative memories did not differ. Finally, disclosed negative memories were more significant than shame memories at first writing session. On the other hand, disclosed negative, undisclosed guilt and shame memories were equally important and meaningful in overall, equally personal, reflected comparable levels of deep emotions, desire to had been shared the memory in the past, positive and negative changes caused by the event, and frequency of thinking about the event.

Main effect of writing session demonstrated that participants’ perception of memories changed through writing sessions. They expressed deeper emotions and

perceived their memories less immoral as they continued to write about their memories. They also reported that they held back from sharing these memories less and thought about the events less, but their desire to have shared them in the past increased as they wrote.

### 3.2.3 Age of event

One-way ANOVA was conducted to examine the differences between conditions in terms of age of events. Results revealed significant difference between conditions,  $F(2, 68) = 3.20, p < .05, MSE = 12.36, \eta_p^2 = .09$ . Disclosed negative memories ( $M_{\text{years}} = 2.96, SD = 3.38$ ) were more recent than guilt memories ( $M_{\text{years}} = 5.46, SD = 3.54$ ), but there were no other differences (Shame  $M_{\text{years}} = 4.59, SD = 3.63$ ).

### 3.2.4 Narrative length

Length was measured by counting number of words in narratives. Means and standard deviations of number of words in each condition and for each writing session are displayed in Table 2.

A 3 (writing session: day 1, day 2 and day 3) X 3 (condition: control, guilt and shame) repeated measures ANOVA was conducted to examine the differences in memory length between groups across writing sessions. There was only a main effect of writing session  $F(1.768, 120.190) = 4.27, p < .05, MSE = 7071.49, \eta_p^2 = .06$ .

Participants wrote longer memories at the second writing session ( $M = 382.96, SE = 17.66$ ) than the first writing session ( $M = 346.17, SE = 15.76$ ),  $p < .05$ . There was no other difference between conditions in memory length.

Table 2. Means and Standard Deviations for Number of Words

	Shame	Guilt	Control
	Mean (SD)	Mean (SD)	Mean (SD)
Day 1	326.86 (159.10)	311.29 (109.47)	400.36 (127.34)
Day 2	386.91 (150.16)	352.88 (149.68)	409.08 (146.129)
Day 3	379.41 (161.31)	354.92 (131.02)	391.60 (188.78)
Average of 3 days	364.39 (73.35)	339.70 (58.62)	400.35 (73.77)

### 3.2.5 Ease of retrieval

Participants indicated ease of retrieving the memories. Eighty-four percent of the participants in the control condition, 66.7% in the guilt condition and 81.8% in the shame condition reported that it was easy and fast to recall the memory. Chi-square analysis revealed that there was no difference among conditions in ease of retrieval  $\chi^2 (2, N = 71) = 2.45, p = .29$ .

### 3.3 Immediate effects of writing

Participants rated six psychological and six physical states that described their current well-being immediately after each writing. Average of six descriptors was calculated in order to construct a psychological mood and a physical symptom score. Higher scores indicated more negative psychological mood and physical symptoms.

First, one-way ANCOVAs with recent PANAS PA and NA scores as covariates were conducted in order to compare psychological mood and physical symptoms of the groups after each session. While the effect of PANAS PA was not significant ( $ps > .05$ ), PANAS NA was significant for psychological mood [1<sup>st</sup> session:  $F (1, 66) = 4.18, p <$



.05; 2<sup>nd</sup> session:  $F(1, 66) = 10.70, p < .05$ ; 3<sup>rd</sup> session:  $F(1, 66) = 3.57, p = .06$ ]. For physical symptoms, the effect of PANAS PA was not significant and the effect of PANAS NA was significant only at the second session [ $F(1, 64) = 6.73, p < .05$ ]. At the first session and third session, groups did not differ from each other regarding psychological mood,  $ps > .05$ . However, at the second session participants both in guilt ( $M = 3.81, SE = .22$ ) and shame ( $M = 3.95, SE = .23$ ) conditions reported higher negative mood than participants in the control group ( $M = 3.08, SE = .21$ ),  $F(2, 66) = 4.69, p < .05, MSE = 1.12, \eta_p^2 = .12$ . Guilt and shame conditions did not differ from each other. There was no difference between three conditions in terms of physical symptoms, all  $ps > .05$ . Planned contrasts revealed that for psychological mood control group differed from guilt and shame groups at first session,  $t(66) = 2.14, p = .04$ , second session,  $t(66) = 3.04, p = .00$ , and third session  $t(66) = 1.86, p = .07$ . However, guilt and shame groups did not differ from each other, at first,  $t(66) = .33, p = .75$ , second,  $t(66) = .20, p = .67$  and third sessions,  $t(66) = .53, p = .59$ . For physical symptoms groups did not differ at any session except marginal difference between control and guilt-shame group at third session,  $t(66) = 1.87, p = .07$ .

Second, a 3 (writing session: day 1, day 2 and day 3) X 3 (condition: control, guilt and shame) repeated measures ANOVA was conducted to examine the changes in immediate psychological and physical reactions to writing. For psychological mood there was main effect of both writing sessions,  $F(1.799, 122.298) = 28.63, p < .001, MSE = .57, \eta_p^2 = .27$  and condition,  $F(2, 68) = 3.68, p < .05, MSE = 3.06, \eta_p^2 = .10$ . Pairwise comparisons revealed that participants reported less negative mood at day 3 ( $M = 3.28, SE = .16$ ) than day 2 ( $M = 3.61, SE = .13$ ),  $p < .05$ , and less negative mood at day 2 than day 1 ( $M = 4.18, SE = .12$ ),  $p < .001$ . That is, negative psychological mood

decreased, and participants found writing less disturbing as they kept writing across days. In terms of condition, pairwise comparisons yielded marginal differences. Participants in the guilt ( $M = 3.93$ ,  $SE = .21$ ) and shame ( $M = 3.90$ ,  $SE = .22$ ) conditions reported higher levels of negative mood than control group ( $M = 3.24$ ,  $SE = .20$ ),  $p = .06$  and  $p = .08$ , respectively. Guilt and shame groups did not differ.

For physical symptoms there was only main effect of writing session  $F(2, 136) = 12.28$ ,  $p < .001$ ,  $MSE = .27$ ,  $\eta_p^2 = .15$ . Pairwise comparisons revealed that participants reported higher negative physical symptoms after writing at day 1 ( $M = 1.98$ ,  $SE = .11$ ) than day 2 ( $M = 1.62$ ,  $SE = .11$ ) and day 3 ( $M = 1.57$ ,  $SE = .11$ ), both  $ps = .00$ . Physical symptoms did not differ between day 2 and day 3.

Means and standard deviations of psychological mood and physical symptom scores in each condition and for each writing session are displayed in Table 3.

Table 3. Means and Standard Deviations for Immediate Psychological Mood and Physical Symptoms

		Shame	Guilt	Control
		Mean (SD)	Mean (SD)	Mean (SD)
Psychological mood	Day 1	4.25 (.94)	4.48 (.92)	3.81 (1.15)
	Day 2	3.92 (.94)	3.86 (1.19)	3.05 (1.22)
	Day3	3.54 (1.46)	3.45 (1.36)	2.85 (1.20)
	Average of 3 Days	3.90 (1.01)	3.93 (.95)	3.24 (1.06)
Physical symptom	Day 1	2.12 (.96)	2.07 (1.07)	1.76 (.77)
	Day 2	1.84 (1.23)	1.57 (.72)	1.43 (.63)
	Day3	1.76 (1.19)	1.73 (1.04)	1.23 (.50)
	Average of 3 Days	1.91 (1.01)	1.79 (.82)	1.48 (.57)

### 3.4 Long-term effects of writing

In order to test whether disclosure caused any change in well-being after one month, participants completed the same well-being measures that were administered prior to writing sessions. Analyses on memory characteristics and immediate health effects of writing demonstrated that shame and guilt conditions have comparable characteristics and health effects. Therefore, for the analysis of long-term effects of writing, guilt and shame conditions were collapsed and the analysis was conducted between disclosed and undisclosed memories. Means and standard deviations of well-being scales are presented at Table 4.

A 2 (time: pretest, posttest) X 2 (disclosure status: disclosed, undisclosed) repeated measures ANCOVA with “frequency of thinking about the event” as covariate was conducted with each well-being measure separately.

Results revealed that neither time nor disclosure status affected participants’ Negative Mood Regulation scores,  $F(1, 68) = .20, p = .66, MSE = 44.99$ , and  $F(1, 68) = .61, p = .44, MSE = 553.69$ , respectively. There was also no interaction,  $F(1, 68) = 2.43, p = .12, MSE = 44.99$ . Similarly, there was no effect of time, disclosure status or interaction in Self-Compassion scores,  $F_s < 1$ .

For PANAS recent PA scores there was only main effect of time  $F(1, 68) = 5.23, p < .05, MSE = 42.15, \eta_p^2 = .07$ . However, pairwise comparison with Bonferroni correction did not yield significant difference between pretest ( $M = 30.67, SE = 1.07$ ) and posttest scores ( $M = 29.91, SE = 1.07$ ). Condition main effect and interaction were not significant,  $F(1, 68) = .64, p = .43, MSE = 105.52$ , and  $F(1, 68) = .11, p = .74, MSE = 42.22$ , respectively.

For PANAS recent NA scores there was main effect of disclosure status,  $F(1, 67) = 5.58, p < .05, MSE = 54.76, \eta_p^2 = .08$ . Pairwise comparisons revealed that participants in the undisclosed memory condition ( $M = 22.82, SE = .78$ ) experienced higher negative affect than participants in the disclosed memory condition ( $M = 19.70, SE = 1.06$ ). There was no effect of time  $F(1, 67) = 1.38, p = .24, MSE = 33.38$ , and interaction  $F(1, 67) = 2.45, p = .12, MSE = 33.38$ .

Table 4. Means and Standard Deviations of Well-Being Scales

	Pre-test			Post-test		
	Shame	Guilt	Control	Shame	Guilt	Control
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Negative Mood	104.27	97.67	100.16	99.91	91.50	98.24
Regulation	(15.69)	(21.97)	(16.22)	(16.16)	(21.74)	(16.78)
Self-Compassion	73.82	65.92	72.20	70.36	64.79	69.80
	(17.11)	(18.21)	(19.25)	(16.78)	(17.40)	(17.07)
PANAS-Recent-PA	32.36	27.88	31.08	30.86	27.96	30.48
	(8.39)	(10.09)	(7.38)	(9.17)	(8.60)	(7.90)
PANAS-Recent-NA	20.68	22.75	21.00	22.73	25.38	19.44
	(6.58)	(7.41)	(6.81)	(10.88)	(6.08)	(5.26)
Psychological Mood	3.90	3.93	3.24	4.14	4.70	3.85
	(1.01)	(.95)	(1.06)	(1.38)	(.95)	(.83)
Physical Symptoms	1.75	1.79	1.48	2.60	2.69	2.34
	(.73)	(.82)	(.57)	(1.43)	(1.43)	(.99)

In the last session, participants also rated 12 psychological and physical symptoms that they previously completed after writing sessions. These scores were used

as general measures of psychological mood and physical symptoms between writing sessions and the last session. For psychological mood, there was main effect of disclosure,  $F(1, 68) = 13.65, p < .001, MSE = 1.27, \eta_p^2 = .17$ , such that undisclosed memory group ( $M = 4.21, SE = .12$ ) reported higher levels of negative psychological mood than disclosed memory group ( $M = 3.47, SE = .16$ ). There was also marginal main effect of time,  $F(1, 68) = 3.62, p = .06, MSE = .72, \eta_p^2 = .05$ . Negative psychological mood was higher after one month ( $M = 4.13, SE = .13$ ) than after writing sessions ( $M = 3.56, SE = .12$ ). In terms of physical symptoms, no main effect of disclosure,  $F(1, 67) = 2.53, p = .12, MSE = 1.44$ ; time,  $F(1, 67) = 2.43, p = .13, MSE = .69$ ; or interaction,  $F(1, 67) = .03, p = .85, MSE = .77$  was observed. Results obtained from general psychological mood indicate that participants continued to experience negative effects after writing sessions.

The same 2 (time: pretest, posttest) X 2 (disclosure status: disclosed, undisclosed) repeated measures analyses were conducted without “frequency of thinking about the event” as covariate. The effect of time was observed with all well-being measures except with PANAS recent PA. However, the direction of the effect was the opposite of the hypotheses. Participants’ expectancy to regulate negative mood decreased from pre-testing ( $M = 100.49, SE = 2.27$ ) to post testing ( $M = 96.88, SE = 2.31$ ),  $F(1, 69) = 9.43, p < .01, MSE = 44.84, \eta_p^2 = .12$ . Self-compassion also decreased from pre-test ( $M = 70.95, SE = 2.29$ ) to post-test ( $M = 68.63, SE = 2.13$ ),  $F(1, 69) = 4.74, p < .05, MSE = 36.77, \eta_p^2 = .06$ . For PANAS recent NA there was marginally significant interaction of time and disclosure,  $F(1, 68) = 3.19, p = .08, MSE = 33.56, \eta_p^2 = .05$ . Simple effects analysis revealed that participants in the undisclosed memory condition reported higher negative affect ( $M = 23.58, SE = 1.07$ ) than participants in the

disclosed memory condition ( $M = 19.44$ ,  $SE = 1.43$ ) at post-test, but they did not differ at pre-test. For general psychological mood there was main effect of both time and disclosure,  $F(1, 69) = 14.72$ ,  $p < .001$ ,  $MSE = .71$ ,  $\eta_p^2 = .18$ , and  $F(1, 69) = 8.79$ ,  $p < .01$ ,  $MSE = 1.47$ ,  $\eta_p^2 = .11$ , respectively. Participants reported higher negative psychological mood at post-test ( $M = 4.14$ ,  $SE = .14$ ) than at pre-test ( $M = 3.58$ ,  $SE = .13$ ). Moreover, participants in the undisclosed memory condition indicated higher negative psychological mood ( $M = 4.18$ ,  $SE = .13$ ) than participants in the disclosed memory condition ( $M = 3.54$ ,  $SE = .17$ ). Finally, there was main effect of time for general physical symptoms, too,  $F(1, 68) = 34.97$ ,  $p < .001$ ,  $MSE = .69$ ,  $\eta_p^2 = .34$ . Physical symptoms were higher at post-test ( $M = 2.49$ ,  $SE = .16$ ) than at pre-test ( $M = 1.62$ ,  $SE = .09$ ).

A third analysis was conducted in order to see the pure effects of undisclosed memories. For this reason, a 2 (time: pretest, posttest) X 2 (disclosure status: disclosed, undisclosed) repeated measures ANCOVA with “frequency of thinking about the event” as covariate were repeated with disclosed and completely undisclosed memories only by excluding partially disclosed or distortedly disclosed memories from undisclosed memory category. Results demonstrated similar patterns. Neither time nor disclosure status had an effect on Negative Mood Regulation, Self-compassion or PANAS recent PA, all  $ps > .05$ . There was main effect of disclosure in PANAS recent NA scores [ $F(1, 55) = 6.74$ ,  $p < .05$ ,  $MSE = 50.30$ ,  $\eta_p^2 = .11$ ] as found in previous analysis. In addition, marginally significant interaction emerged with completely undisclosed and disclosed memories,  $F(1, 55) = 3.51$ ,  $p = .07$ ,  $MSE = 38.52$ ,  $\eta_p^2 = .06$ . Simple main effects analysis revealed higher negative affect at posttest ( $M = 24.56$ ,  $SE = 1.23$ ) than pretest ( $M = 21.51$ ,  $SE = 1.08$ ) in undisclosed memory condition. There was no difference in

disclosed memory condition. Analysis with psychological mood also revealed similar results. There was main effect of disclosure,  $F(1, 56) = 13.01, p < .01, MSE = 1.43, \eta_p^2 = .19$  and main effect of time,  $F(1, 56) = 5.33, p < .05, MSE = .67, \eta_p^2 = .09$ . Finally, analysis with physical symptoms revealed marginal effect of time,  $F(1, 55) = 3.58, p = .06, MSE = .71, \eta_p^2 = .06$ , different from previous analysis. Participants reported higher physical symptoms at post-test ( $M = 2.47, SE = .17$ ) than pre-test ( $M = 1.59, SE = .09$ ).

### 3.5 Narrative analysis

The author and two other independent raters who were blind to the hypotheses and participants' conditions coded the narratives. In the first run of narrative analyses, 12% of the narratives were coded by all three raters for initial examination of narratives. Disagreements were resolved by discussion. After that, additional 14% of narratives were coded by the author and one other rater. In all, 26% of narratives were coded by two or more raters. Cohen's kappa was computed for categorical variables and intraclass correlation coefficient was computed for continuous variables. For narratives with three raters, kappa was computed between each pairs of raters and then averaged to obtain a single index of interrater reliability as suggested by Light (1971). For these narratives, strength of agreement ranged from fair to good (Cohen's kappa for event type was .603, for meaning making .307, for autonomy .329, for growth .621, and for resolution .800). Conflict and relationship type variables were coded only if the event type was coded as "relationship". There was perfect agreement for conflict ( $\kappa = 1$ ) and minimal agreement for relationship type ( $\kappa = .316$ ). Situation type and coping strategies were coded only for shame and guilt memories since their coding manuals were specific to these kinds of

memories. For situation type agreement was .421 and for coping strategy it was .351. For the narratives coded by two raters, Cohen's kappa was .722 for event type, .565 for meaning making, and .818 for autonomy. Intraclass correlation coefficient for growth was .765 and for resolution .345. Conflict and relationship type could not be computed since there was not enough observations in these categories. Agreement for situation type was .600 and for coping strategies it was .444. Overall, interrater reliabilities indicate substantial agreement except for resolution and coping strategies which demonstrated fair and moderate agreement, respectively.

### 3.5.1 The relationship between condition and narrative characteristics

A chi-square test of independence was conducted between condition and event type.

Since assumption of expected frequency was violated in 80% of the cells, categories that had expected count of less than 5 were collapsed and analysis was conducted between condition and event type with two categories coded as "relationship" and "others". The chi-square analysis was not significant,  $\chi^2 (2, N = 71) = 1.20, p < .05$ . As mentioned above relationship narratives were further coded for conflict and relationship types.

There was no relation between condition and conflict [ $\chi^2 (2, N = 36) = 2.51, p > .05$ ] and between condition and relationship type [ $\chi^2 (4, N = 36) = 4.59, p > .05$ ].

The relationship between condition and meaning making was also not significant  $\chi^2 (4, N = 71) = .69, p > .05$ . That is, participants in guilt, shame and control conditions employed similar meaning making methods.

For the analysis between condition and autonomy the category of "ambiguous" were discarded and analysis was run with "autonomy present" and "autonomy absent" categories only. There was a marginally significant association between condition and



autonomy,  $\chi^2 (2, N = 66) = 5.91, p = .05$ , Cramer's  $V = .30$ . Forty-four % of the participants in the control condition indicated that they had control over events compared to 69.6% of the participants in guilt and 77.8% of participants in shame condition.

Guilt and shame memories further examined in relation to situation types and coping strategies. Chi-square analysis revealed that there was no significant relation between condition and situation types, [ $\chi^2 (3, N = 46) = 2.06, p > .05$ ]. The relationship between condition and coping strategy was also not significant, [ $\chi^2 (3, N = 45) = 1.93, p > .05$ ]. However, it should be noted that in all of the analyses with conflict, relationship type, situation type and coping strategies more than 20% of the cells had expected counts less than 5.

In order to examine the relationship between condition and growth and condition and resolution one-way ANOVAs was conducted since growth and resolution were coded as interval scales. Results revealed that there was marginally significant difference between conditions in terms growth,  $F (2, 68) = 2.67, p = .07, MSE = 1.52$ . LSD Post-Hoc analysis showed that control group memories ( $M = 3.12, SE = .26$ ) were more growth promoting than guilt memories ( $M = 2.33, SE = .24$ ). There was no relation between condition and resolution,  $F (2, 68) = .26, p > .05, MSE = 2.74$ .

### 3.6 Predictors of well-being

To test the hypothesis that narrative characteristics would predict well-being above and beyond general affect, four-step hierarchical regression analyses were conducted with Negative Mood Regulation, Self-Compassion, Psychological Mood and Physical Symptom variables. In the first step gender, PANAS general PA and NA were entered in

the model as control variables. In the second step, experience of negative event in the last month was entered in the model, followed by meaning making and autonomy in the third step and growth and resolution in the fourth step. Narrative characteristics were entered in this order since autonomy and meaning making were thought to be initial steps in integrating an experience, and growth and resolution were the results of this integration process.

Prior to conducting hierarchical multiple regression relevant assumptions were tested. Inspection of P-P plots and normality tests revealed that residuals were normally distributed with all dependent variables. Although Shapiro-Wilk test result demonstrated deviance from normality for physical symptom, Kolmogorov-Smirnov test was not significant, and our sample size was satisfactory to accept the result of this test. Correlation and VIF scores demonstrated that there was no multicollinearity problem between variables. There were no extreme outliers within the range of  $\pm 3$  standard deviations, and no extreme leverage points. When influence of the data points was calculated with Cook's distance some of them had high influence according to  $4/n$  cut-off rule. However, none were above 1 and deleting these data did not change the results. Therefore, they were included in the analyses. Residuals and scatter plots showed that non-linearity and heteroscedasticity were not problems in the data set.

Regression statistics for analysis with Negative Mood Regulation as outcome variable are presented at Table L1 (Appendix L).

The hierarchical multiple regression analyses revealed that the variables in the first model contributed significantly to the prediction of Negative Mood Regulation,  $F(3, 67) = 9.60, p < .001, MSE = 250.95$ . In this model, PANAS general PA ( $\beta = .308, t(67) = 2.89, p < .01$ ) and NA ( $\beta = -.381, t(67) = -3.58, p < .01$ ) significantly predicted

Negative Mood Regulation. Second and third models were not significant,  $ps > .05$ . The final model explained an additional 8% of the variance in Negative Mood Regulation and this change in  $R^2$  was significant  $F(2, 62) = 3.91, p < .05, MSE = 238.45$ . Overall model with eight predictors explained 38.5% of the variance in Negative Mood Regulation. Higher resolution [ $\beta = .271, t(62) = .26, p < .05$ ] and PANAS general PA [ $\beta = .284, t(62) = 2.56, p < .05$ ] and lower PANAS NA [ $\beta = -.307, t(62) = -2.26, p < .01$ ] were associated with higher expectancy to regulate negative mood.

Regression statistics for analysis with Self-compassion as outcome variable are presented at Table L2 (Appendix L).

The hierarchical regression with gender and PANAS general PA and NA entered in the first step the model was significant,  $F(3, 67) = 10.58, p < .001, MSE = 205.76$ . In this model PANAS NA was significant predictor  $\beta = -.479, t(67) = -4.57, p < .001$ ; and PANAS PA was marginally significant predictor of self-compassion  $\beta = .199, t(67) = 1.90, p = .06$ . Second and third models were not significant, both  $ps > .05$ . Adding growth and resolution in the fourth model accounted for additional 4.9% of the variance. However, this change was not significant  $F(2, 62) = 2.49, p = .09, MSE = 200.09$ . In the final model significant predictors were PANAS NA ( $\beta = -.460, t(62) = -4.10, p < .001$ ), autonomy ( $\beta = .228, t(62) = 2.02, p < .05$ ) and resolution ( $\beta = .262, t(62) = 2.19, p < .05$ ). All eight variables together in the final model explained 38.9% of the variance in self-compassion.

Regression statistics for analysis with psychological mood as outcome variable are presented at Table L3 (Appendix L).

The hierarchical regression revealed that the first model significantly predicted psychological mood,  $F(3, 67) = 11.93, p < .001, MSE = .84$ . In this model only PANAS

NA was the significant predictor of the outcome,  $\beta = .585$ ,  $t(67) = 5.70$ ,  $p < .001$ . At the second step, negative event experience significantly contributed to the regression model,  $F(1, 66) = 5.39$ ,  $p < .05$ ,  $MSE = .79$ , and accounted for 4.9% of the variance.

Contribution of negative event experience was  $\beta = -.239$ ,  $t(66) = -2.32$ ,  $p < .05$ , where negative event experience was coded as 1 = experienced negative event, 2 = did not experience negative event. Third model was not significant,  $p > .05$ . Adding growth and resolution in the final model explained an additional 5.9% of the variance in psychological mood and this change in  $R^2$  was significant  $F(2, 62) = 3.37$ ,  $p < .05$ ,  $MSE = .75$ . However, this contribution came from PANAS NA and negative event experience rather than growth and resolution. This final model with eight predictors explained 46% of the variance in psychological mood.

Regression statistics for analysis with physical symptom as outcome variable are presented at Table L4 (Appendix L). The hierarchical regression revealed that none of the models significantly explained the variance in physical symptoms, all  $ps > .05$ .

## CHAPTER 4

### DISCUSSION

The present study investigated changes in psychological well-being after disclosure of previously undisclosed shame and guilt memories and previously disclosed negative memories. Pennebaker's (1997) emotional disclosure paradigm was employed in order to make participants disclose their memories in a controlled setting. We suggested that participants in the previously undisclosed memory condition and who retrieved shame memories would experience higher distress and physical symptoms immediately after writing. Moreover, consistent with the literature, this effect was expected to increase from the first session to the last session. We also suggested that these two groups' well-being would be better than disclosed memory or guilt memory conditions after one month. Finally, we proposed that narrative characteristics that can be associated with insight and causation in memories would predict well-being. Our hypotheses were partially supported. In the following sections, I first reviewed and discussed the findings regarding group differences and immediate effects of emotional disclosure, continued with the discussion of the effects of writing on long-term health and finally, discussed the findings about predictors of well-being.

#### 4.1 Immediate effects of writing

Regarding immediate effects of writing, while our first hypothesis that undisclosed memory group will show higher negative mood and physical symptoms was partially supported, our second hypothesis that shame group will show higher negative mood and physical symptoms and our third hypothesis that immediate effects will increase through

writing sessions were rejected. In terms of psychological mood, we found that participants in the undisclosed shame and guilt memory group had higher negative mood after disclosure compared to control group which was congruent with our first hypothesis. That is, control subjects were affected less from disclosing negative events than both shame and guilt subjects. This difference was especially strong in the second day when participants were instructed to focus on emotions and thoughts related to the event. However, shame and guilt groups did not differ from each other, thus rejecting our second hypothesis. In terms of physical symptoms, groups demonstrated comparable levels of physical symptoms after each writing session, which contradicted our first and second hypothesis that undisclosed and shame memory groups would experience higher physical symptoms.

Our third hypothesis concerned temporal changes in psychological mood and physical symptoms through writing sessions. Results were in the opposite direction of what was expected. In terms of temporal changes in psychological mood, there was a decrease in negative mood which was contrary to what was prominently found in past research. Although there are substantial research demonstrating an increase in negative affect and symptoms immediately after emotional disclosure, a few studies found the opposite effect. In that sense, our results were supported by, for instance, Kearns et al.'s (2010) findings who also demonstrated a decrease in negative mood in sexual assault victims through writing sessions.

Participants in our study also demonstrated higher physical symptoms at first day of writing than the second and third days in all groups. Similar results were obtained by Lepore and Greenberg (2002). However, they observed this effect only with control group while a decrease was experienced by all groups in our study.

Although our findings contradicted mainstream findings in emotional disclosure research, when narratives were examined, we indeed encountered statements of participants mentioning how better they started to feel after writing. For instance, one participant stated that “It is a comforting feeling to write things here that I haven't told anyone before... I think this experiment helped me as much as it helped you.” Another participant stated that “I actually feel relieved when I write all this about the event. This event that I did not tell anyone and that I tried to make myself forget does not seem so annoying anymore.” However, this kind of statements were rare, and psychological mood and physical symptom ratings demonstrated that majority of the participants experienced increased symptoms after writing.

In the present study, we failed to find any difference between shame and guilt memories both in memory characteristics and in immediate effects of disclosure. There might be three possible explanations for this null finding. First, although experimental studies demonstrated some obvious differences between shame and guilt, these two emotions are usually used interchangeably by lay people and attention was not given to true feelings behind the events. For instance, when Tangney and Dearing (2002) asked their undergraduate students to define shame and guilt, one of the answers they got was; “Shame is feeling guilty. Guilt is feeling ashamed about something.” (pg. 10) which clearly demonstrated that even educated people may not address the difference between two emotions. Moreover, the events that cause feelings of shame and guilt are very common. That is, while an experience is shameful for one person, it might connote guilt for another. Therefore, it might be the case that shame memories included a little bit of guilt feelings and guilt memories included a little bit of shame feelings in our narratives, too. Indeed, our participants reported both shame and guilt in their narratives

38.6% of the time even though they were only asked to write one of them. Moreover, when coding these emotions in the narratives it was difficult for raters to decide what emotions were emphasized more in the narratives, which can also be understood from low level of interrater agreement in this category of narrative coding (.30). When tested for settings these emotions occur, or consequences and characteristics, the differences between these two emotions might be clearer. However, in the present study, participants not only did write about guilt and shame memories, but these memories were also previously undisclosed. Hence, differences between shame and guilt that were demonstrated in previous studies might have been covered by previous nondisclosure of autobiographical memories. That is, disclosure might be more prominent indicator of autobiographical memory characteristics, than shame and guilt are.

Second, in the present study, the instructions to recall shame and guilt memories mentioned only the names of these emotions without providing any further definition or examples of situations that may lead to shame or guilt feelings. When participants receive instructions to write about “shame” and “guilt” memories instead of detailed instructions about what is shame and guilt, everyone might think of their own definition and this may lead to interwoven shame and guilt narratives. Hence, it might obscure the true difference between guilt and shame memories. In support of this view, in their review of studies regarding shame and guilt, Söylemez, Koyuncu and Amado (2018) reported that in eliciting these emotions, it was more effective to give definitions of these feelings rather than providing only the names in order to capture the difference. However, our manipulation check for emotion suggests that providing only the names of the emotions might not be a problem for the present study.



Third, although shame and guilt are two distinct emotions with different motivations, intensity or focus of evaluation, inhibition and disclosure of related autobiographical memories might have similar health effects. However, since there are no previous emotional disclosure studies conducted with shame and guilt memories, we cannot support this assumption with experimental findings.

#### 4.2 Long-term effects of writing

Substantial research on guilt and shame revealed that these emotions dissociate in many respects such as severity, motivation and focus of evaluation. On the other hand, the distinction between these emotions are very vague especially in daily life. People usually refer to both feelings when describing an event and do not pay attention to difference between these emotions. As a reflection of this situation, more than one third of the participants in our study referred to both emotions in their narratives. In addition to mentioning shame and guilt interchangeably in narratives, shame and guilt memories did not differ in characteristics, such as centrality, significance and emotionality. Moreover, writing about shame or guilt memories resulted in similar changes in psychological and physical health of participants immediately after writing. All in all, emotion characteristics did not manifest themselves in memory characteristics and immediate well-being. Therefore, since we failed to find significant difference between shame and guilt memories, we decided to collapse these two categories and conduct long-term effects analyses with previously undisclosed and disclosed memories. The results partially supported our hypotheses that undisclosed memory group's health will improve more than disclosed memory group. Group differences were observed only with PANAS recent NA and psychological mood such that undisclosed memory group showed higher

negative affect and negative psychological mood than disclosed memory group. Although disclosure was related to negative affect in long term, we failed to find changes in expectancy in negative mood regulation, self-compassion and physical symptoms. However, the effect of time emerged with all well-being measures except PANAS recent PA when analyses were conducted without frequency of thinking about the event as covariate though results were in the opposite direction of what was expected. While we expected an increase in expectancy in regulating negative mood and self-compassion and decrease in negative affect and physical symptoms, both expectancy in successfully regulating mood and self-compassion decreased and negative affect and physical symptoms increased.

Several studies and meta-analyses found no change especially in physical health in long-term (e.g. Mogk, Otte, Reinhold-Hurley, & Kroner-Herwig, 2006; Meads, Lyons, & Carrol, 2003). For instance, Kearns et al. (2010) found that there was no difference between sexual assault victims and control group at follow-up after a month. Similarly, Marlo and Wagner (1999) failed to find improvements in physical health after disclosure of positive, negative and neutral events. However, to our knowledge this is the first emotional disclosure study to demonstrate negative change in health after self-disclosure. One exceptional study in this regard was conducted by Gidron, Peri, Connolly and Shalev (1996) who assigned 14 trauma survivors with PTSD symptoms either to emotional disclosure group or to control group. However, in their study, in addition to traditional emotional disclosure procedure, participants elaborated orally on the traumatic events or trivial events they wrote. The results revealed that health center visits and avoidance symptoms of participants in the disclosure group were higher than participants in the control group at five-week follow-up. However, as mentioned above,

this study added another level to emotional disclosure paradigm by adding oral disclosure session, which might have reversed the health outcomes. Expressing negative experiences verbally provides a disclosure environment where participants are less distracted and more involved in the task compared to writing. This might in turn increase the experience of negative emotions.

One interpretation of the current results regarding temporal changes in well-being concerns the outcome variables chosen for measuring well-being. Since expectancy to regulate negative mood and self-compassion scales were directly related to attitudes toward negative experiences, they were good candidates to test the psychological changes after disclosing negative events. However, emotional disclosure paradigm was originally developed on the premise that inhibition of traumatic events impairs psychological and physical health and relief from the burden of inhibition improves health (Pennebaker, & Beall, 1986). Therefore, previous studies usually employed affect scales and physical symptom and health measures, such as symptom checklists and doctor visits, as indicators of well-being. Moreover, a meta-analysis of studies conducted with psychologically and physically ill population suggested that expressive writing is more effective with physically ill populations than psychiatric populations (Frisina, Borod, & Lepore, 2004). In the present study, however, we used two psychological measures which, to our knowledge, were not commonly tested in expressive writing studies. The failure to find changes in these measures might be attributed to the concepts which these scales were measuring. Emotional disclosure might be more effective in improving physical health but not in improving wide range of psychological health. For instance, it may require more writing sessions, longer duration and more elaborative thinking to achieve an increase in self-compassion and successful

mood regulation strategies. In support of this view, Jourard (1971) suggested that low and high self-disclosure might be related to emotional disorders while moderate self-disclosure is related to well-being. Similarly, Blotcky, Carscaddon and Grandmaison (1983) suggested that the relationship between self-disclosure and physical health is curvilinear. In their study, they measured self-disclosure as general tendency to disclose personal information and demonstrated that participants who were either low or high self-disclosers reported higher physical illness than moderate self-disclosers. Hence, it might be the case that our participants did not have enough time to think about and reflect on their experiences, instead they might have become more critical of themselves until a relatively shorter follow-up assessment. Moreover, the finding that undisclosed memory group experienced higher negative mood than disclosed memory group indicates that our participants needed longer time to process the experience before post testing.

Another interpretation for the increase in negative mood might be related to the type of memories collected. As previously mentioned, motivation behind shame memories is usually to hide or escape the situation. Thus, people may avoid and not prefer to recall shame and guilt memories frequently since they cause distress. In support of this assumption, we found that people thought about their shame memories between writing sessions and the last session less than the control group (Means = 2.05 vs 2.84). That is, participants continued to avoid these memories even after disclosing them. Therefore, while disclosing negative memories might have caused instant and temporary relief, recalling these unwanted and distressing memories might have led to long term stress in participants that lasted even after one month. As previously mentioned, Alea (2010) found that negative memories are not shared since they were infrequently

recalled. Thus, forcing our participants to recall and write about negative events might have caused retrieval of unwanted thought and caused distress for participants.

The present study also failed to find a group difference in well-being except for psychological mood and negative affect. One reason for the null effects might be related to memory instructions for the control group. In previous studies, the control group participants wrote about non emotional trivial topics such as their shoes or daily plans. However, in the present study, the control group wrote about an event that had negative emotional impact, so experimental and control groups wrote about events in comparable levels of valence. This might have obscured the differences between groups caused by emotional burden of the experiences.

Another reason can be attributed to memory characteristics. Guilt, shame and disclosed negative memories reflected similar levels of emotional intensity, distinctiveness, frequency of thinking about the event and desire to have been shared in the past. Guilt and shame memories were rated as less central and less significant in participants' lives than disclosed memories. Therefore, disclosing these memories might not have led to profound differences between groups.

A more general explanation for the current findings concerns the methodology. A meta-analysis on emotional disclosure by Smyth (1998) showed that studies that spaced the writing sessions for longer period of time had higher overall effect sizes even though psychological and physical well-being effect sizes were not affected (However, Frattaroli (2006) showed that spacing between writing sessions did not moderate the effects of writing on health outcomes). Especially for memories that are not disclosed to anyone for a long time like in the present study, this method might have been more effective.

Although there was main effect of time with almost all dependent variables, when covariate variable is included in the analyses, the effect disappeared. Similar effect was also obtained by Williams-Avery (1999) who asked participants to think about an event that they felt worried, ashamed, guilty or upset and that they did not talk in detail with other people. Then, one group disclosed the event expressively in writing and speaking sessions as if someone trusted and caring listening to them; one group inhibited emotional aspect of the event and wrote only facts as if someone untrusted and critical was listening to; one group wrote only about a neutral topic (e.g. the campus). Participants were tested two times; one after two writing sessions (first post-test) and one after speaking session (second post-test). The interval between sessions and post-test were one week only. When tested for health problems at first post-test, time main effect emerged. However, inclusion of possible covariates, such as gender, personality characteristics and previous therapy history dissipated the effect of time. Moreover, health effects were similar to the findings of the present study: symptoms and illness behaviors were higher at first post-test. William-Avery (1999) demonstrated that negative affect and symptoms of emotional disclosure can persist up to two weeks. Our study extends these findings by showing that for specific type of memories these effects can last even after one month.

It is also worth mentioning that during the one-month period between writing sessions and follow-up test, a suicide was committed by a Bogazici University student with whom some of our participants were even classmates. Therefore, this painful news has psychologically affected the entire community at the university including our participants, which might explain the decrease in psychological mood at follow-up.

### 4.3 Predictors of well-being

One theory that attempts to explain mechanism behind expressive writing emphasizes the role of cognitive processing reflected through causation and insight related words in narratives. This theory suggests that high use of these type of words in narratives are indicators of well-being. In the present study, we coded narratives for several characteristics that were thought to reflect the similar kind of cognitive and emotional processing of memories. In our last hypothesis we predicted that narratives that reflect meaning making, autonomy, growth and resolution would be related to better psychological well-being. Among these narrative codings, we found that resolution was the only significant predictor in almost all well-being measures after one month. Results revealed that if the event is resolved and closed in the past, it is more likely that people will expect better mood regulation abilities and have higher self-compassion. This finding was congruent with previous findings that tested cognitive processing in emotional disclosure (e.g. Williams-Avery, 1999).

While examining the effects of recollecting specific AMs in directing behavior, Beike, Adams and Naufel (2010) found that participants who were instructed to think about the event as not closed experienced lower positive affect. Moreover, closure of the event was found to significantly predict the memory related behavior. Thinking that the memory was closed and has no present effect led to no change in behavior. In light of this finding, when frequency of resolution was examined between conditions in the current study, number of completely resolved and completely unresolved memories were not different from each other in different groups,  $\chi^2(2, N = 42) = .941, p > .05$ . This might also be one of the reasons of insignificant results of group comparisons.

According to cognitive-processing theory of emotional disclosure, recent events benefit more from disclosure since some amount of adjustment and evaluation of the event still continues (Lepore, & Greenberg, 2002). Therefore, disclosure during such a process might further help in healthy way of unfolding the event. However, in the present study, almost half of the memories were already advanced or completely resolved ( $N = 32/71$ ) which make further elaboration redundant. Moreover, results showed that both shame and guilt memory participants adopted unhealthy way of coping (i.e. chronic rumination and defense) with their negative emotions (81.8% and 78.2%, respectively). That is, these events were probably resolved in unhealthy ways that led to an increase in negative mood.

Besides narrative characteristics, recent negative affect was found to be significant predictor with all well-being scales. This finding was also consistent with previous studies which demonstrated that negative affectivity was related to higher self-reported illness and lower life satisfaction (e.g. Finkenauer & Rimé, 1998).

#### 4.4 Limitations and future directions

One potential problematic issue with the current study might be the sample characteristics. University students are an attractive subject pool for psychological studies since they are easy to reach. However, one drawback of this subject pool is that they may not be much motivated to take part in the study, especially if they are offered course credits or similar incentives in change of participation. In a demanding study with four different sessions extending to one month and that requires sincere responding, motivation and commitment of participants are profound elements of the study. Indeed, when asked to rate the difficulty of the writing experience on a 7-point Likert type scale



(i.e. “In general, how difficult the three-day writing experience was?”), undisclosed memory group in the present study found the experiment more challenging than disclosed memory group,  $F(1, 69) = 4.610, p = .035, MSE = 1.73$ . Moreover, in our sample some of the participants needed several reminders to attend the sessions showing that they needed encouragement to complete the experiment. However, this is a general problem with all longitudinal studies one way or another.

Another issue is related to collection of health measures which was quite different than previous studies (e.g. Pennebaker & Beall, 1986; Pennebaker, 1996). First, general procedure in previous studies was to measure well-being with physical symptom and health information of participants collected from health center visits or through self-reports or symptom checklists. In the present study, we focused more on psychological well-being and measured two psychological constructs that were not commonly used in prior emotional disclosure experiments. These psychological measures might have different characteristics than general affect measures, such as PANAS and physiological measures. Second issue concerns the time interval that well-being information was collected. In the present study, psychological mood and physical symptoms were measured only between writing sessions and one-month follow-up session. That is, we did not have information about baseline health conditions of participants. This type of design might have obscured the true effect of emotional disclosure. As for negative mood regulation and self-compassion measures, it may require longer times and deeper processing to experience change especially in these psychological measures. Overall, extended time period for collecting health information and measuring consequences of writing might be essential element of expressive writing. In other words, if the health data were collected prior to writing, and longer interval were allowed to participants to

process the writing experience, it might have been more likely that we obtained the similar results as previous ones. Physical symptoms and illness behavior were not primary interest of the current study; therefore, it was unnecessary to reach that information prior to writing sessions. However, future studies should administer follow-up tests in several time points extending one month in order to see psychological and physical changes clearly.

Present study failed to find differences between undisclosed and disclosed memories. This might be because our manipulation was not strong enough. Although participants in the undisclosed memory group reported that they held back more from telling their memories than participants in the disclosed memory group, emotional valence of the two groups were the same. The core effectiveness of emotional disclosure comes from letting go of negative emotions. When both experimental and control groups write about negative emotions both groups should experience relief and improvement in health. Therefore, there would be no difference between experimental and control groups and true effect of emotional disclosure would be obscured. Considering that all of the previous studies assigned neutral topics to control group participants, future studies should examine health effects by comparing experimental group to the control group with neutral or positive memory instructions.

In the present study, we compared memory characteristics only to determine differences between undisclosed guilt, shame and disclosed negative memories and did not check any relationship between these characteristics and well-being measures. However, Marlo and Wagner (1999) found that participants who inhibited (i.e. held back from disclosing the event and wanted to tell other people) more experienced higher physical sensations (e.g. headache, dizziness etc.) and negative mood; and participants

who highly self-disclosed (i.e. the extent they told or wrote about the event in the past) experienced higher physical sensations and decreased mood. Therefore, future studies can also test whether memory characteristics predict well-being.

Marlo and Wagner (1999) showed that writing about positive memories improved psychological health more than writing about negative memories. Thus, it is assumed that both psychological mood and self-compassion would have increased if participants had written positive memories. Future studies should compare autobiographical memories with different valence with a wider range of psychological symptoms.

#### 4.5 Conclusion

The present study aimed to expand findings of Pennebaker's emotional disclosure paradigm by incorporating previously undisclosed shame and guilt memories. However, our findings contradicted with Pennebaker and colleagues' suggestion that disclosing negative or traumatic events improve physical and psychological health. To our knowledge, this is the first study to demonstrate that emotional disclosure can have negative consequences. In that sense, the present study has important implications. First, it demonstrated that expressive writing might not be helpful and even have deleterious effects with some specific type of memories. Memory characteristics of shame and guilt imply that autobiographical memories that are not very personal and that do not cause distress in current mood might not be in the scope of this paradigm. Hence, this study has a potential power to question and modify the theory. More specifically, it raises the possibility that the telling might not be healing all the time. As mentioned very briefly in

the introduction part, staying silent and not disclosing certain topics may actually have healing effects (e.g. Baddeley, & Singer, 2010).

Second, with these reverse effects, our findings do not support inhibition theory and cognitive processing theory is only partially supported. For most of the well-being measures there was no difference between undisclosed and disclosed autobiographical memories. Moreover, among cognitive and emotional narrative variables only resolution predicted well-being. Meaning making, growth etc. were not related to health consequences as cognitive processing theory suggests. Our results are more likely to support self-regulation theory. Although long-term effects were not as the theory claims, our participants reported higher positive mood as they wrote showing that they did not experienced negative side effects of expressive writing.

Third, taking different types of and reasons for silences or unshared memories into consideration might shed some light on explanations for emotional disclosure effects. For instance, Kurzon (2007) defines two types of conversational silences. In intentional silence one decides not to speak either for internal (“I will not speak”) or external (“I must not speak”) reasons. On the other hand, in unintentional silence one does not speak because of psychological inhibitions, such as shyness. Kurzon claims that if the source of silence is internal one should experience less negative affect than one whose silence is unintentional. Similarly, from Fivush’s (2004) formulization of silences we can speculate that other-silenced and self-silenced autobiographical memories would have different health implications.

APPENDIX A

SUMMARY OF DEMOGRAPHIC INFORMATION

	Shame	Guilt	Control
<b>Income</b>			
Low	1	1	0
Low-middle	6	4	2
Middle	10	11	14
Meddle-high	4	8	9
High	1	0	0
<b>Mothers' Education Level</b>			
Graduate	2	1	1
Undergraduate	11	8	13
High School	3	6	5
Middle School	3	1	1
Elementary School	3	6	5
Illiterate	0	2	0
<b>Fathers' Education Level</b>			
Graduate	4	3	4
Undergraduate	12	11	14
High School	5	7	4
Middle School	0	1	0
Elementary School	1	2	3
Illiterate	0	0	0
<b>Place Longest Lived</b>			
Metropolitan	12	18	13
City	8	3	8

Town	0	1	2
Village	1	1	2
Other	1	1	0

Note: Cells represent number of participants.

## APPENDIX B

### SELF-COMPASSION SCALE

ZORLUKLAR KARŞISINDA KENDİME GENEL OLARAK NASIL DAVRANIYORUM?

(HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES)

Yanıtlamadan önce her bir ifadeyi dikkatle okuyunuz. Her bir maddenin sağında takip eden ölçeği kullanarak, belirtilen durumda ne kadar sıklıkla hareket ettiğinizi belirtiniz.

(Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale)

1-----2-----3-----4-----5

Hemen hemen hiçbir zaman  
Almost never

Hemen hemen her zaman  
Almost always

1. Kendimi kötü hissettiğimde, kötü olan her şeye takılma eğilimim vardır. (When I'm feeling down, I tend to obsess and fixate on everything that's wrong.)	1	2	3	4	5
2. İşler benim için kötü gittiğinde zorlukların yaşamın bir parçası olduğunu ve herkesin bu zorlukları yaşadığını görebilirim. (When things are going badly for me, I see the difficulties as part of life that everyone goes through.)	1	2	3	4	5
3. Yetersizliklerimi düşünmek kendimi daha yalnız ve dünyadan kopuk hissetmeme neden olur. (When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.)	1	2	3	4	5
4. Duygusal olarak acı yaşadığım durumlarda kendime sevgiyle yaklaşmaya çalışırım. (I try to be loving towards myself when I'm feeling emotional pain.)	1	2	3	4	5
5. Benim için önemli bir şeyde başarısız olduğumda, yetersizlik hisleriyle tükenirim. (When I fail at something important to me I become consumed by feelings of inadequacy.)	1	2	3	4	5
6. Kötü hissettiğimde, dünyada benim gibi kötü hisseden pek çok kişi olduğunu kendi kendime hatırlatırım. (When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.)	1	2	3	4	5
7. Zor zamanlar geçirdiğimde kendime daha katı (acımasız) olma eğilimindeyim. (When times are really difficult, I tend to be tough on myself.)	1	2	3	4	5

8. Herhangi bir şey beni üzdüğünde hislerimi dengede tutmaya çalışırım. (When something upsets me, I try to keep my emotions in balance.)	1	2	3	4	5
9. Kendimi bir şekilde yetersiz hissettiğimde kendi kendime birçok insanın aynı şekilde kendi hakkında yetersizlik duyguları yaşadığını hatırlatmaya çalışırım. (When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.)	1	2	3	4	5
10. Kişiliğimin sevmediğim yanlarına karşı hoşgörüsüz ve sabırsızım. (I'm intolerant and impatient towards those aspects of my personality I don't like.)	1	2	3	4	5
11. Çok sıkıntılıysam, kendime ihtiyacım olan ilgi ve şefkati gösteririm. (When I'm going through a very hard time, I give myself the caring and tenderness I need.)	1	2	3	4	5
12. Kendimi kötü hissettiğimde diğer insanların çoğunun benden mutlu olduğunu düşünme eğilimindeyim. (When I'm feeling down, I tend to feel like most other people are probably happier than I am.)	1	2	3	4	5
13. Acı veren bir şey olduğunda, durumu dengeli bir bakış açısıyla görmeye çalışırım. (When something painful happens, I try to take a balanced view of the situation.)	1	2	3	4	5
14. Başarısızlıklarımı insan olmanın bir parçası olarak görmeye çalışırım. (I try to see my failings as part of the human condition.)	1	2	3	4	5
15. Sevmediğim yanlarımı gördüğümde kendi kendimi üzerim. (When I see aspects of myself that I don't like, I get down on myself.)	1	2	3	4	5
16. Benim için önemli bir şeyde başarısız olduğumda, işleri belli bir bakış açısı içerisinde tutmaya çalışırım. (When I fail at something important to me I try to keep things in perspective.)	1	2	3	4	5
17. Ben mücadele halindeyken diğer herkesin işlerinin benimkinden kolay gittiğini hissetme eğilimim vardır. (When I'm really struggling, I tend to feel like other people must be having an easier time of it.)	1	2	3	4	5
18. Acı çektiğim zamanlarda, kendime karşı iyiyimdir. (I'm kind to myself when I'm experiencing suffering.)	1	2	3	4	5
19. Bir şey beni üzdüğünde, duygusal olarak bunu abartırım. (When something upsets me I get carried away with my feelings.)	1	2	3	4	5
20. Acı çektiğim durumlarda kendime karşı bir parça daha soğukkanlı olabilirim.	1	2	3	4	5



<i>(I can be a bit cold-hearted towards myself when I'm experiencing suffering.)</i>					
21. Kendi kusur ve yetersizliklerime karşı hoşgörölüyümdür. <i>(I'm tolerant of my own flaws and inadequacies.)</i>	1	2	3	4	5
22. Acı veren bir şey olduđuunda, olayı büyütme eğilimim vardır. <i>(When something painful happens, I tend to blow the incident out of proportion.)</i>	1	2	3	4	5
23. Benim için önemli bir şeyde başarısız olduđumda, başarısızlıđın yalnız benim başıma geldiđi duygusunu hissetme eğiliminde olurum. <i>(When I fail at something that's important to me, I tend to feel alone in my failure.)</i>	1	2	3	4	5
24. Kişiliđimin sevmediđim yönlerine karşı anlayışlı ve sabırlı olmaya çalışırım. <i>(I try to be understanding and patient towards those aspects of my personality I don't like.)</i>	1	2	3	4	5

## APPENDIX C

### NEGATIVE MOOD REGULATION SCALE

İnsanların üzücü duygularıyla ilgili ne yapabileceklerine dair inanışları vardır. Aşağıdaki ifadeler sizin bu inanışlarınızı anlamaya yöneliktir. Önemli olan bu tür durumlarda ne yaptığınızdan öte, ne yapabileceğinize dair inancınızdır. Doğru ya da yanlış cevap yoktur. Lütfen tüm maddeleri okuyun ve size uygun olan seçeneği işaretleyin.

*(This is a questionnaire to find out what people believe they can do about upsetting emotions or feelings. Please answer the statements by giving as true a picture of your own beliefs as possible. Of course, there are no right or wrong answers. Remember, the questionnaire is about what you believe you can do, not about what you actually or usually do. Be sure to read each item carefully and show your beliefs by marking the appropriate number.)*

1-----2-----3-----4-----5

Hiç katılmıyorum  
(Strongly disagree)

Tamamen katılıyorum  
(Strongly agree)

Üzgün olduğumda...  
(When I'm upset I believe that...)

1. ... genellikle kendimi neşelendirecek bir yol bulabileceğime inanırım. <i>I can usually find a way to cheer myself up.</i>	1	2	3	4	5
2. ... daha iyi hissetmek için bir şeyler yapabileceğime inanırım. <i>I can do something to feel better.</i>	1	2	3	4	5
3. ... tüm yapabileceğim bu sıkıntı içinde yuvarlanmaktır. <i>Wallowing in it is all I can do.</i>	1	2	3	4	5
4. ... daha güzel zamanları düşünürsem kendimi daha iyi hissedebileceğime inanırım. <i>I'll feel okay if I think about more pleasant times.</i>	1	2	3	4	5
5. ...başka insanlarla beraber olmanın bana külfet gibi geleceğine inanırım. <i>Being with other people will be a drag.</i>	1	2	3	4	5
6. ... kendimi hoşlandığım bir şeye yönlendirerek daha iyi hissedebileceğime inanırım. <i>I can feel better by treating myself to something I like.</i>	1	2	3	4	5
7. ... neden kötü hissettiğimi anlayınca kendimi daha iyi hissedebileceğime inanırım. <i>I'll feel better when I understand why I feel bad.</i>	1	2	3	4	5
8. ... bu durumla ilgili bir şeyler yapmak için harekete geçemeyeceğime inanırım.	1	2	3	4	5

<i>I won't be able to get myself to do anything about it.</i>					
9. ... durumun iyi yanını bulmaya çalışmanın beni daha iyi hissettirmeyeceğine inanırım. <i>I won't feel much better by trying to find some good in the situation.</i>	1	2	3	4	5
10. ... çok geçmeden kendimi sakinleştirebileceğime inanırım. <i>It won't be long before I can calm myself down.</i>	1	2	3	4	5
11. ... beni gerçekten anlayan birini bulmanın zor olacağına inanırım. <i>It will be hard to find someone who really understands.</i>	1	2	3	4	5
12. ... kendi kendime, geçeceğini söylemenin sakinleşmeme yardımcı olacağına inanırım. <i>Telling myself it will pass will help me calm down.</i>	1	2	3	4	5
13. ... başka biri için güzel bir şey yapmanın beni neşelendireceğine inanırım. <i>Doing something nice for someone else will cheer me up.</i>	1	2	3	4	5
14. ... böyle giderse gerçekten depresyona gireceğimi düşünürüm. <i>I'll end up feeling really depressed.</i>	1	2	3	4	5
15. ... olayları nasıl ele alacağımı planlamanın bana yardımcı olacağına inanırım. <i>Planning how I'll deal with things will help.</i>	1	2	3	4	5
16. ... beni üzen şeyi kolayca untabileceğime inanırım. <i>I can forget about what's upsetting me pretty easily.</i>	1	2	3	4	5
17. ... geri kaldığım işlerimi yetiştirmeye çalışmanın beni sakinleştireceğine inanırım. <i>Catching up with my work will help me calm down.</i>	1	2	3	4	5
18. ... arkadaşlarımla vereceği öğütlerin daha iyi hissettirmeyeceğine inanırım. <i>The advice friends give me won't help me feel better.</i>	1	2	3	4	5
19. ... genelde zevk aldığım şeylerden zevk alamayacağıma inanırım. <i>I won't be able to enjoy th things I usually enjoy.</i>	1	2	3	4	5
20. ... rahatlamamın bir yolunu bulabileceğime inanırım. <i>I can find a way to relax.</i>	1	2	3	4	5
21. ... durumu kafamda çözmeye çalışmanın bu durumun bana daha kötü görünmesine neden olacağına inanırım. <i>Trying to work th problem out in my head will only make it seem worse.</i>	1	2	3	4	5
22. ... film izlemenin beni daha iyi hissettirmeyeceğine inanırım. <i>Seeing a movie won't help me feel better.</i>	1	2	3	4	5
23. ... arkadaşlarımla yemeğe çıkmanın iyi geleceğine inanırım. <i>Going out to dinner with friends will help.</i>	1	2	3	4	5
24. ... uzun bir süre daha, böyle kötü hissedeceğime inanırım. <i>I'll be upset for a long time.</i>	1	2	3	4	5
25. ... bunu aklımdan çıkaramayacağıma inanırım. <i>I won't be able to put it out of my mind.</i>	1	2	3	4	5

26. ... yaratıcı bir şey yaparak kendimi daha iyi hissedebileceğime inanırım. <i>I can feel better by doing something creative.</i>	1	2	3	4	5
27. ... kendim hakkında kötü hissetmeye başlayacağıma inanırım. <i>I'll strat to feel really down about myself.</i>	1	2	3	4	5
28. ... sonunda her şeyin daha iyi olacağını düşünmenin beni daha iyi hissettirmeyeceğine inanırım. <i>Thinking that things will eventually be better won't help my feel any better.</i>	1	2	3	4	5
29. ... durumda mizahi bir yan bulup daha iyi hissedebileceğime inanırım. <i>I can find some humor in the sitaution and feel better.</i>	1	2	3	4	5
30. ... başka insanlarla beraber olsam bile, kendimi "kalabalık içinde yalnız" hissedeceğime inanırım. <i>If I'm with a group of people, I'll feel "alone in a crowd."</i>	1	2	3	4	5

## APPENDIX D

### THE POSITIVE AND NEGATIVE AFFECT SCHEDULE (PANAS)

Aşağıdaki ölçek çeşitli hisleri ve duyguları ifade eden bir takım kelimeler içermektedir. Her bir maddeyi okuyun ve yanındaki boşluğa cevabınızı “1= çok az veya hiç”, “5=çok fazla” olacak şekilde yazın. Lütfen her bir maddeyi son 1-2 gün içerisinde/genel olarak nasıl hissettiğinizi düşünerek değerlendirin.

*(This scale consists of a number of words that describe different feelings and emotions.*

*Read each item and then list the number from the scale below next to each word.*

*Indicate to what extent you feel this way recently/in general)*

1	2	3	4	5
Çok az veya hiç (Very Slightly or Not at All)				Çok fazla (Extremely)
_____	İlgili (Interested)		_____	Asabi (Irritable)
_____	Sıkıntılı (Distressed)		_____	Uyanık (Alert)
_____	Heyecanlı (Excited)		_____	Utanmış (Ashamed)
_____	Mutsuz (Upset)		_____	İlhamlı (Inspired)
_____	Güçlü (Strong)		_____	Sinirli (Nervous)
_____	Suçlu (Guilty)		_____	Kararlı (Determined)
_____	Ürkmüş (Scared)		_____	Dikkatli (Attentive)
_____	Düşmanca (Hostile)		_____	Tedirgin (Jittery)
_____	Hevesli (Enthusiastic)		_____	Aktif (Active)

————

Gururlu  
(*Proud*)

————

Korkmuş  
(*Afraid*)

## APPENDIX E

### CENTRALITY OF EVENTS SCALE

Lütfen yukarıda yazdığınız anınızı düşünerek aşağıdaki soruları 1= “Kesinlikle Hayır”, 5 = “Kesinlikle Evet” olmak üzere 1 ile 5 arasında bir puan vererek değerlendiriniz.

*(Please think back upon the most stressful or traumatic event in your life and answer the following questions in an honest and sincere way, by circling a number from 1 to 5.)*

1-----2-----3-----4-----5

Kesinlikle hayır  
(Totally disagree)

Kesinlikle evet  
(Totally agree)

	1	2	3	4	5
1. Bu olayın kimliğimin bir parçası haline geldiğini hissediyorum. <i>(I feel that this event has become part of my identity.)</i>					
2. Bu olay, kendimi ve dünyayı anlamamda bir referans noktası haline geldi. <i>(This event has become a reference point for the way I understand myself and the world.)</i>					
3. Bu olayın hayat hikayemin merkezi bir parçası haline geldiğini hissediyorum. <i>(I feel that this event has become a central part of my life story.)</i>					
4. Bu olay, diğer olaylarla ilgili duygu ve düşüncelerimi etkiledi. <i>(This event has colored the way I think and feel about other experiences.)</i>					
5. Bu olay, hayatımı kalıcı bir biçimde değiştirdi. <i>(This event permanently changed my life.)</i>					
6. Sık sık bu olayın geleceğim üzerindeki etkileri hakkında düşünürüm. <i>(I often think about the effects this event will have on my future.)</i>					
7. Bu olay, hayatımda bir dönüm noktası oldu. <i>(This event was a turning point in my life.)</i>					

## APPENDIX F

### PSYCHOLOGICAL MOOD AND PHYSICAL SYMPTOM QUESTIONS

Aşağıdaki duygulardan hangilerini ne yoğunlukta hissediyorsunuz?  
(To what extent do you feel emotions below?)

1-----2-----3-----4-----5-----6-----7

Hiç  
(Not at all)

Son Derece  
(Extremely)

_____	Üzgün (Upset)	_____	Baş ağrısı (Headache)
_____	Sinirli (Nervous)	_____	Mide bulantısı/ağrısı/yanması (Nausea/stomachache/heartburn)
_____	Yorgun (Tired)	_____	Kalp çarpıntısı/hızlı atması (Racing heart)
_____	Suçlu (Guilty)	_____	Ellerin terlemesi/soğuması (Sweating/cooling of hands)
_____	Rahatlanmış (Relieved)	_____	Nefes darlığı (Shortness of breath)
_____	Kaygılı (Anxious)	_____	Baş dönmesi (Dizziness)



## APPENDIX G

### DEMOGRAPHICS FORM

1. Yaşınız: \_\_\_\_\_  
(Age):
2. Cinsiyetiniz: Kadın Erkek Diğer Belirtmek istemiyorum  
(Gender): Female Male Other Prefer not to say
3. Okuduğunuz Bölüm: \_\_\_\_\_  
(Department):
4. Bugüne kadar en uzun süre yaşadığınız yer:  
(Place where you lived the longest)  
a) Yurtdışı b) Büyükşehir c) Şehir d) Kasaba e) Köy f) Diğer  
(Abroad) (Metropolitan) (City) (Town) (Village) (Other)
5. Annenizin en son mezun olduğu okul:  
(Your mother's education level)  
a) İlkokul b) Ortaokul c) Lise d) Üniversite e) Lisansüstü  
(Elementary) (Middle school) (High school) (Undergraduate) (Graduate)
6. Babanızın en son mezun olduğu okul:  
(Your father's education level)  
a) İlkokul b) Ortaokul c) Lise d) Üniversite e) Lisansüstü  
(Elementary) (Middle school) (High school) (Undergraduate) (Graduate)
7. Türkiye genelinde değerlendirdiğinizde kendi ekonomik durumunuzu nasıl görüyorsunuz?  
(Where do you place your socio-economic status in Turkey?)  
a) Düşük gelir düzeyi b) Düşük-orta gelir düzeyi c) Orta gelir düzeyi  
(Low income) (Low-middle income) (Middle income)  
d) Orta-üst gelir düzeyi e) Üst gelir düzeyi  
(Middle-high income) (High income)
8. Büyüdüğünüz evde sizin dışınızda kaç kişi yaşıyordu? \_\_\_\_\_  
(How many people were living in the house while you were growing up?)
9. Lütfen büyüdüğünüz evde kimlerle birlikte yaşadığınızı belirtiniz. \_\_\_\_\_  
(Please specify whom you were living with)

## APPENDIX H

### AUTOBIOGRAPHICAL MEMORY INSTRUCTIONS

#### SHAME MEMORY INSTRUCTIONS

1<sup>st</sup> Day

Bazen insanlar yaşadıkları olumsuz anılardan dolayı utanç duyabilir, başkaları tarafından anlaşılmayacaklarını ya da anıyı dinleyenler tarafından yargılanacaklarını düşünebilirler. Karşı taraftan alınabilecek bu tür tepkiler bu anıların diğer insanlarla paylaşılmasını engelleyebilir. Sizden istediğimiz, yaşamış olduğunuz ancak utanç duyduğunuz, insanlar tarafından anlaşılmama ya da yargılanma korkusu nedeniyle daha önce kimseyle paylaşmadığınız bir olay ya da durum ile ilgili tüm hissettiklerinizi ve düşündüklerinizi 3 gün boyunca olabildiğince dürüstçe ve içtenlikle aktarabilmeniz. Yazarken kendinizi serbest bırakarak hislerinizin açığa çıkmasına izin vermeye çalışın. Aklınızdaki her şeyi sansürsüzce ve yargılamadan yazın. Yazmaya başladıktan sonra hiç durmadan ve yazım kurallarına önem vermeden yazın.

*(Sometimes people might feel shameful because of the negative personal memories, think that people will not understand or will misjudge them. Such reaction that can come from the listeners might prevent these memories from being shared with other people. We would like you to write about an event that you did not share with anybody in the past because of the feelings of shame or fear of misunderstanding or misjudgment. For 3 days, write about your feelings and thoughts about the event as honestly and openly as possible. Please try to let yourself feel free by releasing yourself as you type. Write everything in your mind uncensored and without judgment. One you start writing do not worry about spelling and continue to write.)*

Yazarken, özellikle olay ya da durumu anlatmaya ve olayı çevreleyen objektif unsurlara odaklanın.

*(While writing, focus on describing the event or the situation and on the objective factors that surround the event.)*

Yazarken kendinize sorabileceğiniz bazı sorular:

- Olay ya da durum neydi?
- Bu deneyim nerede yaşandı?
- Bu deneyim yaşanırken yanımda kimler vardı?
- Ne kadar süreyle devam eden bir olay ya da durumdu?

*(Questions that you can ask to yourself while writing:*

- What was the event or the situation?*
- Where did you experience this?*
- Who was with you when you were experiencing this?*
- How long did the event or the situation last?)*

Bu sorular deneyiminizle ilgili size sadece fikir vermek amaçlıdır. Bu sorulara cevap verebileceğiniz gibi bunların sizi düşündürdüğü başka noktalara da değinebilirsiniz.

Lütfen 20 dakika boyunca yazın.

*(These questions only aim to give you an idea regarding your experience. Beside answering these questions, you can also mention other points that these questions make you think of. Please write for 20 minutes.)*

## 2<sup>nd</sup> Day

Bugün sizden istediğimiz yaşadığınız olayla ilgili yazmaya devam etmeniz. Yine sizden kendinizi serbest bırakarak içtenlikle yazmanız istenmektedir.

Bugün ilk günden farklı olarak olayın kendisinden ziyade sizde uyandırdığı duygu ve düşüncelere odaklanmanız istenmektedir.

*(Today what you are asked to do is to continue to write about the event you have experienced. You are asked again to let yourself go and write sincerely.*

*Unlike the first day, today you are asked to focus on the feelings and thoughts that the event has evoked rather than the event itself.)*

Yazarken kendinize sorabileceğiniz bazı sorular:

- Bu deneyimi yaşarken neler hissettim?
- Hayatımda neleri değiştirdi?
- Yakın aile ve arkadaşlarımla ilişkilerimi nasıl etkiledi?
- Bu olayın bugünkü yaşamımdaki izleri neler?
- Olay hakkında yazmak nasıl hissettiriyor, neler düşündürüyor?
- Kendime bakışım, kendimle ilgili hislerim nasıl etkilendi?

*(Questions that you can ask to yourself while writing:*

- What did I feel when I was experiencing this?
- What did it change in my life?
- How did it affect the relationship between me and my family or my friends?
- What marks has this event left in my life today?
- How does writing about this event feel and what does it make me think of?
- In what way have my view of myself and my feelings about myself been affected?)

İlk günden hatırlayacağınız gibi, bu sorular size sadece fikir vermek amaçlıdır. Bu sorulara cevap verebileceğiniz gibi bunların sizi düşündürdüğü başka noktalara da değinebilirsiniz.

*(As you can remember from the first day, these questions only aim to give you an idea. Beside answering these questions, you can also mention other points that these questions make you think of.)*

Lütfen 20 dakika boyunca yazın.

*(Please write for 20 minutes.)*

## 3<sup>rd</sup> Day

Bugün sizden istediğimiz yaşadığınız olayla ilgili yazmaya devam etmeniz. Yine sizden kendinizi serbest bırakarak içtenlikle yazmanız istenmektedir. Bugün hem olayın içeriğine hem de sizde uyandırdığı duygu ve düşüncelere odaklanın. Olayla ilgili, önceki günlerde değinmediğiniz ayrıntılara, duygu ve düşüncelere değinmeye çalışın. Önceki günlerden hatırlayacağınız gibi, aşağıdaki sorular size sadece fikir vermek amaçlıdır.

*(Today what you are asked to do is to continue to write about the event you have experienced. You are asked again to let yourself go and write sincerely. Today focus on*

*the content of the event as well as the feelings and thoughts it has evoked. Try to mention the details, feelings and thoughts regarding the event that you did not mention on the previous days. As you can remember from the previous days, the following questions only aim to give you an idea.)*

- Olay ya da durum neydi?
  - Yanımda kimler vardı?
  - Bu deneyimi yaşarken neler hissettim?
  - Hayatımda neleri değiştirdi?
  - Yakın aile ve arkadaşlarımla ilişkilerimi nasıl etkiledi?
  - Bu olayın bugünkü yaşamımdaki izleri neler?
  - Olay hakkında yazmak nasıl hissettiriyor, neler düşündürüyor?
  - Kendime bakışım, kendimle ilgili hislerim nasıl etkilendi?
- (•What was the event or the situation?*  
*•Who was with you?*  
*•What did I feel when I was experiencing this?*  
*•What did it change in my life?*  
*•How did it affect the relationship between me and my family or my friends?*  
*•What marks has this event left in my life today?*  
*•How does writing about this event feel and what does it make me think of?*  
*•In what way have my view of myself and my feelings about myself been affected?)*

Lütfen 20 dakika boyunca yazın.  
(Please write for 20 minutes.)

### GUILT MEMORY INSTRUCTIONS

Bazı olumsuz kişisel anılar suçluluk gibi duygulara sebep olabilir ve bu tür bir duygu bu anıların diğer insanlarla paylaşılmasını engelleyebilir. sizden istediğimiz, yaşamış olduğunuz ancak kendinizi suçlu gördüğünüz (suçladığınız) için kimseyle paylaşmadığınız bir olay ya da durum ile ilgili tüm hissettiklerinizi ve düşündüklerinizi 3 gün boyunca olabildiğince dürüstçe ve içtenlikle aktarabilmeniz. Yazarken kendinizi serbest bırakarak hislerinizin açığa çıkmasına izin vermeye çalışın. Aklınızdaki her şeyi sansürsüzce ve yargılamadan yazın. Yazmaya başladıktan sonra hiç durmadan ve yazım kurallarına önem vermeden yazın.

*(Some negative personal memories might lead to feelings of guilt and this kind of feelings might restrain disclosure of these memories to other people. We would like you to write about an event that you did not share with anybody in the past because of the feelings of guilt. For 3 days, write about your feelings and thoughts about the event as honestly and openly as possible. Please try to let yourself feel free by releasing yourself as you type. Write everything in your mind uncensored and without judgment. One you start writing do not worry about spelling and continue to write.)*

Rest of the instructions were the same.

## DISCLOSED NEGATIVE MEMORY INSTRUCTIONS

İnsanlar hayatları boyunca çeşitli zorluklarla karşılaşabilirler. Bazen yaşadıkları bu zorlukları başkalarıyla paylaştıkları gibi bazen de paylaşmak istemeyebilirler. Sizden istediğimiz herhangi bir sebeple yaşadığınız ve bunu daha sonra biri/birileri ile paylaştığınız zor bir olay ya da durum ile ilgili tüm hissettiklerinizi ve düşündüklerinizi 3 gün boyunca olabildiğince dürüstçe ve içtenlikle aktarabilmeniz. Yazarken kendinizi serbest bırakarak hislerinizin açığa çıkmasına izin vermeye çalışın. Aklınızdaki her şeyi sansürsüzce ve yargılamadan yazın. Yazmaya başladıktan sonra hiç durmadan ve yazım kurallarına önem vermeden yazın.

*(People may face various difficulties throughout their lives. Sometimes, they might not want to share these difficulties with other people and sometimes they might want to keep these difficulties to themselves. We would like you to write about a difficult event or situation you experienced for any reason and that you previously shared with other people. For 3 days, write about your feelings and thoughts about the event as honestly and openly as possible. Please try to let yourself feel free by releasing yourself as you type. Write everything in your mind uncensored and without judgment. Once you start writing do not worry about spelling and continue to write.)*

Rest of the instructions were the same.

## APPENDIX I

### MEMORY QUALITY QUESTIONS

1. Bugün yazdıklarınız ne derece kişiseldi?

*(To what extent the things you wrote today were personal?)*

1-----2-----3-----4-----5-----6-----7

Hiç

*(Not at all)*

Son Derece

*(Extremely)*

2. Bugün yazdıklarınız sizin için ne kadar önemli ve anlamlıydı?

*(To what extent the things you wrote today were significant and meaningful?)*

1-----2-----3-----4-----5-----6-----7

Hiç

*(Not at all)*

Son Derece

*(Extremely)*

3. Bugün yazdıklarınızda ne derece derin duygularınızı ifade ettiniz?

*(To what extent did you express your deep feelings?)*

1-----2-----3-----4-----5-----6-----7

Hiç

*(Not at all)*

Son Derece

*(Extremely)*

4. Bugün yazdıklarınızda ne derece başkalarıyla daha önce paylaşmadığınız duygu ve düşüncelerinizi yansıttınız?

*(To what extent did you disclose your feelings and thoughts you have not disclosed before?)*

1-----2-----3-----4-----5-----6-----7

Hiç

*(Not at all)*

Son Derece

*(Extremely)*

5. Bugün yazdıklarınızı ne derece geçmişte bir başkasına söyleyebilmiş olmayı isterdiniz?

*(To what extent do you wish to have told the things you wrote today to somebody?)*

1-----2-----3-----4-----5-----6-----7

Hiç  
(Not at all)

Son Derece  
(Extremely)

6. Bugün yazdıklarınızı geçmişte başkalarıyla paylaşmamak için kendinizi ne derece durdurmuştunuz?  
(To what extent did you hold back from telling the things you wrote today?)

1-----2-----3-----4-----5-----6-----7

Hiç  
(Not at all)

Son Derece  
(Extremely)

7. Bugün yazdığınız olay/durum ahlaki olarak ne kadar doğruydum?  
(To what extent the event/situation you wrote today was morally right?)

1-----2-----3-----4-----5-----6-----7

Hiç  
(Not at all)

Son Derece  
(Extremely)

8. Bu anı kişiliğinizde herhangi bir olumlu değişikliğe yol açtı mı?  
(Did this event cause any positive change in your personality?)

1-----2-----3-----4-----5-----6-----7

Hiç  
(Not at all)

Son Derece  
(Extremely)

9. Bu anı kişiliğinizde herhangi bir olumsuz değişikliğe yol açtı mı?  
(Did this event cause any negative changes in your personality?)

1-----2-----3-----4-----5-----6-----7

Hiç  
(Not at all)

Son Derece  
(Extremely)

10. Ne sıklıkla bu anı hakkında düşünürsünüz?  
(How often do you think about this event?)

1-----2-----3-----4-----5

Çok nadiren      Nadiren      Bazen      Sık Sık      Çok sık  
(Very rarely)      (Rarely)      (Occasionally)      (Frequently)      (Very frequently)

11. Lütfen bu anınızın tarihini (gün/ay/yıl) belirtiniz. Tahmin etmeniz bile gerekse lütfen ay, gün ve yıl bölümlerini doldurunuz. Anınız uzun bir zaman dilimini kapsıyorsa söz konusu sürenin yaklaşık olarak orta noktasını belirtiniz.  
(Please write the date of your memory in day/month/year format. Even if you have to make a guess please try to write full date. If the memory extends to longer period, write approximate midpoint)

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

12. Bugünkü yazma deneyimizin nasıl geçtiğini kısaca anlatır mısınız?  
(Briefly explain how your writing experience was today.)



## APPENDIX J

### LAST DAY WRITING EXPERIENCE ASSESSMENT

Aşağıdaki soruları üç günlük yazma deneyimini düşünerek doldurunuz.

*(Answer the questions below considering your whole three-day writing experience.)*

1. Genel olarak dört gün boyunca yazdıklarınız ne derece kişiseldi?  
*(In general, to what extent the things you wrote were personal?)*

1-----2-----3-----4-----5-----6-----7

Hiç  
*(Not at all)*

Son Derece  
*(Extremely)*

2. Yazdıklarınızı bu deneye katılmadan önce ne derece başkalarıyla paylaşmıştınız?  
*(To what extent have you shared your experience with other before participating in this experiment?)*

1-----2-----3-----4-----5-----6-----7

Hiç  
*(Not at all)*

Son Derece  
*(Extremely)*

3. Yazdıklarınız ne derece en derin duygularınızı yansıtmış oldu?  
*(To what extent have you expressed your deep feelings?)*

1-----2-----3-----4-----5-----6-----7

Hiç  
*(Not at all)*

Son Derece  
*(Extremely)*

4. Yazdıklarınızı geçmişte başkalarıyla paylaşmamak için kendinizi ne derece tutmuştunuz?  
*(To what extent did you hold back from telling your experience?)*

1-----2-----3-----4-----5-----6-----7

Hiç  
*(Not at all)*

Son Derece  
*(Extremely)*

5. Genel olarak, üç gün boyunca yazma deneyimi sizin için ne derece zordu?  
*(In general, how difficult the three-day writing experience was?)*

1-----2-----3-----4-----5-----6-----7

Hiç  
(Not at all)

Son Derece  
(Extremely)

6. Son üç günde ne derece üzgün hissettiniz?  
(How upset have you felt for three day?)

1-----2-----3-----4-----5-----6-----7

Hiç  
(Not at all)

Son Derece  
(Extremely)

7. Son üç günde ne derece mutlu hissettiniz?  
(How happy have you felt for three day?)

1-----2-----3-----4-----5-----6-----7

Hiç  
(Not at all)

Son Derece  
(Extremely)

8. Sizin açınızdan üç gün boyunca olumsuz olayla ilgili yazmanın en iyi tarafları nelerdi?  
(For you, what was the best thing about writing about your negative experience?)

9. Sizin açınızdan üç gün boyunca olumsuz olayla ilgili yazmanın en zorlayıcı tarafları nelerdi?  
(For you, what was the most challenging thing about writing about your negative experience?)

10. Sizce üç gün boyunca olumsuz olayla ilgili yazmak size yardımcı oldu mu? Eğer evet ise, neden? Eğer hayır ise, neden?  
(Do you think that writing about your negative experience for three days helped you? If yes, why? If no, why?)

## APPENDIX K

### MEANS AND STANDARD DEVIATIONS OF MEMORY QUALITY QUESTIONS

		Shame	Guilt	Control
		Mean (SD)	Mean (SD)	Mean (SD)
To what extent the things you wrote today were personal?	Day 1	5.95 (1.09)	6.25 (1.07)	5.68 (1.57)
	Day 2	6.18 (1.10)	6.13 (1.04)	5.60 (1.41)
	Day3	6.00 (1.20)	5.54 (1.38)	5.60 (1.32)
	Average of 3 Days	6.05 (.88)	5.97 (.90)	5.62 (1.15)
To what extent the things you wrote today were significant and meaningful?	Day 1	5.09 (1.44)	5.58 (1.59)	6.00 (1.19)
	Day 2	5.50 (1.34)	5.96 (1.16)	5.68 (1.38)
	Day3	5.77 (1.11)	5.38 (1.35)	5.80 (1.23)
	Average of 3 Days	5.45 (1.13)	5.64 (1.12)	5.83 (1.06)
To what extent did you express your deep feelings?	Day 1	5.18 (1.30)	5.29 (1.43)	5.08 (1.55)
	Day 2	5.95 (1.05)	5.71 (1.08)	5.32 (1.28)
	Day3	5.95 (1.00)	5.58 (1.02)	5.20 (1.78)
	Average of 3 Days	5.70 (.80)	5.53 (.86)	5.20 (1.22)
To what extent did you disclose your feelings and thoughts you have not disclosed before?	Day 1	5.68 (1.39)	4.79 (1.93)	3.60 (1.96)
	Day 2	6.36 (.73)	5.42 (1.61)	4.68 (1.70)
	Day3	5.77 (1.51)	5.25 (1.51)	4.28 (1.84)
	Average of 3 Days	5.94 (1.03)	5.15 (1.32)	4.19 (1.35)

To what extent do you wish to have told the things you wrote today to somebody?	Day 1	3.41 (1.99)	3.58 (2.41)	3.80 (2.40)
	Day 2	4.55 (2.09)	4.33 (1.99)	4.20 (1.87)
	Day3	3.88 (1.84)	4.11 (1.58)	4.01 (1.64)
	Average of 3	3.68 (2.08)	4.42 (1.98)	4.04 (1.84)
	Days			
To what extent did you hold back from telling the things you wrote today?	Day 1	5.41 (1.65)	5.04 (1.90)	3.64 (2.08)
	Day 2	5.18 (1.79)	4.67 (1.81)	3.64 (1.68)
	Day3	4.86 (1.86)	4.17 (2.07)	3.16 (1.65)
	Average of 3	5.15 (1.58)	4.63 (1.70)	3.48 (1.52)
	Days			
To what extent the event/situation you wrote today was morally right?	Day 1	3.18 (1.87)	2.13 (1.42)	4.00 (2.69)
	Day 2	3.86 (1.75)	2.58 (1.44)	4.60 (2.48)
	Day3	4.18 (1.84)	2.88 (1.60)	4.68 (2.43)
	Average of 3	3.74 (1.50)	2.53 (1.27)	4.43 (2.24)
	Days			
Did this event cause any positive change in your personality?	Day 1	3.91 (1.88)	3.75 (1.78)	4.76 (1.99)
	Day 2	3.86 (1.91)	4.13 (1.60)	4.48 (1.69)
	Day3	3.73 (1.61)	4.46 (1.86)	4.92 (1.89)
	Average of 3	3.83 (1.48)	4.11 (1.52)	4.72 (1.61)
	Days			
Did this event cause any negative changes in your personality?	Day 1	3.82 (1.84)	3.42 (1.91)	3.76 (2.11)
	Day 2	3.64 (1.76)	3.50 (1.82)	3.68 (1.60)
	Day3	3.45 (1.41)	3.21 (1.84)	3.32 (1.95)
	Average of 3	3.63 (1.40)	3.38 (1.71)	3.59 (1.59)
	Days			
How often do you think about this event?	Day 1	2.55 (1.10)	2.58 (1.18)	2.92 (1.35)
	Day 2	2.18 (.73)	2.29 (1.12)	2.68 (1.35)
	Day3	2.23 (.87)	2.42 (1.47)	2.64 (1.29)

Average of 3	2.31 (.81)	2.43 (1.17)	2.75 (1.27)
Days			

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Note: Memory quality questions were rated between 1 and 7.

# APPENDIX L

## HIERARCHICAL MULTIPLE REGRESSIONS

Table L1. Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Negative Mood Regulation

Variable	B	SE B	$\beta$	t	Adjusted $R^2$	$\Delta R^2$	F for change in $R^2$
Step 1					.27	.30	9.60***
Gender	-.006	3.077	.000	-.002			
PANAS general PA	.741	.256	.308	2.890*			
PANAS general NA	-1.026	.286	-.381	-3.583*			
Step 2					.26	.004	.381
Gender	-.579	3.228	-.019	-.179			
PANAS general PA	.746	.258	.309	2.893*			
PANAS general NA	-.976	.299	-.362	-3.263*			
Negative Event	2.555	4.139	.068	.617			
Step 3					.24	.003	.129
Gender	-.513	3.300	-.017	-.156			
PANAS general PA	.719	.273	.299	2.634*			
PANAS general NA	-1.002	.308	-.372	-3.254*			
Negative Event	2.531	4.220	.068	.600			
Meaning-making	.546	2.608	.023	.209			
Autonomy	1.340	3.283	.046	.408			
Step 4					.31	.078	3.913*
Gender	-.194	3.210	-.006	-.060			
PANAS general PA	.684	.267	.284	2.561*			
PANAS general NA	-.826	.303	-.307	-2.721*			
Negative Event	2.735	4.047	.073	.676			
Meaning-making	2.137	2.644	.089	.808			
Autonomy	4.054	3.341	.138	1.214			
Growth	1.241	1.727	.085	.719			
Resolution	3.064	1.354	.271	2.263*			

Note. N = 71; \* $p < .08$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Table L2. Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Self-Compassion

Variable	B	SE B	$\beta$	t	Adjusted $R^2$	$\Delta R^2$	F for change in $R^2$
Step 1					.29	.32	10.579 <sup>***</sup>
Gender	-.989	2.786	-.036	-.355			
PANAS general PA	.442	.232	.199	1.903 <sup>+</sup>			
PANAS general NA	-1.186	.259	-.479	-4.573 <sup>***</sup>			
Step 2					.28	.001	.093
Gender	-1.246	2.929	-.045	-.425			
PANAS general PA	.444	.234	.200	1.898 <sup>+</sup>			
PANAS general NA	-1.163	.271	-.470	-4.287 <sup>***</sup>			
Negative Event	1.146	3.756	.033	.305			
Step 3					.28	.018	.868
Gender	-1.388	2.960	-.051	-.469			
PANAS general PA	.353	.245	.159	1.441			
PANAS general NA	-1.226	.276	-.495	-4.438 <sup>***</sup>			
Negative Event	1.399	3.786	.041	.370			
Meaning-making	-.492	2.340	-.022	-.210			
Autonomy	3.875	2.945	.143	1.316			
Step 4					.31	.049	2.493 (p=.091)
Gender	-.689	2.941	-.025	-.234			
PANAS general PA	.284	.244	.128	1.163			
PANAS general NA	-1.139	.278	-.460	-4.099 <sup>***</sup>			
Negative Event	1.348	3.707	.039	.364			
Meaning-making	-.012	2.422	-.001	-.005			
Autonomy	6.180	3.060	.228	2.019 <sup>*</sup>			
Growth	-.627	1.582	-.046	-.397			
Resolution	2.720	1.241	.262	2.193 <sup>*</sup>			

Note. N = 71; <sup>+</sup>p < .08, \*p < .05, \*\*p < .01, \*\*\*p < .001

Table L3. Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Psychological Mood

Variable	B	SE B	$\beta$	t	Adjusted $R^2$	$\Delta R^2$	F for change in $R^2$
Step 1					.32	.32	11.933 <sup>***</sup>
Gender	-.027	.178	-.015	-.153			
PANAS general PA	-.003	.015	-.023	-.222			
PANAS general NA	.094	.017	.585	5.695 <sup>***</sup>			
Step 2					.36	.05	5.394 <sup>*</sup>
Gender	.093	.180	.052	.517			
PANAS general PA	-.004	.014	-.030	-.297			
PANAS general NA	.084	.017	.519	5.024 <sup>***</sup>			
Negative Event	-.536	.231	-.239	-2.323 <sup>*</sup>			
Step 3					.35	.004	.207
Gender	.096	.184	.054	.522			
PANAS general PA	-.002	.015	-.011	-.105			
PANAS general NA	.086	.017	.531	4.997 <sup>***</sup>			
Negative Event	-.543	.235	-.242	-2.307 <sup>*</sup>			
Meaning-making	.006	.145	.004	.044			
Autonomy	-.116	.183	-.066	-.636			
Step 4					.39	.06	3.367 <sup>*</sup>
Gender	.103	.180	.057	.570			
PANAS general PA	-.002	.015	-.013	-.128			
PANAS general NA	.076	.017	.468	4.432 <sup>***</sup>			
Negative Event	-.562	.227	-.250	-2.471 <sup>*</sup>			
Meaning-making	-.100	.149	-.069	-.673			
Autonomy	-.228	.188	-.129	-1.217			
Growth	-.130	.097	-.148	-1.339			
Resolution	-.121	.076	-.178	-1.591			

Note. N = 71; <sup>+</sup> $p < .08$ ,  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$



Table L4. Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Physical Symptom

Variable	B	SE B	$\beta$	t	Adjusted $R^2$	$\Delta R^2$	F for change in $R^2$
Step 1					.04	.08	1.921
Gender	-.286	.245	-.139	-1.167			
PANAS general PA	.019	.021	.112	.901			
PANAS general NA	.053	.024	.277	2.225*			
Step 2					.04	.02	1.186
Gender	-.207	.256	-.101	-.810			
PANAS general PA	.018	.021	.109	.873			
PANAS general NA	.046	.024	.241	1.870 <sup>+</sup>			
Negative Event	-.355	.326	-.138	-1.089			
Step 3					.01	.002	.059
Gender	-.196	.262	-.096	-.751			
PANAS general PA	.019	.022	.115	.878			
PANAS general NA	.046	.025	.241	1.833 <sup>+</sup>			
Negative Event	-.367	.333	-.142	-1.103			
Meaning-making	.071	.206	.042	.343			
Autonomy	-.019	.265	-.009	-.071			
Step 4					.04	.06	2.035
Gender	-.214	.261	-.104	-.817			
PANAS general PA	.021	.022	.127	.965			
PANAS general NA	.036	.025	.187	1.412			
Negative Event	-.380	.328	-.147	-1.159			
Meaning-making	-.025	.215	-.015	-.116			
Autonomy	-.171	.276	-.081	-.620			
Growth	-.081	.140	-.079	-.579			
Resolution	-.175	.110	-.223	-1.594			

Note. N = 71; <sup>+</sup> $p < .08$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

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