

EFFECTS OF EMOTION- AND GRATITUDE-FOCUSED EXPRESSIVE WRITINGS  
ON INCOMING COLLEGE STUDENTS' ADJUSTMENT

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Effects of Emotion- And Gratitude-Focused Expressive Writings on Incoming College  
Students' Adjustment

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ABSTRACT

The transition to college can introduce new roles, opportunities, and challenges for growth and adjustment. Effective management of these challenges promotes personal adjustment and academic success (Chemers, Hu, & Garcia, 2001). However, difficulty in managing aspects of this transition introduces risks for dysfunction in emotional, social, and academic areas (Heiligenstein & Guenther, 1996). These risks are exacerbated for students who from underrepresented backgrounds at their college and within their field of study (Strayhorn, 2012).

Among undergraduates, expressive writing interventions have been used to improve adjustment. These brief activities of self-reflection were originally used to address past hurts and have been adapted to attend to life's benefits. Reflections on both negative and positive life experiences have been tied to improvements in well-being, social success, and physical health (Emmons & McCullough, 2003; Sloan & Marx, 2004). This is the first study to directly compare effects of expressive writings focused on strong negative emotional experiences with effects of writings focused on positive emotional experiences (gratitude). Furthermore, questions remain about mechanisms of influence for these two writing paradigms. The current study tested the influence of these

paradigms on student adjustment during the college transition, and assessed emotion mechanisms specific to each writing paradigm.

One hundred sixty-one incoming college students were recruited into an online study during the fall semester. Students reported on emotional, social, and academic outcomes at the third, fifth, and eighth weeks of the incoming academic semester. Students were randomly assigned to one of three experimental groups: a group writing on emotion-focused prompts; a group writing on gratitude-focused prompts; and a control group with no assigned writings. During the fourth week of the semester, students in the experimental groups spent four days writing about their respective group prompts.

Students in the emotion-focused writing group showed improvements in willingness to share intimate life events with others (i.e., length of writing, comfort with self-disclosure, recent heart-to-heart conversations). Students in the gratitude-focused writing group showed increases and maintenance of psychological resources (i.e., life satisfaction, involvement in group meetings, instances of studying). I discuss the implications of these findings below.

## DEDICATION

This work is dedicated in gratitude to the generations that have come before me, with optimism for the generations to follow, and in remembrance of those we lost before they completed their journeys.

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To my friends, who have endured a barrage of nonsensical text messages and social media posts over the last six years, I want to thank you all. You guys keep me sane and give me lots of excuses to procrastinate and eat way too much and play video games and some days that is so much easier than whatever grownup things I'm supposed to be doing. You guys are the chicken soup to my soul and I love you for it. I'm overdue on visiting you all, but I'll start leaving the house for more than just weddings soon. Promise.

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## **Chapter 1 - College Student Adjustment**

This chapter introduces the need to study personal adjustment among incoming college students. First, I describe typical college stresses impacting students' emotional well-being, social functioning, and academic progress, including potential long-term consequences of difficulty adjusting to the college transition. Then, I discuss background characteristics related to students' adjustment to college.

### **1.1 - Stresses Faced by College Students**

Students' transition to college, similar to other significant life shifts and transitions (e.g., high school; [Porter & Hsu, 2003]; parenting; [Robinson, Garber, & Hilsman, 1995]), may entail major stresses for incoming students (e.g., D'Zurilla & Sheedy, 1991). This transition typically involves students moving far from their homes and established relationships (Shaver, Furman, & Buhrmester, 1985). For many traditional college students (emerging adults who are entering a four-year college from high school or a two-year college), college represents a significant shift in expectations of autonomy, academic effort, and social ecology (Compas et al., 1986; Kenyon & Koerner, 2009).

#### **1.1.1 – Autonomy and Personal Responsibility**

In regard to autonomy, students have greater flexibility to plan their schedules in college, from their academic courses to daily eating choices and sleeping schedules to attendance at religious services. Increased autonomy grants students more freedom to engage in different activities during college and is associated with greater student motivation in academic and social domains (Garcia & Pintrich, 1996). This increase in autonomy also places greater responsibility on students for outcomes that are the result of their choices. Students have to not only establish their habits for work and leisure, but they must also face consequences of habits, whether in

academic, social, or personal areas. When students are confident in their ability to manage college obligations and maintain control over the surrounding pressures, they report better stress management of stress and more positive self-evaluations (Abouserie, 1994). Frustrations with autonomy demands can make this transition experience more difficult, as students question their capability to meet the rigors of their own expectations and goals, as well as the expectations of others in the college community.

### **1.1.2 – Emotional Demands**

Emotional pressures are also associated with the college transition. These pressures can be due to a variety of factors, including separation anxiety and fear of isolation (Paul & Brier, 2001; Rice, Cole, & Lapsley, 1990), diminished self-esteem and uncertainty (Lopez & Gormley, 2002; Paul & Kelleher, 1995), and frustration and self-criticism when confronted with setbacks (Allen, Barton, & Stevenson, 2014; Zuroff & Mongrain, 1987). Students who struggle to properly identify and regulate these emotional experiences are at risk for diminished personal adjustment that may hinder long-term emotional functioning, engagement in social domains, and academic performance. Students who become overwhelmed and pensive about their negative experiences are apt to place greater emphasis on experiences of negative affect (Garnefski, Kraaik, & Spinhoven, 2001; Nolen-Hoeksema, 2000) and are at greater risk for depressive symptoms, which are linked to poorer personal well-being (Heiligenstein & Guenther, 1996), classroom performance (e.g., Lee, Dickson, Conlet & Holmbeck, 2014), and social competence (D’Zurilla, Chang, Nottingham, & Faccini, 1998; Oswalt & Finkelberg, 1995).

Alternatively, positive aspects of emotional adjustment and functioning during the college transition can serve as buffers from typical stresses and predict adjustment and successful progress following college entry. These positive aspects broadly include students’ ability to up-

and down-regulate their emotional experiences, understand and empathize with others' important emotional cues, and relay important emotional messages to others (Bonanno, Papa, O'Neill, Westphal, & Coifman, 2004; Halberstadt, Denham, & Dunsmore, 2001). For example, interventions addressing students' emotional awareness and ability to engage in intimate discussions of emotional experiences have led to improvements in academic and emotional adjustment during the college transition (Kerr, Johnson, Gans, & Krumrine, 2004). Further, students who are better able to cope with short-term emotional setbacks and distress are more efficient in recovering from personal traumas and relationship conflicts (McCullough, Worthington, & Rachal, 1997) as well as classroom failures (e.g., Neff, Hsieh, & Dejitterat, 2005). These students are also less likely to rely upon and abuse substances such as alcohol as a means of coping (Patcok-Peckham & Morgan-Lopez, 2007). In addition, more emotionally-adjusted students are more likely to be strong performers in group settings and in the classroom. These successes predict increased odds of successfully progressing through college and completing a bachelor's degree in a timely manner (Gerdes & Mallinckrodt, 1994). Students who build early success in managing emotional experiences in college are more likely to remain at their current college through graduation, as they show greater emotional and social adjustment that promotes positive experiences and may contribute to an early sense of belonging and accomplishment in the college setting (Gerdes & Mallinckrodt, 1994).

### **1.1.3 – Social Challenges**

In addition, the college transition incorporates social challenges for establishing new, reliable relationships in an unfamiliar setting, while still maintaining long-established peer and family relationships from one's hometown. New college settings often incorporate pressures to conform to the school culture, which align with individuals' motivating need to belong and

develop dependable relationships with others (Baumeister & Leary, 1995). As a result, individuals typically adjust their attitudes, beliefs, and behaviors to better match those of desired interaction partners (e.g., Mercken, Candel, Willems, & de Vries, 2007; Sprecher, 1998). Thus, incoming college students may alter beliefs and behavior patterns to ease the transition process and quickly build new social ties with peers, often adapting to multiple expectations between groups and settings. Students who have greater confidence in their ability to initiate and manage social relationships in the college setting are likely to have a greater number of reliable relationships with peers and are at lower risk for loneliness and depression (Wei, Russell, & Zakalik, 2005). Likewise, students with more positive experiences in forming and maintaining social ties have better self-perceptions of social competencies and capabilities (Walton et al, 2011). Setbacks in perceptions of social capabilities and a diminished sense of belonging at college are associated with greater social stress when engaging with others (Lyrakos, 2012). These poorer self-evaluations contribute to greater homesickness and risk of academic setbacks and withdrawal from college (Scopelliti & Tiberio, 2010; Thurber & Walton, 2012).

#### **1.1.4 – Academic Pressures**

A major concern as students transition into college is increased academic workload and challenges in meeting rigorous academic demands (Arthur & Hiebert, 1996). Students' early performance in college courses and perceptions of their ability to manage academic challenges influence the extent to which they are able to persevere through new academic rigors and excel in courses (e.g., Zajacova, Lynch, & Epenshade, 2005). First-year college students' academic self-efficacy, or judgments of their ability to handle challenging academic tasks, is associated with academic performance and psychological well-being (e.g., Chemers, Hu & Garcia, 2001). Students who have lower perceptions of their ability to handle pressing academic challenges

typically struggle to manage pressures from incoming course assignments and exams and are at greater risk for dropping out of college (Dewitz, Woolsey, & Walsh, 2009).

In summary, the transition to college is accompanied by varying stressors that are common across four-year college settings in the United States. Research demonstrates that students' success in managing daily challenges tied to the college transition may have long-term implications for emotional well-being, social adjustment, and the likelihood for academic success. Each of these areas is associated with long-term student success and continued enrollment. College completion is important, as it is linked with lifetime benefits in job availability and increased income (Perna, 2003). Furthermore, individuals from marginalized groups that are less likely to attend college may experience the greatest benefits when they do attend (Brand & Xie, 2010). Thus, it is important to study factors that influence a successful transition to college and consider interventions that may improve this transition experience.

## **1.2 – Demographic Predictors of Adjustment to the College Transition**

Whereas a number of stresses are typical for all college students, aspects of students' demographic backgrounds and individual characteristics may alter the impact of common risks during the college transition. Some of these factors may heighten risks by introducing students to pressures based on marginalized group status, whereas others may lessen the impact of stresses by providing students with additional resources for coping and well-being. Demographic factors associated with greater stresses are common areas of marginalization in U.S. higher education. These include gender, minority-race status, non-traditional-age, transfer status, and generational status. Each of these factors may contribute to a sense of marginalization for students, which can threaten feelings of belonging and acceptance as students transition into the college experience (Strayhorn, 2012). Performance-based stereotype threats may also affect college adjustment, as



seen, for example, with female students in certain STEM fields (Spencer, Steele, & Quinn, 1999) and African-American students studying in predominantly White colleges and universities (Major et al., 1998).

### **1.2.1 – Gender**

In co-ed college settings, female undergraduates indicate greater stress and concerns about successful coping with academic issues and family relationships than male undergraduates (Hicks & Miller, 2006). This may reflect women's greater incorporation of emotion-focused strategies to resolve setbacks, compared to men's greater incorporation of problem-solving and behavior-focused coping strategies (Renk & Creasey, 2003). Emotion-focused coping strategies may be confounded with distressing approaches such as rumination, as individuals privately or cooperatively recalling past hurts may over-identify with the experienced setbacks. Hence, these approaches may fail to adequately address the source of stresses or contribute to over-identification with problems when emotions are not well-managed during distressing situations (Austenfeld & Stanton, 2004; Morrison & O'Conner, 2005). Thus, female undergraduates may be at greater risk than male undergraduates for depression (Dyson & Renk, 2006) and social anxiety (Turk et al., 1998) in part due to coping styles.

Beyond emotional strategies, women report lower overall support in college than men. These perceptions are linked to poorer classroom support and, in some instances, diminished classroom participation by female students (Hall & Sandler, 1982; Spencer et al., 1999). Similarly, stereotype threats of academic inadequacy may be pervasive in college settings, as women report less confidence and poorer self-evaluations in their abilities to handle academic pressures. These challenges may be more salient in face-to-face classroom settings, where women may be more readily reminded of academic stereotypes, than distance learning (i.e.,

online) scenarios (Sullivan, 2001). While faculty, peer colleagues, and women themselves report more concerns about women's ability to manage academic and research pressures, studies where stereotype threats are removed or accounted for suggest that women are readily equipped to excel across academic fields and perform at the same level as male colleagues (Kardash, 2000; Spencer et al., 1998). These differing emotional strategies and aspects of classroom engagement may impact early adjustment and comfort during college entry. These findings highlight the importance of further understanding the impact of gender during the transition to college.

### **1.2.2 – Age**

As more students are entering or returning to college after establishing careers and starting families, researchers and administrators alike are increasingly interested in the adjustment of non-traditional-age students during the college transition. “Non-traditional-age students” are typically defined as students age 25 years or older who are enrolled in four-year colleges in the United States. For many four-year institutions, the student experience is tailored to better accommodate students entering directly from high school (or who are transferring after one or two years at another college setting). However, recent surveys suggest nearly one-in-three entering college students are now of “non-traditional-age”, suggesting a reconceptualization of “the traditional student” and altering accommodations to meet the needs of students with differing experiences and personal needs. Further, a majority of older students have dependents and jobs separate from their college courses (National Center for Education Statistics, 2009), placing additional demands that complicate roles across home, work, and school that traditional students do not as often share (Dill & Henley, 1998).

While older students may experience many demands on time and energy aside from their college courses, they may be better equipped to manage autonomy and academic pressures than

younger students. Non-traditional-age students at four-year schools spend more time studying (Adams & Corbett, 2010), report greater fulfillment in completing course assignments (Dill & Henley, 1998), and report greater academic performance than traditional-age students (Carney-Crompton & Tan, 2002). However, non-traditional age students also report having few opportunities to build valued social ties with peers and student groups (Adams & Corbett, 2010; Dill & Henley, 1998). This may detract from some positive experiences and relationships that may benefit the college transition and overall college career. Alternatively, older students report having fewer friends who engage in risky substance behaviors and report comparable intimacy and satisfaction with romantic partners, suggesting there are aspects of social life that remain well-balanced and healthy in domains outside of the classroom or student organizations (Dill & Henley, 1998). While some colleges are incorporating evening and weekend classes to better accommodate older students' schedules and multiple roles, there remain obstacles in providing more recreational and social outlets that promote well-being for nontraditional-age students. Student age is important to examine because traditional-age and non-traditional-age students may differ in emotional, social, and academic outcomes during the college transition.

### **1.2.3 – Minority-Race Status**

Students of a minority-race and/or ethnicity on college campuses may also face additional stress during the college transition. For these students, poorer sense of social support from peers and faculty may heighten pressures of academic and social adjustment. College stresses are more pronounced when students are visible minorities, such as when Asian, Black, or Latino students attend predominantly White colleges and universities (e.g., Greer & Brown, 2011; Hurtado & Carter, 1997; Okazaki, 1997). Minority students typically report poorer views of self (Spurgeon & Myers, 2010) and lower sense of belonging with peers at the college (Strayhorn, 2012),

perceive more stresses (Negga, Applewhite, & Livingston, 2007), and report more depression and anxiety symptoms (Major et al., 1998). The greater risk faced by minority-race students is due to minority status at their college rather than race/ethnicity per se; African American students who are majority-race at their college (such as those attending historically-Black colleges and universities) report low levels of stress and display stronger academic performance (Spurgeon & Myers, 2010).

Race and ethnicity are aspects of one's background and identity that can also involve stereotype threats regarding successful academic performance. Reminders of one's minority race or ethnicity status in academic contexts can place more pressure on students to avoid academic pitfalls that would 'confirm' stereotypes of minorities as poorer performers or unable to match the skills of White colleagues (Steele & Aronson, 1995). Again, these pressures are more likely to be salient when minority individuals attend predominantly White institutions. Further, these threats may intersect with other marginalized identity statuses (e.g., gender, age, etc.), and place considerable pressure on students who experience marginalization in more than one domain (e.g., African American women; [Castillo, Conoley, & Brossart, 2004; Jackson, 1998]). Similarly, minority college students are at increased risk for smaller, often subtle threats to social and academic acceptance, which can weigh on emotional, social, and academic well-being (Solórzano, Ceja, & Yosso, 2000). These threats, or micro-aggressions, include verbal, physical, symbolic, and internet-based challenges to status and acceptance in the college setting. Given these threats to adjustment, minority-race or -ethnicity college students are confronted with managing additional worries based on their racial and ethnic identity. For these reasons, racial or ethnic status is an important factor to consider during the college transition.

#### **1.2.4 – Transfer Status**

Transfer students, though typically older than entering first-year students, experience a range of challenges that do not entirely overlap with those of non-traditional-age students as they adjust to a new college setting and complete another transition experience. Transfer students are likely to report transition challenges that resemble those of first year students, as they are completing another form of transition to a new environment (e.g., Townsend & Wilson, 2006). However, transfer students may not have as extensive social and academic support for coping and building a sense of belonging in the college setting. For instance, the orientation period for transfer students is not always as rigorous as for incoming first-year students, as some institutions may assume transfer students require fewer resources to adjust during this period. However, findings reveal that orientation processes, such as first-semester/year orientation programs, significantly improve transfer students' academic performance and likelihood to remain at the current college (Glass & Garrett, 1995). In many cases, transfer students are transitioning from a two-year college to a four-year college that may be much larger to navigate, in regards to locating physical buildings and activities as well as academic and counseling resources. In addition, many transfer students must become acquainted with course loads, class sizes, and teaching styles that differ from what they have become accustomed to at their previous institution (Flaga, 2006). This can lead to abrupt decreases in academic performance and grade point average (Hills, 1965), as well as frustration for students (Flaga, 2006). Transfer students who do not have thorough academic and social supports for managing this transition may experience distress and be at an increased risk for poorer emotional, social, and academic adjustment during college entry (Gerdes & Mallinckrodt, 1994). Although transfer status is less often a visible source of bias from peers, faculty, and administrators when compared with gender, non-traditional-age status, and minority-race or –ethnicity status, its association with

difficulty transitioning to a new college setting demonstrates that it is important to examine during the college transition

### **1.2.5 – Generational Status**

First-generation college students also face additional pressures in adjusting to college that may exacerbate the typical stresses associated with the college transition. These students typically have families who are less able to offer in-depth advice on preparing for the challenges of college. Further, these families often struggle to identify with students' ongoing stresses (Pascarella, Pierson, Wolniak, & Terenzini, 2004). First-generation students receive less support from their families in the decision to attend college and throughout the college career (Bartels, 1995; York-Anderson & Bowman, 1991). These students also report less confidence in their ability to handle college pressures and experience poorer early academic performance than peers (Ramos-Sánchez & Nichols, 2007). Relative to peers with family college history (successive-generation students), first-generation students complete fewer academic credit hours and receive lower grades, despite a lack of differences in reasoning or problem-solving skills that would be associated with short-term college adjustment and long-term career success (Pascarella et al., 2004). The challenges facing first-generation students vary widely and students typically encounter differing profiles of stresses related to first-generation status (Ramos-Sánchez & Nichols, 2007). However, many pressures aside from parental education predict attrition among first-generation students, including funding opportunities, substance abuse, and emotional distress (Martinez, Sher, Krull, & Wood, 2009). First-generation students who incorporate successful coping strategies, such as proactive coping and seeking support from others, are buffered from stresses and report greater sense of belonging that resembles successive-generation peers (Phinney & Haas, 2003). Students from all backgrounds benefit from successful

coping and sense of belonging during transitions into college. However, marginalized or under-supported students who are at a greater risk of perceived isolation and distress may benefit even more from skills in managing stresses and perceived setbacks.

### **1.2.6 – Involvement in Extended Orientation Programs**

While certain background characteristics can expose students to threats of marginalization in the college transition, specific activities may buffer students from distress and bolster their personal, social, and academic resources. Of particular interest are orientation courses and programs focused on improving the early student experience and addressing both possible setbacks and strategy improvements that can supplement students' coursework, while ameliorating some pressures associated with the college transition. These programs can include themes for addressing academic pursuits in science and engineering, promoting student health and well-being in residential halls, and providing academic and social support for transfer populations. These programs, which are referred to as First-Year Experience (FYE) programs at the university where this study occurred, show great promise for improving student well-being, improving early social and academic functioning during the college transition, and lowering risks of dropout from the college (e.g., Gerdes & Mallincrodt, 1994; Townsend & Wilson, 2006). Researchers and practitioners are interested in understanding the potential role of these programs in improving performance and motivation as students manage their first academic semester and encounter new teaching approaches and study demands.

### **1.3 – Hypotheses for Demographic Influences and Marginalization**

I hypothesized that individuals who indicate background characteristics that are possible aspects of marginalization in predominantly-White, traditional-age college institutions would report poorer adjustment during the college transition, both in initial adjustment and in change

across the first semester. These background characteristics include female gender status, non-traditional-age status, minority-race status, transfer status, and first-generation status. I also hypothesized that individuals who were involved in a first-year experience program would report greater academic adjustment during the early college transition and across the first semester.

#### **1.4 – Summary**

Demographic factors of female gender, non-traditional-age status, minority-race status, transfer status, and first-generation status can present risks that contribute to greater difficulty during the college transition. It is noteworthy that these risks are more prominent in settings where students' underrepresented status would be more pronounced, such as predominantly male, predominantly White institutions and institutions consisting mostly of traditional-age college students. Accordingly, differences in outcomes according to these variables will be tested to determine if results for main hypotheses hold across these demographic factors.

#### **1.5 – Chapter Summary and Dissertation Overview**

The transition from high school to college is an important period with potential long-term consequences for students' academic and career success, as well as psychological well-being. Therefore, intervening to improve students' likelihood of successful adjustment to college can prove critically important. In the next two chapters, two types of expressive writing interventions will be introduced and discussed as means of influencing positive change in student adjustment. Chapter 2 concerns a classic writing paradigm focusing on reflections on emotionally-salient events in a therapeutic manner. Chapter 3 concerns a second, more recent, writing paradigm involving reflections on emotionally satisfying events in a grateful manner. The underlying theories concerning each of these approaches will be discussed, alongside prior findings



concerning each writing paradigm as they relate to adjustment in emerging adults and college students.

Following description of these two writing paradigms, Chapter 4 reviews in further detail the outcomes of interest that are pertinent to students' early transitions to college. These constructs involve aspects of adjustment and maladjustment across three areas: emotional adjustment; social adjustment; and academic adjustment. In Chapter 5, an overview is provided for the study designed to test effects of these two writing paradigms on personal and interpersonal adjustment for transitioning college students. In this study I tracked students across the first two months of the first academic semester in college. Students were randomly assigned into one of three experimental groups to compare the influences of the two expressive writing paradigms when compared with each other and with a control group that did not complete expressive writing. Chapter 6 will then detail the procedures for this study, including the sample, procedure, measures, and measurement timings. Chapter 7 will discuss the analytical strategy for this project and review the study findings, including hypothesis tests and exploratory analyses. Finally, Chapter 8 will discuss the implications of the study findings and additional considerations for future work.

## **Chapter 2 – Therapeutic Expressive Writings**

A number of writing interventions are aimed at addressing past hurts. These writings are therapeutic in that they let the individual express thoughts and feelings that they may have been unwilling to share before or willingly confront. Disclosing feelings about these negative experiences, even if only in writing, is found to be beneficial in many of the same ways that engaging with a counselor or clinician is helpful in recognizing and overcoming distresses (Jones & Pennebaker, 2006), although the impacts of private writing versus professional counseling are likely to differ significantly in magnitude.

### **2.1 – Structure of Therapeutic Writings**

Therapeutic writing activities have been applied across a large number of studies and samples (e.g., college students, working adults, prison inmates). In these studies, individuals are typically given either a series of control prompts or emotion-laden expressive writing prompts. Writing in response to these prompts may last between 10 to 30 minutes, and is completed over the course of three consecutive days. Control prompts often involved neutral recall of past situations and descriptions of those events, with an instruction not to focus on emotional experiences from those events (Pennebaker, 1997). Therapeutic writings involve writing about deep thoughts and feelings, particularly focusing on important traumatic or stressful issues. Individuals are often asked to reflect over their lifetimes, and are able to connect the event with other aspects of their past or future, as they find it appropriate (Pennebaker, 1997). Individuals are asked not to worry about grammar or sentence structure, but to prioritize writing truthfully for the entire time point, without ending the session early or taking an extended break. Timings of writings have varied, both in length of time after the expressed event, and in scheduling of repeated writings. Findings have recently suggested that expressive writings immediately after a

painful experience may be detrimental, rather than beneficial for the participants, such as with women who described recently giving birth (Small et al., 2000). Additionally, repeated writings have been used with individuals reporting once every few hours, once a day across consecutive days, and once a week across consecutive weeks (Pennebaker, 1997). Smyth's (1998) review of expressive writing studies suggested longer wait periods between writings (i.e., once a week) contributed to greater effects among individuals. Follow-up studies did not yield similar results when pacing of writings was explicitly manipulated between groups (Pennebaker & Chung, 2007).

## **2.2 – Benefits of Therapeutic Writings**

Individuals who participate in therapeutic writings often show longitudinal benefits in overall affect and health. Repeated writings on traumatic events have been linked with greater coping following job loss (Spera, Buhrfeind, & Pennebaker, 1994) and lessened rumination across a six-month period (Gortner, Rude, & Pennebaker, 2006). Individuals who engaged in these therapeutic writings were more proactive in addressing life hurdles (i.e., finding new job opportunities; Spera et al., 1994) and were less likely to over-identify with the setbacks they experienced (Gortner et al., 2006). Emotion-focused writings also have positive implications for interpersonal coping and adjustment. College students who engaged in therapeutic writings following painful romantic partner breakups reported less physical distress following writing activities, relative to control participants who engaged in non-emotional writings (Lepore & Greenberg, 2002). These individuals were also more likely to reconcile with their romantic partners, indicating important social implications as well. Therapeutic writings and greater emotional disclosure have been consistently linked to greater physical and mental health improvements for participants (for a review, see Pennebaker & Chung, 2007). Responses to

therapeutic writings have included decreases in personal distress and negative affect (Sloan & Marx, 2004; Watson & Pennebaker, 1989), better sleep quality (de Moor et al., 2002), and fewer reported physician visits in the months following the writing activities (Pennebaker & Beall, 1986). Addressing negative emotions and feelings in a constructive manner appears to have wide-ranging benefits in buffering individuals from life stresses and aiding in recovery from setbacks.

Regarding samples of undergraduate students in particular, therapeutic writing activities have been linked with adaptive outcomes. Lepore and Greenberg (2002) found expressive writings to improve students' physical well-being, long term affective experiences (i.e., mood), and later social adjustment (i.e., chance to reconcile with ex-romantic partner). These outcomes are important and valued in student adjustment across the college career, and they may be particularly salient for early transitions into the college experience. Additionally, work by Gortner and colleagues (2006) focused on expressive writings for college students who were vulnerable and at a high risk for depression symptoms. These writing activities were associated with significant decreases in students' depression symptoms and tendencies to ruminate on negative events six months later. These findings are particularly important for college students, as depression involves a number of risks to students' adjustment and successes in academic (e.g., GPA and lowered risk of dropout; [Heiligenstein & Guenther, 1996]) and social areas (e.g., belonging with peers; [Gerdes & Mallinckrodt, 1994]).

### **2.3 – Limitations of Therapeutic Writings**

Therapeutic writings may be limited in benefits for individuals with high anxiety. These are persons who are highly sensitive to and vigilant against negative experiences (Zvolensky & Forsyth, 2002) and are more prone to rumination and negative appraisal following ambiguous

and nonthreatening events (Mellings & Alden, 2000). Previous uses of therapeutic writings regarding anxiety and PTSD symptoms have had varying results based on the involved samples. For non-clinically-referred samples, writings on traumatic experiences have been linked with adaptive outcomes and decreases in PTSD symptoms (Schoutrop et al., 1997). However, for samples with clinically-diagnosed post-traumatic stress disorder, engagement with the writing activities either led to unchanged or heightened PTSD symptoms (Gidron, Peri, Connolly, & Shalev, 1996; Sloan, Marx, & Greenberg, 2011). Similarly, limited results have been found for victims of domestic violence (Koopman et al., 2005). These results suggest that open, undirected exploration of feelings for anxious or severely traumatized individuals may not be as efficacious as for other non-clinical and clinical (e.g., primarily depressed) populations. It's possible that without a clear approach and guidance for making meaning and adding coherence to these events, individuals become overwhelmed with threatening thoughts and memories that do not allow for constructive recall and may either discourage coherent reflections of the event or introduce rumination about negative event details (Sales, Merrill, & Fivush, 2013; Waters, Shallcross, & Fivush, 2013).

#### **2.4 – Proposed Mechanisms of Emotion-Focused Writings**

While therapeutic writings are associated with improved outcomes in multiple domains of functioning, the mechanisms underlying responses to writings are less understood. Jones and Pennebaker (2006) and colleagues have proposed three major domains of change that may account for improvement in personal adjustment following completion of therapeutic writings: (1) changes in motivation and willpower to correct painful experiences (e.g., finding a job after loss; [Spera et al., 1994]; reconnecting with romantic partner after breakup; [Lepore & Greenberg, 2002]); (2) changes to cognitive appraisals of negative events; and (3) affective

experiences following negative events (see Jones & Pennebaker, 2006). Similarly, Esterling and colleagues (1999) provided a model of change for expressive writing incorporating behavioral (e.g., coping), cognitive (e.g., self-esteem) and affective (e.g., use of emotion words) concurrent mechanisms. These researchers point to the traditional focus of expressive writings on painful and even traumatic contexts, and the opportunities for building meaning when reflecting on these experiences, embracing opportunities to resolve painful life experiences and memories, and constructively experiencing and regulating emotions associated with events.

#### **2.4.1 – Behavioral and Motivational Mechanisms**

Some individuals who experience upsetting and painful events may avoid seeking social support during setbacks. This is known as self-concealment, wherein individuals avoid sharing their experiences and seeking aid to overcome stresses (Kelly & Achter, 1995). Self-concealment is linked with greater risk for anxiety, depression, and reports of bodily symptoms (e.g., gastrointestinal complaints and bodily pain; [Larson & Chastain, 1990]). These are risks that are lessened when individuals complete therapeutic writings (e.g., Pennebaker, 1997). Results support indirect effects of self-concealment on well-being, through detrimental effects on one's fulfillment of personal needs, which may be particularly important following stressful events (Uysal, Lin, & Knee, 2010). Alternatively, self-disclosure may prove beneficial for individuals in coping with stresses and responding to distresses. Disclosure through expressive writings has been associated with improvements in health reports and fewer reported doctor visits (Pennebaker & Chung, 2007), improvements in negative affect following perceived workplace injustices (Barclay & Skarlicki, 2009), and decreases in depression for women discussing sexual abuse (Lorenz, Pulverman, & Meston, 2013).

#### **2.4.2 – Cognitive Mechanisms**

Cognitive mechanisms of therapeutic writings may include shift in attention and changes in appraisals of situations and oneself. Extant studies suggest that individuals who undergo therapeutic writings begin to reflect on negative events in greater detail and use more complex and analytical language when discussing the issues at hand. Deeper reflections on negative events may help organize understanding of the event (Pennebaker, 1997; Smyth, True, & Souto, 2001). Deeper reflection and reappraisal of events may also improve accuracy of appraisals, such as improvements in the accuracy of appraised threats from situations. These improvements contribute to later adjustment for individuals. More accurate appraisals of situations and interactions with others affects how individuals select goals and behaviors for accomplishing tasks, as well as their perceptions of emotional feedback from interaction partners (Fitness & Fletcher, 1993; Richard, Pligt, & Vries, 1996). It is also possible that the process of expressive writing and deeper reflection alters memories of painful events to allow for greater coherence and the willpower to constructively manage details of the event without becoming overwhelmed or fixated by negative thoughts and feelings, further reinforcing the synergetic importance of behavior, cognition, and emotion in expressive writings (Esterling et al., 1999; Pennebaker & Jones, 2006).

### **2.4.3 – Emotional Mechanisms**

Change in affective experiences, and particularly experiences of negative affect, is the third mechanism considered for therapeutic writings. Because individuals who have faced previous traumatic events may not have thoroughly disclosed and confronted their negative feelings (Kelly & Achter, 1995), constructive handling of negative affect is less likely to occur before completion of therapeutic writings. Indeed, a consistent longitudinal finding following therapeutic writings is a decrease in negative affect that is significant from baseline and different

from non-expressive comparison groups (Pennebaker & Chung, 2007). It is possible that intentional confrontation of negative affective experiences “desensitizes” individuals to negative thoughts and feelings, and makes these experiences more manageable to address (Lepore, 1997). While some experiences of negative affect may be useful in drawing attention to important short-term issues (Fredrickson, 2001), decreases in frequency and intensity of persistent negative affect are associated with reduced risks of maladjustment (Craford & Henry, 2004; Diener, Larsen, Levine, & Emmons, 1985). Additionally, being able to successfully manage negative events and emotions may encourage individuals to be more receptive to positive affective experiences, which buffer and quicken recovery from distress following painful events (Fredrickson & Tugade, 2003; Tugade & Fredrickson, 2004).

## **2.5 – Self-Compassion as a Moderator of Expressive Writing Influence**

Self-compassionate responses to challenging life events may involve constructive appraisals of and responses to personal setbacks. Self-compassion involves positive ways of relating to the self, following personal setbacks (Neff, 2003). This approach involves three areas of response: self-kindness rather than self-judgment; a sense of connectivity with others rather than a sense of isolation; and mindful awareness of the issue at hand rather than over-identification with the current problem. Self-compassion has been linked with adjustment among emerging adults as a buffer from acute and chronic stress (Leary et al., 2007), secure attachment and empathy (Neff & McGehee, 2010; Wei et al., 2011), and more effective coping following setbacks (i.e., academic failure; Neff et al., 2005). This concept is related to but distinct from constructs such as self-esteem, and is thought to be more predictive of stress responses than related constructs, such as mindfulness (Neff & Vonk, 2009; Van Dam, Sheppard, Forsyth, & Earleywine, 2011). Researchers have consistently found self-compassion in college students to



be associated with less depression and anxiety, even with students who have experienced traumatic events (Thompson & Waltz, 2008). Kia-Keating and colleagues (2011) suggest that personal characteristics such as self-compassion may contribute to a protective pathway that ameliorates harmful effects of risks across major developmental domains (e.g., emotional, social, academic). Protective influences are viewed as dynamic and contextual, but self-compassion may provide an enduring buffer from distress that is relevant across a range of contexts.

Self-compassion may influence individuals' responsiveness in confronting negative emotions and events. Individuals who are lower in self-compassion would be expected to show poorer mindfulness about the situation at hand, either neglecting important details of the event and its relevance to the self, or over-identifying with the event and becoming unable to distinguish between a personal setback and the self as inadequate. Further, individuals who are lower in self-compassion may be more easily overwhelmed by negative experiences, focusing on negative details and feeling isolated in their setbacks. For these individuals, the benefits of expressive writings may be attenuated or even overturned, as lower self-compassion may relate to rumination and negative appraisals similar to those faced by highly-anxious individuals who complete similar writings (e.g., Schoutrop et al., 1997). Recent evidence suggests that individuals low in self-compassion show a preference for self-critical feedback following mistakes that impact themselves and others, and are more likely to incorporate self-critical behaviors when reflecting on undesirable actions that impact others (Allen, Barton, & Stevenson, 2015). Further, self-compassionate individuals show quicker recovery from routine distress (Leary et al., 2007) and improved outlook given histories of trauma (e.g., maltreatment; [Tanaka, Wekerle, Schmuck, Paglia-Boak, & The MAP Research Team, 2011; Vettese, Dyer, Li, & Wekerle, 2011]). Given this theoretical and empirical foundation, I expected self-compassion to

moderate the influence of emotion-focused writings on student adjustment, particularly in areas of emotional adjustment. Specifically, I expected benefits of emotion-focused writings to be greater for students higher in self-compassion.

## **2.6 – Hypotheses for Emotion-Focused Writings**

I hypothesized that individuals who completed emotion-focused expressive writings would experience adaptive changes that support greater management of negative experiences and events, including behavioral, cognitive, and emotional responses. Specifically, students assigned to complete emotion-focused writings were expected to report increases in adaptive self-disclosure and reductions in destructive rumination following the completion of the writing period. These changes were expected to help explain later improvements in emotional experiences, particularly reductions in unpleasant experiences of negative affect and depressive symptoms. I also expected participants' self-compassion to promote the influence of emotion-focused writing, such that more self-compassionate individuals would report even greater improvements in emotional domains, compared to individuals lower in self-compassion.

## **Chapter 3 – Grateful Expressive Writings**

### **3.1 – Definition of Gratitude**

As with writings centered on negative and painful experiences, writings focused on positive emotions and events are associated with later adjustment and well-being (Toepfer & Walker, 2009). Among writing activities focusing on valued character strengths, gratitude has been incorporated the most extensively. Gratitude is a proposed human strength that has been associated with intrapersonal and interpersonal well-being. As a personal quality, gratitude is valued across a number of cultures, societies, and faiths (Emmons & Crumpler, 2000; Simmel, 1950). Gratitude has been defined as a lasting sense of thankfulness following a perceived benefit and acknowledgement that the benefit is from another person/source (Peterson & Seligman, 2004). Fitzgerald (1998) posits that gratitude consists of three components: a sense of appreciation to another for a perceived benefit; a sense of goodwill and benevolence toward the other; and a desire to reciprocate that stems from one's appreciation. Additionally, McCullough and colleagues (2001) have argued that gratitude serves as a moral affect in three regards: it serves as a barometer, or source of feedback, for moral behaviors and standing; it motivates moral behaviors; and it reinforces likelihoods of upholding future moral beliefs and behaviors. Gratitude has been considered as a mood and emotion, but recent measurements have focused on its role as a disposition and affective trait (McCullough, Emmons, & Tsang, 2002). In this sense, measures of gratitude are concerned with dispositional attention to beneficial acts by others alongside a tendency to desire repaying a benefactor or extending kindness to others when the benefactor is not directly available. Dispositional gratitude has been associated with traditional domains of personality, with positive associations with conscientiousness, agreeableness, openness, and extroversion, and negative associations with neuroticism (Wood et al., 2008).

Researchers have targeted gratitude as a focus of expressive writing because of its associations with personal adjustment and interpersonal connectivity, as well as its potential malleability following interventions (e.g., Froh, Kashdan, Ozimkowski, & Miller, 2009; Froh, Yurkewics, & Kashdan, 2008; Wood, Froh, & Geraghty, 2010).

### **3.2 – Structure of Grateful Writings**

Recent studies concerning grateful writings have tailored expressive writings prompts for positive emotion experiences, based on earlier work by Pennebaker (1997) and colleagues. This work has been consistently linked with improvements in individuals' adjustment. Approaches to gratitude-focused writings have included listing recent events and individuals for whom one is grateful (e.g., Emmons & McCullough, 2003; Lyubomirsky, Sheldon, & Schkade, 2005), as well as writing essays about and letters of gratitude to those who have benefited participants before (e.g., Toepfer, Cichy, & Peters, 2012; Toepfer & Walker, 2009; Watkins, Woodward, Stone, & Kolts, 2003). In previous studies, groups involved with grateful writings have been contrasted with comparison groups that wrote on neutral events or recent burdens. Consistent benefits were observed for those writing on grateful experiences. Additionally, writing about the characteristics of individuals one is grateful for led to greater increases in positive affect than writing positive essays for or letters of gratitude to those individuals (Watkins et al., 2003). Given these findings, I proposed a writing activity that incorporated writing about individuals and events for which one would be thankful.

### **3.3 – Benefits of Grateful Writings**

Grateful writings have been linked with lasting increases in life satisfaction (Froh et al., 2008) and dispositional gratitude (Toepfer & Walker, 2009), as well as decreases in depression (Seligman et al., 2005). These studies have varied in how long individuals' progress was tracked,

with follow-ups ranging from a few weeks (e.g., Emmons & McCullough, 2003; Froh et al., 2008) to six months (e.g., Seligman et al., 2005). These results coincide with extant associations between gratitude and areas of adjustment, such as optimistic outlook (Emmons & Shelton, 2002), social support (Wood et al., 2008), desire to contribute to society (Froh, Bono, & Emmons, 2010), and decreased stress (Wood et al., 2008). Many of these findings have involved community adult and undergraduate samples (e.g., Emmons & McCullough, Sheldon & Lyubomirsky, 2006).

While associated with decreases in depression and increases in social support, grateful writings have typically been applied toward building greater flourishing in individuals, rather than addressing maladjustment or stress. One instance of tested writings involves Seligman and colleagues' (2005) comparisons of grateful letter writing and brief thankful listings with other interventions aimed at improving personal flourishing in individuals. The purpose of this study was to further understand and compare strengths-focused writings and determine whether there were major differences in approaches of grateful writings. Individuals who listed thankful events reported increased happiness and decreased depressive symptoms six months after writings were completed. Individuals who wrote letters of gratitude reported increases in adjustment a month after the writings, but these results diminished at six months. These two activities were among the most effective interventions tested. These results support the benefits of grateful expressive writings for personal adjustment in individuals. However, there remain questions as to how lasting the effects of grateful writing interventions are, in comparison with other types of intervention, including behavioral therapy programs (Wood et al., 2010). The type of grateful writings individuals engage in appears to have different implications for immediate effects (Watkins et al., 2003) and longitudinal effects (Seligman et al., 2005). Whereas briefer,

“counting blessings” approaches do not indicate as large immediate effects, in comparison to letter writings, these approaches may show more lasting effects for happiness and later depression (Seligman et al., 2005). However, reflective gratitude writings have not been directly compared with similar writing approaches over time.

### **3.4 – Proposed Emotion Mechanisms of Grateful Writings**

For responses to grateful writings, I focus on mechanisms based on the broaden-and-build theory of positive emotions, including increases in psychological resources (Fredrickson 1998, 2001). The broaden-and-build theory proposes that positive emotions serve to expand one’s current thought-action repertoire or toolset (Fredrickson, 1998). This broadened thought-action repertoire allows individuals to further bolster previously-established skills and behaviors, as well as explore new thoughts and actions. Engagement in grateful writings should increase experiences of positive emotions and particularly gratitude-related emotions. This might then lead to greater development of personal resources, which include psychological and social resources for individuals (Fredrickson, 2001). With previous studies, such improvements have already been noted in areas of personal well-being and social engagement (Emmons & Sheldon, 2002; Emmons & McCullough, 2003; Froh et al., 2010).

According to Fredrickson (1998) and other researchers, positive emotions are more likely to be experienced in non-threatening, desirable situations and may encourage a broader, less action-specific means of interacting with the self and one’s surroundings. For example, feelings of joy or creativity may not have typical behavior responses associated with them, like the likelihood to remove oneself from a situation involving fear or disgust. Grateful writings may contribute to pleasant experiences such as gratitude and subjective feelings of pleasure and happiness, with ultimate implications for life satisfaction and increased attention to positive life

experiences. These dispositions are not only desirable, but have implications for later adjustment (e.g., Peterson & Seligman, 2004; Lyubomirsky, King, & Diener, 2005). For example, individuals who experience gratitude may then seek ways to extend benefits to former benefactors and others who could benefit from an act of kindness (McCullough et al. 2002). These actions are fulfilling, have the potential to bolster the individual's adjustment without detracting from others, and are morally and culturally valued in the United States (Park et al., 2004; Peterson & Seligman, 2004).

The mechanisms of interest for gratitude-based writings incorporate positive life evaluations and responses that would be expected to promote continued gains in psychological resources, according to the broaden-and-build theory. These include subjective experiences of happiness and trait gratitude, which are both linked to broad areas of well-being within individuals and greater relationship quality with others (Park et al., 2004; Lyubomirsky et al., 2005).

In general, common correlates of character strengths include positive affect (Seligman et al., 2005), coping skills and resilience from setbacks (McCullough & Snyder, 2000; Peterson & Seligman, 2003), life satisfaction and well-being (Park, et al., 2004). Specific strengths such as dispositional gratitude are = associated with more prosocial engagement, such as community-building and volunteering (Burr, Choi, Mutchler, & Caro, 2005; Zeuschel & Hansel, 1989). Current findings regarding the associations between gratitude and adaptive outcomes have been monotonic, indicating that extreme levels of tendencies to show gratitude toward people and events are not associated with poorer outcomes (e.g., Park et al., 2004), unlike personal characteristics such as self-esteem, which can pose a risk for narcissism at extreme levels (Neff & Vonk, 2009). In addition, gratitude has been shown to buffer individuals from internalizing

symptoms, to be associated with quicker recovery from illness, and to be linked with reduced increases in life satisfaction following illness (Breen, Kashdan, Lenser, & Fincham, 2006; McCullough, 2000; Peterson, Park, & Seligman, 2006).

Similarly, greater subjective happiness has been shown to be a contributor of personal flourishing (Fredrickson & Losada, 2011) and well-being (Diener, 2000), as well as a predictor of later adjustment in personal and interpersonal domains. Fredrickson and Losada (2011) have suggested that individuals require multiple positive experiences of affect for every single negative experience to maintain overall flourishing and minimize risks to functioning and adjustment. Individuals who experience difficulties with depression, anxiety, and anger dysregulation are often burdened by increased sensitivity to experiences of negative affect, further highlighting the importance of experiencing and recognizing positive experiences in daily life.

I was also interested in positive emotion and self-evaluative outcomes that may be influenced by gratitude-focused writing interventions. In college student samples, positive emotion traits show benefits for adaptive outcomes that are comparable to the benefits seen in other developmental periods. College students who report greater gratitude and happiness typically perform better in courses (Lounsbury, Fisher, Levy, & Welsh, 2009; Lyubomirsky et al., 2005). These students are also more likely to report greater life satisfaction and a more positive life outlook (Peterson et al., 2007). Students and other adults who display these characteristics are typically more adept at handling personal and social stresses that may arise, being buffered from overwhelming negative feelings and enduring setbacks to achieve later goals (e.g., Peterson & Seligman, 2003). Hence, I expected there will be a mediation effect from gratitude-focused writing interventions, in which involvement in these writings would promote



trait gratitude and subjective happiness, which would then account for changes in areas of well-being, such as life-satisfaction and experiences of positive affect.

Beyond personal adjustment, increases in gratitude and happiness may contribute to social adjustment and academic success. McCullough and Emmons (2002) argued that grateful individuals are more likely to engage in prosocial and moral behaviors toward previous benefactors as well as future individuals in need. Fredrickson (2004) also argued that experiences in positive emotions are likely to contribute to later prosocial behavior use in individuals. In addition, college students higher in traits such as generativity are more likely to become engaged in constructive community-building and volunteering activities (Okun & Michel, 2006). These volunteering and generative behaviors are associated with greater sense of belonging in students (Cassel, 1999). Further a review by Lyubomirsky and colleagues (2005) found persistent trends of happiness with a variety of short-term and longitudinal benefits, as well as improved outlook following interventions of happiness. In particular, their findings suggested that happy individuals typically displayed a greater number of psychological resources both concurrently and in longitudinal considerations, as would be expected given broaden-and-build theory.

### **3.5 – Self-Compassion as a Moderator of Gratitude Writing Influence**

While self-compassion was initially viewed as a characteristic that buffers individuals from distress and maladjustment (Leary et al., 2007; Neff, Hsieh, & Dejitterat, 2005; Neff & Vonk, 2009; Thompson & Waltz, 2008), recent studies consider this construct as a promoter of well-being among adolescents and adults. Self-compassion may provide assets for more positive engagement with situations and individuals, as it encompasses mindful awareness of life events and a greater sense of connectivity with others (Gilbert, 2005; Kia-Keating et al., 2011; Neff, 2003) Self-compassion has been linked with greater emotional adjustment among adolescents,

predicting greater life satisfaction and experiences of positive affect (Bluth and Blanton, 2014). Research with both college age and community adult samples has linked self-compassion with greater self-regulation, psychological well-being, and physical health (Terry & Leary, 2011; Neff, Kirkpatrick, & Rude, 2007; Wei, Liao, Ku, & Shaffer, 2011). Self-compassion also predicts aspects of adjustment that have implications beyond the self, including empathic connectivity (Wei et al., 2011), attachment security (Neff & McGehee, 2010), and greater skills in conflict resolution and relationship maintenance (Yarnell & Neff, 2013). Given established associations with well-being and positive experiences, I expect self-compassion will moderate the effect of gratitude-focused expressive writing, serving as a promotive factor of expressive writing effects when reflecting on pleasant life experiences. Self-compassionate individuals should have a greater sense of connectivity with others and increased awareness of life events that contributes to grateful reflections of positive and beneficial acts (Neff, 2003). Hence, I expected more self-compassionate individuals to report greater increases in positive experiences and gratitude following activities designed to elicit positive thoughts and emotions.

### **3.6 – Hypotheses for Gratitude-Focused Writings**

I hypothesized that individuals who completed gratitude-focused writings would experience changes that supported greater attention toward positive experiences and events. Specifically, students assigned to complete gratitude-focused writings were expected to report increases in trait gratitude and subjective happiness following the completion of the writing period. These changes were expected to help explain later improvements in emotional experiences, particularly pleasant emotional experiences of positive affect and life satisfaction. I also expected participants' self-compassion would moderate the effect of gratitude-focused

writing involvement, such that more self-compassionate individuals would report even greater improvements in emotional domains, compared to individuals lower in self-compassion.

## **Chapter 4 – Outcomes of College Student Adjustment**

While work in emotional- and gratitude-focused writings has included college students, no known studies have explicitly examined the role of these writings in adjustment during the college transition. As discussed earlier, college entry is considered a major transition for emerging adults, involving increases in stress as students begin forming new relationships while still balancing previous peer ties, adjusting to greater academic coursework, and resolving pressures brought forth by engagement in the new college setting and absence from home (Dyson & Renk, 2006; Paul & Kelleher, 1995; Rayle & Chung, 2007). An increasing number of colleges and universities are now working to improve college students' transition experiences, as this may improve students' sense of belonging, academic performance, and willingness to remain at the college (Hausmann, Schofield, & Woods, 2007; Hurtado & Carter, 1997; Seidman, 2005). Expressive writing activities may improve student outcomes by providing a non-intrusive and non-burdensome activity with the potential to encourage lasting improvements in student adjustment. Outcomes that may be pertinent for students include improved functioning with regard to negative and positive emotions, social adjustment, and academic performance.

### **4.1 – Emotional Adjustment**

#### **4.1.1 – Negative Emotional Experiences**

Rumination and self-disclosure are the mediator variables of interest for the emotion-focused writing intervention. I posited that reductions in rumination and increases in self-disclosure would account for changes in major outcomes of negative affect and depressive symptoms.

Destructive or counter-intuitive responses to stress can hinder students' transitions into college and performance in academic and social areas. For example, rumination is a repetitive,

inefficient response to negative experiences that often proves maladaptive and cumbersome for stress management. Rumination involves persistent over-identification with setbacks and stresses. Rumination and negative reflection may be adaptive in short-term instances, such as the recent loss of a loved one (Michael & Snyder, 2005). However, long-term rumination on negative affective experiences is not a constructive means of addressing painful feelings, and is associated with poor adjustment and depression (e.g., Garnefski et al., 2001; Nolen-Hoeksema, 2000). While rumination can involve destructive echoing of negative thoughts, avoidance of negative thoughts and feelings may also limit constructive management of life events. Self-disclosure is a tendency to be more receptive to discussing and sharing personal events rather than engaging in self-concealment or mindless detachment. Individuals who are lower in self-disclosure (or are self-concealing) usually have greater difficulty engaging in introspection and elaborating on emotional states/memories (Páez, Velasco, & González, 1999). Alternatively, constructive introspection and self-disclosure can contribute to effective meaning-making in writings and reflections on painful events and traumas (Richards, Beal, Seagal, & Pennebaker, 2000). Individuals who are more comfortable disclosing intimate and even painful details are better able to build high-quality, enduring relationships with friends and romantic partners (Laurenceau, Barrett, & Pietromonaco, 1998). These intimate partners can provide sources of support through distress, promoting coping and well-being among individuals with extensive and reliable social networks (Swenson, Nordstrom, & Hiester, 2008).

As noted above, students who do not have constructive outlets for discussing and managing negative life events, either through personal coping or intimate support seeking, are at increased risk for experiencing and being overwhelmed by distress. The inability to manage life's various stresses exposes students to excessive worry and depressive symptoms. Students

can experience negative affect for a number of reasons, including social and academic challenges. When students are pressured by recurrent or burdensome experiences of negative affect, they are at greater risk for psychopathology and threats to daily functioning; however, the extent of these risks varies across individuals and groups. For example, women typically report a greater number of both negative and positive affect experiences than men, indicating an increase in affective intensity but also a proportional balance in pleasant and unpleasant encounters (Fujita, Diener, & Sandvik, 1991). Further, students who better incorporate cognitive coping, emotion regulation, and support seeking show improved outlook following episodes of negative affect (Aspinwall & Taylor, 1992; Lopez, Melendez, Sauer, Berger, & Wyssmann, 1998). While experiences of negative affect are mentioned broadly, these experiences vary in their typical causes and consequences for individuals. For example, anger and sadness are likely to be elicited by differing events and setbacks for personal goals—each experience is also likely to promote responses that differ in intensity, perceptions of the self and others, etc. (Bodenhausen, Sheppard, & Kramer, 1994).

Students who are unable to effectively manage or attain support for experiences of negative affect are also at greater risk for psychosocial concerns, such as depression. Depression has broad negative implications for students' adjustment in college. Across development, late adolescents and emerging adults are typically at greater risk for depression relative to young children and older adults (Hankin et al., 1998). These risks increase with prolonged exposure to stress and negative affect. Students who have experienced recent or longstanding traumas (e.g., sexual victimization; [Aosved, Long, & Voller, 2011; Zinzow et al., 2011]), are at particular risk for depression. Further, students who experience conflict with parents (Raudino, Fergusson, & Horwood, 2012) or fail to build and maintain close ties with peers (Swenson et al., 2008) prior to

and during the college transition show increased risk for depressive symptoms. Students who experience marginalization or limited support in the college setting are also at an increased risk for depression, with risks heightened by a combination of negative experiences (e.g., stereotype threat; low sense of belonging) alongside limited social and academic resources for coping and assistance (e.g., Arbona & Jimenez, 2014; Gore & Aseltine, 2003; Love & Murdock, 2012).

Depression is associated with poorer adjustment across areas of college functioning that are important for student growth and progression, particularly during the early transition experience. Students with depression typically report lower motivation to make new friends or become involved with group activities and campus events, and some students may socially disengage as a means of coping with depressive symptoms (Lee et al., 2014). Depression is also broadly linked with poorer academic motivation and success (Heiligenstein & Guenther, 1996), serving as a possible threat to students' retainment at the current college. Depressed individuals are also at risk for poorer lifestyle and behavior choices. These individuals are at an elevated risk to abuse substances such as alcohol (Patcok-Peckham & Morgan-Lopez, 2007), and struggle in areas of daily psychological adjustment (Paul & Brier, 2001). These risky behaviors increase sensitivity to aggression and victimization exposure among males (Margolin, Ramos, Baucom, Bennett, & Guran, 2013; Snipes, Green, Javier, Perrin, & Benotsch, 2014). Outcomes of negative affect and depressive symptoms are important given the potential risks they pose for student adjustment during the initial transition to college and across the college career. Further, additional insight on threats and impacts of emotional maladjustment would benefit fields of psychology and education, as well as lend clarity on the roles of emotional behaviors and strategies while transitioning students respond to challenging life events. Thus, it is helpful to test factors that may be directly impacted by expressive writings concerning strong emotional events, and may

help explain later management of negative emotions and risks associated with overwhelming negative experiences (e.g., negative affect and depressive symptoms). For these reasons, tendencies to ruminate and comfort with self-disclosure were addressed as mediators that may be directly influenced by emotion-focused expressive writings, and mediators that may help explain later variance in experienced negative affect and depressive symptoms.

#### **4.1.2 – Positive Emotional Experiences**

Subjective happiness and trait gratitude are the mediator variables of interest for the gratitude-focused writing intervention. I posited that increases in these constructs would account for changes in major outcomes of positive affect and life satisfaction.

Subjective happiness is associated with life satisfaction (Diener, Emmons, Larson, & Griffin, 1985) and predicts decreased perceptions of college hassles and pressures (Staats, Cosmar, & Kaffenberger, 2007). Happiness is distinct from life satisfaction in that it is a subjective experience based on living in accordance with desired virtues and goals (Peterson, Park, & Seligman, 2005), rather than a broader reflection on one's life. In Western societies, such as the United States, subjective happiness is heavily based on personal goal attainment, successful independence, and approval from others (Lu & Shih, 1997). Hence, many students would likely value or be encouraged to seek accomplishment in these areas for positive self-evaluations and approval from others. Across these pursuits, students recognize their own patterns and histories of happiness, as well as the apparent displays of happiness of surrounding colleagues and community members—thus, it becomes apparent which friends or faculty members seem to be especially jovial or downtrodden across regular encounters and varying situations. Thus, subjective happiness provides a means of measuring one's status relative to others and can offer insight on the normativity of one's happiness, or lack thereof (Lyubomirsky



& Lepper, 1999). Among college and adult samples, subjective happiness is a facet of well-being that predicts adjustment and is desirable across cultures and societies (Lyubomirsky et al., 2005; Lyubomirsky & Lepper, 1999).

Dispositional gratitude is another desirable characteristic that is associated with well-being and improved functioning among individuals. Grateful individuals are likely to have a more positive and fulfilled life outlook, which includes placing greater emphasis on the benefits and successes of their lives rather than the setbacks and missed opportunities (Fredrickson, 2004; McCullough et al., 2001; McCullough et al., 2002). Dispositional (or trait) gratitude predicts socio-emotional adjustment in areas such as empathy (DeWall, Lambert, Pond, Kashdan, & Fincham, 2012). Further, researchers posit that gratitude serves as a promoter of moral behavior, as dispositionally grateful individuals are more likely to minimize aggression (DeWall et al., 2012) and extend generosity to others (McCullough et al., 2001, 2002). Situational gratitude is related to reciprocating kindness to a benefactor or to others in the community (e.g., volunteering; [Burr et al., 2005; McCullough et al., 2002; McCullough, Kimeldorf, & Cohen, 2008]). Experiences of gratitude also contribute to greater perceptions of positive events and increased appreciation and satisfaction with those events and life status (Emmons & McCullough, 2003; McCullough et al., 2002). This shift in attention can make individuals more receptive to a wider range of pleasant life events and promote the positive impacts of higher and lower intensity positive affect. In sum, gratitude can be a contributor to emotional well-being and social engagement that has implications for daily functioning during the college transition.

Across the lifespan, being happy and having a positive life outlook are desirable and predict better functioning across roles in the home, school, and workplace. For college students, these areas include positive experiences of affect and overall satisfaction with life. Like

experiences of negative affect, students are likely to experience positive feelings from a variety of contexts and situations during the college career. Students who have more success and social capital in their peer and romantic relationships, stronger performance in the classroom, and more positive self-views for long-term success report experiencing more frequent and intense positive affect (Gerdes & Mallinckrodt, 1994; Lyubomirsky et al., 2005; Snyder et al., 2003). A surplus of positive experiences can then help buffer students from minor setbacks in these domains (Fredrickson & Losada, 2011).

Life satisfaction is another aspect of well-being that is valued across cultures and settings. Life satisfaction is defined as a global assessment of the quality of one's life (Shin & Johnson, 1978) and is positively associated with other positive self-views, such as self-esteem (Diener & Diener, 1995), and negatively associated with depression and anxiety (Headey, Kelley, & Wearing, 1993). Life satisfaction involves the reflection of one's status and contexts across domains of functioning, but certain contexts will be more salient given the individual's current roles and involvement—for example, sense of belonging and academic self-efficacy may be more salient for transitioning college students' life satisfaction than those nearing the completion of their college careers. College students report greater life satisfaction when they are better able to handle typical college pressures with more success and fewer feelings of distress or failure (Macan, Shahani, Dipboye, & Phillips, 1990; Neff et al., 2005). While Froh and colleagues (2010) considered life satisfaction as a mediator in later outcomes of social adjustment, I hypothesized that increases in subjective happiness and trait gratitude strengths may be more appropriate mediators to account for increases in life satisfaction and experiences of positive affect.

#### **4.2 – Social Adjustment and Healthy Relating with Others**

One of the primary challenges for incoming college students is fitting in with others in the new college setting and forming new social ties (Robinson, Garber, & Hilsman, 1995). According to Baumeister and Leary (1995; Leary & Baumeister, 2000), social acceptance and fit in the social environment are motivating drives across the lifespan and across cultures. Individuals tailor their behaviors to better fit surrounding cultural norms and expectations, with aims of having pleasurable, reliable relationships with others. Students' sense of belonging is particularly important for adjustment during the college transition (Strayhorn, 2012). When students feel accepted by valued interaction partners, such as classmates and faculty, they have a more secure sense of self, stronger personal adjustment, and less maladjustment (Choenarom, Williams, & Hagerty, 2005; Leary & Baumeister, 2000). Individuals who do not feel accepted by others or perceive deficits in social standing are likely to have a threatened sense of self and are at risk for maladjustment (e.g., social anxiety; Kashdan, 2007; Lee & Robbins, 1998; MacDanold & Leary, 2005).

Additional aspects of social adjustment and social capital during the college transition include involvement in peer groups and the formation of new friendships. College student groups and organizations are formed for a range of interests and activities; currently, academic, social, religious, community engagement, and recreational student groups are thriving across U.S. college campuses. Involvement in these groups can provide opportunities to form new social contacts and apply socio-emotional skills, often in relatively non-threatening environments that may foster more positive experiences and skill reinforcement (Fredrickson, 1998). Involvement in student groups can also provide opportunities to connect with peers with similar backgrounds and experiences (e.g., demographic background, religious or political affiliation, shared hobby or sport history). Within and beyond peer organizations, students often form an assortment of new

friendships during the early transition to college. These new ties can be particularly helpful as students cope with the challenges of hometown separation and emotional pressures of the college transition (Swenson et al., 2008; Wei et al., 2005). The social support and resources provided by dyadic and group relationships can be important in buffering students from stress, providing additional opportunities and resources that are beneficial during the early college transition, and encouraging improved outlook and odds of continued success for incoming students (Gerdes & Mallinckrodt, 1994; Walton et al., 2011). In particular, social support seeking, such as the ability to turn to others for intimate conversations, can promote well-being and help students cope with common college stressors (Cohen & Wills, 1985). For example, marginalized students (e.g., Black women who experienced racism in the college setting; [Clark, 2006]) can particularly benefit from having supportive, positive conversations that allow them to share concerns and manage stresses with a reliable, intimate partner.

Because college involves a drastic change in social setting, oftentimes far from the students' hometown, homesickness is an additional concern for many students transitioning into college settings. Students who are further away from home have been found to make more visits back home and report lower self-esteem, alongside greater longing for family and friends (Tognoli, 2003). Longing for friends was also associated with greater social concerns and poorer social self-evaluations in college students (Paul & Brier, 2001). Students reporting greater homesickness are typically more vulnerable to depression and a poorer sense of belonging at their college setting, as reported by active dislike of the college (Beck, Taylor, & Robbins, 2003). College administrators and counselors are greatly interested in the correlates and buffers of homesickness. Hence, further consideration of social adjustment during the college transition is important to a range of fields, including education and psychology.

### **4.3 – Academic Adjustment**

Students' academic performance and perceptions of academic efficacy are important adjustment outcomes during the transition to college. Students who perform better during early college semesters are more likely remain and successfully progress to graduation at the same college throughout their academic career (e.g., Allen, Robbins, Casillas, & Oh, 2008). These students are also more likely to be strongly motivated in their coursework and maintain focus on long-term career goals (Allen et al., 2008). Students' judgments of their abilities to manage academic pressures are also important for academic outcomes. Students with greater perceptions of academic self-efficacy and greater expectations for success are more likely to perform better in their first year of college courses (Chemers et al., 2001) and to view themselves as having a greater number of career options upon college completion (Lent, Brown, & Larkin, 1986; Zimmerman, Bandura, Martinez-Pons, 1992). Students who are more confident in their academic performance and their ability to successfully attain academic goals are also likely to invest more time studying for courses and submitting higher-quality assignments (Mills, Pajares, & Herron, 2007; Zimmerman & Kitsantus, 2005). Confident and motivated students are also likely to explore and incorporate dynamic learning strategies for their courses (Mills et al., 2007). Further, these students report feeling less pressured by challenging course assignments (Zajacova et al., 2005). Such responses bolster students who may be encountering new teaching styles and larger class sizes than to which they are accustomed. Students with greater academic self-efficacy are also likely to report less stress and more school satisfaction (Chemers et al., 2001).

A final academic consideration and a major concern to both students and colleges is student drop out. Across the U.S., risks for dropping out are inversely associated with the level of selectivity of colleges but impact all colleges to some extent. Highly selective institutions (those

that accept 25% or fewer of applicants) report approximately 5% student dropout within the first year, whereas open admission colleges report approximately 38% student dropout within the first year (National Center for Education Statistics, 2014). Many of these students also do not return to other college settings to complete their degrees. As noted above, there are many emotional, social, and academic risks that may contribute to dropping out of school. Students who are from marginalized and under-supported backgrounds experience more negative feelings and depressive symptoms, feel isolated or homesick, or who feel overwhelmed by academic pressures are more likely to strongly consider and eventually drop out of the current college setting (e.g., Adams & Cortbett, 2010; Heiligenstein & Guenther, 1996; Major et al., 1998; Spencer et al., 1999). It is important to continue clarifying threats of dropout and to find ways to promote student satisfaction and well-being to bolster students' odds of completing a successful college career.

#### **4.4 – Differential Predictions across Student Adjustment Outcomes**

In summary, three broad areas of outcomes were examined: emotional adjustment; social adjustment; and academic adjustment. Emotion-focused writing was expected to lead to greater improvement in managing unpleasant emotion experiences (recent experiences of negative affect and depressive symptoms) through increases in adaptive appraisals of stress and self-disclosure. Gratitude-focused writing was expected to lead to greater improvement in pleasant experiences (recent experiences of positive affect and life satisfaction) through increases in trait gratitude and subjective happiness.

#### **4.5– Responses to Expressive Writings**

While not considered as later outcomes, I expected students to experience and respond to the emotion-focused and gratitude-focused writing interventions in differing manners, given the

differing natures of the writing topics. Hence, manipulation checks in writing responses were tested to determine whether students in each of the experimental groups responded differently in terms of cognitive appraisals, affective experiences, and writing intimacy over the course of repeated writings. Such differences could clarify the distinct experiences of completing emotion-focused and gratitude-focused writings. Writing intimacy involves shared events that are personal for the participant and may not have been revealed to other individuals prior to the writing. Intimacy in writing was expected to be particularly pertinent to the emotion-focused writing group, as other instances of intimacy, such as self-disclosure, have been shown to increase following therapeutic expressive writings (e.g., Pennebaker, Kiecolt-Glaser, & Glaser, 1988). Additionally, cognitive complexity and descriptive depth of writings could increase within each writing group, either because of expected gains in autobiographical coherence and complexity for the emotion-focused group (Tetlock, 1981), or broadened psychological resources for the gratitude-focused group (Fredrickson, 1998, 2001). We aimed to determine whether differences in cognitive complexity differentiated the student response to each writing paradigm. Lastly, affective responses were used to determine if students experienced positive and negative feelings differently, based on the writing paradigm. While the emotion-focused writing paradigm allowed for discussion of positively- and negatively-valenced events, I expected negatively-valenced events to be more salient and more thoroughly incorporated into discussions. I also expected the gratitude-focused group to consistently emphasize more positive feelings and words in their writings.

## Chapter 5 – The Present Study

Despite considerable work regarding grateful and therapeutic emotion writing, the literatures on these writing paradigms have not previously been integrated. Therapeutic writing studies have placed greater focus on means of coping with and appraising traumatic events (e.g., Jones & Pennebaker, 2006), whereas grateful writing studies have placed greater focus on personal flourishing (e.g., Froh, Sefick, & Emmons, 2008). Areas of overlap in outcomes, such as depression, life satisfaction, and belonging with others, are limited; nonetheless, available findings suggest that both grateful and therapeutic writing are beneficial (e.g., Froh et al., 2008; Pennebaker & Chung, 2008; Wood et al., 2008). The current study will be the first to compare effects of therapeutic and grateful-writing activities.

### 5.1 – Study Hypotheses

Incoming college students were randomly assigned to one of three experimental conditions: a control condition; an emotion-focused writing condition; and a gratitude-focused writing condition. Students were followed across the first half of the incoming academic semester and completed a number of questionnaires regarding emotional, social, and academic adjustment at three waves of data collection. Between the first and second data waves, students in the experimental writing groups completed four daily writing activities lasting fifteen minutes each. Writing prompts varied by the student's group assignment: the *control* group received no writing prompts or activities; the *emotion-focused writing* group received prompts to write about salient emotion experiences encountered from any point in the lifespan; and the *gratitude-focused writing* group received prompts to write about thankful events and people from any point in the lifespan. A control group was used to further clarify why groups may respond differently to the experimental interventions and provide support that the therapeutic and grateful writings



are uniquely accounting for different outcomes. Students' adjustment across time was modeled using growth curve analyses to determine group-level differences in intervention responses, and individual variation within each group. This project involved five major aims and respective hypotheses.

### **5.1.1 – Study Aim 1**

This study aimed to test immediate differences in participants' cognitive, affect, and behavioral responses to the emotion-focused and gratitude-focused expressive writing paradigms.

- H3a: Over the course of writings, students in the emotion-focused group would display more negative affect and writing intimacy, display less positive affect, and discuss more cognitive causality and insight of events than students in the gratitude-focused group.
- H3b: Over the course of writings, both groups would report increases in writing intimacy.

Immediate affective and experiences following expressive writings were expected to vary according to the valence of the writing prompts and were tested as manipulation checks to ensure that each writing paradigm provided a distinct experience for participating students. Reflections on positive experiences, such as gratitude, elicit affective experiences that were enjoyable for individuals (McCullough, Tsang, & Emmons, 2004) and reductions in physiological stress (Fredrickson & Levenson, 1998). Alternatively, engagement in therapeutic emotional writings had been previously linked with lower positive affect, but not increased negative affect, immediately following writings (King & Miner, 2000). While writings in the emotion-focused group were not mandated to focus on events of negative valence, students were expected to focus more prevalently on negative emotion experiences.

In previous studies, particularly involving expressive writings of traumatic and stressful experiences, researchers had reported increases in the complexity of participants' writings over repeated writing sessions (e.g., Mackenzie, Wiprzycka, Hasher, & Goldstein, 2008). These changes included complexity involved in word choice, introspection, and self-awareness (Mulcahy-Ernt & Ryshkewitch, 1994). It was expected that constructive reflection and expression of negative affective experiences would contribute to increases in the cognitive complexity and elaboration displayed in writings, as these experiences will develop intimacy and deeper meaning for individuals.

Further, expressive writings involving positive affective experiences were expected to contribute to cognitive complexity over time. This hypothesis was in line with expectations of the broaden-and-build theory of emotions, wherein positive affective experiences were expected to contribute to a direct building of positive skills in the moment, as well as a greater receptivity and broadening of additional skills for later use (Fredrickson, 2001).

### **5.1.2 – Study Aim 2**

This study aimed to improve the field's understanding of adjustment during the early college transition.

- H1: Across time points, students' emotional, social, and academic adjustment would improve (e.g. increases in life satisfaction, decreases in homesickness), suggesting they were adapting to the college setting and transition experience.

As students progressed into the academic semester, they were expected to show greater comfort with various aspects of the college experience. Students were expected to better manage

experiences, reporting decreases in negative experiences and feelings, alongside increases in positive experiences and feelings. Further, students were expected to experience social improvements, as they become more acclimated with the new social environment and expectations, established reliable social ties, and gained comfort with the distance from their hometowns. Hence, students were expected to report greater sense of belonging and ongoing formation of friendships over time, as well as decreases in stresses such as homesickness. Finally, students were expected to experience improvements in academic adjustment, reporting greater confidence (expected GPA) in their academic performance, maintaining motivation and effort in their studies (recent attempts at studying), and gaining comfort and confidence in their placement at the current college (recent considerations of dropping out).

### **5.1.3 – Study Aim 3**

This study aimed to lend understanding of the differences students may experience during the college transition, based on marginalization and minority status.

- H2: Students from marginalized backgrounds would report more initial concerns and attenuated improvements in adjustment over the course of the college transition.

Status and identity with marginalized groups, including female gender, minority-race, older age, transfer status, and first-generation status, was expected to present additional challenges and stresses that hamper students' acclimation to the college transition. Further, marginalization in the college setting was expected to place students at risk for social and academic risks that include exclusion or perceived isolation from peers (e.g., Spencer et al., 1999; Dill & Henley, 1998), diminished views of oneself and one's abilities (e.g., Kardash, 2000;

Spurgeon & Myers, 2010), and limited awareness of academic resources that could otherwise promote classroom performance (e.g., Glass & Garrett, 1995). Thus, students from marginalized backgrounds were expected to report attenuated improvement in emotional, social, and academic adjustment across the college transition.

#### **5.1.4 – Study Aim 4**

This study aimed to test the influences of expressive-writing interventions on outcomes of personal adjustment during the college transition.

- H4a: Across the early college transition, completion of emotion-focused writings was expected to be uniquely associated with reductions in trait rumination, experiences of negative affect, and depressive symptoms, alongside increases in self-disclosure. Changes in rumination and self-disclosure were expected to serve as mediating factors in change for negative emotion outcomes. These changes were expected to be uniquely large for the emotion-focused writing group beyond the trends in the control and gratitude-focused experimental groups.
- H4b: Across the early college transition, completion of gratitude-focused writings was expected to be uniquely associated with increases in trait gratitude, subjective happiness, experiences of positive, and life satisfaction. Changes in gratitude and subjective happiness were expected to serve as mediating factors in change in positive emotion outcomes across the course of the study. These changes were expected to be uniquely large for the gratitude-focused writing group beyond the trends in the control and emotion-focused experimental groups.

Different mechanisms were expected to account for longitudinal change in each experimental group. However, these mechanisms were expected to reflect differing proposals of therapeutic motivational/cognitive change (Esterling et al., 1999) and the broaden-and-build theory of emotions (Fredrickson, 1998; 2001), respectively. The *emotion-focused* writing group was expected to experience increases in skills and perceptions that improve coping in response to personal distress. These individuals were expected to undergo constructive benefits in areas of coping that include a reduction in destructive patterns of rumination when considering setbacks and distress. Additionally, individuals were expected to report greater self-disclosure, which may be beneficial in sharing distressful situations and eliciting assistance from others (Vogel & Wester, 2003). Further, students completing the emotion-focused writings are expected to report fewer experiences of negative affect and depressive symptoms, as negative affect and depression are often associated (Crawford & Henry, 2004). See Figure 1 for hypothesized mechanisms of change in the *emotion-focused* writing group.

The *gratitude-focused* writing group was expected to experience constructive broadening and refinement of thought-action repertoires in responses to beneficial experiences. These include increases in positive characteristics in gratitude and subjective happiness. In addition, students are expected to report increases in positive affect and life satisfaction, which are often associated (Diener et al., 1985) These characteristics are associated with broad adjustment in areas of well-being and social outlook (Park, Peterson, & Seligman, 2004; Seligman et al., 2005). Please see Figure 2 for hypothesized mechanisms of change in the *gratitude-focused* writing group.

Overall, both the therapeutic and gratitude writing paradigms have been associated with adaptive outcomes for participants. The therapeutic, emotional writings have been associated

with increases in greater coping (e.g., Cameron & Nicholls, 1998), decreased anxiety and depression (e.g., Pennebaker et al., 1990), and greater reports of well-being regarding areas such as negative affect (Smyth, 1998). Similarly, gratitude writings have been associated with reported increases in life satisfaction (Froh, et al., 2008), social belonging (Wood et al., 2008), and improvements in daily mood (Burton & King, 2004; McCullough, Tsang, & Emmons, 2004).

Additionally, it was expected that, while these paradigms will each be associated with general improvements for participating students, there would be areas where each excels in greater effects over the other. Following therapeutic expressive writings, students were expected to report greater reductions in areas of maladjustment that were associated with less optimal appraisal strategies, such as depression (Nolan-Hoeksema, 2000). This was based on this paradigm's direct focus on constructively facing stressful and traumatic experiences. Alternatively, following grateful expressive writings, students were expected to report greater improvements in well-being. This was based on Fredrickson's (2001) broaden-and-build theory of emotions, in which exposure to positive emotional experiences contributes to greater exploration and resource development, which would contribute to adaptive personal and interpersonal adjustment.

### **5.1.5 – Study Aim 5**

This study aimed to test the moderating influence of self-compassion on responsiveness to expressive writings.

- H5a: Students who were higher in self-compassion and completed the emotion-focused writings were expected to report larger improvements regarding decreases in rumination

and increases in self-disclosure. These changes were expected to account for larger improvements in emotional outcomes, regarding reductions in experiences of negative affect and depressive symptoms. These effects were of particular interest when comparing students of the emotion-focused group with students in the control group.

- H5b: Students who were higher in self-compassion and completed the gratitude-focused writings were expected to report larger improvements regarding increases in subjective happiness and trait gratitude. These changes were expected to account for larger improvements in emotional outcomes, regarding increases in experiences of positive affect and life satisfaction. These effects were of particular interest when comparing students of the gratitude-focused group with students in the control group.

Self-compassion is a healthy way of relating to the self that has been viewed as both a buffer from maladjustment (Leary et al., 2007; Thompson & Waltz, 2008) and promoter of well-being (Neff & McGehee, 2010; Van Dam et al., 2011). In addition, self-compassion has been linked with social adjustment and adaptive relationship strategies that promote reconciliation through conflict (Yarnell & Neff, 2013) and improved relationship quality (Wei et al., 2011). While this study did not include interventions that traditionally influence self-compassion, such as attempts to bolster mindfulness or self-kindness (e.g., Bimie, Speca, & Carlson, 2010), I anticipated that self-compassion would serve a moderating role as an important individual characteristic, serving as a protecting factor and asset of psychological resources (Kia-Keating et al., 2011; Neff, 2003). Individuals who were higher in self-compassion were expected to be more responsive to both emotion-focused and gratitude-focused writing activities, as each activity may benefit from a

self-kind mindset, sense of common humanity in one's experiences, and mindful awareness of the details of one's experiences.



## **Chapter 6 - Methods**

### **6.1 – Participants**

Incoming undergraduate students were recruited in two cohorts across the Fall 2013 and Fall 2014 semesters to complete an online study. Students were recruited through classroom announcements, building flyers, and email announcements. One hundred one students were recruited during the Fall 2013 semester (2013 Cohort), whereas 60 students were recruited during the Fall 2014 semester (2014 Cohort) for a total of 161 participants. The sample consisted of a greater number of women (69.6%) than men (30.4%). A majority of students identified as White or Caucasian (77.6%), whereas 1.2% of students identified as Black or African American, 6.3% of students identified as Southeast Asian or Pacific Islander, 2.4% of students identified as Latino, 1.9% of students identified as Middle Eastern, and 10% identified as multiracial. Average student age was 18.71 years ( $SD = 2.40$ ), with ages ranging from 17 to 41 years. Further, 18% of students had transferred from other colleges and universities. Of the sample, a small proportion of students (6.2%) were first-generation, in that they indicated neither parent had any partial or completed education experience beyond high school. Lastly, 24.8% of students identified as participating in a First-Year Experience program that was specifically tailored to improve academic and/or residential outlook during the college transition. See Table 1 for a summary of student demographics across the two cohorts of participating students. Students represented a range of majors and colleges, as depicted by Figure 3.

### **6.2 – Procedure**

As previously noted, students were recruited from first-year-experience (FYE) programs and the broader university population. Students began participating in the 2nd (2014 Cohort) or 3rd (2013 Cohort) week of the fall academic semester. All study materials were presented and

completed online. Students were provided with information explaining the general purpose of the study before being asked to provide study consent. Students were informed that participation was voluntary and that they were free to withdraw from the study at any time point. Please see Appendix A for the IRB approval letter, Appendix B for the informed consent form, and Appendix C for the application to work with the First-Year Experience programs. Participants' college email addresses were used to assign a case number for tracking and used to contact them across time points, but no identifying information was kept with final versions of datasets.

Students were entered into lottery drawings for prizes at four major time points. These occurred after each major survey period and after the week of expressive writings. Lotteries included gift cards to restaurants near the campus that students could readily visit. Twenty gift cards were available for each drawing, and students remained eligible for later gift cards if they won during an earlier time point. The values of the gift cards increased over time, from \$5 in the first drawing, to \$10 in the second and third drawings, to \$25 in the last drawing.

Participating students completed a range of baseline measures before the writing interventions. Measures were completed during an on-line session designed to last one hour or less. Scales are further described below. After a one-week period in which students were given time to complete the baseline measures at their convenience, students were randomly assigned into one of three groups: a control group, which received no writing prompts during the week; an emotion-focused writing group (EFW), which received writing prompts to describe any strong emotional experiences that previously occurred; and a gratitude-focused writing group (GFW), which received writing prompts to describe previous pleasant events and people for whom individuals were thankful. Please see Appendix D for the exact writing prompts.

Students in the two writing groups were asked to spend four days (Monday through Thursday) writing about either strong emotional experiences or events/people for which they were grateful for fifteen minutes. They could complete the writing at any point during the day. Writing prompts differed by student grouping and were based on previous prompts by Sloan and colleagues (2008) and Sheldon and Lyubomirsky (2008). Adjustments were made to the prompts to have each prompt word length and directions as similar as possible. Immediately after completing the writing, students completed a brief feedback questionnaire on their current positive and negative affect and the writing intimacy they incorporated. To account for possible reports of traumatic events that would ethically require provision of support for students (e.g., abuse or victimization), students in each writing group were asked whether they would like to be contacted to receive any additional support for each shared event(s).

The week following writing activities, all student groups again reported on the same survey measures of interest that were completed at baseline. Finally, one month after the writings, students reported on a last round of surveys. All measures were completed via online surveys. Please see Appendix E for a timeline of the procedures.

### **6.3 – Materials**

Each of the proposed measures is further detailed below. Apart from the demographics, these measures were collected either during the three major survey waves, or following the four expressive writing periods. Measures are grouped below into themes for organization and reference. These measurement themes include 1) expressive writing responses; 2) primary emotion adjustment outcomes; 3) potential mediators and moderators of emotion outcomes; 4) social adjustment outcomes; 5) and academic adjustment outcomes. See Appendix F for a summary of measures and the study periods during which they were presented. As these

measures were often collected at multiple time points (e.g., across the three major survey waves) a range of internal consistencies are reported for many of these measures.

#### **6.4 – Background Characteristics**

Demographic items were collected during the baseline survey. Students were asked to provide information on current academic credit load and indicate whether they participated in late summer activities that would have provided nonstandard, early exposure to university life, such as participation in the ROTC program or extensive camps for incoming students, separate from university-wide orientation. See Appendix G for the items used to collect demographic information.

#### **6.5 – Differentiating Expressive Writing Responses (Manipulation Checks)**

Content analyses were completed for each student’s writing to determine language composition. Analyses considered uses of cognitive mechanisms, uses of affective terms, and the total number of words written. These descriptors were incorporated to further clarify students’ cognitive reasoning, affective experiences during writings and recall, and writing engagement within and across writings. Text analyses were completed using the Linguistic Inquiry and Word Count (LIWC) program (Pennebaker, Francis, & Booth, 2001). This program was developed to identify a range of words that are likely to be used in conversational activities, such as casual writings (Chung & Pennebaker, 2007; Miller, 1995; Tausczik & Pennebaker, 2009).

##### **6.5.1 – Displays of Cognitive Reasoning**

The LIWC program was used to identify words aligned with cognitive mechanisms, including “causes” (e.g., because, effect, hence) and “insight” (e.g., think, know, how). These cognitive mechanisms address explanations of events and deeper reflection of events, respectively. The incorporation of causal and insight word use has been linked with optimal

outcomes for individuals completing traditional, negative-emotion-focused writings (e.g., Pennebaker, 1994; {Pennebaker & Beall, 1986; Pennebaker & Francis, 1996). To my knowledge, these cognitive terms have not been considered in gratitude-focused writings, as greater emphasis has been placed on aspects of the affective experience.

### **6.5.2 – Expressions and Experiences of Affect**

Content analyses addressed students' use of words concerning positive affect (e.g., love, nice, sweet) and negative affect (e.g., hurt, ugly, nasty). Further, students completed items on positive and negative affect in response to each writing activity. Items were from the short version of the PANAS (Mackinnon et al., 1999) on immediate affect, to examine students' immediate response to the writing prompts. These items included subscales of positive affect (5 items, sample item, 'Inspired') and negative affect (5 items; sample item, 'Upset'). Students completed reports on a 5-point Likert scale (1 = *Slightly or not at all*, 5 = *Very much*). Both the positive ( $\alpha = .85 - .87$ ) and negative ( $\alpha = .85 - .91$ ) subscales indicated acceptable reliability. See Appendix H for PANAS items.

### **6.5.3 – Writing Engagement and Intimacy**

Content analyses were used to determine the word counts for each student's writing. This was used as an additional means of understanding students' engagement in addressing writings, given possible between-group differences and within-individual differences in word counts across writings. Following each writing activity, students also completed writing survey items adopted from Richards and colleagues (2000) asking about the intimacy of the story they just wrote about, how much they had wanted to and had shared the experience before, and how much they actively held back on sharing that experience with others. Items were reported on a 5-point Likert scale (1 = *Not at all*, 5 = *A great deal*). Items were considered separately, rather than as a

composite. This form also included an item where students could indicate a request for additional resources to address the event they shared. The reasoning for this item is discussed below. See Appendix I for these items.

#### **6.5.4 – Ethical Precautions for the Writing Interventions**

Given the structure of the therapeutic writing activities, there were ethical concerns about having students recollect painful emotional events, as well as selecting some students for participation in painful recollections while others are selected for pleasant recollections. The emotion-focused writings were incorporated because they have been shown to have long-term benefits and appear to afford a constructive means of addressing painful experiences that have previously happened in participants' lives (e.g., Baddeley & Pennebaker, 2011). While these writings can involve unpleasant event recollections in the moment, these recollections were not expected to place participants at an undue risk for harm or duress.

In addition, revisions were made from the original prompts incorporated by Sloan and colleagues (2008), asking individuals to write deeply on the most painful and traumatic experiences across the lifespan. Individuals were instead asked to write about a strong emotional event that was previously encountered, with no constraints on the event valence. Additionally, steps were taken to provide individuals with additional resources and assistance, should individuals from either of the groups decide that they would like to further discuss any mentioned events, or feel as though they are at risk for any form of harm. Immediately following each writing, students were asked if they wanted to be contacted for additional assistance or to address concerns brought up in the writings, or in general from adjustment to college. I anticipated fewer concerns from the gratitude-focused group; however, I wanted to provide students in both writing groups the same opportunities to receive additional assistance or local

resources, should they have felt such was necessary or helpful. There were 17 instances when students did request additional feedback or direction to local resources. When students did indicate requests for further information, their shared event was reviewed and applicable campus resources, including the women's center and student counseling center, were introduced as safe and private resources to continue addressing these events. Students did not indicate additional needs concerning the same event following these initial contacts.

## **6.6 – Primary Emotion Adjustment Outcomes**

Because college adjustment involves success across multiple domains (e.g., academic, emotional), and because previous research on expressive writing has extended beyond emotional adjustment to consider areas of social well-being (e.g., Baddeley & Pennebaker, 2011; Lepore & Greenberg, 2002), student adjustment in emotional, social, and academic areas was measured. However, primary interest, given explicit focus on emotional writing topics, was on students' emotional adjustment and well-being during the college transition.

### **6.6.1 - Positive Experiences of Affect**

Students completed items from the College Adjustment Test (CAT; Pennebaker, Coler, & Sharp, 1990). This measure includes items of affect based on college experiences, with a subscale of positive affect (six items; sample item 'Liked your social life'). These items are specifically tailored to college experiences that are pertinent for students. Items were completed on a 7-point Likert scale (1= *Not at all*, 7 = *A great deal*; internal consistencies = .75 - .82). See Appendix J for scale items.

### **6.6.2 – Negative Experiences of Affect**

Students also completed items from the College Adjustment Test (CAT, Pennebaker, Coler, & Sharp, 1990) to report on items concerning negative affect in recent college experiences (nine items; sample item, 'Felt lonely'; internal consistencies = .78 - .82).

### **6.6.3 – Life Satisfaction**

Students reported on life satisfaction using the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1984). This scale involved five items completed on a 5-point Likert Scale (1 = *Strongly disagree*, 5 = *Strongly agree*; sample item, 'The conditions of my life are excellent'). The reliability for scale items was acceptable (internal consistencies = .83 - .89). See Appendix K for scale items.

### **6.6.4 – Depressive Symptoms**

The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was used for students' self-reports of depression symptoms. This scale consists of 20 items, asking students about recent depression-related incidents' in the last week (sample item, 'I felt depressed'). Students reported on a 4-point Likert scale (1 = *Rarely or None of the time (Less than 1 Day)*, 2 = *Some or a Little of the time (1-2 Days)*, 3 = *Occasionally or a Moderate amount of time (3-4 Days)*, 4 = *Most or all of the time (5-7 Days)*). Reliability was acceptable for scale items (internal consistencies = .88 - .90). See Table Appendix L for scale items.

## **6.7 – Potential Mediators and Moderator**

### **6.7.1 – Trait Gratitude**

Students completed the Gratitude Questionnaire-6 (GQ-6; McCullough, Emmons, & Tsang, 2002), consisting of items on dispositional gratitude. This scale involved six items on a 7-point Likert scale (1 = *Strongly disagree*, 7 = *Strongly agree*; sample item, 'I am grateful to a wide variety of people'; internal consistencies = .74 - .81). See Appendix M for scale items.



### **6.7.2 – Subjective Happiness**

Students reported on subjective happiness experiences using the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). This scale involves four items concerning happiness in one's life. Students reported on a 7-point Likert scale (1 = *Not at all*, 7 = *A great deal*; sample item, 'Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?'). Scale reliability was acceptable (internal consistencies = .91 - .94). See Appendix N for scale items.

### **6.7.3 – Trait Rumination**

Students reported on rumination habits using the Ruminative Responses Scale (Treyner, Gonzalez, & Nolen-Hoeksema, 2003). This scale involves 22 items concerning forms of rumination following upsetting events. Items are completed on a 4-point Likert scale (1 = *Almost never*, 4 = *Almost always*). This scale includes three subscales of reflection (five items; sample item, 'Analyze recent events to try to understand why you are depressed'), brooding (five items; sample item, 'Think 'Why can't I handle things better?'), and depression-related (12 items; sample item, 'Think about how alone you feel'). Items involving brooding and reflective pondering have been associated with depression symptoms and harsher responses to negative stimuli in individuals (Joormann & Gotlib, 2008; Treyner et al., 2003). Items in this scale were collapsed into a single composite, which is an approach that has been previously used in extant studies (e.g., McLaughlin & Nolen-Hoeksema, 2011). Scale reliability was acceptable (internal consistencies = .93 - .94). See Appendix O for scale items.

### **6.7.4 – Self-Disclosure**

Students completed two subscales from the Revised Self-Disclosure Scales (Wheless, 1976). The subscales included the amount factor (seven items; sample item, 'I often discuss my

feelings about myself.’) and honest-accuracy factor (eight items; sample item, ‘I always feel completely sincere when I reveal my own feelings and experiences’). Students were asked to report how they communicate with other students, and completed items on a 7-point Likert scale (1 = *Not at all like me*, 7 = *Very much like me*). Items were collapsed across the two subscales, as with previous studies (e.g., Jeong, Yoo, & Lee, 2014) for a single composite of self-disclosure (internal consistencies = .76 - .85). See Appendix P for scale items.

### **6.7.5 – Self-Compassion**

Students completed the short version of the Self-Compassion Scale (SCS; Raes, Pommier, Neff, & Van Gucht, 2011), reporting on ways of relating to the self during times of personal distress. This measure includes 12 items on a 5-point Likert scale (1 = *Almost never*, 5 = *Almost always*; sample item, ‘When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people’). While the SCS includes six subscales of Self-Kindness, Self-Judgment, Common Humanity, Isolation, Mindfulness, and Over-Identification, the global self-compassion construct was of interest (internal consistencies = .86 - .91). See Appendix Q for scale items.

## **6.8 – Social Adjustment Outcomes**

### **6.8.1 – Sense of School Belonging**

Students completed reports on their sense of belonging at college. This report is based on a slightly revised form of the Psychological Sense of School Membership scale (PSSM; Goodenow, 1993). This scale involves 18 items concerning feelings of acceptance and interpersonal value from peers and instructors. Items are completed on a 5-point Likert scale (1 = *Not at all true*, 5 = *Completely true*; sample item, ‘People here notice when I’m good at

something’; internal consistencies = .75 - .90). Items asking about teachers were edited to ask about professors instead. See Appendix R for scale items.

### **6.8.2 – Homesickness**

Students reported on homesickness using a subscale from the College Adjustment Test (Pennebaker et al., 1990). Items on the Homesickness subscale focus on recent negative experiences, including missing family members and feeling lonely in the college environment (6 items; sample item, ‘Missed your friends from high school’). Items were completed on a 7-point Likert scale (1 = *Not at all*, 7 = *A great deal*; internal consistencies = .64 - .76).

### **6.8.3 – Involvement with Student Groups**

The College Activities and Behaviors Questionnaire (Pennebaker, 1990) was used to collect open-ended responses on a number of social and academic experiences from the past week. This scale originally included items asking about substance use, but those items were not included for the current study. Across survey points, students provided a number estimate for the number of group meetings they had attended, with example groups being religious organizations and Greek Life. See Appendix S for all of the items from this scale.

### **6.8.4 – Number of Recent Friends Made**

Students also used the College Activities and Behaviors Questionnaire (Pennebaker, 1990) to report on the number of recently made friends. Again, these responses were open-ended and collected at each survey point.

### **6.8.5 – Recent Heart-to-Heart Conversations**

Students used the College Activities and Behaviors Questionnaire (Pennebaker, 1990) to report on recent (in the last week) heart-to-heart conversations with others at the college. The type of contact (peer-level, administrator/faculty) was not specified, but the fact that it was

another individual from the college setting was specified. These responses were open-ended and collected at each survey point.

### **6.8.6 – Contact with Hometown Family and Peers**

Students completed three items from the College Activities and Behaviors Questionnaire concerning outreach to family and peers from their hometowns. Specifically, students were asked how often in the last week they “talked on the phone to one or both parents,” “talked on the phone to old friends *who are not at [their] college,*” and “talked or corresponded with an old girlfriend or boyfriend.” Peer-level items emphasized an established, rather than recent connection with individuals. Each relationship context allowed for a single, open-ended response from participants. Items were not combined, given potential differences in each relationship context for late adolescents and early adults (e.g., Raudino et al., 2012; Neff & McGehee, 2010; Swenson et al., 2008).

## **6.9 – Academic Adjustment Outcomes**

### **6.9.1 – Expected Semester GPA**

Students reported on their anticipated grades across their enrolled courses. This estimate was asked for at the latter two survey time points. While this is not the same as an official report of students’ grades or GPA, this approach has been used in previous studies, and is associated with academic outcomes such as final GPA, although these expectations may be based on students’ prior grade experiences (Svanum & Bigatti, 2006). See Appendix T for these items.

### **6.9.2 – Instances of Studying**

Students provided an open-ended estimate of the number of times they studied in the last week, using the College Activities and Behaviors Questionnaire (Pennebaker, 1990). Only the number of study instances and not the average length of study instances was collected.

### **6.9.3 – Considerations of Dropping Out**

Students provided an open-ended estimate of the number of times they considered dropping out of the current college in the previous week, using the College Activities and Behaviors Questionnaire (Pennebaker, 1990).

## Chapter 7 – Results

### 7.1 – Preliminary Analyses

Descriptive analyses for outcomes at each survey period and the week of writings were computed using SPSS 22 (IBM Corp., 2013). Due to the number of items, descriptives are presented in multiple tables: Table 2 depicts survey descriptives at baseline; Tables 3 – 6 depict writing-based descriptives during the week of writings, separated for each successive day and split for each writing group; Table 7 depicts survey descriptives at one-week follow-up; and Table 8 depicts survey descriptives at one-month follow-up. Independent *t*-tests were conducted to determine whether there were mean-level survey differences between the Fall 2013 and Fall 2014 cohorts. The Fall 2013 cohort was significantly higher in baseline life satisfaction ( $t(158) = 2.03, p = .044$ ) and the Fall 2014 cohort was significantly higher in recent study instances at baseline ( $t(159) = -2.44, p = .016$ ).

Logistic regressions were used to determine whether any baseline measures were associated with complete dropout after baseline (coded 0 if students completed at least one later session; coded 1 if students did not complete either the one-week survey follow-up or one-month survey follow-up). When considered simultaneously, transfer status (Beta = -2.33, S.E. = 1.11, Wald = 4.38,  $p = .036$ ), homesickness (Beta = 1.85, S.E. = .80, Wald = 5.27,  $p = .022$ ), self-compassion (Beta = -2.25, S.E. = .82, Wald = 7.42,  $p = .006$ ), and trait rumination (Beta = -2.58, S.E. = .98, Wald = 6.88,  $p = .009$ ) predicted odds of later study attrition. Transfer students, students higher in trait rumination, and students higher in self-compassion were more likely to complete later surveys than first-year students, students lower in rumination, and students lower in self-compassion, respectively. Students higher in homesickness were less likely to complete any later surveys than students lower in homesickness. See Table 9.

Regarding writing completion, while students were randomly assigned to complete four days of daily writings in both the emotion-focused and gratitude-focused groups, many did not complete the entire week's worth of assignments. These students were still included in all analyses described below. Further, there was a subset ( $n = 8$  emotion-focused assignment;  $n = 9$  gratitude-focused assignment) of students from Cohort 1 who did not complete any assigned writings. Because these students would not have had exposure to the writing prompts without actively visiting the prompt links provided for each day of writing, they were treated as control participants.

Given the large number of variables and longitudinal interest in results, correlation tables were separated by time point and by group assignment. Table 10 shows bivariate correlations for the scales completed at baseline for all participants. Tables 11, 12, and 13 show the correlations at the one-week follow-up for the control, emotion-focused, and gratitude-focused groups, respectively. Tables 14, 15, and 16 show the correlations at the one-month follow-up for the control, emotion-focused, and gratitude-focused groups, respectively. Additionally, repeated measures ANOVA was used to determine whether variables indicated significant change between the baseline to one-week, one-week to one-month, and baseline to one-month survey points. Results are provided in Table 17.

## **7.2 – Analytical Plan**

This study incorporated longitudinal data analyses to determine trends of growth over the course of the early college transition. There are multiple approaches for addressing longitudinal change within and between individuals. These include ANCOVA, latent growth curve modeling through structural equation modeling, and growth curve modeling using hierarchical linear modeling. Extant findings suggest that large sample sizes are needed for general structural

equation models (SEM) and latent growth curve models (LGCM) analyses, typically including at least 150 to 200 participants for standard models (Chin & Newsted, 1999). However, hierarchical linear models (HLMs) used for growth curve modeling have been shown to yield greater power than approaches such as SEM and ANCOVA, when considering identical effect sizes and sample sizes (Muthén & Curran, 1997). Further HLM is said to avoid worrisome bias with a minimum of 50 cases at the second level of analyses (for longitudinal studies this would be 50 individuals; [Mass & Hox, 2005]). Although the current study incorporates three total groups (2 experimental, 1 control), the sample size is reasonable, given precedents of previous studies and theoretical considerations of HLM.

Hierarchical linear modeling (HLM) was used to test a series of growth curve models and address change within and between individuals. This is an approach that incorporates all available data from participants to form model estimates, rather than listwise deleting an individual who is missing certain data or does not complete all data points (Raudenbush & Bryk, 2002). HLM was the primary analytical approach for manipulation checks and group comparisons in writings across time, hypothesis testing in changes across emotion outcomes, and exploratory tests in changes across social and academic outcomes. For all tests, full maximum likelihood estimation was used to manage instances of missing data. This approach allows deviance statistics to be used in later model comparisons (e.g., chi-square model tests), given a reasonably large number of higher-level cases which provide realistic item variances (Bryk & Raudenbush, 1992).

### **7.3 – Manipulation Checks of Expressive Writing Experiences and Responses**

The first aim this study was to distinguish the immediate experiences for individuals who participated in one of the two expressive writing interventions: one paradigm which addressed



strong emotional experiences; the other paradigm addressed instances of gratitude. Each paradigm was expected to account for unique outcomes and incorporate unique mechanisms of change. Hence, it was important to determine the immediate experiences of participation differed by paradigm.

While students in the emotion-focused writing group had the opportunity to share any event they felt was relevant toward the writing prompt, they were expected to write more thoroughly on negative emotion events and address cognitive factors such as causes and insight in their writings. These students were also expected to express feeling more negative affect immediately after writings and to share more intimate events than the gratitude-focused writing group. To test for these differences, student responses were analyzed using the Linguistic Inquiry Word Count program (LIWC; Pennebaker et al., 2001). This program provided proportions of words that addressed cognitive word use, emotion word use, and total words used. Tests in cognitive word use between intervention groups incorporated terms involving causes and insight of student events. Further, students completed a brief form of the PANAS to report on current experiences of positive and negative affect following each writing. In addition, words involving positive and negative affect across writings were analyzed. Lastly, students reported on five items concerning writing intimacy from Richards and colleagues' (2000) Writing Study Questionnaire, and writing length was analyzed across writings.

A series of HLM models was used to test for possible differences in writing style, experienced affect, and writing intimacy between the two expressive writing groups. These tests determined whether there were mean-level differences in writing experiences between groups from the outset of writings (Writings beginning on Monday), and if individuals reported change over the week that differed by writing group. This tested model is depicted below.

### **Level-1 Model**

$$OUTCOME_{ti} = \pi_{0i} + \pi_{1i}*(TIME_{ti}) + e_{ti}$$

### **Level-2 Model**

$$\pi_{0i} = \beta_{00} + \beta_{01}*(WRITING\_GROUP_i) + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(WRITING\_GROUP_i) + r_{1i}$$

This model tests the influence of three lower-level effects on each outcome: the overall mean during the first day of writings ( $\beta_{00}$ ); the slope effect of time ( $\beta_{01}$ ); and random error that is not otherwise captured by model variables. Additional, higher-level effects are tested on the overall intercept and effect of time: an additional intercept, or starting point is tested on each lower-level effect ( $\pi_{0i}$ ,  $\pi_{1i}$ ); the effect of placement in the emotion-focused writing group ( $\beta_{01}$ ;  $\beta_{11}$ ); and random error that is unaccounted for ( $r_{0i}$ ;  $r_{1i}$ ). The final error terms ( $r_{0i}$ ,  $r_{1i}$ ) are particularly helpful for these analyses, as they allow flexibility in cases where individuals have differing starting points on a particular variable and instances where individuals show differing patterns of change over time (some individuals increasing, some individuals decreasing, and some individuals remaining constant). The “time” factor was based on week of study participation, where 0 = baseline survey, 1 = first day of writings, 1.25 = second day of writings, 1.50 = third day of writings, 1.75 = fourth day of writings, 2 = one-week follow-up survey, and 5 = one-month follow-up survey.

See Table 18 for the fixed effects from these models. The fixed effects, rather than random effects, are of interest, as I focused on testing hypothesized differences between groups, rather than considering possible areas where variance remains unaccounted, as might be helpful

with more exploratory model-building. The overall intercept ( $\pi_{0i}$ ) is significant for each variable, suggesting that the mean for each item on the first day of writings is significantly different from zero. The effect of writing group placement (WG) has the emotion-focused writing group coded at a higher value than the gratitude-focused writing group. The control group, which did not complete writings, is not included in this set of analyses.

The effect of writing group placement on the intercept was not significant for cognitive mechanisms. There were significant effects in baseline affective experiences, where the gratitude-focused group incorporated more positive affect terms in writings ( $\beta_{01} = -2.87$ ,  $SD = 1.26$ ,  $p = .025$ ) and reported experiencing more positive affect at baseline ( $\beta_{01} = -1.45$ ,  $SD = .44$ ,  $p < .001$ ), whereas the emotion-focused writing group incorporated more negative affect terms in writings ( $\beta_{01} = 2.30$ ,  $SD = .65$ ,  $p < .001$ ). Regarding writing engagement and intimacy, there was a group placement effect on the initial extent to which events had been shared with others previously ( $\beta_{01} = -1.44$ ,  $SD = .69$ ,  $p = .041$ ). Individuals in the gratitude-focused group were more likely to have previously shared their initial writings.

There was a significant effect of group placement on change in reports of positive affect ( $\beta_{10} = -1.04$ ,  $SD = .24$ ,  $p < .001$ ). Overall, students reported decreases in positive affect over time, but students in the emotion-focused group were buffered from this decrease. Regarding change in writing engagement and intimacy, there was an effect of group placement on writing word count over time ( $\beta_{10} = 148$ ,  $SD = 56$ ,  $p < .001$ ). Students in the gratitude-focused writing group showed decreases in word count over time, whereas students in the emotion-focused writing group showed increases in word count. Lastly, there was an effect of group placement on change in the extent to which the event had been previously shared with others ( $\beta_{11} = 1.18$ ,  $SD = .51$ ,  $p = .024$ ). As the week progressed, students in the emotion-focused writing group were

increasingly likely to have shared their events with others. Trends in reported positive affect, writing word count, and extent to which events were previously shared are depicted in Figures 4, 5, and 6.

Overall, these findings suggest that students did approach and respond to the writing activities distinctly, though the areas of distinction were not always as expected. In particular, students in the emotion-focused group appear less inclined than those in the gratitude-focused group to have shared the event initially, but appear to have shared more information in private writing and with others over time. The following sections address the primary hypotheses of this study, which concern emotional outcomes for incoming students given their participation in expressive writings.

#### **7.4 – Hypothesis Testing**

The following work addresses the remaining four aims: 2) general trends in adjustment among incoming college students; 3) the impact marginalization may have on student adjustment during the college transition; 4) the impact of each expressive writing on students' emotional adjustment; and 5) the moderating effect of self-compassion on responses to expressive writings and emotion outcomes.

As expressed above, there are two hypothesized models for the influences of the emotion-focused and gratitude-focused writing paradigms on outcomes of emotional adjustment. These models are depicted in Figures 1 and 2, respectively. Specifically, emotion-focused writings were expected to contribute directly to reductions in rumination and increases in comfort self-disclosing. These changes were expected to explain decreases in depressive symptoms and experiences of negative affect. Further, gratitude-focused writings were expected to contribute directly to increases in subjective happiness and trait gratitude. These changes were expected to

explain increases in life satisfaction and experiences of positive affect. In each model, self-compassion was addressed as a potential moderating factor, as it has been previously tested as a buffer from distress (Leary et al., 2007), contributor to awareness of negative and positive life events (Van Dan et al., 2011), and promoter of well-being, such as happiness with oneself and kindness with others (Neff et al., 2005; Neff & Vonk, 2009; Yarnell & Neff, 2013). Hypotheses-testing models were built in the following manner: 1) unconditional growth models considering only the effect of time; 2) conditional growth models testing demographic influences on the overall intercept; 3) conditional growth models testing demographic influences on the effect of time; 4) conditional growth models testing the influence of writing group placement on the effect of time; 5) conditional growth models testing possible indirect/mediating factors on the intercept and effect of time; 6) conditional growth models testing possible moderating influence of self-compassion.

#### **7.4.1 – Unconditional Change over Time**

The first set of models tested whether change generally occurred over time in each emotion outcome of interest. The tested model is depicted below.

##### **Level-1 Model**

$$OUTCOME_{it} = \pi_{0i} + \pi_{1i} * (TIME_{it}) + e_{it}$$

##### **Level-2 Model**

$$\pi_{0i} = \beta_{00} + r_{0i}$$

$$\pi_{1i} = \beta_{10} + r_{1i}$$

The fixed effects of this model are depicted in Table 19. The overall intercepts for each variable ( $\beta_{00}$ ) are significantly different from zero. As this information does not address the hypotheses of interest, it will not be explicitly mentioned in successive analyses. The effect of time, with no other factors considered, is significant in outcomes of experiences of positive affect ( $\beta_{10} = -.03$ ,  $SD = .01$ ,  $p < .001$ ), experiences of negative affect ( $\beta_{10} = -.02$ ,  $SD = .01$ ,  $p = .019$ ), and life satisfaction ( $\beta_{10} = .02$ ,  $SD = .01$ ,  $p = .017$ ). Results suggest that across the sample, students typically report surprising decreases in pleasant experiences, as well as expected decreases in unpleasant experiences and increases in satisfaction with one's life.<sup>1</sup>

#### **7.4.2 – Conditional Demographic Effects on the Overall Mean**

The second set of models tested possible effects of student demographics on the overall intercept of each outcome, indicating whether students had differing starting scores based on factors such as gender, age (measured continuously), transfer status, minority racial status, and participation in a First-Year Experience program. Because of minimal representation of first-generation students (6.2%), that demographic factor was not considered in successive models. The tested model is shown below.

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<sup>1</sup> Models were also used to determine whether there were sample cohort effects on variable change over time, tested as:  $OUTCOME_{it} = \beta_{00} + \beta_{10} * TIME_{it} + \beta_{11} * COHORT_i * TIME_{it} + r_{0i} + r_{1i} * TIME_{it} + e_{it}$ . There were no significant cohort effects on emotional, social, or academic trends over time (all  $ps \geq .100$ ).

### Level-1 Model

$$OUTCOME_{ti} = \pi_{0i} + \pi_{1i}*(TIME_{ti}) + e_{ti}$$

### Level-2 Model

$$\pi_{0i} = \beta_{00} + \beta_{01}*(FEMALE_i) + \beta_{02}*(TRANSFER_i) + \beta_{03}*(AGE_i) + \beta_{04}*(MINORITY_i) + \beta_{05}*(FYE_i) + r_{0i}$$
$$\pi_{1i} = \beta_{10} + r_{1i}$$

For higher level effects, the influences of gender (Female), transfer-student status (Transfer), racial status (Minority), and FYE involvement were dummy coded. Women, transfer students, minority students, and those participating in FYE programs received a 1 for each respective code, whereas men, first-year students, majority race students, and students outside of FYE programs received a 0 for each respective code. The effect of age was mean-centered, such that the mean score of age (18.67) was coded as a 0, and students younger and older than the mean received negative and positive scores respectively. These codes are included as higher-level effects, as they are expected to be time-invariant (or maintain rank-order placement among individuals, such as with age) aspects of each individual over the course of this study.

The fixed effects of these demographic influences are depicted in Table 20. Women reported more experiences of negative affect ( $\beta_{01} = .28$ ,  $SD = .10$ ,  $p = .005$ ) and more depressive symptoms ( $\beta_{01} = .14$ ,  $SD = .06$ ,  $p < .001$ ). Transfer students reported a trend in decreased life satisfaction that accounted for significantly poorer model fit if removed ( $\beta_{02} = -.29$ ,  $SD = .16$ ,  $p = .065$ ), and lower comfort with self-disclosure ( $\beta_{02} = -.35$ ,  $SD = .16$ ,  $p = .037$ ). Minority-race students reported lower trait gratitude ( $\beta_{04} = -.23$ ,  $SD = .10$ ,  $p = .022$ ).

In addition, chi-square tests of model comparison were used to determine whether models would be significantly poorer fitting if non-significant demographic effects were removed from each tested model. Variables that showed near-significant trends ( $p < .10$ ) were retained in these tests to determine if they showed significant influences upon the removal of non-trending influences. This was done for outcomes of positive affect, in which age was retained in the model ( $\beta_{01} = -.04$ ,  $SD = .02$ ,  $p = .018$ ), where the effect remained comparable in magnitude, but power was improved with the removal of additional variables. These test results are depicted in Table 21 for the main emotion outcomes of interest (positive affect, negative affect, life satisfaction, and depressive symptoms). For each model, the change in chi-square was not greater than the critical value at the  $\alpha = .05$  level, suggesting that model fit was not significantly poorer if only the significant demographic factors were retained.

#### **7.4.3 – Conditional Demographic Effects on Change over Time**

The third set of models tested possible effects of student demographics on the effect of time for each outcome, indicating whether students reported different trends of change based on background characteristics. A simplified form of the tested model is depicted below, but relevant demographic factors are retained as effects on the overall intercept. As these vary by outcome, they are not depicted in the simplified model below.



### **Level-1 Model**

$$OUTCOME_{ti} = \pi_{0i} + \pi_{1i}*(TIME_{ti}) + e_{ti}$$

### **Level-2 Model**

$$\pi_{0i} = \beta_{00} + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(FEMALE_i) + \beta_{12}*(TRANSFER_i) + \beta_{13}*(AGE_i) + \beta_{14}*(MINORITY_i) + \beta_{15}*(FYE_i) + r_{1i}$$

Demographic effects are scored in the same manner as above. See Table 22 for a depiction of fixed effects. Across each outcome of interest, there were no significant effects from any demographic factors on ways individuals changed over time. No demographic factors were considered for the slope effect of time in later models of emotion outcomes.

#### **7.4.4 – Conditional Effects of Writing Group Involvement on Change over Time**

The fourth set of models tested the influence of expressive writing involvement on the effect of time for each outcome, indicating whether students experienced significantly different change over time due to involvement in one of the writing groups, or if both writing groups differed in some way from the control group. Because experimental groups did not show significant differences in baseline reports, the effects of group placement were not considered for the overall intercept. A simplified form of the tested model is depicted below.

### Level-1 Model

$$OUTCOME_{ti} = \pi_{0i} + \pi_{1i}*(TIME_{ti}) + e_{ti}$$

### Level-2 Model

$$\pi_{0i} = \beta_{00} + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(EMOGROUP_i) + \beta_{12}*(GRATGROUP_i) + r_{1i}$$

Each writing group code (EMOGROUP, GRATGROUP) is dummy coded. Students in the emotion-focused writing group would receive a 1 for EMOGROUP and 0 for GRATGROUP. Students in the gratitude-focused writing group would receive a 0 for EMOGROUP and 1 for GRATGROUP. Students in the control group would receive a 0 for EMOGROUP and 0 for GRATGROUP. See Table 23 for the fixed effects of this model. Involvement in the emotion-focused writing group showed no direct significant effects on the main emotion outcomes of interest, but did show a significant effect on comfort with self-disclosure ( $\beta_{11} = .06$ ,  $SD = .03$ ,  $p = .026$ ). This effect, indicating individuals in the expressive writing group became more comfortable self-disclosing over time, partly supported earlier hypotheses and depictions in Figure 1. This effect is depicted in Figure 7. The gratitude-focused group showed direct effects on experiences of positive affect ( $\beta_{12} = .04$ ,  $SD = .02$ ,  $p = .050$ ), life satisfaction ( $\beta_{12} = .05$ ,  $SD = .02$ ,  $p = .014$ ), and depressive symptoms ( $\beta_{12} = -.03$ ,  $SD = .01$ ,  $p = .012$ ). Students in this group were buffered from decreases in positive experiences, showed greater increases in life satisfaction, and greater decreases in depressive symptoms over time. However, the gratitude-focused writing group did not show any effects on possible mediating factors, such as subjective happiness and trait gratitude. These results partially support hypotheses that these writings would contribute to more positive experiences over the college transition, but suggest a direct, rather

than indirect influence on these emotional outcomes. Figure 8 depicts change in experiences of positive affect between experimental groups. Figure 9 depicts change in life satisfaction between experimental groups. Figure 10 depicts change in depressive symptoms between experimental groups.<sup>2</sup>

#### **7.4.5 – Effects of Self-Disclosure on Change over Time**

Given a significant increase in self-disclosure for participants in the emotion-focused writing group, an additional series of analyses were used to determine whether there was an indirect effect from writing involvement to emotion outcomes that could be attributed to changes in self-disclosure. This tested model is depicted in Figure 11. It is important to note that this test is not to determine possible mediation, as there is not an initial significant path between involvement in the emotion-focused writing and main emotion outcomes of interest. However, as self-disclosure and the emotion outcomes of interest are time-varying across surveys, it is possible that self-disclosure may be associated with improved emotional outlook across time points. The simplified tested model for this indirect effect is shown below.

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<sup>2</sup> In instances where demographic factors were significantly associated with the overall intercept of study outcomes, students would be expected to show differing starting points given their background. In the following figures, a single starting point is depicted for the sake of simplicity, and is based on the majority representation for the study sample. For example, starting points depict starting points for women, students who are of mean age for this study, incoming first-year students, majority-race students, and students who did not participate in FYE projects, as appropriate.

### Level-1 Model

$$OUTCOME_{it} = \pi_{0i} + \pi_{1i}*(TIME_{it}) + \pi_{2i}*(SELFDISC_{it}) + e_{it}$$

### Level-2 Model

$$\pi_{0i} = \beta_{00} + \beta_{01}*(AVG\_SELFDISC_i) + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(EMOGROUP_i) + \beta_{12}*(GRATGROUP_i) + r_{1i}$$

$$\pi_{2i} = \beta_{20}$$

This model includes two new effects: students' reports of self-disclosure at each time point ( $\pi_2$ ) are included on the lower level; students' average reports of self-disclosure across time points ( $\beta_{01}$ ) are included as an upper-level effect on the overall intercept. The lower-level, time-varying effect of self-disclosure is "group-centered" or averaged around each student's reports. This accounts for the extent each individual changes across time. The upper-level, time-invariant average report of self-disclosure is "grand-mean centered" or placed relative to the remaining sample's average reports. This accounts for how individuals perform relative to the entire sample. This approach limits bias for students who begin at one extreme and may show greater change as a result, and students who may begin near the upper or lower range of responses and remain constant across time. There is no random effect considered on self-disclosure, indicating that there is no expectation in this model that self-disclosure is beneficial for some individuals and problematic for other individuals.

See Table 24 for the fixed effects of this model. Writing involvement was included in this model and self-disclosure does predict improved overall starting points for students in each emotional outcome; however, interest is in the possible effects of self-disclosure as a time-varying factor. These models show that after accounting for demographics and writing

involvement, self-disclosure is significantly associated with fewer depressive symptoms across time points ( $\beta_{20} = -.09$ ,  $SD = .03$ ,  $p < .001$ ). Hence, there is support that the emotion-focused writing paradigm is indirectly associated with fewer depressive symptoms through increases in comfort with self-disclosure. These findings partially support the hypothesized model depicted in Figure 2.

An additional set of models was used to explore whether any demographic factors may moderate the influence of self-disclosure on emotion outcomes. This model is shown below.

### Level-1 Model

$$OUTCOME_{ti} = \pi_{0i} + \pi_{1i}*(TIME_{ti}) + \pi_{2i}*(SELFDISC_{ti}) + e_{ti}$$

### Level-2 Model

$$\pi_{0i} = \beta_{00} + \beta_{01}*(AVG\_SELFDISC_i) + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(EMOGROUP_i) + \beta_{12}*(GRATGROUP_i) + r_{1i}$$

$$\pi_{2i} = \beta_{20} + \beta_{21}*(FEMALE_i) + \beta_{22}*(TRANSFER_i) + \beta_{23}*(AGE_i) + \beta_{24}*(MINORITY_i) + \beta_{25}*(FYE_i)$$

See Table 25 for the fixed effects of this model. Demographic factors do moderate the influence of self-disclosure on emotion outcomes in depressive symptoms. The protective effect of self-disclosure on depressive symptoms is attenuated by students' transfer status ( $\beta_{23} = .22$ ,  $SD = .07$ ,  $p = .005$ ).

Overall, results suggest that participation in the emotion-focused writing group can promote increases in self-disclosure. Self-disclosure is associated with fewer depressive symptoms across survey points. Further, the influences of self-disclosure are impacted by student age and transfer status. Transfer students indicated poorer life satisfaction over time when they

reported greater self-disclosure. Age showed mixed implications on the influence of self-disclosure, as older students reported greater life satisfaction and more depressive symptoms

#### 7.4.6 – Self-Compassion as a Moderating Influence on Writing Interventions

A final series of analyses were conducted testing emotion outcomes. This set of models explored possible moderating influences of self-compassion on emotion outcomes. Self-compassion was proposed as a candidate moderator because it is associated with self-kindness, mindfulness, and a sense of connectivity that may promote aspects of expressive writing activities over time (Neff, 2003). A simplified model is presented below.

##### Level-1 Model

$$OUTCOME_{ii} = \pi_{0i} + \pi_{1i}*(TIME_{ii}) + e_{ii}$$

##### Level-2 Model

$$\pi_{0i} = \beta_{00} + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(EMOGROUP_i) + \beta_{12}*(GRATGROUP_i) + \beta_{13}*(AVGSELFCOMP_i) + \beta_{14}*(SCxEWF_i) + \beta_{15}*(SCxGWF_i) + r_{1i}$$

Of interest in these models are the interaction terms between self-compassion and each writing group ( $\beta_{14}$ ,  $\beta_{15}$ ), to determine if there is a moderated influence on change over time. As self-compassion is not shown to significantly change over time, only an average report of self-compassion is accounted for in this set of models. The effects of self-compassion and the interaction terms are mean-centered.

See Table 26 for the fixed effects of this model. Many of the models did not support higher-level interaction effects, but did support main effects of self-compassion. Self-compassion

was associated with greater reports of experienced positive affect ( $\beta_{13} = .06$ ,  $SD = .02$ ,  $p = .004$ ) and subjective happiness ( $\beta_{13} = .08$ ,  $SD = .03$ ,  $p = .006$ ) over time. Further, self-compassion was associated with decreased reports of depressive symptoms ( $\beta_{13} = -.04$ ,  $SD = .01$ ,  $p = .002$ ) and dispositional rumination ( $\beta_{13} = -.09$ ,  $SD = .02$ ,  $p < .001$ ) over time. While these findings do not support expectations for moderation effects, they do align with established findings of self-compassion as a buffer from maladjustment and promoter of well-being.

Two additional models did support interaction effects between self-compassion and expressive writing involvement. For experiences of negative affect, there is a significant moderation effect between involvement in emotion-focused writings and self-compassion ( $\beta_{14} = .08$ ,  $SD = .03$ ,  $p = .007$ ). Individuals in the control group did not report significant differences in experiences of negative affect given levels of self-compassion. However, individuals in the emotion-writing group who were higher in self-compassion reported greater decreases in negative affect than those with lower self-compassion. See Figure 12 for a depiction of this effect. For life satisfaction, there is a significant moderation effect between involvement in gratitude-focused writings and self-compassion ( $\beta_{14} = -.07$ ,  $SD = .03$ ,  $p = .044$ ). Within the control group, individuals who were lower in self-compassion reported greater decreases in life-satisfaction than those with higher self-compassion. In the gratitude-focused writing group, individuals who were higher in self-compassion reported greater increases in life satisfaction than those lower in self-compassion. See Figure 13 for a depiction of this effect. These effects are aligned with expected moderation influences of self-compassion.

### **7.5 – Exploratory Analyses of Social and Academic Adjustment**

Additional models were used to test whether students differed in social and academic outcomes, given demographic factors and involvement in the expressive writing paradigms.

These models were not directly hypothesized, but were of interest due to possible implications of typical growth and intervention involvement for the “whole student.” Models for each set of analyses were organized in a similar model-building fashion: 1) unconditional growth was tested for each outcome; 2) demographic factors were tested as influences on the overall intercept; 3) demographic factors were tested as influences over time; 4) the intervention effects were tested as influences over time; and 5) self-compassion as tested as a possible moderating influence on the association between interventions and outcomes. First, socially-relevant outcomes are addressed, followed by academically-relevant outcomes.

## **7.6 – Social Outcomes**

Socially-relevant outcomes included students’ views of social adjustment as well as recent activities concerning their engagement with others at the college setting and from their hometowns. The considered outcomes included: sense of belonging at the current college; sense of homesickness; number of group meetings attended in the last week; number friends made in the last week; number of times the student had a “heart-to-heart” with another person (subject was not specified); number of times the student had a phone call with parents; number of times the student had a phone call with old friends; number of times the student had a phone call with the romantic partner.

### **7.6.1 - Unconditional Change over Time**

As with emotion-relevant outcomes, initial models of socially-relevant outcomes tested whether significant change occurred across the sample, without consideration for any other influences. See Table 27 for a depiction of fixed effects of growth. Across the sample, students reported decreases in homesickness ( $\beta_{10} = -.03$ ,  $SD = .01$ ,  $p = .007$ ), number of group meetings recently attended ( $\beta_{10} = -.03$ ,  $SD = .01$ ,  $p = .015$ ), number of friends recently made ( $\beta_{10} = -.17$ ,



SD = .02,  $p < .001$ ), and number of times spent talking to parents ( $\beta_{10} = -.06$ , SD = .01,  $p < .001$ ). Some of these changes may represent the typical student experience. As students become more adjusted and comfortable with distance from home, feelings of homesickness and the need to reach out to parents may decrease (Swenson et al., 2008; Wei et al., 2005). Further, students may have fewer opportunities and decreased need to make new connections after establishing an initial social network in the first weeks of the semester, and may generally have fewer meetings they are required to attend for residential and academic activities.

### **7.6.2 – Conditional Demographic Effects on the Overall Mean and Effect of Time**

Next, models tested possible effects of student demographics on the overall intercepts of social outcomes. See Table 28 for the fixed effects of these models. Women ( $\beta_{01} = -.18$ , SD = .08,  $p = .017$ ) and older students ( $\beta_{03} = -.05$ , SD = .02,  $p = .002$ ) reported lower overall sense of belonging at college. Women also reported more overall homesickness ( $\beta_{01} = .27$ , SD = .10,  $p = .009$ ) and more instances of having recent heart-to-heart conversations with another person ( $\beta_{01} = .67$ , SD = .19,  $p < .001$ ). Students in FYE programs reported attending more group meetings ( $\beta_{05} = .28$ , SD = .09,  $p = .002$ ). Chi-square tests were used to determine whether removing non-significant demographic effects contributed to significantly poorer model fit. See Table 29 for these results. No models were significantly poorer fitting when non-significant demographic factors were removed.<sup>3</sup>

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<sup>3</sup> There was a non-significant, but trending ( $.10 > p > .05$ ) demographic effect of minority-race status on recent talks with parents. Additional considerations determined that with other variables removed, this effect was not significant and that model fit was not significantly poorer with this variable removed.

Models then tested whether demographic factors were associated with change over time in socially-relevant outcomes. See Table 30 for fixed effects of these models. There were no significant demographic effects on change over time.<sup>4</sup>

### **7.6.3 – Conditional Effects of Writing Group Involvement on Change over Time**

Next, models tested the influence of expressive writing involvement on change over time for each social outcome. See Table 31 for fixed effects of these models. After accounting for demographic influences, individuals in the gratitude-focused writing group were buffered from decreases in attended group meetings ( $\beta_{12} = .05$ ,  $SD = .02$ ,  $p = .020$ ). See Figure 14 for a depiction of this effect.<sup>5</sup> Further, the emotion-focused writing group reported increases in having heart-to-heart, intimate conversations with others across time ( $\beta_{11} = .10$ ,  $SD = .05$ ,  $p = .040$ ). See Figure 15 for a depiction of this effect. These effects suggest that writing about strong emotional events may encourage greater comfort in personally addressing strong emotional events (self-disclosure) and promote comfort in discussing intimate experiences with select others (heart-to-heart conversations). This coincides with possible behavioral changes following therapeutic writing, where individuals have a decreased desire to conceal intimate life details, and can constructively share events with others (Esterling et al., 1999; Pennebaker & Jones, 2006). Alternatively, writing about broadly positive and thankful experiences may encourage increased comfort and desire for general social engagement. This coincides with views of gratitude in which grateful individuals are more receptive to interacting and extending kind acts to others

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<sup>4</sup> There were non-significant, but trending ( $.10 > p > .05$ ) demographic effects of minority-race status on group meetings and age and transfer status on recent talks with parents. Additional considerations determined that with other variables removed, these effects were not significant and that model fit was not significantly poorer with these variables removed.

<sup>5</sup> To ensure that experimental groups did not coincidentally differ in starting levels of group meetings, a model was tested considering the effects of emotion-focused writing placement and gratitude-focused writing placement on the overall intercept (starting mean) of recently attended group meetings. There were no significant differences based on experimental group ( $ps \geq .081$ ).

(McCullough et al., 2002, 2008), as well as broaden-and-build theory, in which individuals are more open to exploring and engaging with their surroundings and extending broad application of skills over the course of such interactions (Fredrickson, 2001, 2004).

#### **7.6.4 – Moderating Influence of Self-Compassion on the Effect of Writing Group**

##### **Involvement**

The final models concerning socially-relevant outcomes addressed whether self-compassion may moderate the influence of writing interventions on social outcomes. See Table 32 for the fixed effects of this moderation model. For heart-to-heart conversations, there is a significant moderation effect between involvement in emotion-focused writings and self-compassion ( $\beta_{14} = -.15$ ,  $SD = .08$ ,  $p = .046$ ). While this effect is significant regarding the emotion-writing group, the moderation differences appear more salient for individuals in the control group. Across high and low levels of self-compassion, individuals in the emotion-focused writing group display comparable outcomes in recent heart-to-heart conversations at each time point. However, over time, individuals in the control group who were lower in self-compassion reported greater decreases in recent heart-to-heart conversations than control group individuals who were higher in self-compassion. See Figure 16 for a depiction of this effect.

#### **7.7 – Academic Outcomes**

Finally, academic adjustment was considered among students. Academically-relevant outcomes included students' confidence in their academic performance (collected as expected GPA), number of instances they studied for their courses in the last week, and number of instances they considered dropping out of their current college in the last week.

##### **7.7.1 – Unconditional Change over Time**

As with earlier outcomes, initial models of academically-relevant outcomes tested whether significant change occurred across the sample, without consideration of other influences. See Table 33 for a depiction of fixed effects of growth. Across the sample, students reported decreases in expected GPA ( $\beta_{10} = -.03$ ,  $SD = .01$ ,  $p = .016$ ). Further, students reported a decrease in number of times spent studying in the past week across the course of the study ( $\beta_{10} = -.08$ ,  $SD = .02$ ,  $p = .001$ ). While this suggests students decrease in their attempts to study across the semester, this item only collects the number of study sessions and not the length of study sessions. It remains possible that students altered their studying style by working toward fewer study sessions for longer periods of time.

### **7.7.2 – Conditional Demographic Effects on the Overall Mean and Effect of Time**

Next, models tested possible effects of student demographics on the overall intercepts of academic outcomes. See Table 34 for the fixed effects of these models. Minority-race students reported fewer average study attempts in the previous week ( $\beta_{04} = -.34$ ,  $SD = .15$ ,  $p = .031$ ). Women reported more average considerations of dropping out of college in the previous week ( $\beta_{01} = .11$ ,  $SD = .04$ ,  $p = .003$ ). Chi-square tests were used to determine whether removing non-significant demographic effects contributed to significantly poorer model fit. See Table 35 for these results. No models were significantly poorer fitting once non-significant factors were removed.

Models then tested whether demographic factors were associated with change over time in academically-relevant outcomes. This test was conducted for all outcomes since demographic factors may still influence change over time, even if they are not associated with differences at baseline. See Table 36 for fixed effects of these models. For instances of studying, students in FYE programs were buffered from decreases in times spent studying over the course of the study

( $\beta_{15} = .11$ ,  $SD = .05$ ,  $p = .039$ ). This effect is depicted in Figure 17. A chi-square test found that models were not significantly poorer fitting when non-significant demographic factors were removed.

### **7.7.3 – Conditional Effects of Writing Group Involvement on Change over Time**

Next, models tested the influence of expressive writing involvement on change over time for each academic outcome. See Table 37 for fixed effects of these models. After accounting for demographic influences, individuals in the gratitude-focused writing group were buffered from decreases in instances of studying over the course of the study ( $\beta_{13} = .11$ ,  $SD = .05$ ,  $p = .039$ ). See Figure 18 for a depiction of this effect. An additional model explored whether there was a FYE-by-writing status interaction, similar to the moderation tests involving self-compassion. This model did not indicate significant FYE-by-emotion-focused writing ( $\beta_{14} = -.45$ ,  $SD = .35$ ,  $p = .199$ ) or FYE-by-gratitude-focused writing ( $\beta_{15} = -.30$ ,  $SD = .34$ ,  $p = .376$ ) interactions.

### **7.7.4 – Moderating Influence of Self-Compassion on the Effect of Writing Group Involvement**

Additional models concerning academically-relevant outcomes addressed whether self-compassion may moderate the influence of writing interventions on academic outcomes. See Table 38 for the fixed effects of this moderation model. There were no significant interaction effects regarding academic outcomes. There was one significant effect of self-compassion on expected GPA, where more self-compassionate students reported greater confidence in their academic performance across time points ( $\beta_{13} = .04$ ,  $SD = .02$ ,  $p = .049$ ).

### **7.7.5 - Indirect Effects of Expressive Writing on Considerations of Dropping Out**

Given the importance of student dropout for both students and college administrators, I was interested in a final exploratory analysis to consider possible indirect effects from the

expressive writing interventions to considerations of dropping out. For this model, each of the emotional, social, and academic variables that had been previously associated with significant change over time within either of the writing groups was included as a time-varying main effect on considerations of dropping out. This exploratory model is depicted in Figure 19. The tested model is presented below:

### Level-1 Model

$$OUTCOME_{ti} = \pi_{0i} + \pi_{1i}*(TIME_{ti}) + \pi_{2i}*(POSAFFECT_{ti}) + \pi_{3i}*(DEPRESSIVE_{ti}) + \pi_{4i}*(LIFESAT_{ti}) + \pi_{5i}*(GROUPMEETS_{ti}) + \pi_{6i}*(HEART2HEART_{ti}) + \pi_{7i}*(STUDYTIMES_{ti}) + e_{ti}$$

### Level-2 Model

$$\pi_{0i} = \beta_{00} + \beta_{01}*(FEMALE_i) + \beta_{02}*(AVGPOSAFFECT_i) + \beta_{03}*(AVGDEPRESSIVE_i) + \beta_{04}*(AVGLIFESAT_i) + \beta_{05}*(AVGGROUPMEETS_i) + \beta_{06}*(AVGHEART2HEART_i) + \beta_{07}*(AVGSTUDYTIMES_i) + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(EMOGROUP_i) + \beta_{12}*(GRATGROUP_i) + r_{1i}$$

$$\pi_{2i} = \beta_{20}$$

$$\pi_{3i} = \beta_{30}$$

$$\pi_{4i} = \beta_{40}$$

$$\pi_{5i} = \beta_{50}$$

$$\pi_{6i} = \beta_{60}$$

$$\pi_{7i} = \beta_{70}$$

As with the indirect test concerning self-disclosure in the emotion-focused group, an approach was used to limit bias from extreme scores or extreme change within individuals. Variables were

entered simultaneously to determine whether select variables accounted for unique variation above the others. Fixed effects for this model are presented in Table 39. When considered simultaneously, depressive symptoms ( $\beta_{30} = .28$ ,  $SD = .07$ ,  $p < .001$ ) were significantly associated with considerations of dropping out. Across time points, students who experienced more depressive symptoms were also more likely to consider leaving college. These findings also suggest that there may be indirect associations between each writing paradigm and considerations of dropping out. Gratitude-focused writings were directly associated with reductions in depressive symptoms across time. Emotion-focused writings were associated with increases in self-disclosure, which was associated with fewer depressive symptoms across time points.

## **Chapter 8 - Study Discussion**

### **8.1 – Study Background and Purpose**

The transition into traditional college settings typically involves new affordances and changes and challenges for students, as many are entering an unfamiliar setting that is distant from their hometowns and established social ties (Compas et al., 1986). Further, students must adjust to a range of concerns, from increasing responsibility and independence (Garcia & Pintrich, 1996), to the overlapping emotional, social, and academic pressures tied to the college and peer settings (Chemers et al., 2011; Dewitz et al., 2009; Heiligenstein & Guenther, 1996; Lee et al., 2014; Strayhorn, 2012). Because of these challenges, it is worthwhile to improve understanding of the college transition and consider interventions that can improve this life event. The use of various expressive writing paradigms may be particularly beneficial and feasible for improving student adjustment. This study incorporated two previously used, but not yet compared expressive writing paradigms to understand their respective influences and mechanisms of change on personal adjustment among incoming college students.

This study incorporated five major aims. The first aim was to distinguish students' immediate experiences (cognitive, affective, and behavioral) during and following completion of emotion-focused or gratitude-focused writing paradigms. The second aim was to improve the field's understanding of the early college transition by following students across part of the incoming college academic semester. The third aim was to lend clarity to potential differences students may experience given background characteristics, such as age, gender, minority/majority racial status, transfer status, and involvement with tailored first-year experience programs. The fourth aim was to test the potential influences of expressive writing interventions on student outlook and adjustment over the course of the college transitions. The



fifth and final aim was to test whether students' self-compassionate approaches of relating to themselves may additionally moderate intervention response in adjustment across the college transition.

In order to address these aims, 161 students were recruited across two fall semesters for a longitudinal, online study. Students completed a set of questionnaires at three time points. Following the first survey point, students were randomly assigned to one of three experimental groups: a control group that did not engage in expressive writing; a group that engaged in four daily emotion-focused expressive writings; and a group that engaged in four daily gratitude-focused emotion writings. Hierarchical linear modeling was then used to test longitudinal change within and between participating students, both in survey responses and in writing trends. Below, the growth trends are reviewed and result implications are discussed regarding 1) manipulation checks during the week of expressive writings, 2) broad trends of adjustment across the entire sample of incoming students; 3) particular trends of adjustment given underrepresented status and involvement in FYE programs; 4) hypotheses tests regarding expressive writings and emotion outcomes, 5) moderating influences of self-compassion on the effects of expressive writings on emotion outcomes, and 6) exploratory analyses regarding social and academic outcomes.

## **8.2 – Aim 1: Immediate Experiences and Responses between Each Expressive Writing Paradigm**

In comparing the immediate experiences to the two expressive writing paradigms of emotion-focused writing (based on Pennebaker and colleagues' [1998] classic therapeutic writing interventions) and gratitude-focused writing (based on Emmons and McCullough's [2003] more recent gratitude activity interventions), I aimed to clarify the potentially distinct

mechanisms of influence associated with each writing paradigm. While each of these interventions has been shown to improve well-being among participants (Froh et al., 2008, 2009; Pennebaker et al., 1990, 1998), questions remained about the possible areas of distinctions, particularly in cognitive, affective, and motivational domains. I first expected students to approach the week of daily writings differently, based on their writing assignment prompts.

Regarding cognitive responses to writings, I expected individuals in the emotion-focused group to incorporate more insight and consideration of cognitive causes for their emotion experiences. This is based on discussions of the possible influences of expressive writing activities by Jones and Pennebaker (2006), who discussed ways individuals may not routinely reflect on intimate life events before engagement in the expressive writing paradigms. Hence, involvement in these activities may encourage new strategies and approaches for considering, reflecting upon, and resolving memories of previous events. Cognitive mechanisms of insight and causation were of particular interest, rather than factors such as working memory, as both therapeutic expressive writing (Klein & Boals, 2001) and exploration of positive gratitude (Fredrickson, 2004) would be expected to contribute to immediate working memory. Results did not support these expected differences.

The two writing groups did not significantly differ in average amount of causation or insight displayed in writings, nor did they indicate differing trends in word use across daily writings. As each group tended to use some causation and insight words across writings, it's possible that each writing paradigm promotes some level of cognitive involvement, though for differing reasons. Emotion-focused writing may require consideration of the reasons painful events occurred and how those events can be later handled, whereas gratitude-focused writings

may promote broad opportunities for exploring thoughts and strategies that do not have a specific goal or purpose, but can be beneficial in later situations.

Testing these possibilities will likely require procedural adjustments, as well as the incorporation of qualitative analyses. For emotion-focused writings, comparing a group of *unguided* writers with a group that received dedicated and responsive guidance over the course of writing (e.g., strategies for strengthening memory recall, feedback on the organization and resolution of discussed events) may help clarify whether structure serves as a major component of writing response. This approach may be particularly informative for understanding anxious populations and the potential drawbacks (and buffers) anxious individuals may experience during reflective writings without extensive structure. Further, qualitative approaches that consider the content of writings may help extend beyond information from self-reports and content analyses. For example, Wainryb and colleagues' (2005) proposed narrative coding scheme concerning transgressions may provide considerable a valuable approach for clarifying expressive writings and the attributions individuals apply to themselves and other agents (e.g., desires, values, uncertainty of actions) and contexts of conflict and resolution that may be missed with quantitative approaches.

The lack of significant growth in the use of cognitive terms remains a concern, and may be an artifact of the pacing between writings. With daily writings, individuals may not have as many new events or details and may “burnout” somewhat from daily attempts at intimate writing. While the study timing was designed to limit attrition and the likelihood of many students visiting home between study sessions, reviews of expressive writings have found greater spacing (i.e., weekly) to promote greater effects of writings (Smyth, 1998).

Regarding affect, I expected the emotion-focused writing group to display more negative emotions in discussions of events and I expected recollection of these events to lead to reported feelings of negative affect. Alternatively, as recollections for the gratitude-focused group should elicit pleasant experiences and have positive valence, I expected participants in this group to display more positive emotions in writings and report more feelings of positive affect. There is partial support for these expectations. Writings groups differed in average emotion word use in writings. The emotion-focused group showed more displays of negative emotion, whereas the gratitude-focused group showed more displays of positive emotion. There were not significant changes in emotion word use over time. Also, the gratitude-focused writing group initially reported more positive affect after writings. However, the gratitude-focused group also reported some decreases in positive affect over time, and resembled the emotion-focused group by the end of writings. This is surprising, as these students would be expected to incorporate a greater appreciation and stronger feelings reflecting the positive aspects of their lives (McCullough et al., 2001).

Regarding behavioral responses with these events, I expected individuals in the emotion-focused group to incorporate less intimacy initially (i.e., writing length and perceptions of writing disclosure), followed by increasing comfort with the idea of sharing their events with a third-party. Again, this is based on the nature of the writings, which would be more likely to involve strong, painful life experiences, relative to the gratitude-focused writings. Findings for this expectation were limited. Writing length, measured in word count, did not initially differ between writing groups. However, the emotion-focused group showed gradual increases in writing length, whereas the gratitude-focused group showed gradual decreases.

One survey item was significant, concerning the extent that a written event had been previously shared with others. Individuals in the emotion-focused group initially reported being less likely to have shared an event they wrote about, but reported increases in the extent their event was shared over the course of daily writings. It is possible that this indicates that these individuals were electing to share more events with others over the course of the week. However, this could also indicate that individuals were selecting events to write about which they had previously found comfort in confiding with another. However, given the broader pattern of findings for this group, these findings do seem aligned with expectations of increasing self-disclosure and willingness to share intimate details as a result of involvement in this writing paradigm.

These results provide partial support for expectations that involvement in the emotion-focused writings, which are based on more therapeutic approaches (Jones & Pennebaker, 2006; Pennebaker, 1997), should incorporate more writing intimacy, even though discussion of these events may be more painful initially. However, these results were limited to two areas, and did not include significant differences in uses of cognitive terms. Behavioral and affective areas of change may be particularly promising areas of change to consider within individuals who complete the emotion-focused or traditionally therapeutic expressive writing paradigms. Over time, these students may become more comfortable discussing challenging and even traumatic events, which may contribute to some areas of long-term improvement noted in previous studies (e.g., (Barclay & Skarlicki, 2009; Kelly & Achter, 1995; Lorenz et al., 2013). Further, the gratitude-focused group, though initially higher in reports of positive affect and displaying more positive affect in writing, did report decreases that showed similarity with the emotion-focused group over the course of the week. While these reports were for immediate experiences of affect

following the writings, rather than experiences of affect from the last week, they were somewhat surprising. These changes could be due to qualitative changes in the types and depth of events discussed, or they could suggest that these writings generally did not continue to promote positive feelings. As the gratitude-focused group's writings consistently displayed more positive affect and less negative affect than the emotion-focused group's, there may be contextual cues in these writings that future qualitative approaches can further distinguish.

### **8.3 – Aim 2: Trends in Personal Adjustment across Incoming College Students**

Initial models regarding outcomes in emotional, social, and academic outcomes addressed whether students showed change in major outcomes over the early college transition. I expected students to generally report improvements across areas that would suggest they are becoming more comfortable with the college setting and transition experience (e.g., increases in life satisfaction, sense of belonging, and expected GPA).

The first set of analyses considered emotional outcomes. Across the sample, students reported decreases in experiences of positive affect and experiences of negative affect, as well as increases in life satisfaction. The decrease in positive affect was a surprising trend that may be partly explained by the timing of the study. This study measured student responses to the approximate mid-point of the fall semester, which is a traditional time for assignments and exams to occur. Student responses may have reflected the increased workload they are likely to encounter across courses. However, it is worth noting that students reported improvements in other areas (fewer negative experiences and greater life satisfaction) that suggest the overall transition was a reasonably pleasant and managed experience.

The second series of analyses considered social outcomes. Students across the sample reported decreases in homesickness, number of attended meetings, recent friends made, and

instances of talking to parents over the course of the study. These changes may be broad reflections of the transition experience as students attend fewer required meetings for courses and residence hall events and lessened need to build new social ties after establishing an initial social network in the beginning weeks of the semester (students' baseline reports of recent friends made are significantly above zero). Further, decreases in homesickness and instances of calling home to parents may coincide, as students gain comfort and acceptance in their new settings. For example, recent attempts at reducing the pressures of homesickness among college students call for the normalization of homesick thoughts and approaches that simplify transitioning to the new college culture (Thurber & Walton, 2012). These are interventions that may be helpful for overwhelmed students, but processes that are likely occurring naturally for many students over the course of the semester.

The third series of analyses considered academic outcomes. Students typically lowered their expectations for end-of-semester GPA somewhat over the course of the transition. Further, students reported engaging in fewer instances of studying as the semester progressed. Lower expectations of GPA may reflect more realistic perceptions of course difficulty as students progressed into the midpoint of the semester, however, many students continued expecting to receive an overall A throughout the course of the semester. While students' expectations of final GPA grades are moderately correlated with their actual classroom performance (Svanum & Bigatti, 2006), these expectations may be somewhat inflated, as many introductory courses involve average grades of B to C across the class. Student-reports of decreased study attempts were surprising, given the typical increase in course assignments over the course of semester. It is possible that students were increasing the efficiency of their study periods or extending the length of fewer study sessions. However, given decreases in expected grade, it is also possible

that students were spending less total time preparing for assignments and recognized that such changes in strategy could somewhat hamper final grades.

#### **8.4 – Aim 3: Differences in Personal Adjustment given Students' Background**

##### **Characteristics**

Additional models tested whether particular background characteristics predicted average differences in emotional, social, and academic outcomes. Models also tested whether students reported different trends over time, given background characteristics.

Regarding emotion outcomes, students reported some differences in major outcomes based on demographic factors. Women, on average, reported more experiences of negative affect in college settings and more depressive symptoms. These trends coincide with the current literature which indicates that women are more likely to report concerns with internalizing symptoms than men (Dyson & Renk, 2006; Turk et al., 1998). Further, older (but not necessarily transfer) students reported fewer experiences of positive affect, whereas transfer (but not necessarily older) students reported poorer life satisfaction. These are results that coincide with previously discussed concerns for transfer and non-traditional-age college students. In some instances, these students have additional social pressures or family/community obligations that are not as readily addressed or advertised by colleges more familiar with students entering directly from high school (e.g., schedule flexibility for working students, support sources for transfer students, personal and academic counseling services; [Adams & Corbett, 2010; Flaga, 2006]). While many of these resources were available at the college where this study occurred, and some students were directly involved in first-year experience programs that aim to improve the early academic transition for first-year and transferring students, there may be additional ways to advertise and engage students through campus resources such as tutoring, the women's



center, psychological counseling centers, and departmental advising that can improve students' comfort and alleviate pressures that detract from satisfaction and perceived security during the college career. Students did not report differing growth trends in emotional adjustment based on demographics, indicating that they do not experience greater improvements or setbacks as they progressed across the early transition due to background factors or possible marginalization.

In social outcomes, women reported a poorer sense of belonging, greater homesickness, and involvement in a greater number of heart-to-heart conversations. Older students also reported a lower sense of belonging in the college setting. Again, these findings coincide with previous concerns of marginalization in college, where women may perceive themselves as receiving less support, particularly in fields where they are traditionally underrepresented (e.g., physics, engineering, [Hall & Sandler, 1982]). Similarly, older students may experience more difficulties in forming new peer ties, limiting sense of belonging and comfort in the college setting (Adams & Corbett, 2010; Dill & Henley, 1998). Of interest, women also reported engaging in a greater number of intimate, heart-to-heart conversations than men. These close conversations may resemble the aspects of collaborative coping that adolescent girls and young women typically incorporate to a greater extent than men (Renk & Creasey, 2003). These conversations may be particularly important for sharing intimate and even painful details that help with managing life events and building trust and intimacy with others (Cohen & Wills, 1985). Students in First-Year Experience programs reported a greater number of average group meetings, which may reflect structured meetings which address academic and residential topics in these programs. As with emotion outcomes, demographic factors did not predict differing growth trends over the course of the study.

In academic outcomes, minority-race students reported engaging in fewer study instances in the last week. Given the isolation of this demographic association, it is harder to determine the reasoning for this trend. Minority students, as well as women, are particularly vulnerable to experienced threats based on marginalization and stereotypes, including stereotype threats that may introduce expectations of poor performance in classroom settings due to background characteristics (e.g., expectations that Blacks cannot excel in college courses or that women are not as capable in math; [Steele & Aronson, 1995]). These threats could then help explain why marginalized students may be less motivated to engage in studying. However, this effect concerning racial background is surprisingly isolated, in that there are no other expected findings that may reflect emotional or social of racial marginalization. Additional factors such as ethnic identity and self-relevant theories of motivation may help explain this finding further. Minority-race students who strongly value their racial identity may be more motivated for stronger academic engagement and performance (Sellers, Chavous, & Cooke, 1998). Further, stronger racial identity may contribute to external attributions of prejudice and discrimination to others' inadequacies, rather than internalizing hurtful acts and viewing them as valid criticisms or actions (Crocker & Major, 1989). In addition, students' perceptions of personal competence and efficacy can promote or hinder coping with college challenges. Students who experience classroom and general college setbacks and do not believe themselves capable of adapting and overcoming such threats may perform poorly due to diminished effort and motivation (e.g., procrastination; [Haycock, McCarthy, & Skay, 2011]) and feelings of inadequacy (e.g., test anxiety; [Cassady & Johnson, 2002]). In predominantly White institutions, minority-race students such as Blacks and Latinos are more likely to report poorer views of themselves and their capabilities (Negga et al., 2007; Spurgeon & Myers, 2010), and to also experience group-

based social and academic pressures that can threaten performance in college (Castillo et al., 2004; Solórzano et al., 2000).

**8.5 – Aim 4: Hypotheses Tests of Expressive Writings on Emotion Outcomes** Each writing intervention was hypothesized to have an indirect influence on major emotion outcomes through changes in particular mechanisms. For the emotion-focused writings based on Pennebaker's (1997) therapeutic expressive writings and Sloan and colleagues' (2008) writing prompts, individuals were expected to experience initial reductions in rumination style and increases in comfort with self-disclosure. These changes were then expected to account for reductions in experiences of negative affect and depressive symptoms. For the gratitude-focused writings based on Emmons and McCullough's (2003) earlier gratitude interventions and an adaptation of Sheldon and Lyubomirsky's (2008) writing prompts, individuals were expected to experience initial increases in subjective happiness and gratitude. These changes were then expected to account for improvements in experiences of positive affect and life satisfaction.

Students in the emotion-focused writing group did not show any intervention-based main effects on primary emotion outcomes. Involvement in emotion-focused writings was associated with increases in self-disclosure, as expected. Self-disclosure then was associated with fewer depressive symptoms across time points. While these findings do not support a mediation effect, as there is no direct association between writing involvement and the main outcomes, there is support for an indirect effect as suggested in hypotheses. Additional moderating influences of demographic factors were explored to determine if self-disclosure may be more strongly associated with particular outcomes given students' background characteristics. Self-disclosure

Students in the gratitude-focused writing group better maintained positive affect, reported greater increases in life satisfaction than other groups, and reported greater decreases from

depressive symptoms than other groups. These were surprising trends in that they were direct effects, rather than indirect associations through other possible mechanisms, such as initial change in subjective happiness or trait gratitude. Regarding depressive symptoms, the effect of self-disclosure was attenuated given greater student age.

#### **8.6 – Aim 5: Moderation Tests of Self-Compassion on Expressive Writing Influence**

Self-compassion, a constructive and healthy way of relating to the self through distress (Neff, 2003), was tested as a potential moderator for the influence of each expressive writing paradigm on students' emotion outcomes. I expected self-compassionate individuals to show an improved response to each writing paradigm, as individuals in the emotion-focused writing group would be expected to better accept and constructively resolve recollections of unpleasant emotion experiences, whereas individuals in the gratitude-focused writing group would be expected to incorporate greater mindfulness that further promoted detection and observance of beneficial events and people. There was mixed support for this expectation. There was a self-compassion-by-emotion-writing interaction effect for experiences of negative affect. Individuals who were higher in self-compassion and were involved in emotion-focused writings reported significantly greater reductions in experiences of negative affect over the course of the study. There was also a self-compassion-by-gratitude-writing interaction effect for life satisfaction, where individuals in the control group showed decreases in life satisfaction when they were low in self-compassion and maintained constant life satisfaction when they were high in self-compassion, whereas in those in the gratitude-focused writing group showed minimal increases in life satisfaction when they were low in self-compassion and showed greater increases in life satisfaction when they were high in self-compassion.

These effects do lend support that self-compassion might be additionally beneficial for individuals completing self-relevant intervention tasks, such as expressive writing activities. Self-compassion was not the target of intervention in this study, and did not significantly change across time over the course of this study. However, there have been a number of successful mindfulness and self-compassion interventions that have contributed to increases in self-compassion in short-term considerations self-evaluations and self-relevant behavior (e.g., Adams & Leary, 2007; Allen & Leary, 2007; Leary & Allen, 2007). Combining simple self-compassion interventions with an expressive writing paradigm may contribute to even greater outcomes in areas of emotional adjustment for individuals, whether individuals are asked to confront painful life experiences or contemplate positive, yet often overlooked aspects of their lives.

### **8.7 – Summary of Hypotheses Tests**

Overall, these findings lend some support to existing concerns of college student marginalization and the impact of limited support and representation in the college setting, as well as to the expected benefits of expressive writing paradigms that address broadly negative and broadly positive personal experiences. Of note, the results of these findings are relatively modest for many emotion outcomes. Demographic factors, which were associated with differing baseline reports of some emotion outcomes, did not account for differing trends of growth over time (women did not report different changes than men, etc.). Further, some of the effects for the writing interventions were modest in effect size. However, given the brevity of the intervention and the length of the project, these results are encouraging in that there were clear trends in adaptive directions, even controlling for the possibility of considerable variation between and within individuals. While this study was unable to continue following students over the course of a series of months or across the college career, other longitudinal considerations of expressive

writing interventions have suggested that the influences of these interventions often have lasting impacts for Pennebaker-based writings (e.g., Pennebaker & Beall, 1986; Lepore & Greenberg, 2002), although there remain mixed findings on how well the effects of gratitude-based writings are maintained (Seligman et al., 2005).

### **8.8 – Exploratory Tests of Expressive Writings on Social Outcomes**

Unlike the emotion outcomes of this study, there were no specified hypotheses regarding social outcomes of interest as far as the underlying mechanisms and particular variables that may be most closely aligned and influenced by each writing paradigm. In previous studies, traditional negative emotion expressive writings have been associated with improved social outlook in reconciling with romantic partners (Lepore & Greenberg, 2002) and recovering from workplace conflict and job loss (Spera et al., 1994). Further, trait gratitude is associated with improved social responsiveness and generosity (Froh et al., 2010), as well as improved social support (Wood et al., 2008). Gratitude-focused writings typically direct focus on the positive behaviors of others for which people are encouraged to indirectly (journaling or listing approaches; [Emmons & McCullough, 2003]) or directly (writing a letter to family or community members; [Toepfer & Walker, 2009]) consider thanking or repaying the kind acts of others. As such, each writing paradigm had the potential to bolster improved social adjustment and increase willingness to be engaged in positive, reliable interactions with others. Social reports included perceptions of sense of belonging at the current college and homesickness. Students also reported on a series of experiences from the past week, including times they attended a group meeting (non-specified), made a friend, had a heart-to-heart conversation with someone, talked to their parents over the phone, talked to old friends over the phone, and talked to romantic partners over the phone.

The influence of each writing intervention was considered as a main effect on social outcome trends. Individuals in the emotion-focused writing group reported increases in heart-to-heart conversations over time. These changes coincide with increases in having shared a written event and dispositional self-disclosure, suggesting that individuals in the emotion-focused group may experience improvements in constructively addressing painful emotion experiences in personal recollections and in shared discourse with others. This also aligns with previous trends in Pennebaker-based expressive writings that show improvements in constructive management of negative experiences (Sloan & Marx, 2004; Watson & Pennebaker, 1989). Further, individuals in the gratitude-focused writing group were buffered from decreases in attended group meetings. These findings may be partially explained as experiences of gratitude may encourage a desire to become involved and “pay forward” acts of kindness toward others (McCullough et al., 2002). While the type of group meeting (e.g., required for class, social or religious involvement) was not specified by students, group involvement provides opportunities for students to broaden their social network in the college setting and gain exposure to new opportunities and activities that can be beneficial for their academic success (Gerdes & Mallinckrodt, 1994; Walton et al., 2011) and personal well-being (Swenson et al., 2008).

Lastly, self-compassion was tested as a moderating factor in social outcomes. A self-compassion-by-emotion-focused writing interaction was observed for outcomes in heart-to-heart conversations. The moderation effect actually indicated greater differences among the control group given levels of self-compassion. Individuals who had not completed writings and were lower in self-compassion reported decreases in heart-to-heart conversations, whereas those higher in self-compassion were buffered from such decreases. Those in the emotion-focused writing group reported similar increases in heart-to-heart conversations across levels of self-

compassion. Again, the influence of self-compassion in this instance is reasonable, given its incorporation of a common sense of humanity (Neff, 2003; Gilbert, 2005) and ties with conflict resolution and relationship quality in intimate relationships (Neff & Brevetas, 2013; Yarnell & Neff, 2013). As heart-to-heart conversations may be beneficial in building stronger ties and overcoming common relationship conflicts, the influence of self-compassion seems particularly meaningful. However, these effects appear to occur in the absence of expressive writing, rather than in combination with intervention.

Overall, these findings suggest that there are steady improvements in areas of social adjustment as students advance through the early college transition. Students report fewer concerns with homesickness, while also spending less time attending group meetings, making fewer friends, and having fewer phone calls with their parents back home. Many of these changes may reflect typical trends as students become more acclimated with their college routines and have diminished need to attend mandatory meetings, establish additional contacts, and reach out to parents. However, students did report some baseline differences based on gender, age, and involvement in extensive orientation programs. Women and older students had a poorer sense of belonging at their current college, and women also reported being more homesick than men. Alternatively, women reported engaging in more heart-to-heart conversations that may be beneficial for promoting intimate, reliable relationships. Students in FYE programs report more involvement in group meetings.

Individuals in the emotion-focused group also reported increases in heart-to-heart conversations, while individuals in the control group who were lower in self-compassion reported decreases in heart-to-heart conversations. Lastly, students in the gratitude-focused group did not show decreases in attended group meetings like students in the other groups. These



findings suggest that there may be some areas where the expressive writings paradigms uniquely promote social adjustment among students. Considering both emotional and social outcomes, the emotion-focused writings encourage increased comfort with addressing intimate feelings, both at the personal level and interpersonal level. This may contribute to constructive management of intimate and painful experiences, and comfort seeking social support as needed. Alternatively, the gratitude-focused writings was associated with improved feelings and may contribute to an increased receptivity to engagement in more public settings, hence a trend where students remained more engaged in group meetings and outings, which can provide additional opportunities for testing and strengthening emotional and social skills with others (Fredrickson, 1998).

### **8.9 – Exploratory Tests of Expressive Writings on Academic Outcomes**

I lastly considered academic outcomes during the early college transition. Like social outcomes, there were no specific hypotheses regarding the influence of expressive writings, but outcomes in this domain were of interest due to the importance of academic success in college. Previous studies have found that expressive writing activities can bolster working memory among participants (Klein & Boals, 2001) and may indirectly improve college classroom performance, due to improved management of stresses (Lumley & Provenzano, 2003). Again, I was interested in the extent each writing activity may contribute to self-efficacy in classroom performance (expected GPA), motivation to perform well academically (recent study instances), and willingness to maintain at the current college setting (considerations of dropping out).

Another demographic trend regarding academic outcomes involved considerations of dropping out. Women reported significantly more considerations of dropping out in the past week. This finding coincides with women's reports of more experiences of negative affect,

depressive symptoms, and homesickness. Unsurprisingly, these concerns across emotional and social areas threaten not only women's comfort with the college setting, but likely heighten risks for withdrawal. This finding occurred in a college that has a traditional emphasis on fields such as engineering. Again, such academic fields are areas where women may be particularly likely to be underrepresented and are at increased risk for experiencing marginalization (e.g., Spencer et al., 1998). However, similar concerns have been raised in a number of varying college settings, including liberal arts institutions. Each of these findings underscores the importance of further understanding and addressing possible areas of marginalization based on students' backgrounds and incoming experiences.

There was an additional demographic influence on change in study habits over time. Students who were involved in first-year experience (FYE) programs reported fewer decreases in study instances across the semester. These students were in a range of programs that emphasized strong academic strategies, community-building and engagement (particularly with residential hall-based programs), and in some cases provided targeted resources for students from specific backgrounds (e.g., transfer students). One of the overarching goals of these programs at the national level is to improve the incoming student experience and bolster students' long-term academic and personal outlook. This particular trend in study habits aligns with the FYE mission and may contribute to improved long-term academic outlook for students.

The effects of writing interventions were considered as main effects on academic outcomes. Students in the gratitude-focused group were buffered from decreases in instances of studying. Further, students in the emotion-focused group showed a near-significant trend in which they were also buffered from decreases in study instances. These results suggest that not only can FYE involvement promote more engaged study habits, but that expressive writings may

be feasible approaches to encourage students vigilance in remaining active and involved in their studies. While this effect was only significantly large in the gratitude-writing group, both writing interventions show promise in this area, as would be expected given positive findings in the current literature. Somewhat surprisingly, there were no effects of writing involvement on considerations of dropping out from either group. While the emotion-focused group showed increases in intimacy and constructively addressing self-relevant events, whereas the gratitude-focused group showed greater emotional adjustment and satisfaction alongside increased engagement in group settings, neither group appeared to experience a reduction in worries or thoughts of leaving the college setting. This may be partly because concerns of dropping out were limited to a fairly small subset of the sample. However, the students who did report these concerns often reported daily considerations or multiple considerations of dropping out each day (50-100 instances in the last week for some students). These are concerns that seem to be limited to select students, but are incredibly problematic and disruptive.

Concerns in dropping out may arise for a number of reasons. Marginalization is a common concern, and does appear to be a concern for some students in the current study (women, older students, and transfer students in particular). However, additional personal characteristics, including emotional well-being, social engagement, and academic self-efficacy may help predict students' willingness to retain in the college setting (e.g., Gerdes & Mallinckrodt, 1994). A final exploratory model considered each of the emotional (positive affect, life satisfaction, depressive symptoms), social (group involvement, heart-to-heart conversations), and academic (study involvement) variables that were predicted to change over time by one of the two writing paradigms as possible influences on considerations of dropping out. These items were time-varying factors that had the potential to provide insight indirect effects of expressive

writing involvement on students' likelihood to want to remain at the current college setting. When all of these factors were considered simultaneously, depressive symptoms accounted for significant, unique variance in considerations of dropping out. Depressive symptoms were directly influenced by involvement in gratitude-focused writings and indirectly influenced by involvement in emotion-focused writings (through self-disclosure), suggesting that each writing paradigm may have positive, indirect influences in buffering students' from considerations of leaving their current college setting. However, it is important to note that direct counseling services and orientation experiences remain the most appropriate approach for alleviating student concerns and improving student comfort as individuals adjust to new settings and personal demands (e.g., Glass & Garrett, 1995). However, these writing approaches can serve as beneficial and informal supplements to improving students' adjustment during this transition, at a low burden and time cost to students.

### **8.10 – Translational Applications of Expressive Writings to College Settings**

Each of the expressive writing paradigms incorporated in this study has a considerable history of use with college-age samples and community adults. However, classroom or casual applicability in the college setting may vary given the differing emotional and motivational demands between these approaches.

The emotion-focused writings, though based on a therapeutic approach, did not show as many significant associations with emotional outcomes of interest, relative to the gratitude-focused writings. Further, these writings may prove more emotionally taxing for students when routinely incorporated in classes or encouraged for unguided student reflection in private settings. Students may elaborate more readily on negative experiences and emotions, yet without a constructive and coherent approach and feedback for establishing meaning from these events,

they may be overwhelmed by past hurts (e.g., Mellings & Alden, 2000). These emotion-focused writings and the original therapeutic writing activities from which they are based may be more beneficial in formal and more supervised or co-operative instances, such as when students seek support from counseling services.

The gratitude-focused writings did support adaptive and surprisingly direct changes in multiple primary emotion outcomes, including experiences of positive affect, life satisfaction, and depressive symptoms. These results align with previous findings and are encouraging as the gratitude-writing paradigm can be adapted to differing approaches beyond journaling attempts. For example, individuals continue to show significant improvements in many of these areas when incorporating a much briefer approach of listing three-to-five beneficial events and individuals (Emmons & McCullough, 2003; Froh et al., 2008). Given the promotive influences of this activity and the ability to further revise these writing approaches for minimal disruption from daily routines or class activities, I would advocate for the application of gratitude-focused writings and activities for more casual settings to supplement student adjustment during the college transition. This could be particularly helpful in instances where instructors or FYE program coordinators wanted to incorporate a simple and fairly innocuous approach to having students reflect on their experiences and find positive meaning in their lives. The original writing prompt Emmons and McCullough (2003) used to have students use a brief list to count their blessings is shown on Appendix U. This prompt may be adapted for additional use for brief and beneficial writing approaches.

### **8.11 – Study Limitations, Strengths, and Future Directions**

The following three sections discuss concerns of the study procedures and findings, areas of strength given the study design, and areas of future improvement.

### **8.11.1 – Study Limitations**

This study includes three considerable limitations that are worth noting. First, the demographics of this study did not incorporate as much diversity as intended. The study included a majority of female, successive generation, White students. This prevented racial groups from being considered in greater detail (rather than as a dichotomization of majority/minority background) and limits how representative this college sample may be compared to other samples across the United States. There were explicit attempts to increase racial and ethnic diversity, particularly in recruitment of the second sample cohort. The Multicultural Center where this study occurred was specifically sought for study advertisement using flyers, however there were not ample opportunities to recruit in-person, which may have hampered recruiting attempts. Attempts at recruiting explicitly from “male-heavy” areas such as the College of Business were not feasible for the current study.

An additional limitation of this study was the extent of attrition that occurred across time points. Some students failed to complete all assigned writings or surveys at later study time points. Attrition is a common and unfortunate aspect of longitudinal studies, however, this factor was particularly salient in this study, as nearly a third of participants failed to complete at least one major survey, and relatively few students completed all four days of assigned expressive writings. Of note, students were more likely to withdraw from later participation if they were higher in baseline homesickness. This may have influenced findings suggesting homesickness and related areas were improving over the course of the study. Conversely, students who were higher in baseline rumination were more likely to remain in the study. Because the interventions provided opportunities to write in detail on past experiences, the intervention experience may

have been appealing to these students. Potential biases related to attrition patterns are worth consideration in interpreting findings.

The analytical plan for this project, hierarchical linear modeling, did counter attrition to an extent, modeling expected trends for individuals and groups given all available points of data across time points. Hence, students were not removed from consideration given attrition (so long as all time-invariant data such as group placement and gender was available). While multiple attempts were made to maintain contact with students and send routine (but hopefully not overwhelming) reminders for study participation, attrition did occur enough to potentially limit some findings.

The final major concern for this study involves the designed study length and spacing of time points. With expressive writings, both daily and weekly pacing of writings have been used in previous studies. There is some evidence that weekly writings may provide greater benefits for participants (Smyth, 1998). However, there were concerns that weekly writings may allow for more attrition in the current study, and a daily approach was incorporated instead. Further, the length of the overall study allowed for a month of follow-up following the interventions, but did not incorporate extensive follow-ups such as six-month or a one-year data collections. The reasoning for these procedure decisions were again based partly on concerns of attrition, where few students were expected to maintain interest for long-term participation that crossed into another semester or academic year. These decisions prevented the study from addressing whether intervention effects, particularly for gratitude-based writings, might continue to promote adjustment across multiple months.

### **8.11.2 – Study Strengths**

In contrast to some of the concerns of this study, this project incorporated three promising aspects and strengths in its design. This study is a longitudinal consideration of a major developmental period and influences on differing trends, particularly those that may be influenced by marginalization or involvement with intensive academic orientations. Study data included information that broadly applies to the college student experience, including emotional, social, and academic adjustment.

Further, while the demographics of this sample, particularly among male, minority-race, and first-generation individuals, were not as diverse as desired, the study did successfully recruit incoming students from a variety of academic fields, and did not overly rely on students from introductory psychology classes, who may not be as representative of other incoming peers during the college transition. Further, this study included enough older-age students and transfer students for reasonable comparison with traditional-age and first-year college students. These demographic trends are promising and did allow for greater consideration of multiple demographic factors.

In addition, this study is the first known attempt to compare the influences of two expressive writing paradigms and to further clarify the underlying mechanisms that may influence participants. The longitudinal design of this study also allowed for multiple collection points after the intervention to better establish trends following the interventions, as opposed to a single follow-up period. Lastly, threats of social desirability were expected to be minimized, as students completed survey responses and expressive writings in a private setting, and no responses were permanently linked with students' contact or identifying information.

### **8.11.3 – Future Study Directions**



This study offers information that further informs areas of psychology and has implications for fields such as education. It also provides a foundation for future considerations and attempts to further understand and improve adjustment among college students of varying backgrounds. Future considerations of the college transition and the influences of expressive writings would benefit from additional considerations regarding participant demographics, refinements in study design, and consideration of a broader incorporation of interrelated constructs.

While this study was able to successfully recruit students from differing academic fields and students who varied to an extent in demographic differences, additional improvements in diversity would be of high value to the field. This includes diversity in gender, race, age, transfer-status, and first-generation status. However, the field would also benefit greatly to extended focus to currently understudied background characteristics among college samples, which include gender and sexual identity, veteran status, relationship status and consideration for dependents, and socioeconomic factors. Individuals managing minority-gender identity or expression, entering college from military service, and/or caring for children may have considerable and distinct challenges in managing emotional, social, and academic pressures within and beyond the college setting. These students are becoming increasingly recognized and prevalent as the notion of “traditional” college student continues to change in U.S. society. To maintain an environment that welcomes students and provides them the resources to succeed, colleges and researchers will benefit from understanding the setbacks these students often face as they manage stresses across the college career.

There are additional ways that considerations of expressive writings can be further improved to move beyond noting the main effects associated with these interventions and further

understanding the reasoning why these interventions are effective (and under what circumstances they may be ineffective). Qualitative approaches may become increasingly helpful in distinguishing the differences in these writings, and moving beyond proportions of used words and self-reports that remain informative, but limited in distinguishing reports such as writings into categories or dimensions. Direct coding of these responses to determine the type of shared events, extent of depth or superficiality, coherence, and meaning attached across sentences may be particularly beneficial in understanding the kinds of details being shared between writing groups and within particular individuals (e.g., Waters et al., 2013). Further, codes pertinent for affective, social, and behavioral aspects of narratives can coincide with and extend established quantitative approaches (e.g., Wainryb et al., 2005).

Finally, the emotional, social, and academic factors included in the current study are beneficial for building a sense for holistic adjustment among entering college students, but there remain additional factors and approaches for considering well-being and adjustment during this period. These include other major constructs within these areas (e.g., anxiety, religiosity, parental support for college major), as well as major constructs in areas such as physical adjustment (e.g., fitness, diet, amount of sleep). Further, person-centered approaches may prove to be uniquely informative in understanding broader patterns of adjustment within individuals (e.g., Padilla-Walker, Dyer, Yorgasson, Fraser, & Coyne, 2013). These approaches can be informative concurrently (comparing broad patterns of adjustment across areas at baseline) and longitudinally (tracking students who meet certain profiles of adjustment and seeing if particular groups report consistently better improvements across time). While the current study maintained focus on groups given assignment into experimental groups, there are ways to incorporate both random assignment and consideration of profiles within these groups, given large enough sample

sizes. This approach would provide another means of re-evaluating approaches to this data, and extending understanding of individuals' adjustment.

## **8.12 – Conclusions**

This study addressed five major aims to expand the current understanding of adjustment during the college student transition and to test two proven expressive writing paradigms that have yet to be compared thoroughly. Each of these interventions has been associated with improvements in areas of personal adjustment that may benefit incoming students as they address typical college pressures in social, academic, and personal domains (e.g., Emmons & McCullough, 2003; Gortner, Rude, & Pennebaker, 2006). However, questions remained regarding the underlying mechanisms that may influence change following these interventions.

The first aim of this study was to distinguish the immediate experiences between involvement in emotion-focused and gratitude-focused expressive writing activities. Individuals in the emotion-focused writing group initially displayed more negative emotion, displayed less positive emotion, and reported experiencing less positive affect following writings, compared to the gratitude-focused writing. However, the gratitude-focused writing group reported diminishments in experienced positive affect in later writings and resembled the emotion-focused writing group by the end of writings. This finding provided mixed support for expectations of affect-based differences between writing groups. The emotion-focused group initially reported being less likely to have shared their written event at the beginning of writings, but showed increases in their willingness to have shared their written event and wrote longer posts as writings progressed. This aligned with anticipated behavioral changes regarding writing intimacy, although additional aspects, such as extent the writing was revealing or how much the writer 'held back' in their writing did not differ between groups. Surprisingly, anticipated

cognitive differences in word use determining causes and insight of events did not significantly differ between groups. Findings suggest that affective and behavioral differences may be most salient between these paradigms.

The second major aim of this study was to improve general understanding of the changes students experience during the early college transition. Longitudinal approaches were used to generally determine changes in emotional, social, and academic domains for students. Students showed a mix of outcomes that included notable improvements in some domains (increases in life satisfaction, decreases in experiences of negative affect, decreases in homesickness) as well as some surprising trends (decreases in experiences of positive affect, decreases in attended group and organizational meetings, decreases in expected GPA). These were trends that were significantly large across student backgrounds and experimental groups.

The third aim of this study was to clarify the potential concerns of marginalization on student adjustment during this transition. Background characteristics, including gender, race, age, transfer status, and involvement in extended orientation programs were considered as possible influences on students' initial adjustment and continued growth. In some instances, students reported poorer baseline reports given their status as women (more experiences of negative affect, depressive symptoms, lower sense of belonging at college; and considerations of dropping out), minority-race students (fewer recent attempts at studying), older students (fewer experiences of positive affect; lower sense of belonging at college), and transfer status (lower life satisfaction). Alternatively, involvement in FYE orientation programs appeared to promote students' social (group meetings) and academic (study efforts) adjustment. These trends highlight concerns that under-represented or under-supported students are at risk for during this

period, as well as the potential benefits from structured academic and residential support programs.

The fourth aim of this study was to determine the influences of each writing intervention on aspects of student adjustment over the college transition. Each writing paradigm was expected to have a differing indirect effect on major emotional outcomes (depicted in Figures 1 and 2) and was expected to have general ties with social and academic outcomes. Involvement in the emotion-focused writing group was directly associated with greater self-disclosure (and indirectly associated with fewer depressive symptoms) and recent heart-to-heart conversations. Involvement in the gratitude-focused writing group was directly associated with greater experiences of positive affect, life satisfaction, involvement with group meetings, and times spent studying, as well as fewer depressive symptoms. Each writing paradigm was suggested to be indirectly associated with considerations of dropping out, which was higher when students reported more depressive symptoms.

The fifth and final aim of this study was to determine the moderating influence of self-compassion as a promotive factor for the effects of each writing paradigm. Self-compassion had two interaction effects regarding emotion-focused writing on outcomes of experienced negative affect and heart-to-heart conversations. Emotion-focused writing individuals who were high in self-compassion showed much greater reductions in negative affect. For outcomes in heart-to-heart conversations, control group individuals who were also lower in self-compassion showed declines in heart-to-heart conversations. Self-compassion also had an interaction regarding gratitude-focused writing regarding life satisfaction. Gratitude-focused writing students higher in self-compassion showed the greatest improvements in life satisfaction, whereas control group students low in self-compassion showed declines in self-compassion.

These study findings are promising and provide a foundation for future considerations that consider a wider breadth of student characteristics, as well as analytical approaches that emphasize qualitative and person-centered approaches. Lastly, given the number of direct main effects and possible ease of implementation, the gratitude-focused writing intervention is recommended for continued translational use in attempting to promote student well-being during the college transition.

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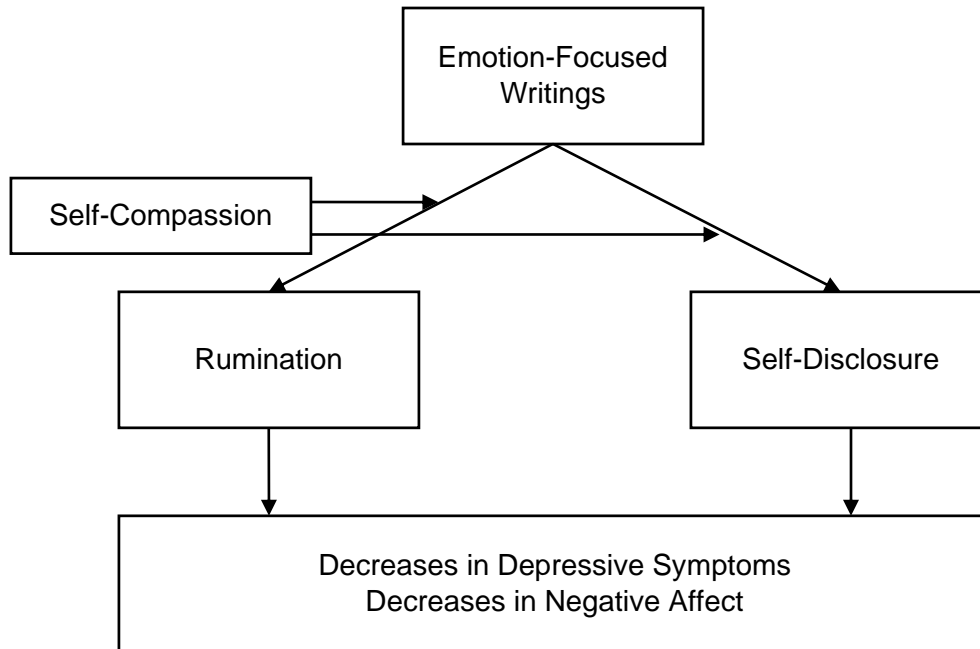
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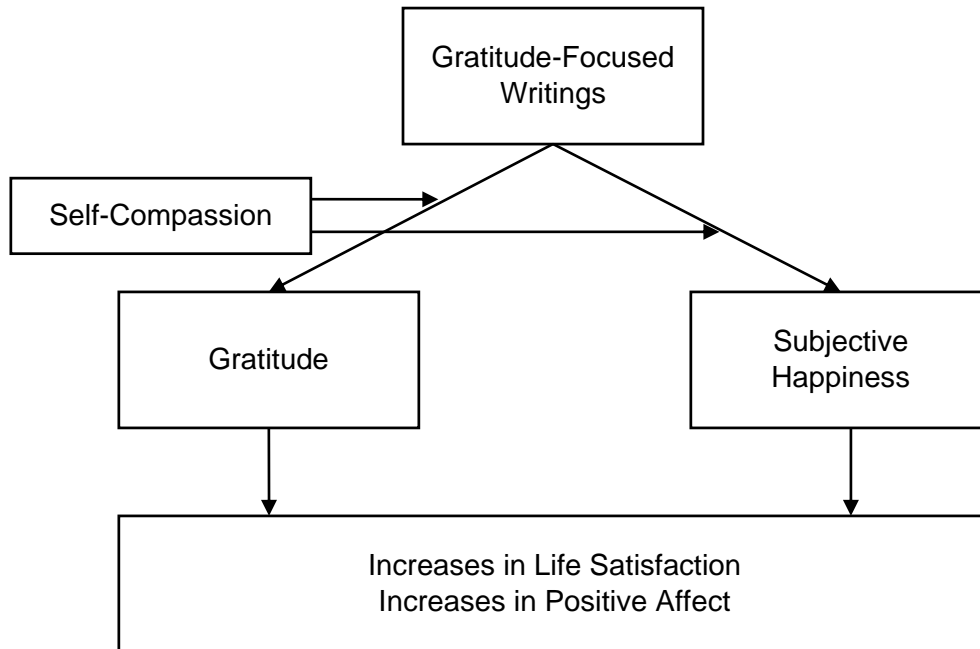
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*Figure 1.* Hypothesized Emotion-Focused Intervention Effects. Students in the emotion-focused writing group were expected to experience direct improvements in decreased rumination and self-disclosure. These improvements were expected to account for reductions in experiences of negative affect and depressive symptoms. Self-compassion was expected to moderate the influence of the expressive writing activity, as highly self-compassionate individuals were expected to show greater responses to writings and greater improvements in rumination and self-disclosure, which would contribute to relatively greater improvements in negative affect and depressive symptoms.



*Figure 2.* Hypothesized Gratitude-Focused Writing Effects. Students in the gratitude-focused writing group were expected to experience direct improvements in increased gratitude and subjective happiness. These improvements were expected to account for increases in experiences of positive affect and life satisfaction. Self-compassion was expected to moderate the influence of the expressive writing activity, as highly self-compassionate individuals were expected to show greater responses to writings and greater improvements in gratitude and subjective happiness, which would contribute to relatively greater improvements in positive affect and life satisfaction.

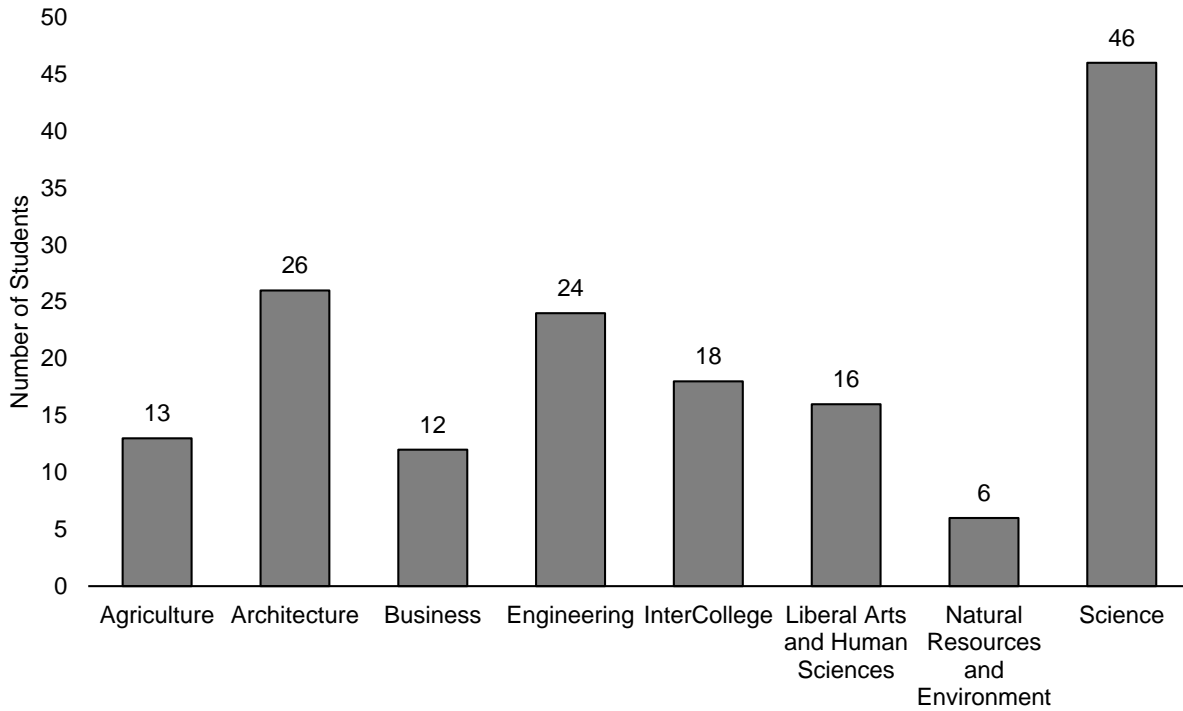
Table 1

*Sample Demographics across Each Cohort*

	<b>2013 Cohort</b>	<b>2014 Cohort</b>
Overall <i>N</i>	101	60
<i>M</i> Age (SD) in years	18.49 (1.6)	19.06 (3.3)
% Female	66.3%	75%
% Caucasian	79.2%	76.7%
% Transfer Students	17.8%	18.3%
% F.Y.E. Participants	28.7%	18.3%
% First-Generation	6.9%	5%

*Note.* F.Y.E. is an abbreviation for First-Year Experience program. First-Generation status is indicated by reports that neither parent has any post-high-school education experience.





*Figure 3.* College Representation Given Students' Major (or First Major if Multiple). Primary college major was the determining factor for college placement for students with two or more majors. The Psychology Department is housed within the College of Science at the University where this study occurred. The InterCollege houses the University Studies program, for students who are still determining their major.

Table 2

*Descriptives of Survey Outcomes at Baseline*

<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
<b>Emotion Outcomes</b>				
Positive Affect	3.86	.58	2.00	5.00
Negative Affect	2.86	.61	1.56	4.38
Life Satisfaction	3.70	.75	1.00	5.00
Depressive Symptoms	1.65	.36	.95	3.05
<b>Potential Indirect Influences</b>				
Gratitude	4.27	.55	1.67	5.00
Subjective Happiness	3.77	.81	1.00	5.00
Rumination	1.98	.51	1.00	3.91
Self-Disclosure	4.15	.77	1.53	6.00
Self-Compassion	3.05	.62	1.67	4.58
<b>Social Outcomes</b>				
Sense of Belonging	3.07	.48	1.61	3.94
Homesickness	3.33	.68	1.67	5.33
Group Meetings <sup>Sq</sup>	.65	.64	.00	3.58
Friends Made <sup>Sq</sup>	1.58	1.11	.00	6.14
Having a “Heart-to-Heart”	1.36	1.34	.00	6.00
Calls to Parents <sup>Sq</sup>	1.22	.73	.00	4.10
Calls to Old Friends <sup>Sq</sup>	.75	.61	.00	2.87
Calls to Romantic Partners <sup>Sq</sup>	.50	.90	.00	5.40
<b>Academic Outcomes</b>				
Expected Semester GPA	--	--	--	--
Study Instances <sup>Sq</sup>	1.74	.87	.00	6.14
Considerations of Dropping Out <sup>I</sup>	.12	.25	.00	.99

*Note.*  $N = 161$ . <sup>Sq</sup> = items were square-root transformed to reduce skewness. <sup>I</sup> = items were inverse transformed to reduce skewness.

Table 3

*Descriptives of First-Day Writing Responses (Monday)*

<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
<i>Emotion-Focused Writing Group (n = 38)</i>				
<b>Cognitive Mechanisms</b>				
Causation Word Use	1.36	.74	1.12	1.60
Insight Word Use	2.34*	.85	2.07	2.61
<b>Affective Experiences</b>				
Positive Emotion Word Use	2.40**	1.23	.00	5.00
Negative Emotion Word Use	.38**	2.51	.00	8.00
Reports of Positive Affect	2.66*	.85	1.00	4.80
Reports of Negative Affect	2.25*	1.14	1.00	5.00
<b>Writing Engagement and Intimacy</b>				
Writing Word Count	360.24	170.64	84	778
How 'Personal' was the Writing	4.18*	1.04	1.00	5.00
Extent Event was Shared with Others	2.26	.98	1.00	5.00
How 'Revealing' was the Writing	3.45	1.03	1.00	5.00
Desire to Share the Event	3.18	1.31	1.00	5.00
Actively Held Back in Writing	3.11*	1.43	1.00	5.00
<i>Gratitude-Focused Writing Group (n = 39)</i>				
<b>Cognitive Mechanisms</b>				
Causation Word Use	1.06	1.20	.67	1.46
Insight Word Use	1.38*	.82	1.11	1.65
<b>Affective Experiences</b>				
Positive Emotion Word Use	6.10**	2.24	.00	13.00
Negative Emotion Word Use	.66**	.67	.00	3.00
Reports of Positive Affect	3.21*	.86	1.00	4.80
Reports of Negative Affect	1.71*	.84	1.00	5.00
<b>Writing Engagement and Intimacy</b>				
Writing Word Count	353.15	202.79	17	752
How 'Personal' the Writing Was	3.59*	1.07	1.00	5.00
Extent Event Was Shared	2.56	1.39	1.00	5.00
How 'Revealing' the Writing Was	3.08	1.18	1.00	5.00
Desire to Share the Event	2.87	1.36	1.00	5.00
Extent Actively Held Back	2.12*	1.22	1.00	5.00

Note. \* = ANOVA results suggest a mean-level difference between groups at the  $\alpha = .05$  level.

Table 4

*Descriptives of Second-Day Writing Responses (Tuesday)*

<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
<i>Emotion-Focused Writing Group (n = 31)</i>				
<b>Cognitive Mechanisms</b>				
Causation Word Use	1.49	.83	1.18	1.80
Insight Word Use	2.56*	1.14	2.14	2.99
<b>Affective Experiences</b>				
Positive Emotion Word Use	2.61**	1.20	.00	6.00
Negative Emotion Word Use	2.43**	1.39	.00	6.00
Reports of Positive Affect	2.39	.86	1.00	4.20
Reports of Negative Affect	2.16	.96	1.00	4.25
<b>Writing Engagement and Intimacy</b>				
Writing Word Count	361.03*	155.13	128	644
How 'Personal' was the Writing	4.13*	.99	1.00	5.00
Extent Event was Shared with Others	2.64	1.05	1.00	5.00
How 'Revealing' was the Writing	3.97*	1.05	1.00	5.00
Desire to Share the Event	3.45*	1.31	1.00	5.00
Actively Held Back in Writing	3.35*	1.25	1.00	5.00
<i>Gratitude-Focused Writing Group (n = 28)</i>				
<b>Cognitive Mechanisms</b>				
Causation Word Use	1.04	1.09	.62	1.46
Insight Word Use	1.09*	.96	.72	1.46
<b>Affective Experiences</b>				
Positive Emotion Word Use	6.29**	2.73	.00	12.00
Negative Emotion Word Use	.68**	.85	.00	4.00
Reports of Positive Affect	2.56	.78	1.20	3.75
Reports of Negative Affect	1.74	.88	1.00	4.25
<b>Writing Engagement and Intimacy</b>				
Writing Word Count	259.86*	149.06	19	680
How 'Personal' the Writing Was	3.00*	1.22	1.00	5.00
Extent Event Was Shared	2.32	1.19	1.00	4.00
How 'Revealing' the Writing Was	2.68*	1.28	1.00	5.00
Desire to Share the Event	2.46*	1.20	1.00	5.00
Extent Actively Held Back	2.04*	1.17	1.00	5.00

Note. \* = ANOVA results suggest a mean-level difference between groups at the  $\alpha = .05$  level.

Table 5

*Descriptives of Third-Day Writing Responses (Wednesday)*

<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
<i>Emotion-Focused Writing Group (n = 23)</i>				
<b>Cognitive Mechanisms</b>				
Causation Word Use	1.39*	.89	1.00	1.78
Insight Word Use	2.41*	1.08	1.94	2.88
<b>Affective Experiences</b>				
Positive Emotion Word Use	2.65**	1.36	1.00	6.00
Negative Emotion Word Use	2.47**	1.29	.00	5.00
Reports of Positive Affect	2.37	.84	1.00	4.20
Reports of Negative Affect	2.27	1.16	1.00	5.00
<b>Writing Engagement and Intimacy</b>				
Writing Word Count	417.17*	202.69	145	859
How 'Personal' was the Writing	3.78	1.17	2.00	5.00
Extent Event was Shared with Others	2.91*	1.08	1.00	5.00
How 'Revealing' was the Writing	3.26	1.01	2.00	5.00
Desire to Share the Event	3.13*	1.29	1.00	5.00
Actively Held Back in Writing	3.04*	1.36	1.00	5.00
<i>Gratitude-Focused Writing Group (n = 25)</i>				
<b>Cognitive Mechanisms</b>				
Causation Word Use	.81*	.75	.50	1.13
Insight Word Use	1.42*	.99	1.00	1.84
<b>Affective Experiences</b>				
Positive Emotion Word Use	7.38**	3.04	3.00	17.00
Negative Emotion Word Use	.80**	.87	.00	3.00
Reports of Positive Affect	2.68	.72	1.60	4.00
Reports of Negative Affect	1.82	1.01	1.00	4.75
<b>Writing Engagement and Intimacy</b>				
Writing Word Count	284.92*	162.48	18	595
How 'Personal' the Writing Was	3.28	.98	2.00	5.00
Extent Event Was Shared	1.96*	.89	1.00	4.00
How 'Revealing' the Writing Was	2.76	1.01	1.00	5.00
Desire to Share the Event	2.40*	.91	1.00	4.00
Extent Actively Held Back	1.76*	.88	1.00	4.00

Note. \* = ANOVA results suggest a mean-level difference between groups at the  $\alpha = .05$  level.

Table 6

*Descriptives of Fourth-Day Writing Responses (Thursday)*

<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
<i>Emotion-Focused Writing Group (n = 24)</i>				
<b>Cognitive Mechanisms</b>				
Causation Word Use	1.21	.85	.85	1.57
Insight Word Use	2.26*	.78	1.93	2.59
<b>Affective Experiences</b>				
Positive Emotion Word Use	2.58**	1.37	1.00	5.00
Negative Emotion Word Use	2.20**	1.05	.00	5.00
Reports of Positive Affect	2.38	.77	1.20	4.00
Reports of Negative Affect	1.96*	.87	1.00	4.50
<b>Writing Engagement and Intimacy</b>				
Writing Word Count	363.21	150.39	180	710
How 'Personal' was the Writing	3.71	.95	2.00	5.00
Extent Event was Shared with Others	3.04	1.27	1.00	5.00
How 'Revealing' was the Writing	3.54	1.06	1.00	5.00
Desire to Share the Event	3.13	1.46	1.00	5.00
Actively Held Back in Writing	3.25*	1.39	1.00	5.00
<i>Gratitude-Focused Writing Group (n = 19)</i>				
<b>Cognitive Mechanisms</b>				
Causation Word Use	.72	.69	.39	1.05
Insight Word Use	1.24*	1.08	.72	1.76
<b>Affective Experiences</b>				
Positive Emotion Word Use	6.69**	3.53	1.00	14.00
Negative Emotion Word Use	.59**	.49	.00	2.00
Reports of Positive Affect	2.29	.76	1.00	3.60
Reports of Negative Affect	1.42*	.68	1.00	3.50
<b>Writing Engagement and Intimacy</b>				
Writing Word Count	274.26	162.04	7	523
How 'Personal' the Writing Was	3.00	1.41	1.00	5.00
Extent Event Was Shared	2.79	1.32	1.00	5.00
How 'Revealing' the Writing Was	2.84	1.21	1.00	5.00
Desire to Share the Event	2.79	1.44	1.00	5.00
Extent Actively Held Back	1.84*	1.17	1.00	5.00

Note. \* = ANOVA results suggest a mean-level difference between groups at the  $\alpha = .05$  level.

Table 7

*Descriptives of Survey Outcomes at One-Week Follow-Up*

<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
<b>Emotion Outcomes</b>				
Positive Affect	3.75	.58	2.17	5.00
Negative Affect	2.82	.66	1.44	4.44
Life Satisfaction	3.72	.76	1.60	5.00
Depressive Symptoms	1.69	.41	.95	3.11
<b>Potential Indirect Influences</b>				
Gratitude	4.28	.52	2.33	5.00
Subjective Happiness	3.69	.87	1.25	5.00
Rumination	1.95	.54	1.00	3.50
Self-Disclosure	4.10	.86	1.93	6.07
Self-Compassion	3.02	.68	1.50	4.64
<b>Social Outcomes</b>				
Sense of Belonging	3.00	.48	1.44	3.94
Homesickness	3.24	.63	1.50	4.67
Group Meetings <sup>Sq</sup>	.48	.57	.00	2.32
Friends Made <sup>Sq</sup>	0.01	.75	.00	4.57
Having a “Heart-to-Heart”	1.43	1.37	.00	6.00
Calls to Parents <sup>Sq</sup>	1.06	.61	.00	3.47
Calls to Old Friends <sup>Sq</sup>	.49	.94	.00	2.61
Calls to Romantic Partners <sup>Sq</sup>	.49	.94	.00	6.14
<b>Academic Outcomes</b>				
Expected Semester GPA	3.52	.36	2.70	4.00
Study Instances <sup>Sq</sup>	1.22	1.11	.00	5.40
Considerations of Dropping Out <sup>I</sup>	.11	.25	.00	.98

*Note.*  $N = 110$ . Expected GPA is based on a 4-point scale, with both “plus” and “minus” letter grades possible. Ex. A- = 3.7, B+ = 3.4, B = 3. <sup>Sq</sup> = items were square-root transformed to reduce skewness. <sup>I</sup> = items were inverse transformed to reduce skewness.

Table 8

*Descriptives of Survey Outcomes at One-Month Follow-Up*

<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
<b>Emotion Outcomes</b>				
Positive Affect	3.66	.59	2.33	4.83
Negative Affect	2.80	.63	1.11	4.11
Life Satisfaction	3.73	.76	2.00	5.00
Depressive Symptoms	1.69	.43	.95	2.95
<b>Potential Indirect Influences</b>				
Gratitude	4.20	.55	3.00	5.00
Subjective Happiness	3.65	.95	1.25	5.00
Rumination	1.95	.52	1.00	3.36
Self-Disclosure	4.21	.88	1.67	6.60
Self-Compassion	3.01	.68	1.17	4.58
<b>Social Outcomes</b>				
Sense of Belonging	3.04	.49	1.28	3.94
Homesickness	3.17	.59	1.83	4.83
Group Meetings <sup>Sq</sup>	.51	.65	.00	3.58
Friends Made <sup>Sq</sup>	.72	.52	.00	2.32
Having a “Heart-to-Heart”	1.36	1.23	.00	7.00
Calls to Parents <sup>Sq</sup>	.91	.56	.00	2.32
Calls to Old Friends <sup>Sq</sup>	.65	.71	.00	5.40
Calls to Romantic Partners <sup>Sq</sup>	.48	.93	.00	6.14
<b>Academic Outcomes</b>				
Expected Semester GPA	3.42	.45	2.00	4.00
Study Instances <sup>Sq</sup>	1.30	1.58	.00	9.63
Considerations of Dropping Out <sup>I</sup>	.13	.26	.00	.91

*Note.*  $N = 107$ . Expected GPA is based on a 4-point scale, with both “plus” and “minus” letter grades possible. Ex. A- = 3.7, B+ = 3.4, B = 3. <sup>Sq</sup> = items were square-root transformed to reduce skewness. <sup>I</sup> = items were inverse transformed to reduce skewness.



Table 9

*Logistic Regression Analysis of Study Attrition*

Independent Variable	Beta	S.E.	Wald Value	Sig.	Odds
Female	-.46	.82	.32	.573	.63
Age	.30	.33	.78	.376	1.34
Transfer Status	-2.33	1.11	4.38	.036	.098
Minority Status	1.07	.87	1.52	.218	2.91
FYE Involvement	-.84	.79	1.11	.291	.43
Negative Affect	-.83	1.02	.67	.414	.44
Depressive Symptoms	-1.73	1.88	.84	.358	.18
Rumination	-2.58	.98	6.88	.009	.08
Self-Disclosure	.18	.51	.12	.729	1.19
Positive Affect	-.20	1.09	.04	.852	.82
Life Satisfaction	1.21	.80	2.25	.134	3.34
Subjective Happiness	-.56	.65	.76	.383	.57
Gratitude	.17	.73	.05	.816	1.19
Self-Compassion	-2.25	.82	7.42	.006	.106
Belonging	-.35	1.22	.08	.777	.71
Homesickness	1.85	.80	5.27	.022	6.34
Made Friends	.09	.37	.06	.804	1.10
Group Meetings	-1.01	.83	1.48	.224	.36
Heart-to-Heart Talk	-.03	.27	.01	.914	.97
Called Parents	-.14	.68	.04	.841	.87
Called Friends	.13	.53	.06	.801	1.14
Called Partner	-.23	.37	.39	.535	.80
Time Studying	-.37	.46	.62	.430	.69
Considered Dropping	-2.11	2.10	1.04	.309	.12
Model $\chi^2$	37.13	$p = .043$			
Pseudo $R^2$	.318				
<i>N</i>	161				

*Note.* The dependent variable is full attrition after baseline, coded so that 0 = completion of at least one later survey and 1 = no completion of later surveys.

Table 10

*Bivariate Correlations between Variables at Baseline (Full-Sample)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1 Female	--																							
2 Age	-.08	--																						
3 Transfer Status	-.15	<b>.45</b>	--																					
4 Minority Status	-.06	.04	.05	--																				
5 FYE Involvement	.01	-.08	.03	-.04	--																			
6 Negative Affect	<b>.22</b>	-.05	.04	.07	-.09	--																		
7 Depressive Symptoms	<b>.18</b>	.05	.08	-.03	-.09	<b>.75</b>	--																	
8 Rumination	.14	.05	.03	.07	.02	<b>.42</b>	<b>.49</b>	--																
9 Self-Disclosure	-.04	.07	-.09	.12	-.04	<b>-.27</b>	<b>-.25</b>	-.13	--															
10 Positive Affect	-.09	<b>-.21</b>	-.12	.03	.06	<b>-.62</b>	<b>-.67</b>	<b>-.26</b>	.15	--														
11 Life Satisfaction	.11	<b>-.18</b>	<b>-.20</b>	-.11	.11	<b>-.53</b>	<b>-.63</b>	<b>-.34</b>	<b>.22</b>	<b>.61</b>	--													
12 Subjective Happiness	-.10	-.03	-.08	-.01	.07	<b>-.54</b>	<b>-.59</b>	<b>-.39</b>	<b>.28</b>	<b>.54</b>	<b>.60</b>	--												
13 Gratitude	.14	-.11	<b>-.19</b>	<b>-.17</b>	.00	<b>-.30</b>	<b>-.32</b>	-.09	.05	<b>.40</b>	<b>.56</b>	<b>.34</b>	--											
14 Self-Compassion	<b>-.20</b>	-.01	-.10	.05	-.01	<b>-.56</b>	<b>-.58</b>	<b>-.50</b>	<b>.27</b>	<b>.46</b>	<b>.44</b>	<b>.57</b>	<b>.22</b>	--										
15 Belonging	-.15	<b>-.26</b>	<b>-.20</b>	-.08	.05	<b>-.61</b>	<b>-.67</b>	<b>-.27</b>	<b>.16</b>	<b>.76</b>	<b>.59</b>	<b>.45</b>	<b>.41</b>	<b>.41</b>	--									
16 Homesickness	<b>.24</b>	-.15	-.05	-.02	-.03	<b>.56</b>	<b>.48</b>	<b>.17</b>	-.23	<b>-.35</b>	<b>-.21</b>	<b>-.29</b>	-.15	<b>-.24</b>	-.36	--								
17 Made Friends	.00	<b>-.20</b>	-.15	.00	.10	-.04	-.09	-.12	.15	.12	.14	<b>.20</b>	.06	.07	.13	.09	--							
18 Group Meetings	.05	-.07	-.04	-.12	<b>.20</b>	.01	.02	.07	.01	.11	.11	<b>.18</b>	.11	.00	.08	.03	<b>.32</b>	--						
19 Heart-to-Heart Talk	<b>.30</b>	-.09	-.02	.03	.00	-.03	-.03	-.07	.10	<b>.17</b>	.14	.14	.04	-.01	.13	.00	.08	<b>.20</b>	--					
20 Called Parents	.13	<b>-.16</b>	.09	-.14	-.03	.08	.08	-.12	.00	-.09	.05	.04	.01	-.01	-.08	<b>.41</b>	.13	.13	.12	--				
21 Called Friends	.10	.03	-.10	-.07	-.14	-.06	.09	-.10	.05	-.09	.02	.03	.04	.01	-.07	<b>.27</b>	<b>.19</b>	.03	.07	<b>.31</b>	--			
22 Called Partner	-.02	.06	-.04	.01	-.03	.07	.06	.07	.10	-.07	-.06	-.10	-.15	-.11	-.08	-.09	.06	.04	.06	-.07	-.03	--		
23 Time Studying	.10	.02	.12	-.05	.08	.03	.05	.08	.02	.03	-.02	.00	.09	.01	.05	.03	.15	<b>.23</b>	.05	.07	.06	.11	--	
24 Considered Dropping	<b>.26</b>	.05	-.04	.06	-.06	<b>.46</b>	<b>.51</b>	<b>.33</b>	-.10	<b>-.41</b>	<b>-.30</b>	<b>-.25</b>	<b>-.25</b>	<b>-.28</b>	<b>-.34</b>	<b>.35</b>	-.01	.14	-.09	.00	.03	-.01	.11	

Note.  $N = 161$ . Significant correlations ( $p < .05$ ) are formatted as bold. Expected GPA was not collected at baseline.

Table 11

*Bivariate Correlations between Variables at One-Week Follow-Up (Control Group)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1 Female	--																								
2 Age	-.20	--																							
3 Transfer Status	-.17	<b>.41</b>	--																						
4 Minority Status	.02	-.02	.03	--																					
5 FYE Involvement	-.05	-.05	.13	-.04	--																				
6 Negative Affect	.04	-.28	-.18	.08	.05	--																			
7 Depressive Symptoms	-.16	-.17	-.11	.05	-.02	<b>.74</b>	--																		
8 Rumination	-.18	-.14	-.19	.21	.01	<b>.65</b>	<b>.80</b>	--																	
9 Self-Disclosure	-.06	.21	-.02	.04	-.10	<b>-.46</b>	<b>-.47</b>	<b>-.37</b>	--																
10 Positive Affect	.11	-.02	-.03	.12	.11	<b>-.65</b>	<b>-.84</b>	<b>-.65</b>	<b>.40</b>	--															
11 Life Satisfaction	.17	.08	-.16	-.04	.08	<b>-.57</b>	<b>-.74</b>	<b>-.63</b>	<b>.48</b>	<b>.67</b>	--														
12 Subjective Happiness	.07	.25	.03	-.18	-.02	<b>-.69</b>	<b>-.72</b>	<b>-.55</b>	<b>.53</b>	<b>.59</b>	<b>.66</b>	--													
13 Gratitude	.10	.23	.27	-.02	.01	<b>-.53</b>	<b>-.66</b>	<b>-.55</b>	<b>.51</b>	<b>.47</b>	<b>.55</b>	<b>.45</b>	--												
14 Self-Compassion	-.02	.30	.07	-.13	.06	<b>-.77</b>	<b>-.66</b>	<b>-.54</b>	<b>.55</b>	<b>.67</b>	<b>.59</b>	<b>.69</b>	<b>.44</b>	--											
15 Belonging	.19	-.23	-.16	.05	.08	<b>-.58</b>	<b>-.67</b>	<b>-.49</b>	<b>.39</b>	<b>.78</b>	<b>.60</b>	<b>.37</b>	<b>.55</b>	<b>.59</b>	--										
16 Homesickness	.13	<b>-.32</b>	-.08	-.18	-.05	<b>.64</b>	<b>.57</b>	<b>.39</b>	-.20	<b>-.54</b>	<b>-.38</b>	<b>-.37</b>	-.26	<b>-.49</b>	.30	--									
17 Made Friends	-.06	.28	.06	-.03	-.03	-.10	-.26	-.26	.08	.14	<b>.31</b>	<b>.33</b>	.25	.20	-.06	.00	--								
18 Group Meetings	-.04	.01	.00	<b>-.24</b>	<b>.32</b>	-.06	-.24	-.11	-.03	.17	.19	.01	.24	-.07	.15	-.21	.11	--							
19 Heart-to-Heart Talk	<b>.32</b>	-.14	-.13	.05	.05	.15	.01	.14	.13	.16	.04	.14	-.13	.07	.08	.14	-.18	.02	--						
20 Called Parents	-.19	-.05	.13	-.27	-.01	.23	<b>.43</b>	.21	.01	<b>-.40</b>	-.31	-.29	-.23	-.27	<b>-.33</b>	.18	-.11	-.11	-.08	--					
21 Called Friends	.14	-.15	-.16	-.05	-.07	.02	-.01	.07	.10	.04	.01	.18	.07	.11	.05	.29	<b>.35</b>	-.02	.09	-.09	--				
22 Called Partner	.02	-.06	-.14	-.08	.10	.14	.05	.28	-.16	.06	-.15	-.01	-.16	-.12	-.08	-.09	-.09	<b>.39</b>	<b>.41</b>	.04	.07	--			
23 Expected GPA	-.04	.24	.07	-.15	.25	<b>-.41</b>	<b>-.31</b>	<b>-.54</b>	.19	.28	.23	.30	.19	.45	.21	<b>-.36</b>	.21	.12	-.03	-.07	-.11	-.29	--		
24 Time Studying	.07	-.07	-.06	<b>-.25</b>	<b>.24</b>	.23	.18	.06	-.11	-.24	-.10	-.04	-.16	-.30	-.26	.15	.25	<b>.60</b>	-.05	.20	.17	.27	.24	--	
25 Considered Dropping	-.18	-.03	-.05	.06	-.13	<b>.39</b>	<b>.63</b>	<b>.57</b>	-.22	<b>-.53</b>	<b>-.50</b>	<b>-.37</b>	<b>-.49</b>	-.26	<b>-.36</b>	.28	-.20	-.28	-.13	.27	-.12	-.10	-.28	.00	

Note.  $N = 40$ . Significant correlations ( $p < .05$ ) are formatted as bold.

Table 12

*Bivariate Correlations between Variables at One-Week Follow-Up (Emotion-Focused Writing Group)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1 Female	--																								
2 Age	-.01	--																							
3 Transfer Status	-.27	<b>.49</b>	--																						
4 Minority Status	-.12	-.07	-.03	--																					
5 FYE Involvement	.21	-.15	-.11	.06	--																				
6 Negative Affect	.11	.31	.26	.08	-.16	--																			
7 Depressive Symptoms	.29	<b>.53</b>	.19	-.01	.00	<b>.68</b>	--																		
8 Rumination	-.04	.11	.01	.22	-.06	<b>.41</b>	<b>.42</b>	--																	
9 Self-Disclosure	-.03	-.16	-.33	.19	-.13	<b>-.42</b>	<b>-.42</b>	-.13	--																
10 Positive Affect	-.21	<b>-.47</b>	.03	-.02	.11	<b>-.61</b>	<b>-.72</b>	-.33	.12	--															
11 Life Satisfaction	.08	<b>-.35</b>	-.03	.04	.17	<b>-.47</b>	<b>-.49</b>	-.26	.20	<b>.55</b>	--														
12 Subjective Happiness	-.04	-.25	-.23	.07	.05	<b>-.62</b>	<b>-.40</b>	<b>-.39</b>	<b>.37</b>	<b>.60</b>	<b>.55</b>	--													
13 Gratitude	<b>.43</b>	-.28	-.28	-.28	-.12	-.20	-.21	-.28	.17	.22	<b>.48</b>	<b>.36</b>	--												
14 Self-Compassion	-.16	-.15	-.02	-.13	.23	<b>-.54</b>	<b>-.39</b>	<b>-.37</b>	.26	<b>.45</b>	<b>.42</b>	<b>.65</b>	.31	--											
15 Belonging	-.03	<b>-.46</b>	.03	.07	.06	<b>-.52</b>	<b>-.54</b>	-.27	.06	<b>.61</b>	<b>.62</b>	<b>.41</b>	.24	<b>.38</b>	--										
16 Homesickness	.13	.08	-.04	-.01	-.07	<b>.40</b>	<b>.46</b>	.30	.08	-.31	-.26	-.19	-.05	-.08	<b>-.40</b>	--									
17 Made Friends	-.28	-.24	-.21	.30	-.06	-.29	-.21	-.15	.19	.10	.03	.28	-.12	.02	.16	-.13	--								
18 Group Meetings	-.26	-.13	-.06	-.22	.07	-.29	-.17	-.17	-.06	.15	.26	.11	-.22	.03	<b>.35</b>	-.27	<b>.40</b>	--							
19 Heart-to-Heart Talk	-.19	-.04	.24	.29	-.04	-.07	-.19	-.04	-.21	.19	.23	.06	-.31	-.32	.24	-.28	.25	.27	--						
20 Called Parents	.07	-.07	.12	.08	.21	-.07	.18	-.21	.01	-.04	-.01	.13	-.01	.15	-.13	.03	.26	.05	-.10	--					
21 Called Friends	-.08	.27	-.17	-.13	-.06	-.05	.14	.06	.09	-.31	.05	.01	.08	.03	-.24	-.01	.24	<b>.43</b>	-.10	-.11	--				
22 Called Partner	-.01	.13	.19	.00	-.09	.18	.31	.03	-.20	-.24	-.01	-.06	.14	-.15	.01	<b>-.35</b>	.12	.22	-.16	.09	.22	--			
23 Expected GPA	-.30	.13	.01	.01	<b>-.39</b>	.03	-.12	-.21	.20	-.10	-.02	.02	.19	.21	-.18	-.09	-.11	-.07	-.21	.14	.04	.20	--		
24 Time Studying	.10	.19	.15	<b>-.30</b>	-.11	.20	.27	.12	-.19	-.11	-.22	-.16	.28	-.06	-.05	.03	-.18	.36	-.14	-.06	.02	.18	.08	--	
25 Considered Dropping	.26	.29	-.08	-.19	.21	.22	.31	.17	-.08	-.27	-.07	-.08	.06	-.06	<b>-.48</b>	<b>.39</b>	-.13	-.11	-.09	.08	.24	-.18	-.06	-.12	

Note.  $N = 34$ . Significant correlations ( $p < .05$ ) are formatted as bold.

Table 13

*Bivariate Correlations between Variables at One-Week Follow-Up (Gratitude-Focused Writing Group)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1 Female	--																								
2 Age	.21	--																							
3 Transfer Status	.15	<b>.68</b>	--																						
4 Minority Status	-.14	<b>.34</b>	.15	--																					
5 FYE Involvement	-.18	-.10	-.12	.13	--																				
6 Negative Affect	<b>.38</b>	.17	-.10	-.31	-.25	--																			
7 Depressive Symptoms	.30	<b>.40</b>	.19	<b>.37</b>	-.02	<b>.77</b>	--																		
8 Rumination	.28	.24	.20	.21	.20	<b>.57</b>	<b>.70</b>	--																	
9 Self-Disclosure	-.06	.22	.05	.08	-.27	.03	.07	-.03	--																
10 Positive Affect	-.27	<b>-.35</b>	-.32	<b>-.47</b>	.09	<b>-.62</b>	<b>-.67</b>	<b>-.35</b>	.01	--															
11 Life Satisfaction	-.21	<b>-.41</b>	<b>-.36</b>	<b>-.46</b>	.03	<b>-.52</b>	<b>-.60</b>	<b>-.44</b>	-.19	<b>.49</b>	--														
12 Subjective Happiness	<b>-.35</b>	<b>-.51</b>	<b>-.41</b>	-.33	-.04	<b>-.55</b>	<b>-.59</b>	<b>-.47</b>	-.01	<b>.64</b>	<b>.55</b>	--													
13 Gratitude	<b>-.42</b>	<b>-.43</b>	<b>-.37</b>	<b>-.47</b>	.17	<b>-.42</b>	<b>-.57</b>	<b>-.34</b>	-.14	<b>.60</b>	<b>.69</b>	<b>.62</b>	--												
14 Self-Compassion	<b>-.39</b>	-.27	<b>-.41</b>	-.16	-.17	<b>-.69</b>	<b>-.65</b>	<b>-.66</b>	.08	<b>.51</b>	<b>.41</b>	<b>.51</b>	<b>.42</b>	--											
15 Belonging	<b>-.33</b>	<b>-.41</b>	<b>-.34</b>	<b>-.51</b>	.17	<b>-.63</b>	<b>-.73</b>	-.32	.03	<b>.85</b>	<b>.56</b>	<b>.61</b>	<b>.71</b>	<b>.52</b>	--										
16 Homesickness	.33	.06	-.14	.33	-.25	<b>.73</b>	<b>.57</b>	<b>.36</b>	.00	<b>-.50</b>	.27	<b>.47</b>	-.27	-.30	<b>-.42</b>	--									
17 Made Friends	<b>-.39</b>	<b>-.35</b>	.27	.22	-.07	<b>-.35</b>	<b>-.41</b>	<b>-.35</b>	.15	<b>.34</b>	.29	<b>.34</b>	<b>.33</b>	.26	<b>.41</b>	-.31	--								
18 Group Meetings	-.12	-.14	-.07	-.27	.15	-.31	-.28	-.13	.02	.27	.17	.26	<b>.34</b>	.21	.17	-.19	.33	--							
19 Heart-to-Heart Talk	.12	-.21	-.16	-.25	-.05	-.12	-.04	-.06	.33	.29	.13	.19	.18	.01	.30	-.19	<b>.36</b>	-.05	--						
20 Called Parents	.24	-.27	<b>-.34</b>	-.26	-.24	-.02	-.17	-.29	-.09	.13	.29	.00	.30	.15	.14	.22	.15	.21	<b>.39</b>	--					
21 Called Friends	.10	-.02	-.21	-.04	-.09	-.07	.12	.01	-.19	-.02	.29	.12	.08	.02	-.06	.23	.12	.27	.04	.17	--				
22 Called Partner	.16	.16	.15	.06	.00	.19	.29	.19	.29	-.09	-.13	-.32	-.25	-.21	-.10	.21	-.10	<b>-.46</b>	.27	-.13	.09	--			
23 Expected GPA	-.14	-.09	-.17	-.09	-.09	-.19	-.00	-.10	.04	.12	-.06	.10	.02	.01	.11	-.28	.16	.09	.10	.14	.03	-.11	--		
24 Time Studying	.10	-.03	-.02	-.21	.15	-.22	-.08	.19	-.17	.10	.19	-.12	.10	-.02	.17	.22	.02	.27	.09	.08	-.14	.09	.08	--	
25 Considered Dropping	.23	.30	.29	<b>.55</b>	-.26	<b>.50</b>	<b>.50</b>	<b>.36</b>	.13	<b>-.52</b>	<b>-.45</b>	<b>-.57</b>	<b>-.52</b>	<b>-.39</b>	<b>-.68</b>	<b>.41</b>	-.09	-.03	-.08	-.01	.06	-.01	-.08	-.05	

Note.  $N = 36$ . Significant correlations ( $p < .05$ ) are formatted as bold.

Table 14

*Bivariate Correlations between Variables at One-Month Follow-Up (Control Group)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1 Female	--																								
2 Age	-.20	--																							
3 Transfer Status	-.17	<b>.41</b>	--																						
4 Minority Status	.02	-.02	.03	--																					
5 FYE Involvement	-.05	-.05	-.13	.04	--																				
6 Negative Affect	.08	-.23	-.13	-.17	-.10	--																			
7 Depressive Symptoms	.03	-.20	-.10	-.07	-.09	<b>.77</b>	--																		
8 Rumination	-.13	-.23	-.28	.03	-.01	<b>.69</b>	<b>.76</b>	--																	
9 Self-Disclosure	.02	.06	-.02	-.20	-.12	<b>-.43</b>	<b>-.51</b>	<b>-.40</b>	--																
10 Positive Affect	.01	-.05	-.05	.09	-.13	<b>-.59</b>	<b>-.82</b>	<b>-.56</b>	<b>.46</b>	--															
11 Life Satisfaction	-.02	.00	-.10	.03	.11	<b>-.63</b>	<b>-.78</b>	<b>-.60</b>	<b>.48</b>	<b>.79</b>	--														
12 Subjective Happiness	.01	<b>.33</b>	.24	.00	.14	<b>-.68</b>	<b>-.76</b>	<b>-.60</b>	<b>.56</b>	<b>.67</b>	<b>.71</b>	--													
13 Gratitude	-.05	.27	.21	-.01	-.07	<b>-.50</b>	<b>-.60</b>	<b>-.57</b>	<b>.32</b>	<b>.41</b>	<b>.59</b>	<b>.52</b>	--												
14 Self-Compassion	-.13	<b>.34</b>	.25	.03	.04	<b>-.73</b>	<b>-.66</b>	<b>-.65</b>	<b>.55</b>	<b>.58</b>	<b>.56</b>	<b>.68</b>	<b>.38</b>	--											
15 Belonging	-.09	-.30	-.27	-.05	.20	<b>-.49</b>	<b>-.53</b>	<b>-.33</b>	<b>.35</b>	<b>.64</b>	<b>.63</b>	<b>.34</b>	<b>.39</b>	<b>.38</b>	--										
16 Homesickness	.19	-.29	-.11	-.15	-.01	<b>.71</b>	<b>.65</b>	<b>.53</b>	<b>-.35</b>	<b>-.45</b>	<b>-.43</b>	<b>-.43</b>	<b>-.40</b>	<b>-.48</b>	<b>-.53</b>	--									
17 Made Friends	.11	-.22	-.07	-.10	.22	.06	-.14	-.12	.15	<b>.36</b>	.26	.30	.06	.01	.09	.06	--								
18 Group Meetings	-.05	.06	-.06	-.22	.20	.10	-.10	.03	.03	.08	-.04	.01	.09	-.08	.25	-.14	.17	--							
19 Heart-to-Heart Talk	.28	-.18	-.11	-.20	.12	.04	-.01	.07	-.05	.21	-.08	.03	-.14	.00	.25	-.06	.26	<b>.32</b>	--						
20 Called Parents	-.02	.02	.07	-.28	-.06	-.07	-.02	-.11	.06	-.03	.16	.25	.06	.09	-.08	.13	-.02	-.14	-.06	--					
21 Called Friends	-.11	-.08	-.03	-.02	.25	.08	<b>.32</b>	.25	.08	-.23	-.16	-.07	-.04	-.08	.11	.05	.04	-.07	-.08	-.06	--				
22 Called Partner	-.04	-.08	-.19	.11	-.03	.19	.05	.27	.04	.00	-.15	-.10	-.13	-.22	.22	-.12	.14	<b>.40</b>	<b>.59</b>	-.05	-.04	--			
23 Expected GPA	-.07	.11	-.06	-.10	<b>.44</b>	-.24	<b>-.41</b>	-.24	.07	<b>.42</b>	<b>.33</b>	.21	.21	.22	<b>.49</b>	-.25	-.06	.28	.19	<b>-.40</b>	.04	-.01	--		
24 Time Studying	.17	.02	.02	-.12	.24	.13	-.06	-.04	.10	.14	.14	.20	.01	-.20	-.03	.18	<b>.39</b>	<b>.50</b>	.20	-.01	-.05	.10	.08	--	
25 Considered Dropping	.16	-.08	-.19	.22	-.25	.30	<b>.42</b>	<b>.34</b>	-.19	<b>-.36</b>	-.19	<b>-.32</b>	-.13	<b>-.40</b>	<b>-.36</b>	<b>.39</b>	-.16	-.23	-.18	.29	-.14	-.08	<b>-.43</b>	-.06	

Note.  $N = 40$ . Significant correlations ( $p < .05$ ) are formatted as bold.

Table 15

*Bivariate Correlations between Variables at One-Month Follow-Up (Emotion-Focused Writing Group)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1 Female	--																								
2 Age	-.01	--																							
3 Transfer Status	-.28	<b>.49</b>	--																						
4 Minority Status	-.12	-.07	-.03	--																					
5 FYE Involvement	.21	-.15	-.11	.06	--																				
6 Negative Affect	.13	.24	.20	.11	-.13	--																			
7 Depressive Symptoms	.08	<b>.58</b>	.25	.03	-.15	<b>.67</b>	--																		
8 Rumination	.02	.20	-.04	<b>.40</b>	-.20	<b>.40</b>	<b>.52</b>	--																	
9 Self-Disclosure	-.14	-.02	-.01	.25	-.12	-.34	-.24	-.18	--																
10 Positive Affect	.13	-.31	.02	-.10	.06	-.22	<b>-.66</b>	<b>-.34</b>	.12	--															
11 Life Satisfaction	.21	<b>-.36</b>	-.18	.05	.21	-.31	<b>-.60</b>	-.29	.07	<b>.69</b>	--														
12 Subjective Happiness	.21	-.24	-.21	.06	.09	-.20	<b>-.64</b>	<b>-.42</b>	.15	<b>.70</b>	<b>.72</b>	--													
13 Gratitude	<b>.38</b>	-.22	-.15	-.17	-.12	-.05	<b>-.39</b>	-.20	.12	<b>.62</b>	<b>.54</b>	<b>.58</b>	--												
14 Self-Compassion	-.20	-.16	-.01	-.13	.17	<b>-.41</b>	<b>-.57</b>	<b>-.62</b>	.29	.34	<b>.44</b>	<b>.52</b>	.17	--											
15 Belonging	.03	<b>-.56</b>	-.12	.06	-.02	-.29	<b>-.55</b>	-.33	.14	<b>.57</b>	<b>.60</b>	<b>.44</b>	<b>.53</b>	.18	--										
16 Homesickness	-.04	.06	-.05	<b>.36</b>	.06	<b>.65</b>	<b>.36</b>	<b>.34</b>	-.12	-.20	-.31	-.05	-.14	-.20	<b>-.34</b>	--									
17 Made Friends	-.05	-.13	-.15	.05	-.19	.06	-.11	-.02	-.28	.22	-.06	.15	.17	-.07	.05	.05	--								
18 Group Meetings	-.16	-.09	-.05	-.14	.11	-.12	-.08	-.21	-.04	.15	.27	.12	.13	.06	.27	-.27	.31	--							
19 Heart-to-Heart Talk	.20	.10	.10	.05	-.31	.10	.15	.09	.05	.17	.01	.00	.23	<b>-.39</b>	.18	-.04	.09	.19	--						
20 Called Parents	.10	-.03	.02	-.05	.33	-.01	.06	-.21	.07	.12	.13	.13	.10	.07	.06	-.03	.13	.31	.06	--					
21 Called Friends	.15	.23	-.06	.17	.08	-.15	.05	.04	.13	-.12	-.06	.21	-.03	.03	-.25	-.10	.22	.18	.02	.10	--				
22 Called Partner	-.19	-.02	.01	.28	-.15	.20	.23	.14	.16	-.25	-.03	-.08	-.02	.13	-.03	.20	.00	-.09	-.14	-.02	-.06	--			
23 Expected GPA	<b>-.37</b>	-.03	.08	-.05	-.32	.06	-.04	-.03	.16	.09	-.12	.05	.12	.04	.06	.06	.21	-.10	-.29	.17	.00	.10	--		
24 Time Studying	.12	.06	.00	-.19	-.06	.17	.16	.02	-.26	.03	.17	-.06	<b>.37</b>	-.16	.25	-.21	.04	<b>.41</b>	.03	.14	.06	.22	.08	--	
25 Considered Dropping	.14	.20	-.05	.07	-.10	.31	.42	.13	.20	<b>-.39</b>	-.27	-.22	-.09	-.10	-.48	.31	-.23	-.11	.19	-.02	.01	<b>.35</b>	-.25	-.12	

Note.  $N = 34$ . Significant correlations ( $p < .05$ ) are formatted as bold.

Table 16

*Bivariate Correlations between Variables at One-Month Follow-Up (Gratitude-Focused Writing Group)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1 Female	--																								
2 Age	.21	--																							
3 Transfer Status	.15	<b>.68</b>	--																						
4 Minority Status	-.14	<b>.34</b>	.15	--																					
5 FYE Involvement	-.18	-.10	.12	-.13	--																				
6 Negative Affect	.19	.06	-.10	.23	.08	--																			
7 Depressive Symptoms	.31	.31	.09	.30	.06	<b>.81</b>	--																		
8 Rumination	.24	.26	.25	.23	.08	<b>.69</b>	<b>.76</b>	--																	
9 Self-Disclosure	-.24	.22	-.09	.23	<b>-.38</b>	.04	.06	.05	--																
10 Positive Affect	-.13	<b>-.35</b>	-.33	-.22	-.18	<b>-.61</b>	<b>-.69</b>	<b>-.50</b>	<b>.08</b>	--															
11 Life Satisfaction	-.02	<b>-.50</b>	<b>-.39</b>	<b>-.61</b>	-.04	<b>-.48</b>	<b>-.44</b>	<b>-.44</b>	-.12	<b>.57</b>	--														
12 Subjective Happiness	-.29	<b>-.66</b>	<b>-.54</b>	-.30	-.19	<b>-.45</b>	<b>-.65</b>	<b>-.52</b>	.03	<b>.57</b>	<b>.53</b>	--													
13 Gratitude	-.09	-.33	-.31	<b>-.37</b>	-.08	-.30	<b>-.44</b>	-.33	-.06	<b>.52</b>	<b>.67</b>	<b>.50</b>	--												
14 Self-Compassion	<b>-.43</b>	-.34	-.32	.02	-.17	<b>-.66</b>	<b>-.68</b>	<b>-.70</b>	.08	<b>.49</b>	<b>.43</b>	<b>.57</b>	.27	--											
15 Belonging	-.20	<b>-.39</b>	-.31	<b>-.51</b>	-.01	<b>-.51</b>	<b>-.62</b>	<b>-.42</b>	-.03	<b>.67</b>	<b>.58</b>	<b>.57</b>	<b>.62</b>	<b>.45</b>	--										
16 Homesickness	.25	.02	-.18	-.05	.02	<b>.49</b>	<b>.56</b>	<b>.44</b>	-.22	<b>-.35</b>	-.05	<b>-.35</b>	-.21	-.38	-.29	--									
17 Made Friends	-.18	<b>-.39</b>	-.31	.06	-.11	-.19	<b>-.39</b>	<b>-.47</b>	.07	.24	.02	<b>.35</b>	.09	<b>.45</b>	.22	<b>-.44</b>	--								
18 Group Meetings	.00	-.16	.06	-.16	.26	.08	-.02	.21	-.12	-.14	.00	.16	-.10	-.13	-.08	.22	.20	--							
19 Heart-to-Heart Talk	.05	-.18	-.33	.01	-.09	.14	.10	-.09	<b>.36</b>	.09	.19	.18	.07	.21	.07	-.17	.04	-.24	--						
20 Called Parents	.25	-.25	<b>-.47</b>	-.22	-.22	.17	.03	-.09	-.10	.20	.12	.18	.04	-.12	.14	.32	.08	.13	.25	--					
21 Called Friends	-.10	.13	-.08	-.09	-.22	.13	.25	.06	<b>.39</b>	-.22	-.11	.01	-.18	.02	-.14	.14	.09	.27	.34	.24	--				
22 Called Partner	.06	.26	.28	.28	.31	.24	<b>.44</b>	<b>.50</b>	.29	-.23	<b>-.45</b>	<b>-.44</b>	<b>-.42</b>	<b>-.46</b>	-.27	.01	-.10	.05	-.13	-.20	.02	--			
23 Expected GPA	-.12	-.16	-.18	-.13	-.14	-.29	-.33	-.34	.05	<b>.37</b>	.05	.28	-.18	.09	.15	-.23	<b>.41</b>	.13	<b>-.35</b>	.15	-.14	.08	--		
24 Time Studying	.12	.02	-.01	-.12	.28	.02	.02	.13	-.25	.10	.17	.02	.04	-.05	.15	<b>.37</b>	-.05	.49	<b>-.36</b>	-.09	-.05	.12	.18	--	
25 Considered Dropping	.22	.27	<b>.35</b>	.12	.00	<b>.36</b>	<b>.62</b>	<b>.53</b>	.07	<b>-.64</b>	-.15	<b>-.48</b>	-.19	<b>-.48</b>	<b>-.41</b>	.31	-.33	-.01	-.14	-.23	.02	.31	-.28	-.09	

Note.  $N = 33$ . Significant correlations ( $p < .05$ ) are formatted as bold.



Table 17

*Repeated Measures ANOVAs of Survey Variables*

Variable	Type III SS	<i>df</i>	MS	<i>F</i> -value	Sig.
Negative Affect	.28	2.00	.14	1.58	.211
Depressive Symptoms <sup>S</sup>	.01	1.83	.006	.18	.819
Rumination <sup>S</sup>	.81	1.78	.45	4.00	.025
Self-Disclosure <sup>S</sup>	.19	1.80	.11	.70	.483
Positive Affect	.65	2.00	.32	3.32	.039
Life Satisfaction	.33	2.00	.17	1.72	.184
Subjective Happiness	1.20	2.00	.10	.70	.498
Gratitude	.86	2.00	.43	4.37	.015
Self-Compassion	.02	2.00	.01	.11	.897
Belonging <sup>S</sup>	.02	1.73	.01	.16	.825
Homesickness	.28	2.00	.14	1.22	.298
Made Friends	21.48	2.00	10.73	25.55	.000
Group Meetings <sup>S</sup>	.04	1.66	.02	.12	.854
Heart-to-Heart Talk	.16	2.00	.08	.10	.909
Called Parents	2.32	2.00	1.16	9.20	.000
Called Friends <sup>S</sup>	.49	1.92	.30	.72	.462
Called Partner <sup>S</sup>	.41	1.77	.23	.63	.516
Time Studying <sup>S</sup>	2.99	1.96	.08	.10	.905
Considered Dropping	.10	2.00	.05	1.49	.229

*Note.* <sup>S</sup> = The test of sphericity was significant for this variable and the more conservative Greenhouse-Geisser estimate was used in the univariate test.

Table 18

*Fixed Effects of Expressive Writing Responses*

	<b>Intercept, <math>\pi_0</math></b>		<b>Time, <math>\pi_1</math></b>	
	Int., $\beta_{00}$	WG, $\beta_{01}$	Int., $\beta_{10}$	WG, $\beta_{11}$
<b>Cognitive Mechanisms</b>				
Causation Word Use	1.68 (.40)**	-.07 (.55)	-.55 (.29) <sup>†</sup>	.37 (.39)
Insight Word Use	1.49 (.42)**	1.09 (.58) <sup>†</sup>	-.13 (.33)	.01 (.44)
<b>Affective Experiences</b>				
Positive Emotion Word Use	5.03 (.92)**	<b>-2.87 (1.26)**</b>	1.22 (.77)	-.95 (1.04)
Negative Emotion Word Use	.72 (.47)	<b>2.30 (.65)**</b>	-.03 (.33)	-.43 (.46)
Reports of Positive Affect	4.18 (.32)**	<b>-1.45 (.44)**</b>	-1.04 (.24)**	<b>.86 (.32)**</b>
Reports of Negative Affect	1.87 (.40)**	.77 (.55)	-.14 (.28)	-.24 (.39)
<b>Writing Engagement and Intimacy</b>				
Writing Word Count	464 (57)**	-122 (80)	-129 (41)**	<b>148 (56)*</b>
How 'Personal' was the Writing	4.08 (.48)**	.88 (.65)	-.58 (.37)	-.90 (.50)
Extent Event was Shared with Others	2.60 (.51)**	<b>-1.44 (.69)*</b>	-.05 (.38)	<b>1.18 (.51)*</b>
How 'Revealing' was the Writing	3.46 (.46)**	.19 (.63)	-.42 (.35)	.34 (.47)
Desire to Share the Event	3.23 (.60)**	.09 (.83)	-.40 (.47)	.33 (.63)
Actively Held Back in Writing	2.54 (.54)**	.64 (.74)	-.47 (.40)	.47 (.54)

Note. <sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . WG = Writing Group. The gratitude-focused writing group is coded as 0, whereas the emotion-focused writing group is coded at 1.

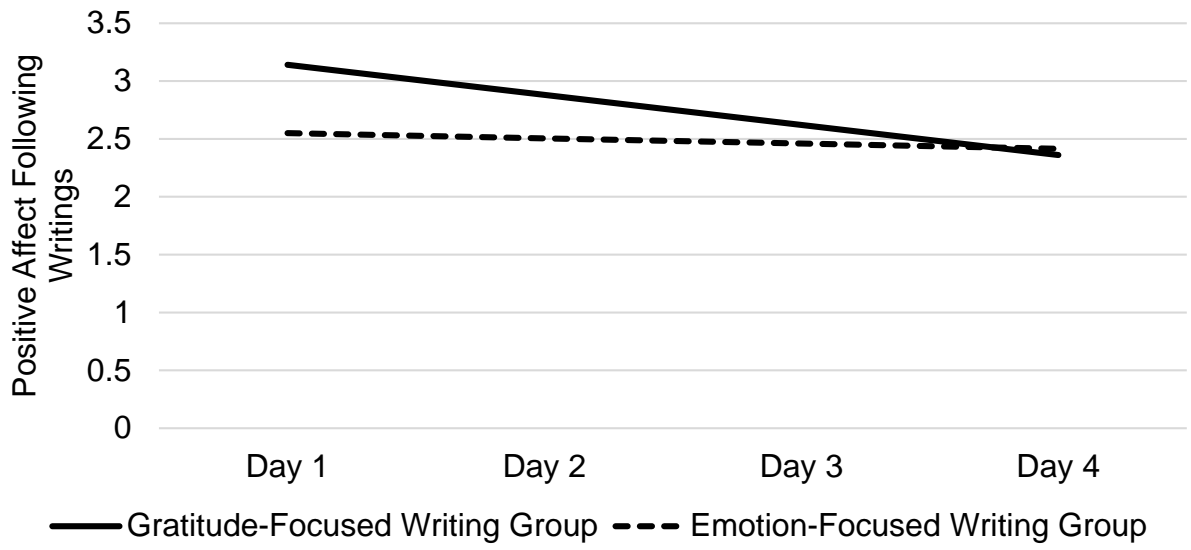


Figure 4. Reports of Post-Writing Positive Affect for each Writing Group.

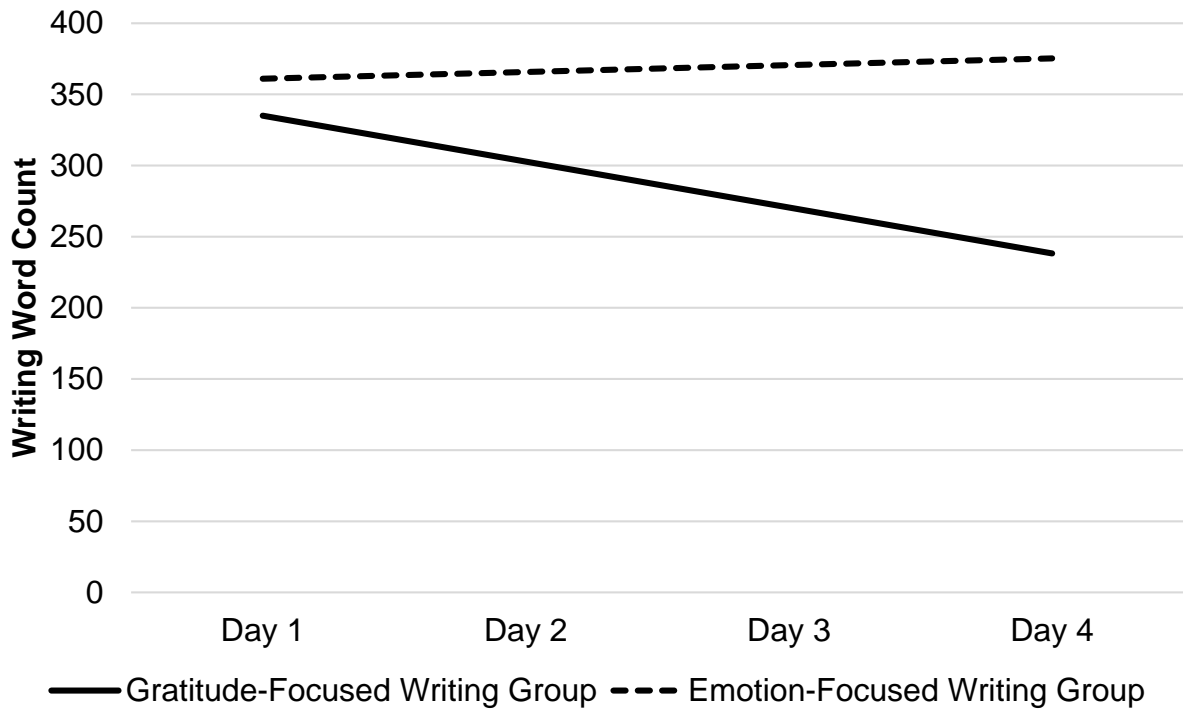


Figure 5. Writing Word Counts for each Writing Group.

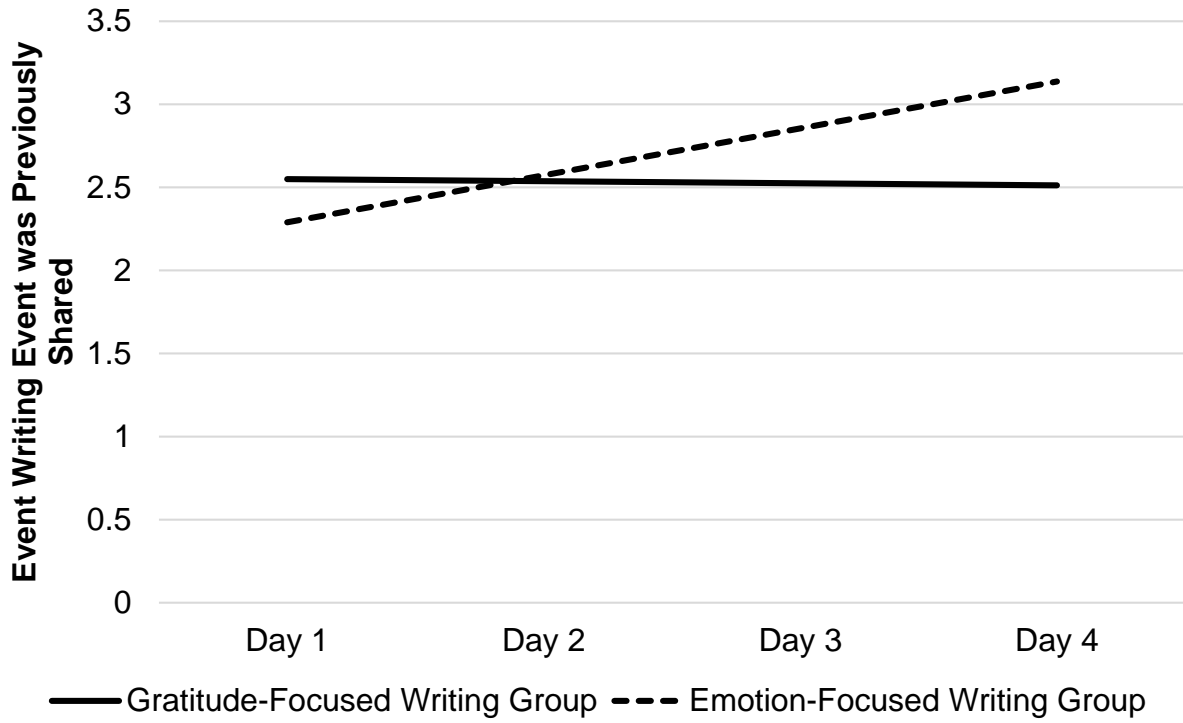


Figure 6. Extent Each Group's Writing Had Been Previously Discussed with Others.

Table 19

*Fixed Effects of Unconditional Growth in Emotion Outcomes and Prospective Indirect Effects*

	<b>Intercept, <math>\pi_0</math></b> Int., $\beta_{00}$	<b>Time, <math>\pi_1</math></b> Int., $\beta_{10}$
Pos. Affect	3.85 (.05)**	-.03 (.01)**
Neg. Affect	2.86 (.05)**	-.02 (.01)*
Life Satis.	3.71 (.06)**	.02 (.01)*
Dep. Symps.	1.65 (.03)**	.00 (.01)
Happiness	3.79 (.06)**	-.02 (.01)
Gratitude	4.28 (.04)**	-.01 (.01)
Self-Discl.	4.14 (.06)**	.02 (.01)†
Rumination	1.96 (.04)**	-.01 (.01)

Note. †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . Pos. Affect = Experiences of Positive Affect. Neg. Affect = Experiences of Negative Affect. Life Satis. = Life Satisfaction. Dep. Symps. = Depressive Symptoms. Self-Discl. = Self-Disclosure.

Table 20

*Fixed Effects of Demographics on Emotion Outcomes and Indirect Effects*

	<b>Intercept, <math>\pi_0</math></b>						<b>Time, <math>\pi_1</math></b>
	Int., $\beta_{00}$	Female, $\beta_{01}$	Transfer, $\beta_{02}$	Age, $\beta_{03}$	Minority, $\beta_{04}$	FYE, $\beta_{05}$	Int., $\beta_{10}$
Pos. Affect	3.92 (.09)**	-.11 (.09)	-.09 (.12)	-.04 (.02) <sup>†</sup>	.04 (.11)	.07 (.10)	-.03 (.01)**
Neg. Affect	2.64 (.10)**	<b>.28 (.10)**</b>	.20 (.13)	-.02 (.02)	.11 (.11)	-.14 (.10)	-.02 (.01)**
Life Satis.	3.67 (.11)**	.11 (.12)	<b>-.31 (.16)<sup>†</sup></b>	-.03 (.03)	-.13 (.14)	.16 (.13)	.02 (.01)*
Dep. Symps.	1.57 (.06)**	<b>.14 (.06)*</b>	.12 (.08)	.01 (.01)	-.03 (.07)	-.06 (.06)	.00 (.01)
Happiness	3.93 (.13)**	-.17 (.14)	-.31 (.18) <sup>†</sup>	.02 (.03)	.00 (.15)	-.02 (.01)	-.02 (.01)
Gratitude	4.27 (.08)**	.12 (.09)	-.15 (.12)	.00 (.02)	<b>-.23 (.10)*</b>	.00 (.09)	-.01 (.01)
Self-Discl.	4.24 (.12)**	-.10 (.13)	<b>-.35 (.17)*</b>	.05 (.02) <sup>†</sup>	.23 (.15)	-.07 (.14)	.02 (.01)
Rumination	1.85 (.08)**	.10 (.08)	.04 (.11)	.01 (.02)	.11 (.09)	.04 (.08)	-.01 (.01)

Note. <sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . The model accounts for random effects (error) on the overall Intercept and effect of Time, indicating that individuals may have differing starting points at baseline and may change differently over time (different individuals may increase, decrease, or remain fairly constant in variables). Pos. Affect = Experiences of Positive Affect. Neg. Affect = Experiences of Negative Affect. Life Satis. = Life Satisfaction. Dep. Symps. = Depressive Symptoms. Self-Discl. = Self-Disclosure. FYE = Involvement in a FYE program.

Table 21

*Chi-Square Model Tests Removing Non-Significant Demographic Effects in Models of Emotion**Outcomes*

	<b>All Intercept-Effects</b>		<b>Significant Intercept Effects</b>		<b>Model Difference</b>	
	Deviance	Parameters	Deviance	Parameters	Difference	Crit. Value
Pos. Affect	467.99	11	471.23	7	3.24	9.49
Neg. Affect	483.33	11	488.25	7	4.92	9.49
Life Satis.	577.04	11	582.09	7	5.05	9.49
Dep. Symps.	150.50	11	155.55	7	5.05	9.49

*Note.* Critical values are at the  $\alpha = .05$  level. Pos. Affect = Experiences of Positive Affect. Neg. Affect = Experiences of Negative Affect. Life Satis. = Life Satisfaction. Dep. Symps. = Depressive Symptoms.



Table 22

*Fixed Effects of Demographics on Change in Emotion Outcomes*

	<b>Intercept</b>				<b>Time</b>					
	Int.	Female	Transfer	Age	Int., $\beta_{10}$	Female, $\beta_{11}$	Transfer, $\beta_{12}$	Age, $\beta_{13}$	Minority, $\beta_{14}$	FYE, $\beta_{15}$
Pos. Affect	3.85 (.04)**	--	--	-.05 (.02)*	-.04 (.02)*	.02 (.02)	-.01 (.02)	.00 (.00)	.01 (.02)	-.01 (.02)
Neg. Affect	2.66 (.09)**	.30 (.10)**	--	--	.00 (.03)	-.03 (.02)	-.01 (.02)	.00 (.00)	.00 (.02)	.00 (.02)
Life Satis.	3.77 (.06)**	--	-.37 (.15)*	--	.01 (.02)	.01 (.02)	-.01 (.03)	.00 (.00)	-.01 (.02)	.01 (.02)
Dep. Symps.	1.56 (.05)**	.13 (.06)*	--	--	.00 (.01)	-.01 (.01)	.01 (.02)	.00 (.00)	.01 (.02)	-.01 (.01)

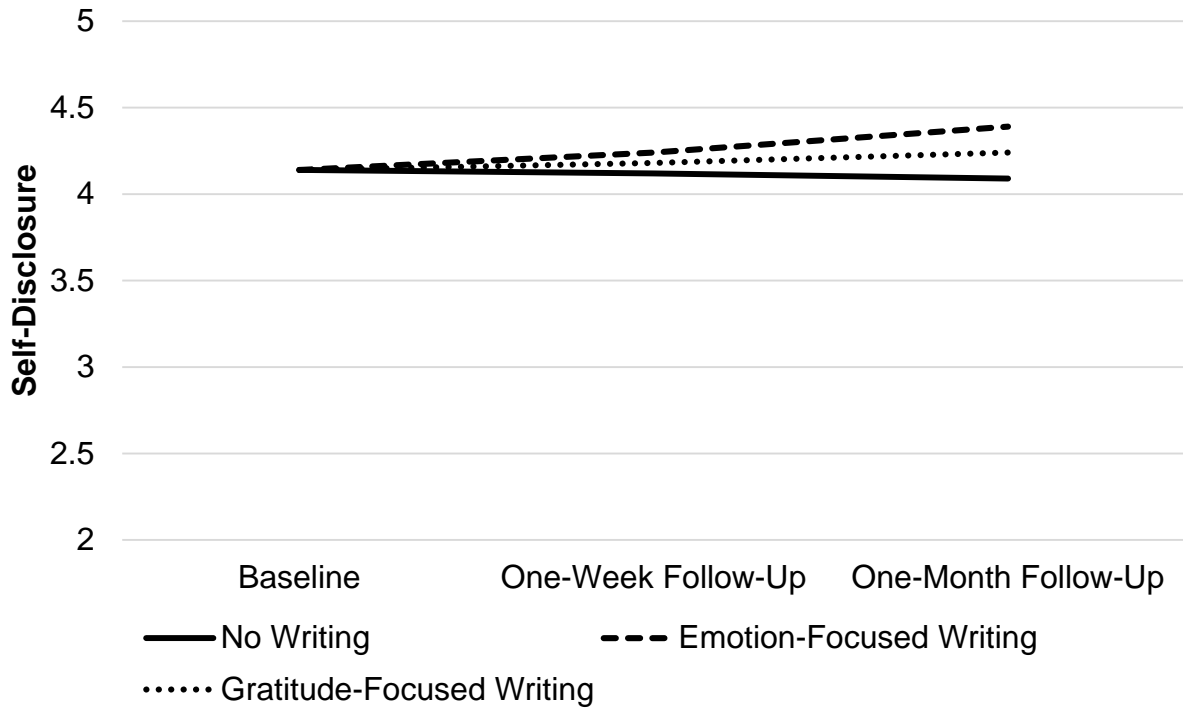
*Note.* †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . The model accounts for random effects (error) on the overall Intercept and effect of Time, indicating that individuals may have differing starting points at baseline and may change differently over time (different individuals may increase, decrease, or remain fairly constant in variables). Pos. Affect = Experiences of Positive Affect. Neg. Affect = Experiences of Negative Affect. Life Satis. = Life Satisfaction. Dep. Symps. = Depressive Symptoms. FYE = Involvement in a FYE program.

Table 23

*Fixed Effects of Demographics and Writing Interventions on Emotion Outcomes and Potential Mechanisms of Change*

	<b>Intercept, <math>\pi_0</math></b>				<b>Time, <math>\pi_1</math></b>		
	Int.	Female	Transfer	Age	Int., $\beta_{10}$	EFW, $\beta_{11}$	GFW, $\beta_{12}$
Pos. Affect	3.85 (.04)**	--	--	-.04 (.02)*	<b>-.05 (.01)**</b>	.03 (.02)	<b>.04 (.02)*</b>
Neg. Affect	2.68 (.08)**	.26 (.10)**	--	--	<b>-.03 (.01)*</b>	.03 (.02)	-.01 (.02)
Life Satis.	3.78 (.06)**	--	-.40 (.14)**	--	.00 (.01)	.02 (.02)	<b>.05 (.02)*</b>
Dep. Symps.	1.57 (.05)**	.13 (.06)*	--	--	.01 (.01)	.00 (.01)	<b>-.03 (.01)*</b>
Happiness	3.79 (.06)**	--	--	--	-.02 (.02)	-.03 (.03)	.03 (.03)
Gratitude	4.28 (.04)**	--	--	--	-.01 (.01)	-.01 (.02)	.00 (.02)
Self-Discl.	4.20 (.07)**	--	-.34 (.17)*	.05 (.03)*	-.01 (.02)	<b>.06 (.03)*</b>	.03 (.03)
Rumination	1.96 (.04)**	--	--	--	-.02 (.01)	.02 (.02)	-.01 (.02)

Note. †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . The model accounts for random effects (error) on the overall Intercept and effect of Time, indicating that individuals may have differing starting points at baseline and may change differently over time (different individuals may increase, decrease, or remain fairly constant in variables). Pos. Affect = Experiences of Positive Affect. Neg. Affect = Experiences of Negative Affect. Life Satis. = Life Satisfaction. Dep. Symps. = Depressive Symptoms. Self-Discl. = Self-Disclosure. FYE = Involvement in a FYE Program. EFW = Emotion-Focused Writing involvement. GFW = Gratitude-Focused Writing involvement.



*Figure 7.* Change in Self-Disclosure across experimental groups. Starting values assume students are entering their first year of college and are the mean age for this sample.

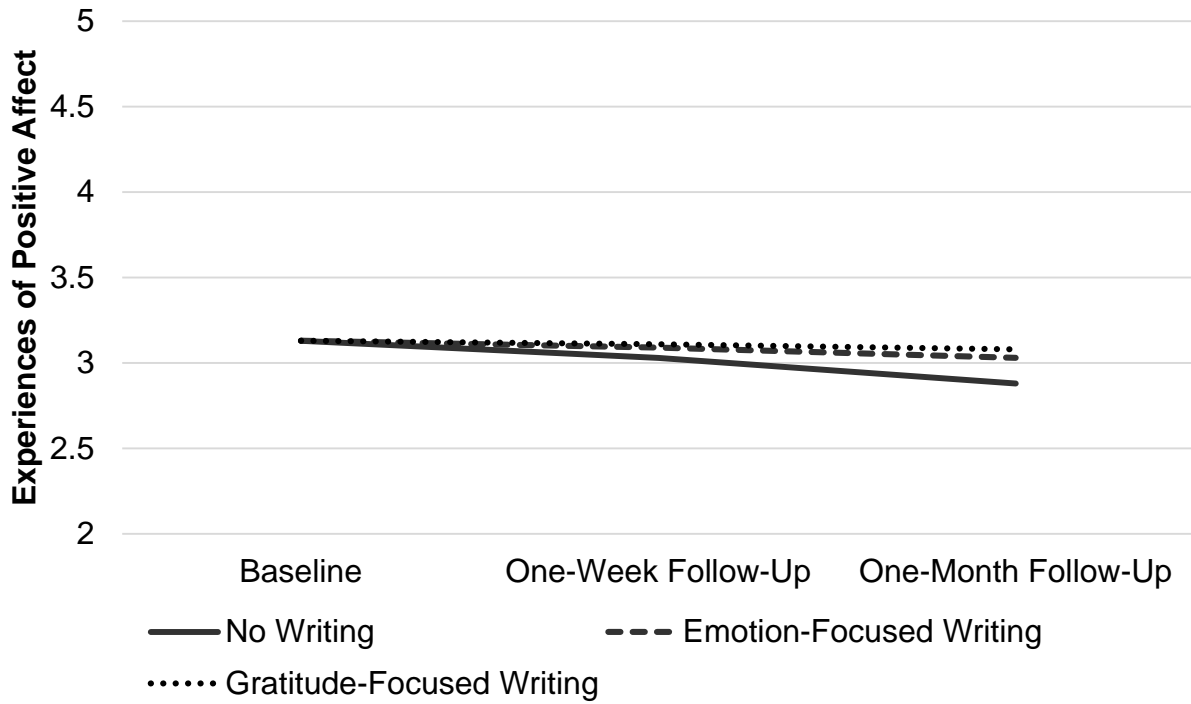
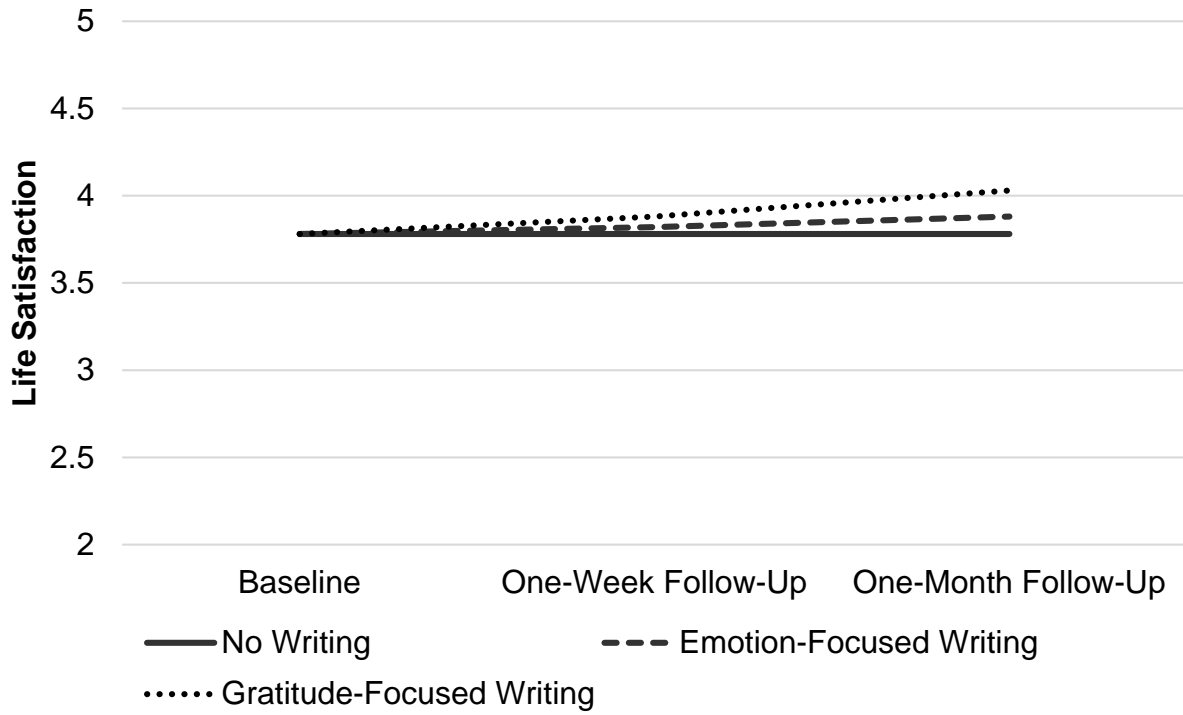
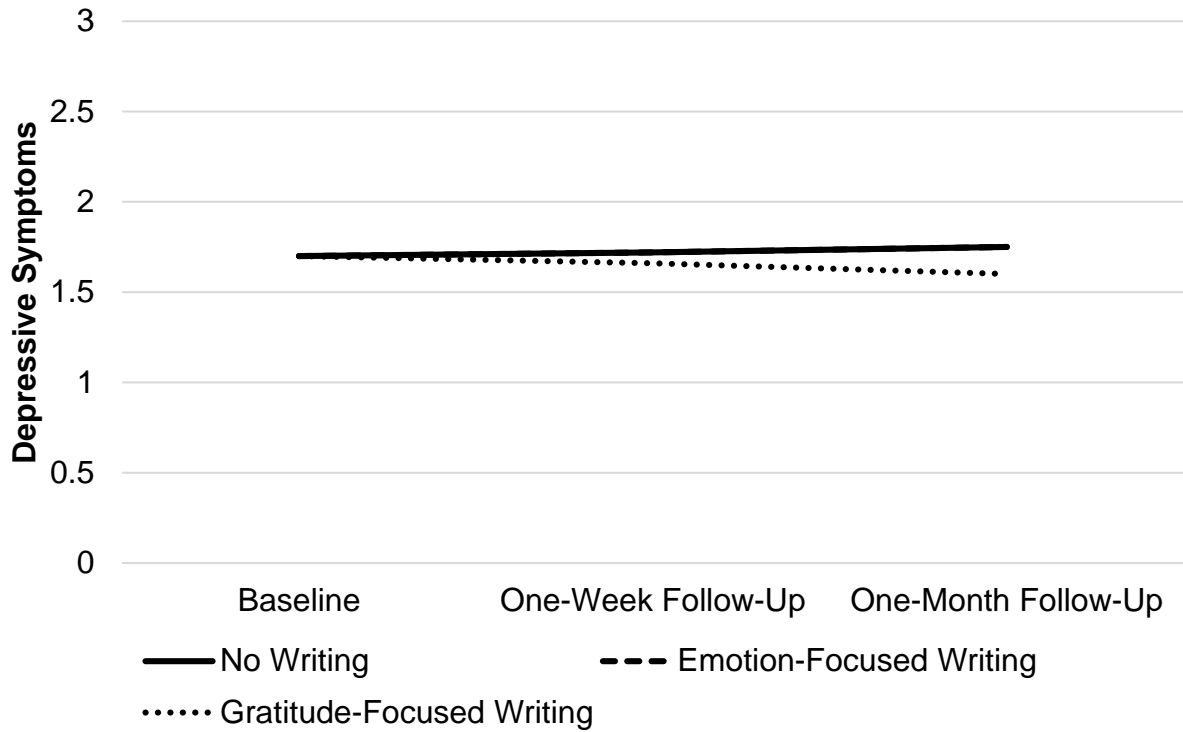


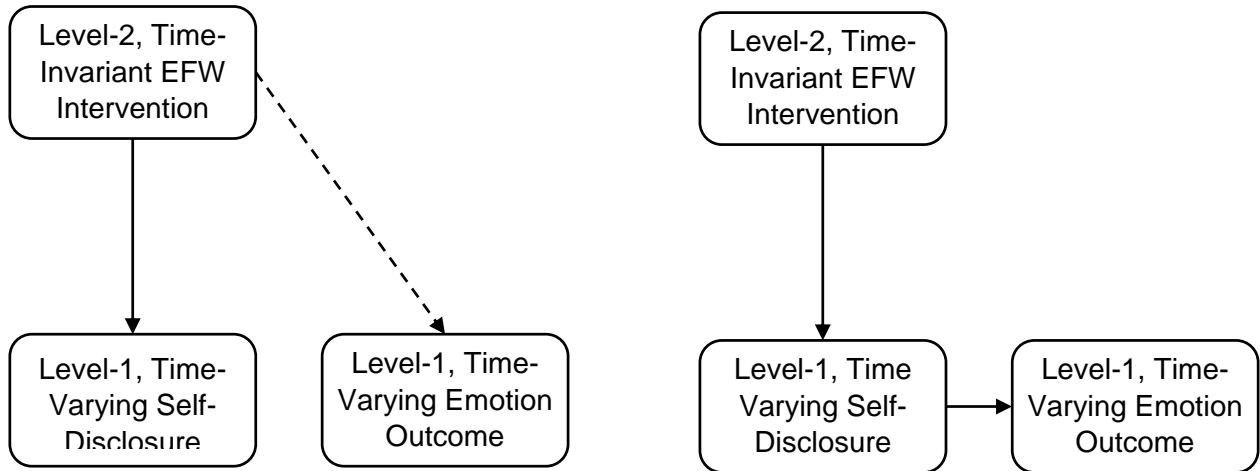
Figure 8. Growth in experiences of positive affect across experimental groups. Starting values assume students are the mean age for this sample.



*Figure 9.* Growth in life satisfaction across experimental groups. Starting values assume students are entering their first year of college.



*Figure 10.* Growth in depressive symptoms across experimental groups. Starting values assume students are female. Because the effect of emotion-focused writing involvement is near zero, that trendline overlaps with the non-writing control group's trendline.



*Figure 11.* Theoretical depiction of the indirect effect of emotion-focused writing through self-disclosure. Given an effect of emotion-focused writing involvement on change in self-disclosure, but not on change in emotion outcomes of interest, a model was used to test an indirect influence on self-disclosure on emotion outcomes. This is not a mediation test, but a means of determining whether self-disclosure is consistently associated with improved emotion outlook across survey time points.

Table 24

*Fixed Effects of Time-Varying Self-Disclosure on Emotion Outcomes*

	<b>Intercept, <math>\pi_0</math></b>					<b>Time, <math>\pi_1</math></b>			<b>Self-Disc., <math>\pi_2</math></b>
	Int.	Female	Transfer	Age	Avg. Self-Disc.	Int., $\beta_{10}$	EFW, $\beta_{11}$	GFW, $\beta_{12}$	Int., $\beta_{20}$
Pos. Affect	3.86 (.04)**	--	--	<b>-.04 (.02)**</b>	.15 (.05)**	<b>-.05 (.01)**</b>	.02 (.02)	.04 (.02) <sup>†</sup>	.09 (.05) <sup>†</sup>
Neg. Affect	2.69 (.08)**	<b>.22 (.09)*</b>	--	--	-.23 (.06)**	<b>-.03 (.01)*</b>	.03 (.02)	.00 (.02)	-.07 (.05)
Life Satis.	3.78 (.06)**	--	<b>-.36 (.14)**</b>	--	.19 (.07)**	.00 (.03)	.02 (.02)	<b>.05 (.02)**</b>	.04 (.05)
Dep. Symps.	1.57 (.05)**	<b>.11 (.06)<sup>†</sup></b>	--	--	-.12 (.04)**	.01 (.01)	.00 (.01)	<b>-.03 (.01)*</b>	<b>-.09 (.03)**</b>

*Note.* <sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . While interest with this model regards the influence of time-varying self-disclosure, which only shows significant change in the emotion-writing group, the effect of gratitude-writing intervention is retained as a control variable. Pos. Affect = Experiences of Positive Affect. Neg. Affect = Experiences of Negative Affect. Life Satis. = Life Satisfaction. Dep. Symps. = Depressive Symptoms. Self-Disc. = Self-Disclosure. FYE = Involvement in a FYE program. EFW = Emotion-Focused Writing involvement. GFW = Gratitude-Focused Writing involvement. For this model, the effect of average self-disclosure is included as a time-invariant level-2 effect that is grand mean centered. This allows for a comparison of relative placement for each individual against the remaining sample. Further, time-varying self-disclosure is included and is 'group mean-centered'. This allows for comparison within each person, as she or he reports changes over time. The inclusion of each of these effects minimizes bias for individuals who may begin at sample extremes and/or report extreme change.



Table 25

*Fixed Effects of Time-Varying Self-Disclosure and Demographics on Emotion Outcomes*

	<b>Time, <math>\pi_1</math></b>			<b>Self-Disc., <math>\pi_2</math></b>					
	Int., $\beta_{10}$	EFW, $\beta_{11}$	GFW, $\beta_{12}$	Int., $\beta_{20}$	Female, $\beta_{21}$	Transfer, $\beta_{22}$	Age, $\beta_{23}$	Minority, $\beta_{24}$	FYE, $\beta_{25}$
Pos. Affect	-.05 (.01)**	.03 (.02)	.03 (.02)	.11 (.13)	.07 (.13)	-.18 (.12)	.01 (.02)	.01 (.13)	-.12 (.11)
Neg. Affect	-.03 (.01)*	.03 (.02)	.00 (.02)	-.02 (.12)	-.17 (.13)	.21 (.12) <sup>†</sup>	-.02 (.02)	-.07 (.13)	.19 (.10) <sup>†</sup>
Life Satis.	-.05 (.01)	.03 (.02)	.03 (.02) <sup>†</sup>	.11 (.13)	.07 (.13)	-.18 (.12)	.01 (.02)	.01 (.13)	-.12 (.11)
Dep. Symps.	.01 (.01)	.00 (.01)	-.03 (.01)	-.16 (.08) <sup>†</sup>	-.01 (.08)	<b>.22 (.07)**</b>	-.01 (.01)	.03 (.08)	.07 (.07)

Note. <sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . Due to space constraints, the overall intercept effects are not included in the current table. Pos. Affect = Experiences of Positive Affect. Neg. Affect = Experiences of Negative Affect. Life Satis. = Life Satisfaction. Dep. Symps. = Depressive Symptoms. Self-Discl. = Self-Disclosure. FYE = Involvement in a FYE program. EFW = Emotion-Focused Writing involvement. GFW = Gratitude-Focused Writing involvement.

Table 26

*Interaction of Self-Compassion and Expressive Writing Interventions on Emotion Outcomes*

	<b>Time, <math>\pi_1</math></b>					
	Int., $\beta_{10}$	EFW, $\beta_{11}$	GFW, $\beta_{12}$	Self-Compassion, $\beta_{13}$	SCxEFW, $\beta_{14}$	SCxGFW, $\beta_{15}$
Pos. Affect	-.09 (.04)*	.17 (.09) <sup>†</sup>	.05 (.10)	.06 (.02)**	-.05 (.03)	-.01 (.03)
Neg. Affect	.05 (.04)	-.22 (.09)*	-.06 (.09)	-.09 (.02)**	<b>.08 (.03)**</b>	.02 (.03)
Life Satis.	-.07 (.04)	.08 (.10)	.25 (.10)*	.07 (.02)**	-.02 (.03)	<b>-.07 (.03)*</b>
Dep. Symps.	.04 (.03)	-.06 (.06)	-.08 (.06)	-.04 (.01)**	.02 (.02)	.02 (.02)
Happiness	-.08 (.06)	.05 (.13)	.17 (.14)	.08 (.03)**	-.03 (.04)	-.05 (.04)
Gratitude	-.05 (.04)	.06 (.09)	.11 (.10)	.04 (.02) <sup>†</sup>	-.02 (.03)	-.04 (.03)
Self-Discl.	-.04 (.06)	.23 (.14) <sup>†</sup>	-.02 (.14)	.03 (.03)	-.06 (.04)	.01 (.05)
Rumination	.02 (.04)	-.05 (.09)	-.07 (.09)	-.09 (.02)**	.03 (.03)	.02 (.03)

Note. <sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . Due to space constraints, the overall intercept effects are not included in the current table. Pos. Affect = Experiences of Positive Affect. Neg. Affect = Experiences of Negative Affect. Life Satis. = Life Satisfaction. Dep. Symps. = Depressive Symptoms. Self-Discl. = Self-Disclosure. EFW = Emotion-Focused Writing involvement. GFW = Gratitude-Focused Writing involvement. SCxEFW = Interaction effect of Self-Compassion and Emotion-Focused Writing involvement. SCxGFW = Interaction effect of Self-Compassion and Gratitude-Focused Writing involvement.

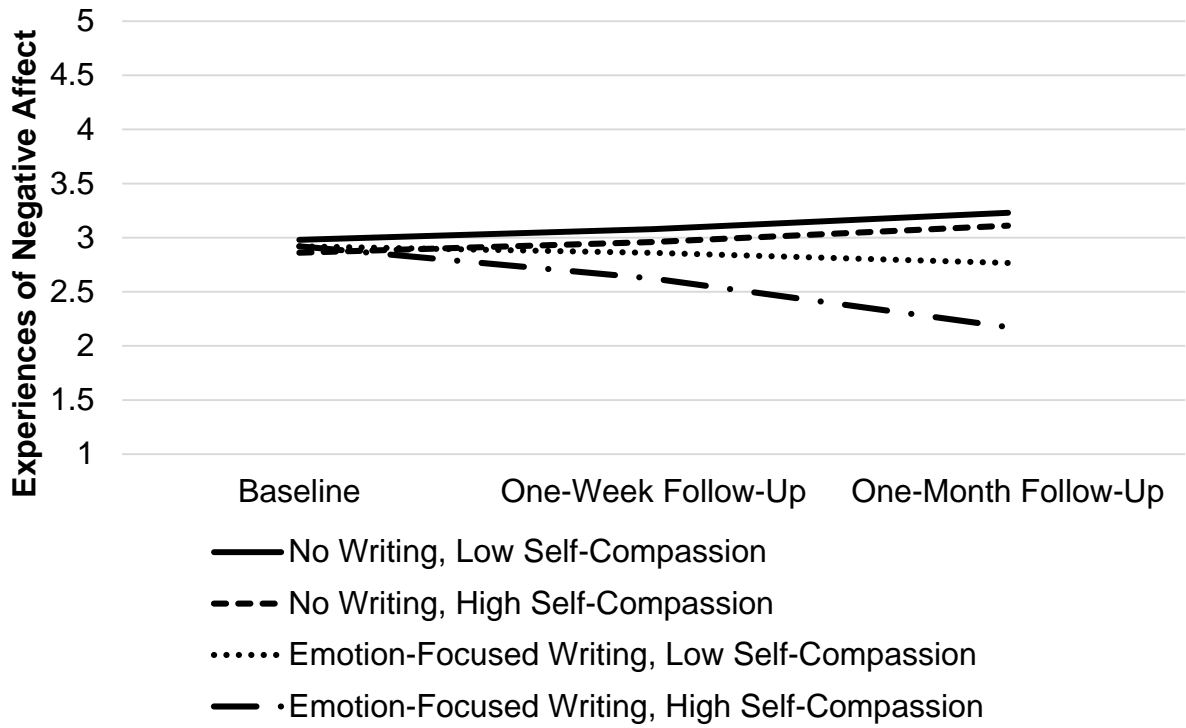
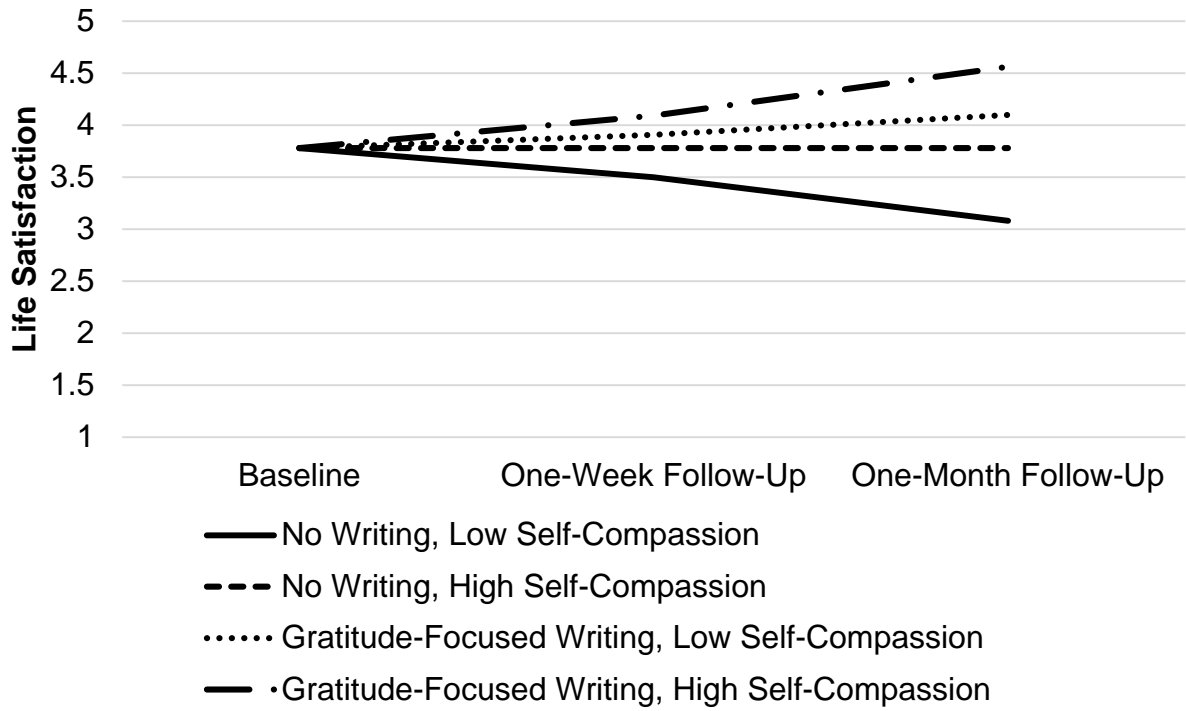


Figure 12. Influence of self-compassion on changes in negative affect within the emotion-focused writing group. Starting values assume students are female.



*Figure 13.* Influence of self-compassion on changes in life satisfaction within the gratitude-focused writing group. Starting values assume students are incoming first year students.

Table 27

*Fixed Effects of Unconditional Growth in Social Outcomes*

Outcome	<b>Intercept, <math>\pi_0</math></b>	<b>Time, <math>\pi_1</math></b>
	Int., $\beta_{00}$	Int., $\beta_{10}$
Belonging	3.05 (.04)**	.00 (.01)
Homesick	3.31 (.05)**	-.03 (.01)**
Group Meeting	.61 (.04)**	-.03 (.01)*
Friends Made	1.51 (.08)**	-.07 (.02)**
Heart-to-Heart	1.37 (.11)**	.01 (.02)
Talk to Parents	1.20 (.05)**	-.06 (.01)**
Talk to Friends	.73 (.05)**	-.02 (.02)
Talk to Partner	.51 (.07)**	-.01 (.02)

Note. †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ .

Table 28

*Fixed Effects of Demographics on Growth in Social Outcomes*

	<b>Intercept, <math>\pi_0</math></b>						<b>Time, <math>\pi_1</math></b>
	Int., $\beta_{00}$	Female, $\beta_{01}$	Transfer, $\beta_{02}$	Age, $\beta_{03}$	Minority, $\beta_{04}$	FYE, $\beta_{05}$	Int., $\beta_{10}$
Belonging	3.21 (.07)**	<b>-.18 (.08)*</b>	-.15 (.10)	<b>-.05 (.02)**</b>	-.09 (.09)	.05 (.08)	.00 (.01)
Homesick	3.13 (.10)**	<b>.27 (.10)**</b>	.00 (.13)	-.04 (.02)	.07 (.12)	-.06 (.11)	-.03 (.01)**
Group Meeting	.62 (.08)**	-.06 (.14)	-.02 (.11)	.00 (.02)	-.25 (.10)	<b>.28 (.09)**</b>	-.01 (.02)
Friends Made	1.62 (.12)**	-.12 (.10)	-.16 (.14)	-.03 (.02)	.03 (.13)	-.03 (.11)	-.17 (.02)**
Heart-to-Heart	.90 (.19)**	<b>.67 (.19)**</b>	.16 (.25)	-.04 (.04)	.04 (.22)	-.11 (.20)	.01 (.02)
Talk to Parents	1.15 (.09)**	.12 (.10)	-.02 (.02)	.14 (.13)	-.20 (.11) <sup>†</sup>	-.06 (.10)	-.06 (.01)**
Talk to Friends	.76 (.09)**	.04 (.09)	-.20 (.12)	.01 (.02)	-.02 (.11)	-.10 (.10)	-.02 (.02)
Talk to Partner	.58 (.14)**	-.06 (.14)	-.11 (.19)	.02 (.03)	.10 (.17)	-.08 (.15)	-.17 (.02)**

Note. †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . FYE = Involvement in a FYE program.

Table 29

*Chi-Square Model Tests Removing Non-Significant Demographic Effects in Models of Social Outcomes*

	<b>All Intercept-Effects</b>		<b>Significant Intercept Effects</b>		<b>Model Difference</b>	
	Deviance	Parameters	Deviance	Parameters	Difference	Crit. Value
Belonging	226.84	11	230.37	8	3.53	7.81
Homesick	530.68	11	534.56	7	3.88	9.49
Group Meeting	741.67	11	748.82	7	7.15	9.49
Friends Made	853.95	11	860.25	6	6.30	11.07
Heart-to-Heart	1148.33	11	1149.83	7	1.50	9.49
Talk to Parents	534.97	11	541.93	6	6.96	11.07
Talk to Friends	670.87	11	675.10	6	4.23	11.07
Talk to Partner	846.88	11	848.22	6	1.34	11.07

*Note.* Critical values are at the  $\alpha = .05$  level.

Table 30

*Fixed Effects of Demographics on Change in Social Outcomes*

	<b>Intercept, <math>\pi_0</math></b>				<b>Time, <math>\pi_1</math></b>					
	Int.	Female	Age	FYE	Int., $\beta_{10}$	Female, $\beta_{11}$	Transfer, $\beta_{12}$	Age, $\beta_{13}$	Minority, $\beta_{14}$	FYE, $\beta_{15}$
Belonging	3.17 (.06)**	-.17 (.08)*	-.05 (.02)**	--	.00 (.01)	.00 (.01)	-.01 (.02)	.00 (.00)	-.01 (.01)	.01 (.01)
Homesick	3.07 (.09)**	.35 (.11)**	--	--	-.00 (.02)	-.03 (.02)	-.03 (.03)	.00 (.00)	.04 (.02)	.01 (.02)
Group Meeting	.54 (.05)**	--	--	.30 (.10)**	.00 (.02)	-.02 (.02)	-.01 (.03)	.00 (.00)	-.04 (.02)†	.00 (.02)
Friends Made	1.51 (.08)**	--	--	--	-.15 (.03)**	-.02 (.02)	-.02 (.03)	.00 (.00)	.00 (.03)	-.03 (.02)
Heart-to-Heart	.84 (.18)**	.76 (.22)**	--	--	.06 (.05)	-.05 (.05)	-.02 (.06)	.00 (.01)	-.03 (.06)	-.04 (.05)
Talk to Parents	1.20 (.05)**	--	--	--	-.05 (.02)**	.00 (.02)	-.04 (.02)†	.01 (.00)†	-.02 (.02)	-.00 (.02)
Talk to Friends	.73 (.05)**	--	--	--	-.01 (.03)	-.02 (.03)	-.02 (.04)	.00 (.01)	.03 (.04)	.02 (.03)
Talk to Partner	.51 (.07)**	--	--	--	.01 (.03)	-.03 (.03)	.00 (.04)	.00 (.01)	.07 (.04)	-.01 (.03)

Note. †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . FYE = Involvement in a FYE program.



Table 31

*Fixed Effects of Demographics and Writing Interventions on Social Outcomes*

	<b>Intercept, <math>\pi_0</math></b>				<b>Time, <math>\pi_1</math></b>		
	Int.	Female	Age	FYE	Int., $\beta_{10}$	EFW, $\beta_{11}$	GFW, $\beta_{12}$
Belonging	3.17 (.06)**	-.17 (.08)*	-.06 (.01)**	--	-.01 (.01)	.02 (.01)	.01 (.01)
Homesick	3.12 (.09)**	.29 (.10)**	--	--	-.02 (.02)	-.01 (.02)	-.02 (.02)
Group Meeting	.54 (.05)**	--	--	.29 (.09)**	-.05 (.01)**	.03 (.02)	<b>.05 (.02)*</b>
Friends Made	1.51 (.08)**	--	--	--	-.19 (.02)	.03 (.03)	.04 (.03)
Heart-to-Heart	.92 (.17)**	.65 (.19)**	--	--	-.03 (.04)	<b>.10 (.05)*</b>	.03 (.05)
Talk to Parents	1.20 (.05)**	--	--	--	-.07 (.01)**	.03 (.02)	.01 (.02)
Talk to Friends	.73 (.05)**	--	--	--	-.02 (.02)	.02 (.03)	-.02 (.03)
Talk to Partner	.51 (.07)**	--	--	--	-.03 (.03)	.04 (.04)	.00 (.04)

Note. †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . FYE = Involvement in a FYE program. EFW = Emotion-Focused Writing involvement. GFW = Gratitude-Focused Writing involvement.

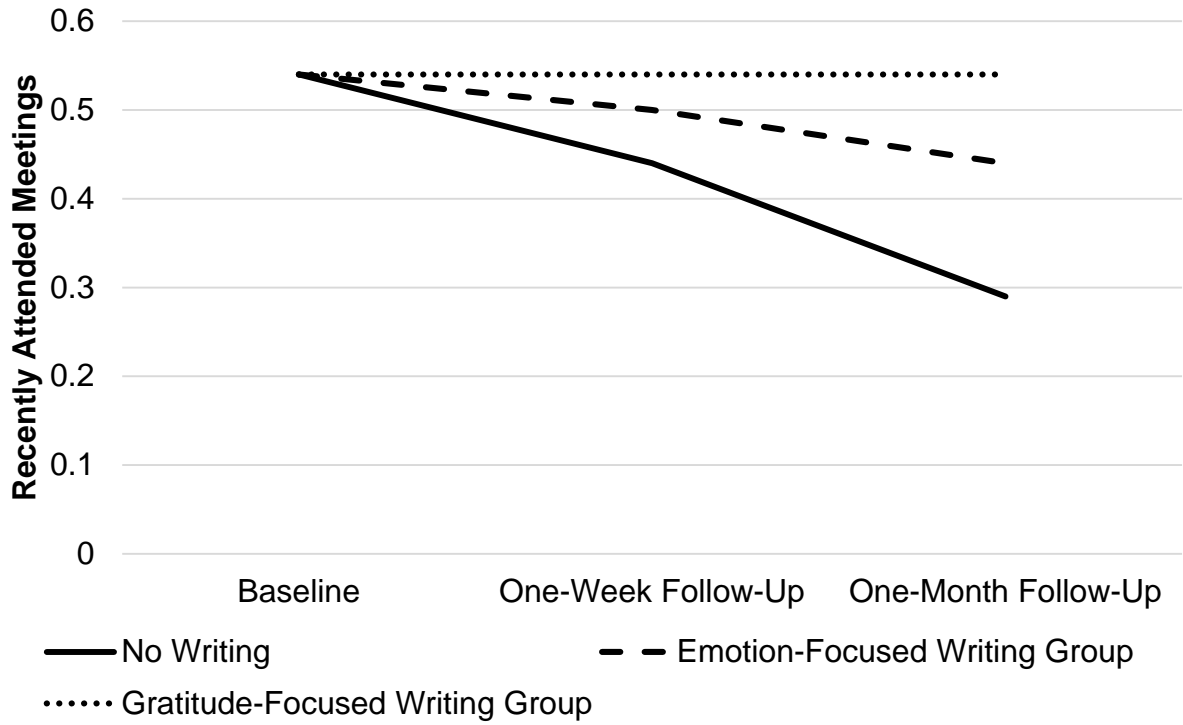


Figure 14. Growth in attended group meetings across experimental groups. Starting values assume students are not participants in First Year Experience programs.

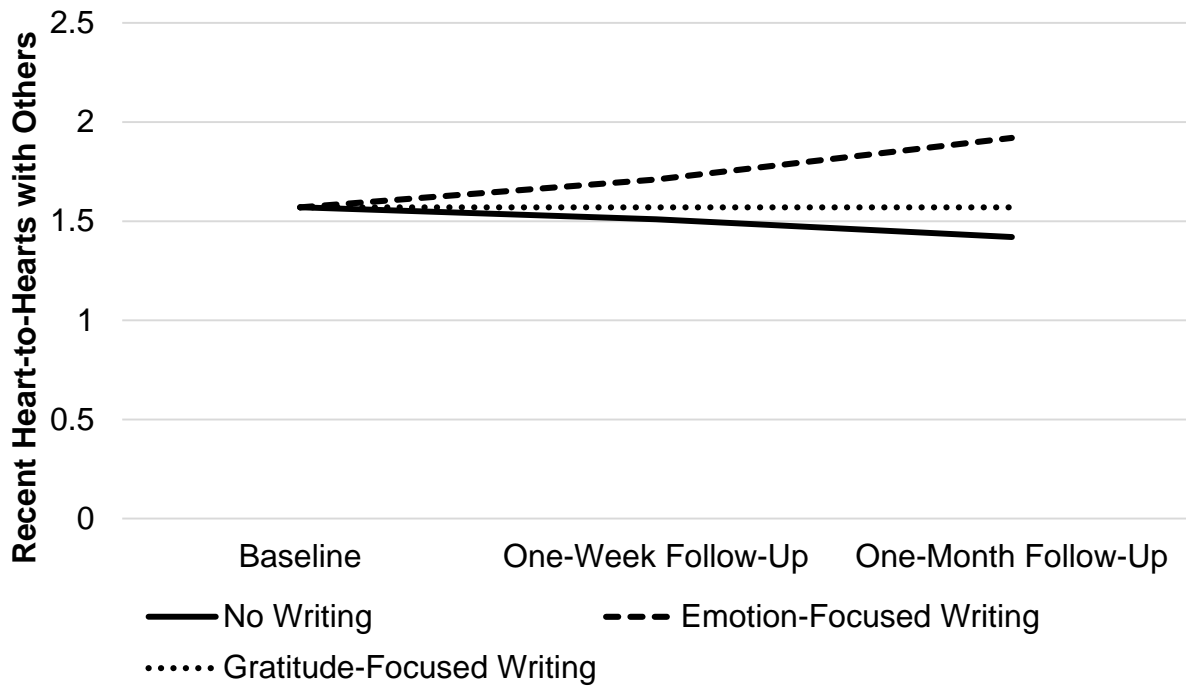


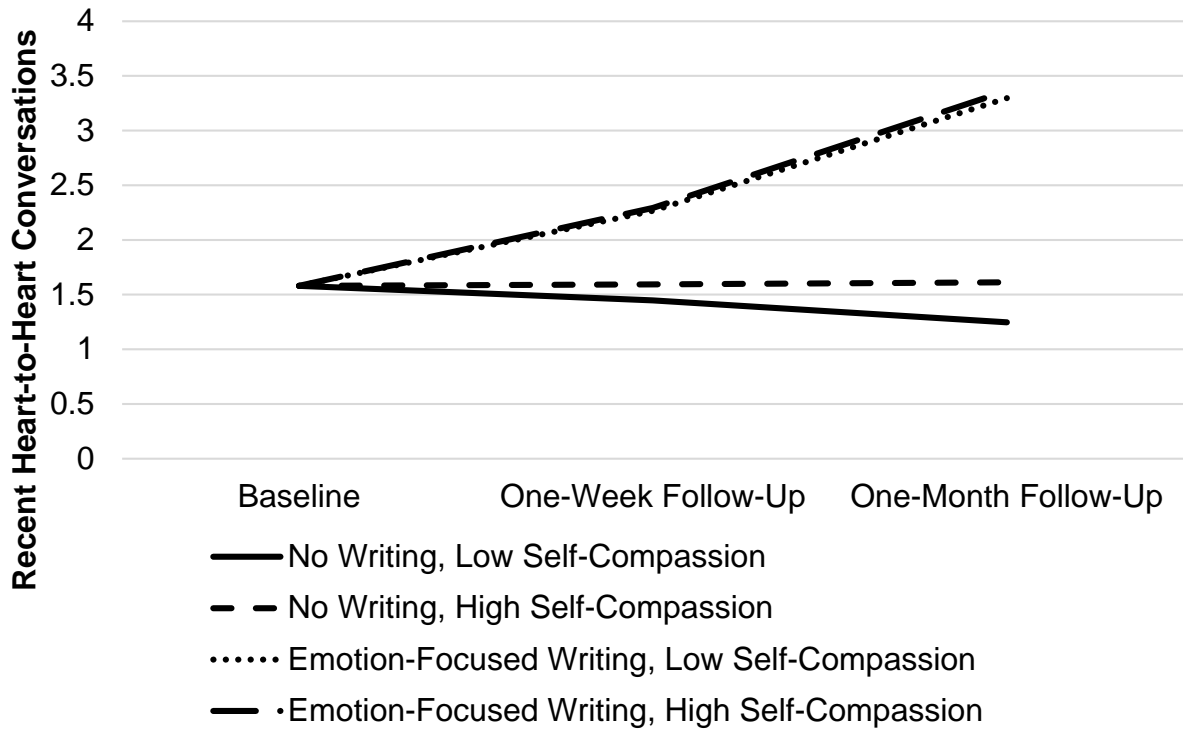
Figure 15. Growth in heart-to-heart conversations across experimental groups. Starting values assume students are female.

Table 32

*Interaction of Self-Compassion and Expressive Writing Interventions on Social Outcomes*

	<b>Time, <math>\pi_1</math></b>					
	Int., $\beta_{10}$	EFW, $\beta_{11}$	GFW, $\beta_{12}$	Self-Compassion, $\beta_{13}$	SCxEFW, $\beta_{14}$	SCxGFW, $\beta_{15}$
Belonging	-.04 (.03)	.14 (.06)*	.02 (.07)	.02 (.01)	-.03 (.02) <sup>†</sup>	.00 (.02)
Homesick	-.03 (.03)	.12 (.06) <sup>†</sup>	-.01 (.07)	.01 (.01)	-.03 (.02)	.01 (.02)
Group Meeting	-.03 (.05)	-.04 (.11)	.06 (.11)	-.02 (.02)	.03 (.04)	.00 (.04)
Friends Made	-.17 (.06)**	.10 (.13)	-.13 (.13)	.00 (.03)	-.02 (.04)	.06 (.04)
Heart-to-Heart	-.06 (.10)	.56 (.25)*	-.34 (.19) <sup>†</sup>	.01 (.04)	<b>-.15 (.08)*</b>	.12 (.06)
Talk to Parents	-.10 (.04)*	.06 (.09)	.11 (.10)	.03 (.02)	-.01 (.03)	-.03 (.03)
Talk to Friends	.03 (.07)	-.10 (.15)	-.08 (.16)	-.01 (.03)	.04 (.05)	.02 (.05)
Talk to Partner	.06 (.08)	-.19 (.17)	-.10 (.17)	-.04 (.04)	.08 (.05)	.04 (.06)

Note. <sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . Due to space constraints, the overall intercept effects are not included in the current table. EFW = Emotion-Focused Writing involvement. GFW = Gratitude-Focused Writing involvement. SCxEFW = Interaction effect of Self-Compassion and Emotion-Focused Writing involvement. SCxGFW = Interaction effect of Self-Compassion and Gratitude-Focused Writing involvement.



*Figure 16.* Influence of self-compassion on changes in heart-to-heart conversations within the gratitude-focused writing group. Starting values assume students are females.

Table 33

*Fixed Effects of Unconditional Growth on Academic Outcomes*

	<b>Intercept, <math>\pi_0</math></b>	<b>Time, <math>\pi_1</math></b>
Exp. GPA	3.58 (.04)**	-.03 (.01)*
Study Instances	1.59 (.06)**	-.08 (.02)**
Dropping Out	.11 (.02)**	.00 (.01)

Note. †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . Expected GPA was only collected at follow-up periods, and not baseline.

Table 34

*Fixed Effects of Demographic Factors on Overall Intercept of Academic Outcomes*

	<b>Intercept, <math>\pi_0</math></b>						<b>Time, <math>\pi_1</math></b>
	Int., $\beta_{00}$	Female, $\beta_{01}$	Transfer, $\beta_{02}$	Age, $\beta_{03}$	Minority, $\beta_{04}$	FYE, $\beta_{05}$	Int., $\beta_{10}$
Exp. GPA	3.66 (.11)**	-.09 (.07)	-.07 (.09)	.02 (.01)	-.01 (.09)	-.02 (.07)	-.03 (.01)*
Study Instances	1.41 (.13)**	.21 (.14)	.28 (.18)	-.01 (.03)	<b>-.34 (.15)*</b>	.18 (.14)	-.08 (.02)
Dropping Out	.04 (.03)	<b>.11 (.04)**</b>	-.01 (.04)	.01 (.01)	.03 (.04)	-.03 (.04)	.00 (.01)

Note. †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . FYE = Involvement in a FYE program.

Table 35

*Chi-Square Model Tests Removing Non-Significant Demographic Effects in Models of Academic**Outcomes*

	<b>All Intercept-Effects</b>		<b>Significant Intercept Effects</b>		<b>Model Difference</b>	
	Deviance	Parameters	Deviance	Parameters	Difference	Crit. Value
Exp. GPA	141.58	11	145.86	6	4.28	11.07
Study Instances	1363.20	11	1369.31	7	.11	9.49
Dropping Out	-57.98	11	-54.30	7	3.68	9.49

*Note.* Critical values are at the  $\alpha = .05$  level.

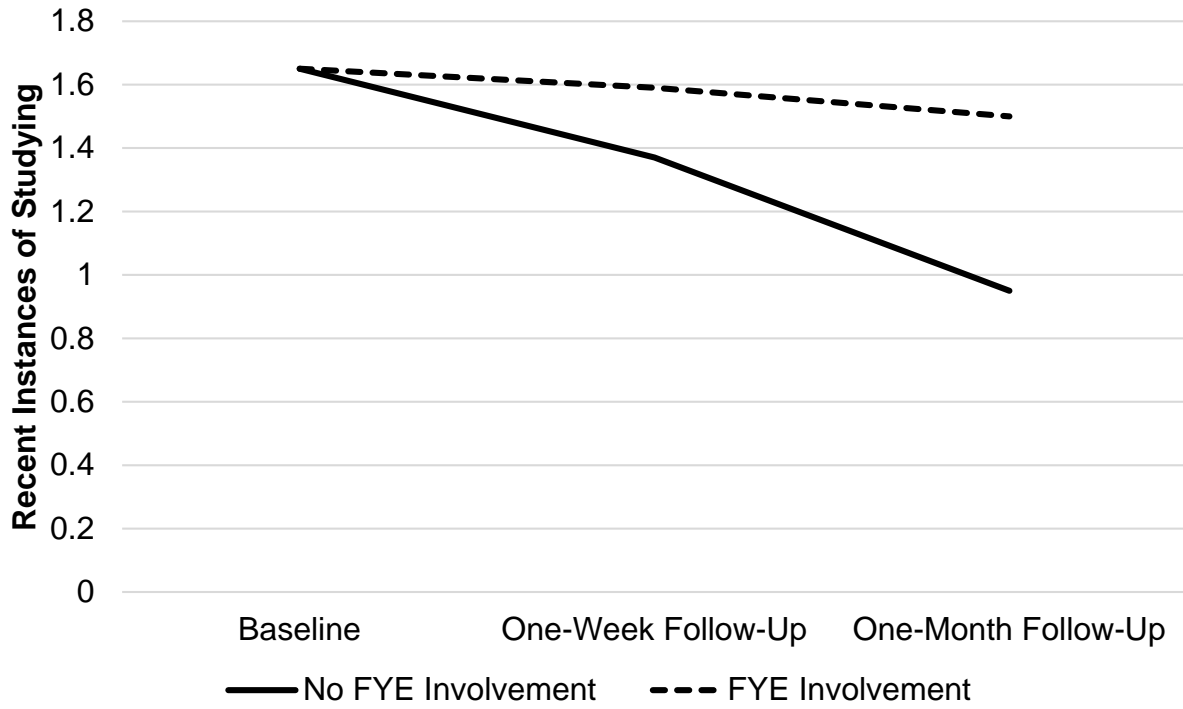


Table 36

*Fixed Effects of Demographics on Change in Academic Outcomes*

	<b>Intercept, <math>\pi_0</math></b>			<b>Time, <math>\pi_1</math></b>					
	Int.	Female	Minority	Int.	Female	Transfer	Age	Minority	FYE
Exp. GPA	3.58 (.04)**	--	--	-.03 (.03)	-.03 (.02)	-.01 (.02)	.00 (.00)	.02 (.02)	.01 (.02)
Study Instances	1.65 (.07)**	--	-.30 (.16) <sup>†</sup>	-.14 (.05)**	.09 (.05) <sup>†</sup>	-.04 (.06)	.01 (.01)	-.06 (.06)	<b>.11 (.05)*</b>
Dropping Out	.03 (.03)	.12 (.04)**	--	.01 (.01)	-.01 (.01)	.01 (.01)	.00 (.00)	.01 (.01)	-.01 (.01)

Note. <sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . FYE = Involvement in a FYE program.



*Figure 17.* Growth in recent study instances given involvement in a First-Year-Experience program. Starting values assume students are of majority-race background.

Table 37

*Fixed Effects of Demographics and Writing Interventions on Academic Outcomes*

	<u>Intercept</u>			<u>Time</u>			
	Int.	Female	Minority	Int.	FYE	EFW	GFW
Exp. GPA	3.58 (.04)**	--	--	-.03(.02)	--	-.01 (.02)	.00 (.02)
Study Instances	1.66 (.07)**	--	-.35 (.15)*	-.16 (.03)**	.10 (.05)†	.10 (.05)†	<b>.11 (.05)*</b>
Dropping Out	.04 (.03)	.10 (.04)**	--	.00 (.01)	--	.02 (.01)	.00 (.01)

*Note.* †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . FYE = Involvement in a FYE program. EFW = Emotion-Focused Writing involvement. GFW = Gratitude-Focused Writing involvement.

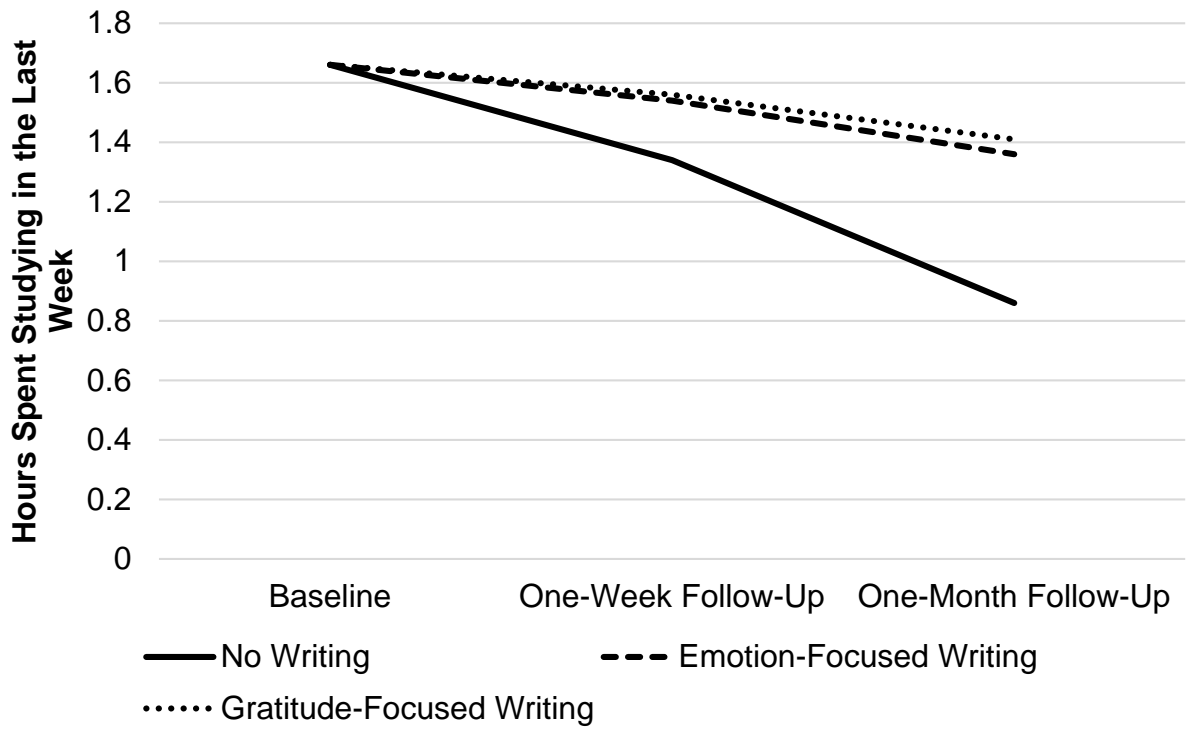


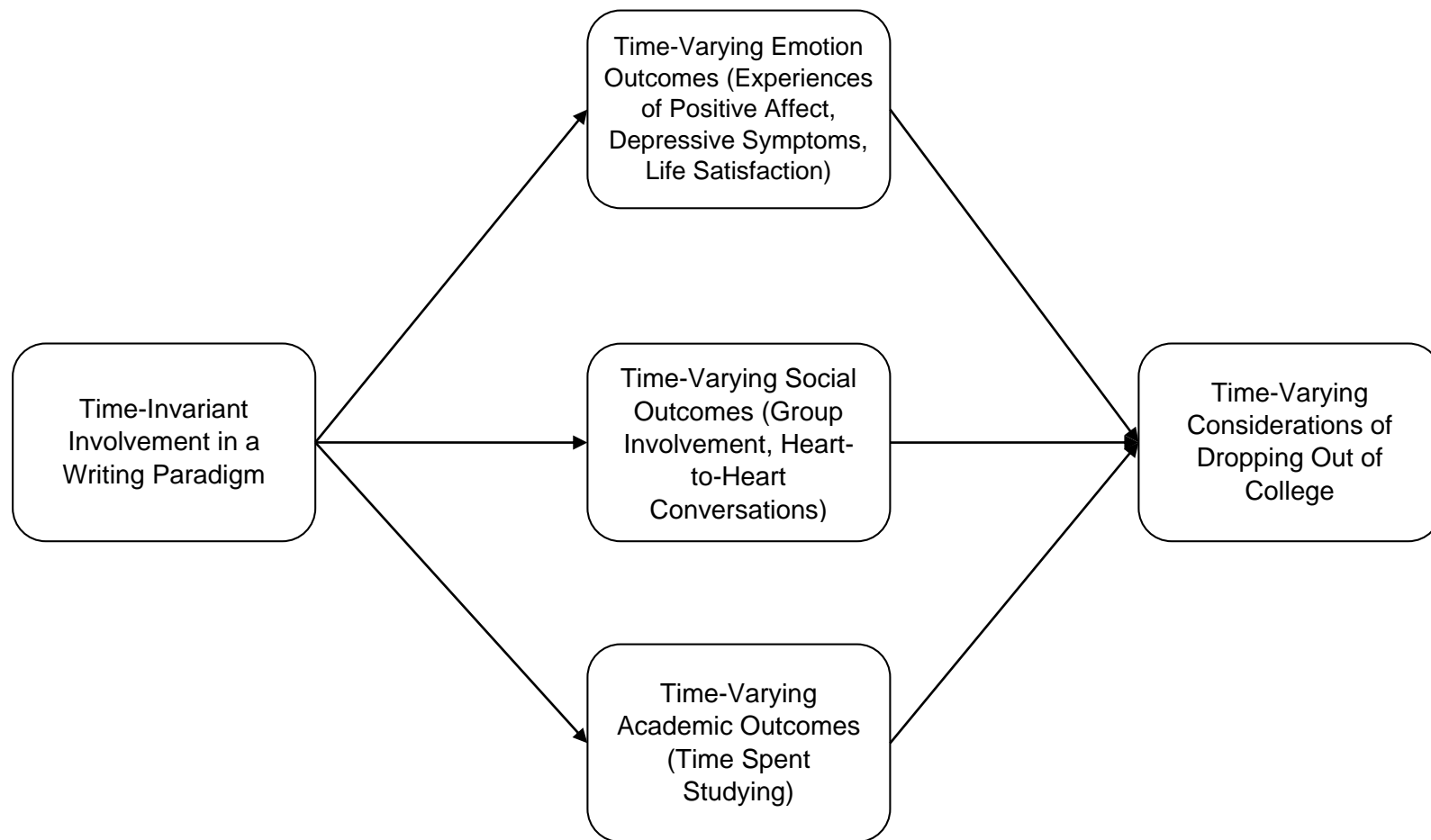
Figure 18. Growth in recent study instances across experimental groups. Starting values assume students are of majority-race background.

Table 38

*Interaction of Self-Compassion and Expressive Writing Interventions on Academic Outcomes*

	<b>Time, <math>\pi_1</math></b>					
	Int., $\beta_{10}$	EFW, $\beta_{11}$	GFW, $\beta_{12}$	Self-Compassion, $\beta_{13}$	SCxEFW, $\beta_{14}$	SCxGFW, $\beta_{15}$
Exp. GPA	-.07 (.05)	.11 (.10)	.05 (.10)	.04 (.02)*	-.04 (.03)	-.02 (.03)
Hours Studying	-.19 (.12)	.17 (.27)	.25 (.27)	-.08 (.05)	-.03 (.09)	-.04 (.09)
Dropping Out	.01 (.02)	-.04 (.05)	-.01 (.05)	-.02 (.01)	.02 (.02)	.00 (.02)

*Note.*  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . EFW = Emotion-Focused Writing involvement. GFW = Gratitude-Focused Writing involvement. SCxEFW = Interaction effect of Self-Compassion and Emotion-Focused Writing involvement. SCxGFW = Interaction effect of Self-Compassion and Gratitude-Focused Writing involvement.



*Figure 19.* Exploratory model testing indirect influences of expressive writings through emotional, social, and academic outcomes on considerations of dropping out.

Table 39

*Fixed Effects of Time-Varying Influences on Considerations of Dropping Out*

Positive Affect, $\pi_2$	Depressive Symptoms, $\pi_3$	Life Satisfaction, $\pi_4$	Group Meetings, $\pi_5$	Heart-to-Heart Conversations, $\pi_6$	Study Instances, $\pi_7$
Int., $\beta_{20}$	Int., $\beta_{30}$	Int., $\beta_{40}$	Int., $\beta_{50}$	Int., $\beta_{60}$	Int., $\beta_{70}$
-.04 (.04)	.28 (.07)**	-.05 (.04)	.00 (.03)	-.01 (.01)	.02 (.01)

*Note.*  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ . Effects on the overall intercept and time slope are excluded due to space constraints.

## IRB Approval Letter



Office of Research Compliance  
Institutional Review Board  
North End Center, Suite 4120, Virginia Tech  
300 Turner Street NW  
Blacksburg, Virginia 24061  
540/231-4606 Fax 540/231-0969  
email [irb@vt.edu](mailto:irb@vt.edu)  
website <http://www.irb.vt.edu>

### MEMORANDUM

**DATE:** July 29, 2014  
**TO:** Jordan Ashton Booker, Julie C Dunsmore  
**FROM:** Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)  
**PROTOCOL TITLE:** Expressive Writing in Incoming College Students  
**IRB NUMBER:** 13-572

Effective July 28, 2014, the Virginia Tech Institutional Review Board (IRB) Chair, David M Moore, approved the Continuing Review request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

### PROTOCOL INFORMATION:

Approved As: Expedited, under 45 CFR 46.110 category(ies) 7  
Protocol Approval Date: August 14, 2014  
Protocol Expiration Date: August 13, 2015  
Continuing Review Due Date\*: July 30, 2015

\*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

### FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

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## Appendix B

### Informed Consent Letter

#### *Purpose of this Study*

The purpose of this study is to examine influences of writing activities in college students in areas of emotional, social, and academic adjustment during the fall semester. Approximately 400 college students from this university will participate.

#### *Study Procedure*

This study involves three survey response periods (this is one of them), as well as three brief writing activities, across the fall semester.

For the survey periods you are asked to take your time reading the items and responding to them as you feel most comfortable. There is no time limit on the questions.

Completing each survey period is expected to take no more than an hour.

For the writing activities, you will be provided an internet link and asked to complete a ten-minute writing activity, based on a prompt. The prompt is meant to guide you, but give you flexibility in responding as you feel is most appropriate.

After the ten minute writing, you will be asked to complete a few final questions.

You will be asked to complete these writing activities once a week, for three successive weeks.

The writing activities should take no more than 20 minutes for each session.

#### *Potential Risks*

This study involves slight risk. None of the questions asked are meant to be invasive, nor are any questions of intimate or legal nature included. There is a slight risk that you may experience mild stress or unpleasant thoughts when considering some of the items presented. It is also possible that you experience discomfort when completing the writing activities. If you have any questions or concerns at any point during the study or afterward, please feel free to contact the researchers at [jdunsmore@vt.edu](mailto:jdunsmore@vt.edu) or [jbooke@vt.edu](mailto:jbooke@vt.edu).

#### *Benefits*

This study will bolster understanding in the scientific community regarding behaviors and perceptions that have not previously been thoroughly considered. These benefits primarily impact knowledge for the scientific community and may not noticeably impact you. However, if you would like a summary of this research when it is available, I will gladly provide you with that information.

#### *Extent of Anonymity and Confidentiality*

Although this website is being used for data collection, responses will be collected **without the inclusion of your name**. If you want extra credit in Psychology courses, you will need to include your PID. Your PID will be used only to assign extra credit points and will be deleted from locally stored data. Care will be taken to ensure that your PID will not be accessible and data will only be stored in encrypted file systems that will increase security and limit the risk of a breach of confidentiality.

**It is possible that the Institutional Review Board (IRB) may view this study's collected data for auditing purposes. The IRB is responsible for the oversight of human subjects involved in research.**

Data for this study will be maintained on a local computer for up to 5 years, in an encrypted folder that will be protected by a complex password that will not be used for accessing any other systems or files. This computer will remain in a secure laboratory that is locked when not in use. Any printed materials regarding this data will be kept in this laboratory, in a locked file cabinet.

#### *Compensation*

This study does not provide monetary compensation. However, there are four lottery drawings that students will be entered into for major collection periods. When students complete each of the three survey periods, as well as after completing the final writing period, students will be entered into a drawing for a gift card for local area restaurants. There is a 1:20 opportunity to receive a gift card at each time point, and students remain eligible for later time points after winning an earlier gift card.

#### *Freedom to Withdraw*

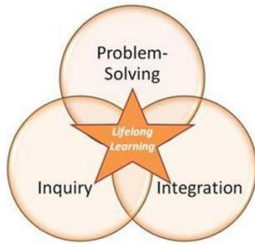
At any time before or during involvement with this study, you are free to withdraw from the study. If you do not feel comfortable answering some of the survey items, you are welcome to skip those items.

***Clicking below indicates that you voluntarily agree to participate in this study and that you have the responsibility to answer questions truthfully, to the best of your ability.***

**CONTACT INFORMATION:** Should you have any questions regarding this study, you may contact the investigators. The faculty Principal Investigator, Dr. Julie C. Dunsmore, may be contacted at [jdunsmor@vt.edu](mailto:jdunsmor@vt.edu) or (540) 231 – 4201. If you feel you have not been treated according to the descriptions in this form, or that your rights as a research participant have been violated during the course of this project, you may contact Dr. David W. Harrison, Chair of the Psychology Department Human Subjects Committee at [dwh@vt.edu](mailto:dwh@vt.edu) or (540) 231 – 4422 or Dr. David Moore, Chair of the Virginia Tech IRB Research Involving Human Subjects, [moored@vt.edu](mailto:moored@vt.edu) or (540) 231 – 4991.

## Application to Work with First Year Experience Program Students

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### Application for Access to *Pathways to Success Data*

#### Virginia Tech's Quality Enhancement Plan

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**1. Title/topic of the prospective research project:**

Effects of Expressive Writing on College Student Adjustment

**2. Names of all prospective researchers on the project:**

Jordan Booker, Julie Dunsmore, Kurt Hoffman

**3. Description of the research project:**

**a. Purpose statement for the project (no more than 150 words):**

This project is aimed at testing two established expressive writing activities for students that have been associated with positive outcomes in regard to personal adjustment. I will examine how each of these activities contributes to students' adjustment as they transition into college.

The first paradigm involves descriptions of pleasant, beneficial events that people are thankful for. The second paradigm involves reflection on negative emotional experiences that are unpleasant in the moment, but beneficial for later adjustment. Each of these approaches is proposed to improve adjustment through different behavioral mechanisms – either through increasing personal character strengths or through changing how people evaluate events. In this project I aim to compare these two paradigms to determine how they improve personal and interpersonal outcomes for students, and whether they affect different types of student outcomes. I am particularly interested in students' social and academic adjustment to college.

**b. Rationale for the use of the specific *Pathways* population in the project (no more than 150 words):**

I am focused on students' transition from high school to college. Therefore, students in the *Pathways* population are especially appropriate for this project. Furthermore, having all participants from the *Pathways* population will reduce selection biases for the study. Students in this population were also of interest because our results may prove informative and beneficial for the program administrators, allowing the project to serve in a complementary role to the initiatives of the *Pathways* project.

**c. Intended use of the results of the project (e.g., publication, presentation) (no more than 150 words):**

This study is the planned basis for Jordan Booker's dissertation project. The results of this project will be the main focus of the dissertation and will likely be shared in other ways including research manuscripts and conference presentations (e.g., poster, oral). Results will also be shared with *Pathways* program administrators. All dissemination of results will maintain participant confidentiality.

**4. Rationale for the incorporation of any additional measures that *Pathways* students would be required to complete (no more than 150 words):**

Because the focus of the project is effects of expressive writing activities on college adjustment, the key additional measures are the writing activities themselves and adjustment. Demographics (i.e., sex, race, credit load) will also be measured to describe the sample. Briefly, students will engage in three brief weekly writing activities, following which they will report emotions, physical distress, and whether they have previously discussed the events described. Students will also participate in three surveys, one prior to the writing period, one immediately following the conclusion of the writing period, and one several weeks afterward. In these, students will report gratitude, hope, curiosity, self-compassion, emotions, coping, life satisfaction, depression, anxiety, sense of belonging, and academic and social self-efficacy. Some of these scales also contribute to overarching *Pathways* goals of problem-solving and inquiry. Thus, results are expected to be of interest for the *Pathways* project and the scientific community at large.

**5. How will you insure that additional measures will not place an undue burden on *Pathways* students and faculty and does not replicate or detract from other measures already in use by *Pathways to Success* programs? (no more than 150 words):**

The proposed measures and writing activities for this project have been reconsidered and revised a number of times to ensure that excessive burden is not placed on the participating students and that students are not asked about for information that is overly sensitive. There are three writing periods and another three data collection periods proposed for students. The total time expected for student participation is four hours. Because the writing activities and survey completion will take place online, the additional measures are not expected to place an undue burden on *Pathways* faculty.

**How will this research support the education mission of the *Pathways to Success* program(s)? (no more than 150 words):**

Overall, this data will help provide a clearer picture of incoming students' personal and interpersonal adjustment, upon entering Virginia Tech and across the course of their first semester. This study also provides insight on potential improvements in adjustment due students' engagement in easily administered, brief reflective writing activities. These measures will also help elucidate students' characteristics and motivation to contribute to future generations, particular aspects that contribute to the spirit of *Ut Prosim* on this campus. Students will also report on their coping abilities and personal stresses, which will help clarify some of the typical worries incoming students may be having as they transition into college. Because this study includes two writing activity groups and a control group being followed over time, it will be possible to

compare the effects of the writing activities to typical changes in adjustment students report as they progress across the first semester.

**6. Please complete and submit one of the following signature pages to show that you have gained the support the academic departments, offices, or units related to your data collection.**

The prospective research project will use data from one or a small number of *Pathways* programs. The signature sheet shows the support of the *Pathways to Success* program PI(s).

The prospective research project will make use of aggregate data from multiple *Pathways* programs. The signature sheet shows the support of the Virginia Tech offices relevant to the access or collection of the aggregate data.

**7. Description of possible venues for publication or presentation of research results:**

Two major areas of venues include research conferences and journals. Examples of conferences where this work may be appropriate include the annual meetings of the Society for Personality and Social Psychology, the Society for the Study of Emerging Adults, the Society for Research in Child Development, and the International Positive Psychology Association. There are a large number of research journals where results may be appropriate to share, but some potential journals include *Social Development*, the *Journal of Personality and Social Psychology*, *Developmental Psychology*, *Positive Psychology*, and *Emotion*.

**8. Plan for IRB approval:**

a. Are the prospective researchers IRB certified?  Yes  No

b. Does the prospective research expand on a current IRB?  Yes  No

c. Will the prospective research require an amended IRB?  Yes  No

Will the prospective research require a new IRB?  Yes  No

## Appendix C

### **Expressive Writing Prompts for Experimental Groups**

The writing prompts are based on studies by Sloan and colleagues (2008) and Sheldon and Lyubomirsky (2008). Minor changes to the prompts were made to better align them with the study activities.

#### **Emotion-Focused Writing Group Prompts**

Sloan, Marx, Epstein, and Dobbs' (2008) study focused on incoming undergraduate students, and had students complete 20 minute writings for three daily periods. Students were allowed to complete these writings online, in private settings or in the library. The current study prompt is below:

*As stated when you enrolled in this study, I am examining students' adjustment to college. I will be asking you to report on areas of adjustment three times during this semester, to see how these areas fluctuate over time. I am also interested in factors that may help with the college transition, and so I will also ask you to do something this week that might affect your adjustment. This 'something' has already been shown to have significant positive effects on peoples' lives, and I want to further examine its potential for first-year college students.*

*For today and the next 3 days, I would like for you to write about your very deepest thoughts and feelings about an extremely important emotional issue that has affected you and your life. In your writing, I'd like you to really let go and explore your very deepest emotions and thoughts. You might tie your topic to your relationships with others, including parents, lovers, friends, or relatives; to your past, your present, or your future; or to who you have been, or who you are*

now. You may write about the same general issues or experiences on all days of writing or on different topics each day. All of your writing will be completely confidential. Don't worry about spelling, sentence structure, or grammar. The only rule is that once you begin writing, you continue to do so until your time is up.

*[after clicking to continue] In the space below, please write about an extremely important emotional issue that has affected you and your life. When the timer reaches 15 minutes, you may finish your thought and then click the button to continue.*

Note. Italicized words differ from the original prompt.

### **Gratitude-Focused Writing Group Prompts**

Sheldon and Lyubomirsky's (2008) study focused on undergraduate students in an introductory psychology course, having students routinely completing short essay grateful writing exercises across four weeks, primarily at home with limited oversight in the form of investigator-led check-ups at the week 2 and week 4 periods. The original article did not imply that a time-limit was given to participants for each writing session. The incorporated prompt is below:

*As stated when you enrolled in this study, I am examining students' adjustment to college. I will be asking you to report on areas of adjustment three times during this semester, to see how these areas fluctuate over time. I am also interested in factors that may help with the college transition, and so I will also ask you to do something this week that might affect your adjustment. This 'something' has*

already been shown to have significant positive effects on peoples' lives, and *I* want to further examine its potential *for first-year college students*.

*For today and the next 3 days*, I would like you to try to cultivate a sense of gratitude. "Cultivate a sense of gratitude" means that you make an effort to think about the many things in your life, both large and small, that you have to be grateful about. These might include particular supportive relationships, sacrifices or contributions that others have made for you, facts about your life such as your advantages and opportunities, or even gratitude for life itself, and the world that we live in. In all of these cases you are identifying previously unappreciated aspects of your life, for which you can be thankful.

[after clicking to continue] In the space below, write about the many things in your life, both large and small, that you have to be grateful about. Outline these reasons in as much detail as you can. *When the timer reaches 15 minutes, you may finish your thought and then click the button to continue.*

Note. Italicized words differ from the original prompt.



Appendix D

**Procedure Schedule and Measurement Timings**

	Baseline	Expressive Writings	One-Week Follow-Up	One-Month Follow-Up
<i>Week of Fall Semester</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>8</i>
<i>Week of Study</i>	<i>0</i>	<i>1</i>	<i>2</i>	<i>5</i>
Manipulation Checks		X		
Demographics	X			
Study Outcomes	X		X	X

*Note.* Due to a change in the academic calendar in Fall 2014, in which students would experience the Fall Break (a traditional time to visit home) a week earlier, the study procedures were initiated a week earlier for the second Cohort, but followed the same pacing of data collection.

Appendix E

**Summary of Study Scales and Incorporation**

Scale	Measured Constructs	Results Domain	Presentation Schedule
Demographics	Background Characteristics	--	Baseline Only
Positive and Negative Affect – Short Form	Immediate Experience of Positive Affect	Writing Responses	Four Daily Writings
	Immediate Experience of Negative Affect	Writing Responses	Four Daily Writings
Writing Study Questionnaire	Writing Intimacy	Writing Responses	Four Daily Writings
Text Analyses	Cognitive Word Use	Writing Responses	Four Daily Writings
College Adjustment Test	Recent Experiences of Positive Affect	Emotional	Three Major Surveys
	Recent Experiences of Negative Affect	Emotional	Three Major Surveys
Satisfaction with Life Scale	Homesickness	Social	Three Major Surveys
	Life Satisfaction	Emotional	Three Major Surveys
Center for Epidemiologic Studies-Depression	Recent Depressive Symptoms	Emotional	Three Major Surveys
Gratitude Scale-6	Trait Gratitude	Possible Mediator	Three Major Surveys
Subjective Happiness Scale	Subjective Happiness	Possible Mediator	Three Major Surveys
Rumination Scale	Rumination	Possible Mediator	Three Major Surveys
Revised Self-Disclosure Scales	Self-Disclosure	Possible Mediator	Three Major Surveys
Self-Compassion Scale-Short Form	Self-Compassion	Possible Moderator	Three Major Surveys
Psychological Sense of School Membership Scale	Sense of Belonging	Social	Three Major Surveys
College Activities and Behaviors Questionnaire	Recent Attendance at Group Meetings	Social	Three Major Surveys
	Recent Number of Friends Made	Social	Three Major Surveys
	Recent Calls to Parents	Social	Three Major Surveys
	Recent Calls to Old Friends	Social	Three Major Surveys
	Recent Calls to Romantic Partner	Social	Three Major Surveys
	Recent Instances of Studying	Academic	Three Major Surveys
	Recent Considerations of Dropping Out	Academic	Three Major Surveys
	Expected GPA Form	Expected GPA	Academic

Appendix F

**Demographics Items**

What is your biological sex?

- Female
- Male

What is your academic major? Please write your major(s), separated by commas.

How many academic credits are you currently taking?

What is your age in years?

What is your ethnicity?

- Hispanic or Latino
- Not Hispanic or Latino
- Prefer not to answer

What is your race? Please write the race(s) you identify with, separated by commas.

- American Indian
- Alaskan Native
- Asian
- Native Hawaiian
- Pacific Islander
- Black or African American
- White

What is the highest level of education your father attained?

- Less than high school
- Completed high school
- Some college/trade school
- Completed college/trade school
- Some post-graduate work
- Completed a post-graduate degree

What is the highest level of education your mother attained?

- Less than high school

- Completed high school
- Some college/trade school
- Completed college/trade school
- Some post-graduate work
- Completed a post-graduate degree

Have you participated in any programs or activities at Virginia Tech during the last summer or before fall classes started, other than orientation?

(ex. Hokie Camp, The Corps of Cadets, The Marching Virginians)

- No
- Yes

If so, which activities did you participate in?

## Appendix G

### Positive and Negative Affect Scale – Short Version

Please indicate the extent you feel this way in this moment. There are no right or wrong answers.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Very much
1	Inspired			
2	Alert			
3	Excited			
4	Enthusiastic			
5	Determined			
6	Afraid			
7	Upset			
8	Nervous			
9	Scared			
10	Distressed			

*Note.* Items 1-5 reflect positive affect. Items 6-10 reflect negative affect.

Appendix H

**Writing Study Questionnaire**

Right now, to what extent are you currently experiencing each of the following, where:

1	2	3	4	5
Not at all		Somewhat		A great deal

- 1 Overall, how personal was the essay that you wrote today?
- 2 Overall, how much have you told other people about what you wrote today?
- 3 Overall, how much did you reveal your emotions in what you wrote today?
- 4 How much have you wanted to tell another person about what you wrote today?
- 5 How much have you actively held back from telling others what you wrote today?

After discussing your writing event today, would you like to be further contacted to talk about this event or be directed toward local resources to help address the event you discussed?

- No
- Yes

If yes, please provide a means of contacting you below:

Appendix I

**College Adjustment Test**

Use a 7-point scale to answer each of the following questions, where:

1	2	3	4	5	6	7
Not at all			Somewhat			A great deal

Within the LAST WEEK, to what degree have you:

- 1 Missed your friends from high school.
- 2 Missed your home.
- 3 Missed your parents and other family members.
- 4 Worried about how you will perform academically at college.
- 5 Worried about love or intimate relationships with others.
- 6 Worried about the way you look.
- 7 Worried about the impression you make on others.
- 8 Worried about being in college in general.
- 9 Liked your classes.
- 10 Liked your roommate(s).
- 11 Liked being away from your parents.
- 12 Liked your social life.
- 13 Liked college in general.
- 14 Felt angry.
- 15 Felt lonely.
- 16 Felt anxious or nervous.
- 17 Felt depressed.
- 18 Felt optimistic about your future at college.
- 19 Felt good about yourself.

*Note.* Items 9, 10, 12, 13, 18, and 19 reflect positive affect. Items 4, 5, 6, 7, 8, 14, 15, 16, and 17 reflect negative affect. Items 1, 2, 3, 15, 16, and 11 (reverse-scored) reflect homesickness.

## Appendix J

### Satisfaction with Life Scale

*Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.*

1	2	3	4	5	6	7
Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree

- 1 In most ways my life is close to my ideal.
- 2 The conditions of my life are excellent.
- 3 I am satisfied with my life.
- 4 So far I have gotten the important things I want in life.
- 5 If I could live my life over, I would change almost nothing.



Appendix K

**Center for Epidemiologic Studies-Depression Scale**

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

Less than 1 day Rarely or none of the time	1 – 2 days Some or little of the time	3 – 4 days Occasionally or a moderate amount of time	5 – 7 days Most or all of the time
--	---	---	--

During the past week:

- 1 I was bothered by things that don't usually bother me.
- 2 I did not feel like eating my appetite was poor.
- 3 I felt that I could not shake off the blues even with help from my family or friends.
- 4 I felt that I was just as good as other people.
- 5 I had trouble keeping my mind on what I was doing.
- 6 I felt depressed.
- 7 I felt that everything I did was an effort.
- 8 I felt hopeful about the future.
- 9 I thought my life had been a failure.
- 10 I felt fearful.
- 11 My sleep was restless.
- 12 I was happy.
- 13 I talked less than usual.
- 14 I felt lonely.
- 15 People were unfriendly.
- 16 I enjoyed life.
- 17 I had crying spells.
- 18 I felt sad.
- 19 I felt that people dislike me.
- 20 I could not get "going."

*Note.* Items 8, 12, and 16 were reverse-scored.

Appendix L

**Gratitude Questionnaire-6**

Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. I have so much in life to be thankful for.
2. If I had to list everything that I felt grateful for, it would be a very long list.
3. When I look at the world, I don't see much to be grateful for.
4. I am grateful to a wide variety of people.
5. As I get older I find myself more able to appreciate the people, events, and situations have been part of my life history.
6. Long amounts of time can go by before I feel grateful to something or someone.

*Note.* Items 3 and 6 were reverse-scored.

Appendix M

**Subjective Happiness Scale**

*For each of the following statements and/or questions, please indicate the point on the scale that you feel is most appropriate in describing you.*

In general, I consider myself:

1	2	3	4	5	6	7
Not a very happy person						A very happy person

Compared to most of my peers, I consider myself:

1	2	3	4	5	6	7
Less happy						More happy

Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

1	2	3	4	5	6	7
Not at all						A great deal

Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
Not at all						A great deal

*Note.* Item 4 was reverse-scored.

## Appendix N

### Rumination Scale

*People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost never, sometimes, often, or almost always think or do each one when you feel down, sad, or depressed. Please indicate what you generally do, not what you think you should do.*

1	2	3	4
Almost never	Sometimes	Often	Almost always

- 1 Think about how alone you feel
- 2 Think "I won't be able to do my job if I don't snap out of this"
- 3 Think about your feelings of fatigue and achiness
- 4 Think about how hard it is to concentrate
- 5 Think "What am I doing to deserve this?"
- 6 Think about how passive and unmotivated you feel.
- 7 Analyze recent events to try to understand why you are depressed.
- 8 Think about how you don't seem to feel anything anymore.
- 9 Think "Why can't I get going?"
- 10 Think "Why do I always react this way?"
- 11 Go away by yourself and think about why you feel this way.
- 12 Write down what you are thinking about and analyze it.
- 13 Think about a recent situation, wishing it had gone better.
- 14 Think "I won't be able to concentrate if I keep feeling this way."
- 15 Think "Why do I have problems other people don't have?"
- 16 Think "Why can't I handle things better?"
- 17 Think about how sad you feel.
- 18 Think about all your shortcomings, failings, faults, mistakes.
- 19 Think about how you don't feel up to doing anything.
- 20 Analyze your personality to try to understand why you are depressed.
- 21 Go someplace alone to think about your feelings.
- 22 Think about how angry you are with yourself.

Appendix O

**Revised Self-Disclosure Scales**

Indicate for the following statements to reflect how you communicate with other students at Virginia Tech.

1	2	3	4	5	6	7
Not at all true of me						Very true of me

1. I do not often talk about myself.
2. My statements of my feelings are usually brief.
3. I usually talk about myself for fairly long periods at a time.
4. My conversation lasts the least time when I am discussing myself.
5. I often talk about myself.
6. I often discuss my feelings about myself.
7. Only infrequently do I express my personal beliefs and opinions.
8. I cannot reveal myself when I want to because I do not know myself thoroughly enough.
9. I am often not confident that my expressions of my own feelings, emotions, and experiences are true reflections of myself.
10. I always feel completely sincere when I reveal my own feelings and experiences.
11. My self-disclosures are completely accurate reflections of who I really am.
12. I am not always honest in my self-disclosure.
13. My statements about my own feelings, emotions, and experiences are always accurate self-perceptions.
14. I am always honest in my self-disclosures.
15. I do not always feel completely sincere when I reveal my own feelings, emotions, behaviors, or experiences.

*Note.* Items 1, 2, 3, 4, 6, 8, 9, 12, and 15 were reverse-scored.

Appendix P

**Self-Compassion Scale – Short Form**

*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
Almost never				Almost always

- 1 When I fail at something important to me I become consumed by feelings of inadequacy.
- 2 I try to be understanding and patient towards those aspects of my personality I don't like.
- 3 When something painful happens I try to take a balanced view of the situation.
- 4 When I'm feeling down, I tend to feel like most other people are probably happier than I am.
- 5 I try to see my failings as part of the human condition.
- 6 When I'm going through a very hard time, I give myself the caring and tenderness I need.
- 7 When something upsets me I try to keep my emotions in balance.
- 8 When I fail at something that's important to me, I tend to feel alone in my failure.
- 9 When I'm feeling down I tend to obsess and fixate on everything that's wrong.
- 10 When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
- 11 I'm disapproving and judgmental about my own flaws and inadequacies.
- 12 I'm intolerant and impatient towards those aspects of my personality I don't like.

*Note.* Items, 1, 4, 7, 8, 9, 11, and 12 were reverse scored.

## Appendix Q

### Psychological Sense of School Membership Scale

Please indicate how well the statements below describe you. There are no right or wrong answers.

1	2	3	4	5
Not at all true				Completely true

- 1 I feel like a real part of Virginia Tech.
- 2 People here notice when I'm good at something.
- 3 It is hard for people like me to be accepted here.
- 4 Other students in this school take my opinions seriously.
- 5 Most professors at Virginia Tech are interested in me.
- 6 Sometimes I feel as if I don't belong here.
- 7 There's at least one professor or other adult at this college I can talk to if I have a problem.
- 8 People at this college are friendly to me.
- 9 Professors here are not interested in people like me.
- 10 I am included in lots of activities at Virginia Tech.
- 11 I am treated with as much respect as other students.
- 12 I feel very different from most other students here.
- 13 I can really be myself at this school.
- 14 The professors here respect me.
- 15 People here know I can do good work.
- 16 I wish I were at a different college.
- 17 I feel proud of belonging to Virginia Tech.
- 18 Other students here like me the way I am.

*Note.* Items 3, 6, 9, 12, and 16 were reverse-scored.

## Appendix R

### College Activities and Behaviors Questionnaire

Within the last week, how MANY TIMES have you done each of the following:

1. Number of times exercised strenuously \_\_\_\_
2. Number of times had difficulty falling asleep \_\_\_\_
3. Talked on the phone to one or both parents \_\_\_\_
4. Talked on the phone to old friends who are not at your college \_\_\_\_
5. Visited a physician or the student health center for illness \_\_\_\_
6. Ate far too much at one meal \_\_\_\_
7. Had a heart-to-heart with someone here at college \_\_\_\_
8. Attended a meeting of an organization (e.g., church, fraternity) \_\_\_\_
9. Studied \_\_\_\_
10. Thought about dropping out of college \_\_\_\_
11. Talked or corresponded with an old girlfriend or boyfriend \_\_\_\_
12. Made a new friend \_\_\_\_
13. Received a traffic ticket (including parking violation) \_\_\_\_
14. Written down your deepest thoughts and feelings \_\_\_\_



Appendix S

**Expected GPA Items**

What is the current number of class credits you are taking?

What is the average grade you currently expect to get across all of your classes?

- A
- A-
- B+
- B
- B-
- C+
- C
- C-
- D+
- D
- D-
- F

Appendix T

**Writing Prompt for Counting Blessings**

This prompt is from Emmons and McCullough's (2003) comparison of counting blessings versus burdens. This prompt may allow for a briefer writing approach for incorporating discussions of gratitude.

*There are many things in our lives, both large and small, that we might be grateful about. Think back over the past week and write down on the lines below up to five things in your life you are grateful or thankful for.*