Caring for Caregivers: Assessing the Influence of Expressive Writing on Cancer Caregivers' Emotional Well-being, Relational Satisfaction, and Comforting Sensitivity

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Abstract

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The reception of social support is a known predictor of psychological and physical well-being, with research suggesting that increases in recipient well-being are more likely to ensue when a support provider offers high quality support (Bodie & Burleson, 2008). Although much research has examined predictors and outcomes associated with social support, little work has assessed whether increases in provider support quality can be achieved. The reception of high quality support is particularly important for populations already at an increased risk of morbidity/mortality (Cohen, 1988). Hematopoietic stem cell transplant (HSCT) cancer survivors consist of one such population with prevalent late-onset and long term health effects post-cancer treatment (Sryjala, Martin, & Lee, 2012). In addition, research suggests that HSCT survivor well-being is strongly associated with the social support they receive from partners (Rini et al., 2011). Research has also determined that a support provider's own well-being is predictive of the quality of support s/he provides (Revenson & Majerovitz, 1990), but that caregivers/support providers of HSCT cancer survivors can experience decreased well-being due to prolonged stress associated with the cancer experience (Bishop et al., 2007). This suggests it is important for researchers to find ways to improve support quality via increasing caregivers' well-being, as this would potentially benefit both interactants. As such, a primary goal of this dissertation was to determine whether increases in HSCT spousal cancer-survivor caregivers' well-being, and thus their support provision quality, would ensue following an expressive writing intervention.

Participants (*N* = 64) consisted of spousal caregivers of HSCT survivors who were 1-3 years post-transplant. Participants completed a 17-day intervention in which a pretest survey captured baseline levels of psychological functioning and support quality (measured via reported responses to a hypothetical scenario, as well as descriptions of naturally-occurring support interactions). They were then randomly assigned to one of two expressive writing conditions (expressive disclosure [ED] or benefit-finding [BF]), or to a time-management [TM] control condition, and they completed these writings three separate times, at one-week intervals. After completing the intervention, participants were surveyed on posttest levels of psychological functioning and support quality. Posttest reports were then used to predict changes in support provision quality. Results suggest that, for this population, support quality (measured via naturally-occurring support situations) may be improved upon through the use of particular ways of writing. Results also suggest that aspects of caregiver well-being may be positively, and sometimes negatively, affected by expressive writing.

This trial was registered with clinicaltrials.gov, ID: NCT02339870

Keywords: caregivers, cancer survivors, social support, expressive writing therapy

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Chapter I: Overview and Review of Literature

Overview

Researchers have devoted significant time and effort to studying the complexities of social support interactions, with findings alluding consistently to the significant role that support plays in people's lives, health, and relationships (Bodie & Burleson, 2008; Jones & Burleson, 2003; MacGeorge, Feng, & Burleson, 2011). Social support can be given or received, and the reception of support in particular is associated with a plethora of psychological, relational, and physical indicators of well-being, ranging from improved affect (Bodie, 2013) to decreased morbidity and mortality (Cohen, 1988). Because support is so influential, a number of researchers have developed, and assessed the efficacy of, interventions designed to increase individuals' availability of support (see Lakey & Lutz, 1996). These interventions have tried, primarily, to increase recipients' received support by encouraging social changes made by recipients themselves or by training non-familial individuals to provide quality social support to recipients (Bogat & Jason, 1983; Heller et al., 1991; Kennell, Klaus, McGrath, Robertson, & Hinckley, 1991; Lovell & Hawkins, 1988; Yahne & Long, 1988). As such, few, if any studies have assessed whether received support can be improved upon via enhancing a close network member's support provision when interacting with a support recipient.

Assessing whether providers' support provision can be improved upon provides a pathway for theoretical strides to be made in understanding how the support process—for both providers and recipients—is influenced by providers' choices, behaviors, and well-being, as opposed to focusing exclusively on why support matters for those who receive it. Further, if a network member (i.e., support provider) improves his or her support provision, it is worth exploring whether the improvement results in increased physical, psychological, and relational well-being for both providers and recipients (Cutrona, 1996; Reblin & Uchino, 2008). As such, the current study includes one of the first attempts at assessing whether expressed support can be improved upon by increasing spousal support providers' well-being, and thus, their support provision quality. A number of studies suggest that providers' well-being is indeed tied to the quality of support they are willing to provide to others (Reizer, Ein-Dor, & Possick, 2012; Teschendorf, Schwartz, Ferrans, O'Mara, Novotny, & Sloan, 2007). Considering the notion that the reception of support is intricately tied to recipients' well-being, it is important to understand whether, by increasing provider well-being, their support quality can be enhanced.

Research suggests that more sensitive, person-centered forms of supportive communication are associated with greater recipient well-being (Bodie & Burleson, 2008) and further, that effective provision of support is associated with greater well-being for those who provide it (Kraus, Herzog, & Baker, 1992). These findings point to the assertion that successful support interactions can incite greater welfare for *both* providers and recipients (Lu, 1997). Understanding the provisional process that contributes to this is important, as current theoretical models have primarily focused on explaining support processes and outcomes via support recipients, thus offering a relatively one-sided understanding of a process that involves another person (High & Dillard, 2012; MacGeorge, Feng, & Burleson, 2011). This study aims to examine the other side of the interaction by exploring how support providers' well-being contributes to their support provision quality,

Further, it is important for researchers to examine the support provision process in contexts that have a higher incidence of recurring supportive interactions such as caregiving/illness situations. Research suggests that recipient needs for recurrent support provision, particularly in contexts that are also stressful for providers, can decrease providers' willingness to provide high quality comfort over time likely due to the stress they incur themselves (Teschendorf et al., 2007). Thus, the current study was conducted with spousal caregivers of hematopoietic stem cell transplant (HSCT) cancer survivors, so as to assess changes in support provision quality for a population that has a high likelihood of encountering frequent support interactions (Wells, Booth-Jones, & Jacobsen, 2009). This, then, provides a more complete understanding of how and why support provision quality might change when coupled with changes in support provider well-being and provides a pathway for future research to explore how changes in support provision quality can be influenced by *both* providers and recipients' physical, mental, and relational well-being (Reblin & Uchino, 2008).

Researchers have suggested that support providers' quality of support provision could likely be enhanced specifically through use of support interventions that increase a provider's *ability* or *motivation* to provide high quality support (Burleson, 2003; Burleson & MacGeorge, 2002). Nonetheless, little work has assessed whether changes in motivational factors that are associated with differences in support quality actually *influence* change in expressed support. MacGeorge and colleagues (2011) state that differences in providers' ability, or competence, to provide high quality support does not necessarily predict their willingness to do so. Garnering a theoretical understanding of how motivational factors influence support provision, then, paves the way for dyadic research to focus on *both* conversants' willingness to process and respond to each other's needs influences support outcomes for providers and recipients.

Bodie (2013) has ascertained that positive outcomes are greater for support *recipients* when they have more motivation to cognitively process the support messages that they receive; however, support providers' willingness to process support (implicit or explicit) support requests has not received much empirical attention. Although speculative, it is feasible that through increasing well-being, support providers may then be more motivated to recognize and respond to support recipients’ need for support, and thus be more willing to effectively respond to such needs. This, then, may be a mechanism that increases positive support outcomes for each interactant.

As such, although it would be useful to teach support providers what constitutes high quality support and how they can go about providing it to others (thus improving support provision ability), this could also place undue burden on individuals if they feel pressured to communicate support in a particular way (Riggall, 2012). As such, rather than focusing on increasing support providers’ ability to communicate comfort in a particular way and then prompting them to do so, this study centered on assessing whether motivational predictors of support quality (namely, aspects of support providers’ well-being) could be enhanced through the use of expressive writing (described later in this paper) and whether change in motivational predictors then predicted change in quality of support provision. This approach reduces the potential for caregivers to feel pressured to communicate support in a particular way but still provides a prospective avenue through which support quality could be improved and caregiver well-being could be enhanced, thus potentially constituting a more mutually beneficial situation for both support providers and recipients and an increase in our understanding of the support process overall.

Specific Aims

This study employed a randomized controlled trial to assess two primary goals related to spousal caregivers of cancer survivors who have undergone a hematopoietic stem cell transplant (HSCT) in the past 1-3 years. The first goal was to ascertain reported associations between psychological and relational functioning for HSCT spousal caregivers. The number of HSCT transplants taking place each year continues to grow (Center for International Blood at Marrow Transplant Research, 2015), and research suggests that HSCT cancer survivors who are between 1-3 years post-transplant typically encounter consistent health challenges and enduring physical and psychological after-effects of a transplant. As such, they often need continued assistance from caregivers and usually rely on loved ones such as spouses to meet challenges and demands associated with treatment and follow-up care (Andrykowski, 2005; Boyle et al., 2000; Rini et al., 2011). In addition, previous work finds that HSCT survivor well-being is influenced by the quality of care and social support they receive from partners, suggesting that the reception of high quality support provision is particularly relevant in this context (Rini et al., 2011).

Importantly, quality of care and support provision is often influenced by a provider's own well-being (Dumont et al., 2006). At this point, however, researchers know relatively little about HSCT caregivers' psychological functioning post-transplant. General trends among cancer caregivers, however, suggest high rates of stress, depression, emotion regulation difficulty, and burden (Monin & Schulz, 2009; Pinquart & Sorensen, 2003). To determine whether similar results are reported for HSCT caregivers, their reported burden, depression, and stress levels, as well as positive and negative predictors of these psychological functions, are examined in this study.

The second, and primary, goal of this dissertation involved determining whether increases in caregivers' psychological well-being and support provision quality could be achieved following an expressive writing intervention. As mentioned, the reception of high quality social support is an important predictor of health and psychological well-being for support recipients (MacGeorge et al., 2011; Reblin & Uchino, 2008), thus interventions designed to improve support quality could have profound implications for the well-being of populations who are already at an increased risk of morbidity/mortality, such as HSCT cancer survivors.

Researchers have determined that a number of psychological predictors (e.g., stress, emotion regulation difficulty, empathy) can affect individuals' motivation to provide high quality support, but it has yet to assess whether positive changes in these predictors actually enrich quality of expressed support. Expressive writing is a type of therapy known to cultivate improved psychological and physical well-being for individuals who have undergone traumatic experiences (Campbell, 2003; Kelley, Lumley, & Leisen, 1997; Pennebaker & Beall, 1986; Russ, 1992; Stanton et al., 2002). The current investigation seeks to test whether expressive writing improves HSCT caregivers' well-being and whether this corresponds with increased expression of high quality social support (Applegate, 1980; Burleson, 1985, 2003).

In the following section, I provide discussion of research related to cancer caregivers and the predictors and outcomes related to social support provision for this population. I then move into a description of the importance of social support in this context and a discussion of how support quality is measured before ending Chapter I by outlining ways expressive writing therapy might serve to promote increases in support provision quality successfully.

Prevalence of Cancer and its Associations with Caregiving

Health estimates suggest that more than 1.5 million people are diagnosed with cancer each year in the United States alone (National Cancer Institute, 2015). Adding this number to the 14 million cancer survivors still alive (American Cancer Society, 2014) reveals a staggering number of individuals who have faced the physical, psychological, and psychosocial difficulties that accompany a cancer diagnosis. Researchers predict that by the year 2020, approximately 1 in 19 people will be a cancer survivor and/or patient (Butcher, 2008).

Although clinical advancements mean that cancer deaths are decreasing and patients are living longer, accompanying psychosocial difficulties still affect overall quality of life for this population (Montazeri, Tavoli, Mohagheghi, Roshan, & Tavoli, 2009). The management of cancer can include complex lifestyle changes, treatment considerations, pain management, relational difficulties, and adjustment to bodily changes during and after treatment (Manne & Badr, 2008; Taylor, Ferrell, Grant, & Cheyney, 1993). Further, there are certain cancers and cancer treatments that tend to have a much greater likelihood of long-term negative consequences for survivors, one such treatment being hematopoietic stem cell transplantation.

Hematopoietic Stem Cell Transplants (HSCT)

A hematopoietic stem cell transplant (HSCT) is a cancer treatment option that is sometimes recommended for individuals who have lymphoid or hematologic cancers but that can also be used as a treatment for a range of other disorders (Copelan, 2006). According to the World Health Organization (2015), over 50,000 HSC transplants take place each year, and they are a life-saving treatment for thousands of people. HSCT cancer treatment involves the harvesting of stem cells that are injected intravenously into a cancer patient. A person will often receive a HSCT after high dose radiation or chemotherapy to aid in recovery as the radiation and chemotherapy may have damaged a person’s healthy cells (Copelan, 2006). Healthy stem cells can then multiply and promote an increase in healthy cell rates. A cancer patient receives either an autologous (i.e., her own stem cells) or allogeneic (i.e., another person’s stem cells) transplant, and these cells are typically taken from bone marrow or the peripheral blood stream (Copelan, 2006).

Because of the intensity of the treatment, many individuals who undergo HSCT experience complications that land them in intensive care (Afessa & Peters, 2006) or that are accompanied by the development of late or long-term effects (Sryjala, Martin, Deeg, & Boeckh, 2006). Such complications can include chronic graft versus host disease, fatigue, sexual dysfunction, pulmonary and cardiac complications, decreased bone mass, thyroid issues, vision complications, secondary cancers, increased risk of depression and anxiety, and increased risk of bacterial, viral, and fungal infections (Syrjala et al., 2006). As such, treatment and follow-up care typically last many years (Shankar et al., 2007), meaning that spousal (or other) caregivers of HSCT survivors continue with caregiving duties long after completion of the transplant.

Psychological Issues Associated with Cancer Caregiving

People who take on the role of caring for cancer patients and survivors typically face higher rates of depression, stress, and anxiety compared to the general population (Braun, Mikulincer, Rydall, Walsh, & Rodin, 2007; Vitaliano, Young, & Zhang, 2004). Over time, caregivers often also report difficulties in regulating their experiences of negative emotions (Reizer, et al., 2012, Revenson & Majerovitz, 1990) and can experience high levels of caregiver burden and burnout (Cantor 1983, Vitaliano, Young, & Russo 1991). General cancer caregiving is associated with high levels of stress, depression, and burden (Monin & Schulz, 2009; Pinquart & Sorensen, 2003), but their occurrence in HSCT cancer caregivers is relatively unstudied, this investigation sought to assess such psychological reports for HSCT caregivers whose spouses were 1-3 years post-transplant. Little research has been published specific to HSCT caregivers well-being post-transplant; however, the research that has been conducted suggests that spousal HSCT caregivers tend to report greater anxiety and depression than transplant survivors, and that female spousal caregivers are at increased risk for marital dissatisfaction (e.g., Langer, Abrams, & Sryjala, 2003). Because we know relatively little about spousal caregiver associations with psychological well-being post-transplant, scores on variables such as caregiver burden, depression, and stress were examined, with the first research question of this study asking:

> **Research Question 1:** Do HSCT cancer survivor caregivers report relatively high or relatively low mean scores on burden, depression, and perceived stress?

There are certain psychological and social buffers that can reduce the negative psychological and physical maladies that may arise for cancer caregivers. For example, having high levels of perceived social support availability from friends and family can serve to decrease feelings of stress and burden (Cohen, 1992; Wills, 1990). Additionally, a high degree of psychological resilience when experiencing difficult circumstances can buffer depression and stress (Beasley, Thompson, & Davidson, 2003; Southwick, Vythilingam, & Charney, 2005). Additionally, research suggests that high levels of relational satisfaction and closeness with a cancer patient can decrease feelings of burden (Francis, Worthington, Kypriotakis, & Rose, 2010).

Because caregiver levels of burden, depression, and stress can be positively affected by relational factors and psychological resources, these known stress buffers were examined to determine whether such buffers negatively predicted reported degree of caregiver burden, depression, and stress for the HSCT caregiver population. Based on the research discussed above, the first hypothesis of this study posited that:

> **Hypothesis 1:** Caregivers’ perceived support, resilience, and relational satisfaction will uniquely and negatively predict reported feelings of caregiver burden.

The second hypothesis suggests that:

> **Hypothesis 2:** Caregivers’ perceived support, resilience, and relational satisfaction will uniquely and negatively predict reported levels of stress.

Similarly, the third hypothesis posits that:

> **Hypothesis 3**: Caregivers' perceived support, resilience, and relational satisfaction will uniquely and negatively predict reported levels of depression.

Associations between Psychological Well-being and Motivation to Provide Social Support

Many of the variables mentioned above, such as caregiver burden, stress, and relational satisfaction, are not only important for a caregiver's own well-being, but they also predict a caregiver's likelihood of providing social support to distressed others (Applegate, 1980; Burleson, 1984; Revenson & Majerovitz, 1990; Rini & Dunkel-Schetter, 2010). Social support is defined specifically as "verbal and nonverbal behavior produced with the intention of providing assistance to others perceived as needing that aid" (MacGeorge et al., 2011, p. 317).

Cancer survivors experience a number of physical and psychological stressors, and they will often seek support, particularly from spouses, in an attempt to reduce feelings of distress (Davis-Ali, 1992). Nonetheless, the *reception* of social support is not inherently beneficial: Some forms of social support are more or less effective depending on their type, quality, and sensitivity (Bodie & Burleson, 2008). Furthermore, the provision of support quality, particularly emotional support, tends to decrease over time for individuals in chronically stressful situations such as caregiving contexts (Reizer et al., 2012; Revenson & Majerovitz, 1990). To help understand this, the remaining sections of this review detail existing literature on the provision of emotional support (see next section) as well as an overview of its associations with physical and psychological well-being and a discussion of the ways social support quality is effected by motivational factors, so as to provide a framework for the remaining goal of assessing whether reported support quality can be improved upon via an expressive writing intervention for caregivers.

Emotional Support

Cutrona and Russell (1990) posit that there are five types of social support people tend to offer one another. These are emotional support (expressing sympathy and concern), esteem support, (assurance of one's value), informational support (offering advice or information), network support (communicating connection), and tangible support (material offerings or offers of physical assistance). This study is specifically concerned with verbal aspects of *emotional* support, as the reception of emotional support in particular is strongly correlated with psychological and physical health outcomes for recipients, particularly in health contexts (Reblin & Uchino, 2008). Emotional support (sometimes labeled as comforting communication) is defined as "communicative behavior enacted by one party with the intent of helping another cope effectively with emotional distress" (Burleson, 2010, p. 159). The provision of effective emotional support is in part considered a skill—one that typically develops throughout childhood and adolescence—but is also considered a variable that can be enhanced in adulthood through the use of support interventions (Burleson, 2003).

There is strong scholarly consensus that the reception of social support is tied to increases in physical and mental health (Burleson, Albrecht, Goldsmith, & Sarason, 1994; Cohen & Wills, 1985; Gruenewald & Seemen, 2010). Lower resting heart rate, blood pressure, cholesterol, inflammation indicators, and norepinephrine levels are some physical benefits associated with support reception (Bland, Krogh, Winkelstein, & Travisan, 1991; Thomas, Goodwin, & Goodwin, 1985; Uchino, Cacioppo, & Kiecolt-Glaser, 1996; Unden, Orth-Gomer, & Elofsson, 1991). Psychologically, social support promotes cognitive adjustment, increased coping capability, and decreased perceptions of stress (Kawachi & Berkman, 2001; Thoits, 1985; Wang, Wu, & Liu, 2003).

As mentioned, several lines of research suggest that emotional support is particularly influential for recipient health outcomes (Cunningham & Barbee, 2000; Penninx, Van Tilburg, Deeg, Kreigsman, Boeke, & Van Eijk, 1997). Receiving emotional support does not correspond inevitably with increases in well-being, however. The *quality* of emotional support that one person expresses to another can differ, and the reception of substandard emotional support can actually have adverse effects on recipients (MacGeorge et al., 2011). Positive recipient outcomes noted previously are more likely to ensue if support providers utilize *sensitive comforting strategies* to help a distressed individual (Cutrona, 1996; Karantzas, McCabe, & Cole, 2012).

Emotional support quality, or sensitivity, can be measured in a number of ways depending on study goals. For example, assessments have been developed to capture support quality via the perspective of those who receive it (Lakey & Cohen, 2000), the perspective of those who provide it (Harvey-Knowles & Faw, 2014), or via the use of more objective coding schemes (wherein researchers code participants' support messages) that differentiate levels of support quality based on previous support research (Burleson, 1985; Goldsmith, 2000).

Benefits and drawbacks accompany each way of measuring support quality. For example, research that captures support quality from the perspective of recipients has the advantage of also assessing whether perceptions of high quality support reception are effective in reducing recipients' distress, at least according to the recipients, and whether they are associated with greater recipient well-being (Gottlieb & Bergen, 2010). On the other hand, research has established that support recipients' perceptions of received support quality can differ from provider perceptions of its provision, or from more objective measures of support quality, due to personal attributes, feelings toward a support provider, or other interactional influences (Bachman & Bippus, 2005; Kunkel, 2002). As such, measuring change in support quality solely from recipient perspectives can be problematic, because their view of a relationship or of a particular interaction can subjectively affect perceptions of quality (Lakey & Drew, 1997).

Choosing to instead measure support quality from the perspective of those who provide it gives researchers the advantage of assessing how a provider typically responds to another's distress and whether response patterns are associated with various provider characteristics or attributes (Dunkel-Schetter & Skokan, 1990). Although this research choice removes the potential for support recipient biases to impact ratings of quality, it increases the potential for support providers to offer biased ratings of support quality instead (Harvey-Knowles & Faw, 2014). It also does not tap into real effects that may (or may not) have ensued. As such, measuring change in support quality from the perspective of providers could be problematic if providers believe that the quality of support they provide is different, for better or worse, than that which is actually provided (King & Bruner, 2000).

Conversely, gauging support provision quality via coding schemes that are applied to expressed support messages is considered a more objective measure of support quality as such schemes remove the potential for provider and recipient biases (Burleson, 1984). In addition, by choosing a coding scheme that is *hierarchical* in nature (i.e., one that, arguably, sequentially increases in support quality), it is still possible to determine whether an individual employs supportive messages that are of greater or lesser quality (Burleson, 1984). Drawbacks to this method of capturing support quality, however, include the concern that judgments of support quality are being made based solely on the categories included in the coding scheme; thus, coded support quality may not capture whether recipients or providers view certain messages as more effective (Burleson, 1984). Nonetheless, because *change* in support quality was of concern in the current investigation, it was important to choose a method of capturing support quality that reduced potential recipient or provider biases, and the coding of expressed support messages using a validated hierarchical coding scheme provided this option.

A particular theoretical approach that aligned with needs of the current study is Burleson's verbal person-centered (VPC) support framework (1984). VPC refers to the degree to which a message legitimizes another's distress while offering sensitive, feeling-centered feedback; Burleson, 1982). This framework views emotionally supportive messages on a continuum in which messages can be coded into low, moderate, or high VPC support categories. High VPC is associated with positive recipient outcomes across a plethora of studies (High & Dillard, 2012), and messages higher in VPC are considered more supportive than those lower in VPC (Burleson, 2003; Jones & Burleson, 2003). Because the VPC framework offers a reduction in biased estimates, coupled with an empirically validated hierarchical coding scheme known to represent differential levels of support quality, it was chosen for use in the current study. A more in-depth discussion of existing research pertaining specifically to the VPC framework is provided next.

Verbal Person-Centered Support Quality

As mentioned, the degree of support sensitivity included in a supportive message can be assessed by coding that message for its level of *verbal person-centeredness* (VPC). VPC is defined as "the extent to which messages explicitly acknowledge, legitimize, and contextualize the feelings and perspective of a distressed other" (Bodie et al., 2011, p. 231). There are three overarching categories of VPC messages: *low person-centered* (LPC), *moderate person-centered* (MPC), and *high person-centered* (HPC) support. Within each overarching category of VPC are three subcategories that further delineate specific sub-types of LPC, MPC, and HPC messages for a total of nine message types (Applegate, 1980; Burleson, 1983).

In delineating the specifics of VPC message type, Burleson (2010) notes that LPC messages tend to deny or ignore a distressed person's feelings, and such messages often challenge the legitimacy of a support recipient's emotions. Individuals conveying this type of support will sometimes criticize support recipients' feelings or tell them how they *should* feel about a distressing situation. LPC support is perceived to be least effective when compared to MPC and HPC support (Burleson, 1994). MPC messages include expressions of condolence or sympathy and may be comprised of attempts to distract a distressed individual from an issue. MPC messages might also include explanations for the upsetting situation. Although these messages are intended to decrease suffering, MPC messages are thought to "fall short" at times, because they do not prompt support recipients to really delve into, or expand upon, their feelings (Burleson, Holmstrom, & Gilstrap, 2005). HPC messages are typically considered most effective, as they include an acknowledgement of a support recipient's feelings while aimed at encouraging new insights or perspectives on a stressful situation. Support providers conveying HPC messages often suggest that support recipients really try to explore their emotions surrounding an issue as a means toward working through it (Bodie, Burleson, Gill-Rosier et al., 2011; Bodie, Burleson, Holmstrom et al., 2011).

Research testing the effectiveness of VPC demonstrates consistently that support recipients rate HPC messages as more helpful, positive, and sensitive than they rate MPC or LPC messages (Burleson, 2003), and support recipients report feeling better after having received HPC messages (as opposed to MPC or LPC messages) (Jones & Burleson, 2003). HPC messages have also been associated with relationship satisfaction (Burleson & Samter, 1996), liking and attraction (Burleson, Holmstrom, & Gilstrap, 2003), and social acceptance (Burleson, Delia, & Applegate, 1992). Further, a meta-analysis conducted by High and Dillard (2012) indicated a positive relationship between VPC and support recipients' perceived effectiveness of received support, suggesting that recipients prefer receiving HPC support in times of distress. It should be noted, however, that some research suggests HPC messages are not always viewed most positively (Lemieux & Tighe, 2001) and that a number of factors can influence support recipient perceptions of message effectiveness, including an individual's attachment style, motivation to process received support, and degree of message scrutiny, among other variables (Bodie, 2013; Bodie, Burleson, & Jones, 2012; Jones, 2005).

Barriers in Caregivers' Motivation to Provide High Quality Social Support

Research suggests that individual differences (such as personality characteristics) influence enacted support quality; moreover, researchers acknowledge that *motivational variables* can also affect one's willingness to exercise sensitivity when providing comfort (see Burleson, 1984, 2003; Samter & Burleson, 1984). Aspects of one's current disposition, such as feeling stressed or tired, can decrease motivation or willingness to engage in sensitive comforting which means that although people may have the capacity to provide high quality comfort, they will not necessarily utilize their abilities to the fullest extent (Applegate, 1980; Burleson, 1985, 1994, 2003).

While negotiating the psychological upset of having a loved one suffer from cancer, most spouses and partners also assume the role of becoming an informal caregiver in order to help the cancer patient with physical and emotional needs (Teschendorf et al., 2007). Because of increased demands, both physically and emotionally, spouses or partners often report even greater emotional distress than do cancer sufferers (Braun, Mikulincer, Rydall, Walsh, & Rodin, 2007; Mellon, Northouse, & Weiss, 2006). The extended time period in which caregivers experience high support demands may strain or erode their ability to offer sensitive, high quality, support to cancer sufferer (Reizer et al., 2012). Indeed, in a study by Teschendorf and colleagues (2007), caregivers cited concerns as to whether their capacity to provide support could be sustained, and this was after a caregiving span of approximately 6-12 weeks, although caregiving duties often extend to a much longer time period.

Understandably, caregivers' own levels of physical and psychological functioning deteriorate when having to watch a loved one battle a potentially deadly disease (Given, Given, Kurtz, & Kurtz, 1993). Chronically high stress levels, elevated levels of burden, onset of depression, and emotional regulation difficulties are cited as common complaints (Luecken & Lemery, 2004; Porter, Keefe, Lipkus, & Hurwitz, 2005, Reizer, et al., 2012, Revenson & Majerovitz, 1990). Each of these psychological demands can decrease individuals' motivation to offer high quality social support over time. Detailed in the next section are the known barriers of effective support provision. Following that is a discussion of how such barriers might be improved upon through the use of expressive writing therapy.

Perceived Burden, Stress, and Depression

Perceived caregiver burden, depression, and stress are psychological maladies that share various characteristics. For example, each is considered a type of mood disorder that is catalyzed by undesirable life circumstances and that can prompt prolonged psychological and even physical symptoms of distress (Pinquert & Sorensen, 2003b; Pittenger & Duman, 2008; Reiche, Nunes, & Morimoto, 2004). In caregiving contexts, burden, depression, and stress typically arise due to concerns over physical changes of the cancer sufferer, uncertainty over the potential for illness recurrence, prolonged physical difficulties resulting from treatment, economic difficulties, marital difficulties, and the general transitions involved in learning to negotiate and manage such an important life change (Holland, 1989; Northouse & Stetz, 1989; Oberst & James, 1985;

Sryjala et al., 2012). Some studies have even suggested that caregivers tend to have higher, and longer-lasting, stress levels than do cancer sufferers (e.g., Flor, Turk, & Scholz, 1987).

Neuroscientists agree that both acute and chronic psychological distress can impair physical and cognitive functioning (McEwen, 1999). Physiologically, chronic forms of distress have been tied to increases in salivary cortisol (a stress-response hormone) as well as increased allostatic load on the hypothalamic- pituitary-adrenal (HPA) axis (an aspect of our neuroendocrine system that controls stress) (Harrell, Hall, & Tariaferro, 2003; McEwen & Seeman, 1999). Psychologically, burden and distress increase “off-task” thoughts (Sarason, Sarason, Keefe, Hayes, & Shearin, 1986), and stress specific to care giving has been associated with increases in cognitive dysfunction (Oken, Fonareva, & Wahbeh, 2011).

Physical and psychological manifestations of stress are thought to complicate the support provision process (Revensen & Majerovitz, 1990). Bodie and Burleson (2008) state that more complex, well thought out, support messages tend to be highly valued by support recipients. Chronic psychological distress, however, reduces individuals’ capacity to think and respond as efficiently as they would normally (Lazarus, 1999). Because the delivery of high quality social support is in part contingent on support providers´ cognitive abilities (Burleson, 1983, 1984, 1985), barriers to normal cognitive functioning can impair individuals’ motivation to construct sensitive support messages. In support of this argument, Burleson (1984) notes that temporary states such as stress can reduce one’s desire or willingness to comfort another. Similarly, using the VPC support coding system, Applegate (1980) found that individuals’ degree of sensitivity in support messages decreased due to temporary states such as anxiety or stress.

Research conducted in illness contexts also supports the assertion that chronically stressed or burdened partners of illness sufferers tend to express more problematic and unhelpful support behaviors (Revenson & Majerovitz, 1990). As support researchers note, limits to psychological resources can result in a greater focus on meeting self needs rather than the needs of another (Feeney & Collins, 2003; Iida, Seidman, Shrout, Fujita, & Bolger, 2008). As such, interventions that focus on meeting caregiver needs by decreasing caregiver burden, depression, and stress, may serve to enhance caregiver well-being as well as re-instill caregivers' motivation to provide higher quality social support to cancer survivors. As such, I next discuss an issue similar to caregiver burden, depression, and stress that is also known to complicate the support process: emotion regulation difficulty. Emotion regulation difficulties are experienced commonly in caregiving contexts, but they may also be enhanced via therapeutic intervention.

Emotion Regulation Difficulty

As noted, individuals experiencing emotional strain may be less motivated to provide sensitive, high quality support to others (Reizer et al., 2012) than are those with less strain. Feelings of emotional stress, depression, and strain are also known coincide with *emotion regulation difficulty*, which is another factor that is predictive of decreases in support provision quality. Emotion regulation refers to processes of understanding, accepting, and controlling emotions (particularly when negative emotions arise) and acquiring the capacity to use appropriate regulation strategies in situations that demand them (Gratz & Roemer, 2004). "Emotion regulation can be viewed on a continuum with the anchors underregulated, optimally regulated, and overregulated. People at the extreme ends of this continuum have dysregulated emotions which puts them at risk for physical and psychological health problems" (Lepore, Greenberg, Bruno, & Smyth, 2002, p. 101). After chronic periods of depression, anxiety, chronic negative affect, unpleasant emotion, and/or high stress—all associated with cancer caregiving—

individual capacities for emotional regulation tend to deteriorate (Baumeister, Zell, & Tice, 2007).

Underregulation of emotion is associated specifically with difficulty controlling responses to emotional stimuli and chronic activation of physiological stress responses (Lepore et al., 2002). Emotional underregulation is common for caregivers and, according to some research, is the primary issue with which caregivers report experiencing difficulty (Osse, Vernooij-Dassen, Schade, & Grol, 2006). Conversely, overregulation of emotion is associated with suppression or inhibition of emotional experience and is likewise a predictor of psychological and physically manifested health issues (Gross, 1989; Petrie, Booth, & Pennebaker, 1998). Overregulation of emotion is also a common issue for caregivers, because so much of the caregivers' time is spent supporting their partner. As such, caregivers will often suppress or inhibit emotions associated with their own needs (Baanders & Heijmans, 2007; Golant & Haskins, 2008), even though research has documented the importance of emotional outlets in supporting caregiver well-being (Flaskerud, Carter, & Lee, 2009).

As with stress, depression, and burden, caregivers' inability to regulate negative emotion is associated with decreased ability to offer high quality social support to illness sufferers (Revenson & Majerovitz, 1990). Particularly in relational contexts during which both members of couples are experiencing emotional strain, a support provider's attempts at providing effective emotional support may be undermined due to the emotional climate (Rini & Dunkel-Schetter, 2010). Maisel and colleagues (2010) report a similar finding in that individuals are less likely to offer helpful behaviors if their emotion regulation abilities are impaired due to chronically present stressors. Gross (2002) also contends that individuals with greater capacity to regulate emotions also have a greater capacity to respond to the needs of others. As Reizer and colleagues

(2012) note, “people may be able to lend effective support to others only after the regulation of their own distress” (p. 695). Conversely, when individuals are able to regulate their emotions, effective interpersonal functioning is more likely to occur, and attempts at providing sensitive support to cancer caregivers may be enhanced without occurring at the emotional expense of the caregiver (Cole, Michel, & O’Donnell, 2008).

Importantly, emotion regulation is a dynamic process that can be enhanced. In cancer contexts, inducing purposeful activities that promote greater emotional regulation for cancer caregivers may cultivate increases in mental and physical well-being (Vingerhotes, Nyklicek, & Denollet, 2008). In turn, this may prompt increased motivation to respond supportively toward partners when they are under duress (Iida et al., 2008). Altogether, potential maladies including burden, stress, depression, and emotion regulation difficulty, are predictive of the quality of support a person provides. Although there are a number of psychological barriers that can prevent effective support provision, there are also psychological and relational variables known to positively predict support provision quality. Such variables include an individual’s degree of empathy toward others (Trobst, Collins, & Embree, 1994), as well as a person’s level of relational satisfaction with the individual to whom they are providing support (Dunkel-Schetter & Skokan, 1990). As such, each are included in the current study and are discussed in more detail next.

Positive Predictors of Support Provision Quality

Empathy

Empathy has been defined in a variety of ways (Davis, 1983) but is often conceptualized as emotional concern for the well-being of another individual (Batson & Coke, 1981). Empathy can also involve emotional matching, or emotional contagion, wherein individual(s) experiencing empathy for a distressed person will report experiencing distress themselves (Eisenberg & Miller, 1987). Empathy is sometimes considered akin to the experience of compassion, as empathy and compassion each involve concern over the suffering of others (Carmel & Glick, 1996).

A number of studies suggest that highly empathic people have a greater likelihood of offering emotional support to others and that these individuals are typically more supportive than those low in empathy (Burleson, 1983). Indeed, feelings of concern for a distressed other appear to be a strong predictor of support provision (Trobst et al., 1994), and support providers' engagement in in perspective-taking (a mechanism by which empathy is evoked) is predictive of high quality comforting behaviors (Applegate, Burleson, & Delia, 1992; Batson, Early, & Salvarani, 1997; Burleson 1984; Strayer & Roberts, 1989).

In illness contexts, however, individuals will often report decreases in their empathic concern toward others (Boyle, 2011). Typically this is thought to occur because of the high degree of distress or burden that people experience when caring for others over long periods of time (Neumann et al., 2011). As such, researchers have concluded that interventions designed to maintain or enhance empathic concern are particularly important in caregiving situations (Mercer & Reynolds, 2002), and a number of studies have shown that empathy can be enhanced through therapeutic intervention (Block-Lerner, Adair, Plumb, Rhatigan, & Orsillo, 2007; Shapiro, Rucker, Boker, & Lie, 2006). It is important to note, however, that increases in empathy can a double-edged sword, as empathy itself can be associated with reports of burden and distress (Stebnicki, 2000). Thus, if interventions increase participants' empathic concern toward others effectively, those individuals may also be more likely to report higher levels of distress themselves. Nonetheless, other studies have contradicted this assertion by finding that higher empathy is instead associated with greater wellness and mental well-being (Shanafelt et al., 2005).

Relational Satisfaction

The final predictor of high quality social support that will be discussed and assessed in this study is relational satisfaction. Research purports that the degree of relational satisfaction one experiences, particularly for individuals who are in romantic relationships, is predictive of support provision quality (Pasch, Bradbury, & Sullivan, 1997). For example, Gurung and colleagues (1997) found that supportive behaviors and sensitivity to a support recipient's needs were more prevalent among individuals who reported feeling more satisfied in their relationships. Additionally, Iida and colleagues (2008) reported that both support providers' and support recipients' relationship satisfaction were significantly associated with greater support provision. Finally, in another study that looked specifically at romantic partners' perceptions, researchers found that individuals who were more satisfied in their relationships were significantly more likely to enact helpful and supportive behaviors toward their partners than were those low in satisfaction (Brunstein, Dangelmayer, & Schultheiss, 1996).

As with empathic responding, however, high levels of psychological distress can induce decreases in relational satisfaction over time, particularly in caregiving contexts (Manne, Alfieri, Taylor, & Dougherty, 1999). Further, some research reports that caregivers' marital dissatisfaction is uniquely predictive of severe psychological distress, more so than that of other important psychological factors such as caregiver burden (Braun et al., 2007). Specific to HSCT contexts, researchers have found that spousal caregivers often report lower satisfaction than the patients themselves (Langer, Abrams, & Sryjala, 2003). Relational satisfaction is dynamic, however, and can be improved upon through various behavioral interventions such as the one utilized in the current investigation (Baddeley & Pennebaker, 2011).

Together, the aforementioned studies have demonstrated that myriad psychological and relational characteristics are influenced by the potential trauma of a spousal cancer diagnosis and the corresponding caregiving duties that a relational partner typically assumes. As evidenced, reports of caregiver burden, depression, stress, and emotion regulation difficulty tend to increase over time for individuals in long-term caregiving roles. In addition, reports of empathy and relational satisfaction tend to decrease for caregiving populations. Each of these psychological characteristics can be improved upon through behavioral interventions, with one such intervention consisting of expressive writing therapy (EWT; Pennebaker & Beall, 1986). The current study seeks to assess whether EWT promotes positive changes in the aforementioned psychological and relational variables and whether this corresponds with changes in the quality of social support that a caregiver reportedly provides. The remaining literature review details what comprises expressive writing therapy and provides evidence of its effect on the aforementioned psychological and relational variables, before outlining a number of hypotheses and research questions pertinent to the current investigation.

Expressive Writing Therapy as a Means for Increasing Well-being and Support Quality

Expressive writing is a type of therapy that consists of having participants write about traumatic life experiences in a deeply emotional way (Smyth, 1998). Interventions utilizing expressive writing are designed to encourage the release of emotions that participants are potentially inhibiting, or are unaware of feeling, toward a traumatic event. The argument that expressive writing could be healthy for individuals was based initially on research conducted by Freud and colleagues (1954, 1966). Freud (1954) maintained that both cognition and affect are tied to traumatic experiences; thus, emotions associated with a trauma remain in a person's consciousness and can impact health and well-being negatively. By releasing pent-up emotions tied to a trauma, catharsis can occur and more optimal physical and mental functioning can be achieved (Breuer & Freud, 1966).

Out of the theory of cathartic release came the development of expressive writing via the research agenda of James Pennebaker and colleagues. The first published study assessing the efficacy of expressive writing was conducted by Pennebaker and Beall in 1986. Results of this study supported Freud and Breuer's argument that cathartic therapy promotes well-being, as findings suggested that writing about emotions surrounding a trauma cultivated a decrease in participants' reported health problems and health center visits following the intervention.

Since the initial development of expressive writing, two primary writing types have emerged: expressive disclosure and benefit-finding. Expressive disclosure involves the expression of pent-up *negative* emotions surrounding a traumatic event, whereas benefit-finding focuses on *positive* outcomes associated with a trauma (King, 2002; Pennebaker, Kiecolt-Glaser, & Glaser, 1988). A host of physical and psychological benefits have been associated with each type of writing (see Frattaroli, 2006).

In expressive writing interventions, expressive disclosure and/or benefit-finding writing conditions are compared commonly to a control writing condition (time-management or factual descriptions are common control writing topics) to assess differential treatment effects (Crowley, Faw, & Parks, 2012; Smyth, Nazarian, & Arigo, 2008; Stanton & Danoff-Burg, 2002). Various theories have been posited as to why and how expressive writing appears to promote health benefits, but no single explanatory mechanism has been agreed upon by scholars (Frattaroli, 2006). A more in-depth discussion regarding the theoretical underpinnings associated with expressive disclosure and benefit finding are expounded upon below.

Expressive Disclosure

When utilizing the expressive disclosure form of expressive writing, researchers often include statements that prompt participants to “really let go and explore [their] very deepest emotions and thoughts…ideally focus[ing] on feelings, thoughts, or changes [they] have not discussed in great detail with others” (Stanton & Danoff-Burg, 2002, p. 43), thus encouraging participants to expound upon negative thoughts and experiences they associate with a trauma (Smyth, 1998). In doing so, many theorists maintain that *disinhibition* is at play behind the reported benefits that participants incur (Frattaroli, 2006). This assumption is in line with previously mentioned research by Freud and Breuer (1966) suggesting that negative emotions must be disinhibited to experience health benefits associated with their release.

More specifically, research suggests that individuals will often avoid and inhibit negative emotions associated with a traumatic event, which incurs cumulative stress on an individual both physically and psychologically (Pennebaker, 1982; Pennebaker & Beall, 1986). Such inhibition can induce stress itself, or it can promote “rebounding” in which previously inhibited emotions re-arise and cause ruminative tendencies that are also associated with decreased well-being (Wegner, Schneider, Carter, & White, 1987). The act of expressive disclosure writing, then, is argued to force participants to confront these emotions and work through thoughts and feelings they associate with a trauma (Jones & Pennebaker, 2006). As such, it is thought to be a cathartic release of negative emotion that in turn reduces psychological and physical distress (Pennebaker, 1997).

Despite a number of studies finding support for what has been called disinhibition theory (Booth, Pennebaker, & Petrie, 1999, Pennebaker et al., 1988; Petrie et al., 1995; Sloan & Marx, 2004), the theory has not always held up against empirical scrutiny. For example, Greenberg and colleagues (1996) found that expressive writing cultivated positive health and well-being outcomes even when participants were assigned to write about "imaginary traumas" that they had not actually experienced. Furthermore, other research found no significant differences between participants who wrote about previously disclosed versus previously undisclosed traumas (Greenberg & Stone, 1992).

This brought researchers to question whether cathartic release via the expression of pent up negative emotions is a necessary precursor for the enhancement of health and well-being via writing. To challenge the disinhibition assumption, researchers assessed whether optimistic forms of writing might also encourage increased health and well-being (King & Miner, 2000). In doing so, researchers asked individuals to engage in a *benefit-finding* type of expressive writing, wherein only positive emotions and outcomes were written about. Results of such studies suggest benefit-finding has also proved useful in cultivating increased health and well-being for participants, thus prompting researchers (e.g., King, 2002) to consider other theoretical possibilities behind expressive writing's effectiveness.

Benefit-finding

Benefit-finding writing prompts are similar to those of expressive disclosure in that they ask participants to deeply explore thoughts and emotions toward a traumatic experience, with the writings ideally focusing on topics not discussed at length with others previously. The primary difference between expressive disclosure and benefit-finding is that writing prompts ask participants to focus *solely* on any positive thoughts, feelings, or events that have occurred in light of a trauma they experienced (Stanton & Danoff-Burg, 2002). Theoretical underpinnings of the benefit-finding approach most often suggest *self-regulation* as the explanatory mechanism behind positive effects of writing.

More specifically, King (2002) asserts that emotions act as a source of information for individuals in that they allow a person to learn more about her- or himself and to better understand her or his personal goals. Expressive writing promotes recognition of emotions that arise due to consistencies or incongruences with life goals and pursuits. This process is thought to cultivate increases in, or a return to, normal self-regulation functioning. Cameron and Nicholls (1998) provided evidence for this account by giving study participants writing instructions related to a self-regulation task: Individuals who were soon entering college were asked to write about how they planned on coping with the upcoming transition. The researchers found that individuals in this writing condition still reported health benefits following the intervention, thus suggesting that any writing (whether positively or negatively valenced) that promotes self-regulation may be beneficial for participants.

Additional studies have also found support for the self-regulation perspective, with results suggesting that benefit-finding encourages greater psychological and/or physical benefit than expressive disclosure in some instances, including participant reports of better mood, decreased hospital visits, and more positive emotions (Burton & King, 2004; King & Miner, 2000). Nonetheless, other studies still suggest that expressive disclosure outperforms benefit-finding when comparing the two. For example, Stanton and colleagues (2002) found that for breast cancer patients, greater health benefits arose for participants who completed expressive disclosure writings than for those who wrote about benefits. Further, Lyubomirsky and colleagues (2006) reported that asking participants to write about negative life experiences promoted greater well-being in participants when compared to those who wrote about positive life experiences.

Taken together, the aforementioned findings illustrate that both expressive disclosure and benefit-finding forms of expressive writing can promote increases in health and well-being for participants, although the mechanism by which this occurs is still being debated by theorists, and it is possible that benefits arise differentially across contexts and populations (Chung & Pennebaker, 2008; King, 2002; Smyth & Pennebaker, 2008). Nonetheless, a meta-analysis conducted by Frattaroli (2006) examined over 145 related studies and found that expressive disclosure and benefit-finding can both effectively reduce stress, increase self-regulation of emotion, reduce reports of physical illness, increase coping ability, enhance immune system function, decrease depressive symptoms, decrease negative mood and affect, enhance physical functioning and induce positive reappraisal toward negative life events (Cameron & Nicholls, 1998; Donnelly & Murray, 1991; Greenberg & Stone, 1992; Lepore, 1997; North, Meyerson, Brown, & Holahan, 2013; Pennebaker & Beall, 1986; Pennebaker, Colder, & Sharp, 1990; Pennebaker, Kiecolt-Glaser, & Glaser, 1988).

Further, the findings in Frattaroli’s (2006) meta-analysis did not point to a single theoretical framework as the conclusive explanatory mechanism for the effects of expressive writing, as she did not find differential outcomes between individuals who completed expressive disclosure writings and those who completed benefit finding. As such, both forms of expressive writing were included in the current study to assess whether disinhibition or self-regulation emerge as better predictors of well-being in the HSCT caregiver context. I now turn to discuss specific methodological choices that can be made when conducting an expressive writing study and ground choices made for the current study in previous literature before moving on to intervention related hypotheses and research questions.

Methodological Considerations of Expressive Writing Studies

The actual mechanistic process behind expressive writing is fairly simple and consists of having participants spend 15-20 minutes writing out their thoughts and emotions in response to the types of writing prompts discussed above. Although the expressive writing process itself is relatively straightforward, experimental designs assessing the efficacy of expressive writing have varied widely when instructing participants on how to complete writing tasks. Typically, however, when individuals are asked to write about a traumatic topic for 15-20 minutes, they do so over a 3-4 consecutive day period or over a span of 3-4 weeks at one-week intervals (Frattaroli, 2006). Findings of a meta-analysis conducted by Smyth (1998) suggest that one-week writing intervals produce larger effect sizes when compared to daily writing sessions. That is the approach taken in the present study.

When giving participants writing instructions, some researchers have allowed participants to choose the topic they write about (e.g., “Write about your feelings surrounding any trauma you have endured”) (Pennebaker & Beall, 1986), whereas others have provided very particular topics of focus (e.g., coming to college, experiencing discrimination, job loss; see Frattaroli, 2006). Pennebaker and Chung (2007) suggest that researchers use “sufficiently open instructions” when prompting participants on what to write. Differences in the length of expressive writing periods have also been tested, with some studies finding effects after having participants write for as little as two minutes (Burton & King, 2007). Nonetheless, Frattaroli (2006) found that writing sessions lasting for 15-minutes or longer were more beneficial for participants than were those with shorter time restrictions. Finally, research has looked at whether expressive writing that was completed in a private versus public setting was associated with differential outcomes. Frattaroli's (2006) meta-analysis suggested that participants who completed writings at home (or in their location of choice) reported higher psychological effect sizes than participants who completed writings in a laboratory setting. Further, these effect sizes did not differ for individuals who completed handwritten versus typed writings.

Based on the aforementioned research, the current study utilized three 20-minute expressive writing sessions that were completed at one week intervals, with both expressive disclosure and benefit-finding conditions included and compared to a time-management control writing condition. Additionally, participants for this study were instructed to complete writings away from others in a location of their choice, and they were provided with a link to a secure website in which they could type their responses to writing prompts. I turn now to a discussion of the expressive writing, well-being, and support literature that informed specific hypotheses and research questions tested in this study.

Intervention Related Hypotheses and Research Questions

Caregiver Burden, Stress, and Depression

As noted, cancer caregivers frequently report experiencing high levels of caregiver burden, stress, and depression levels (Braun, Mikulincer, Rydall, Walsh, & Rodin, 2007; Vitaliano, Young, & Zhang, 2004). Further, these variables are associated with the quality of social support an individual reportedly receives (Burleson, 1983; Feeney & Collins, 2003; Revensen & Majerovitz, 1990). A number of expressive writing interventions have promoted reductions in these psychological maladies effectively, although this has not always been tested in a cancer caregiving context. Nonetheless, prior research has established that expressive writing is associated consistently with significant decreases in caregiver burden (Barton &

Jackson, 2008) and in stress (Smyth, 1998), and depression levels (Gortner, Rude, & Pennebaker, 2006; Lepore, 1997), suggesting that similar findings should occur in this context when comparing treatment conditions to the control condition. However, because meta-analysis findings have indicated that, across studies, often no differences in outcomes arise between benefit-finding and expressive disclosure writings (Frattaroli, 2006), it is unclear whether differences in burden, stress, and depression would arise *between* expressive disclosure and benefit-finding treatment conditions. As such, the following hypotheses and research questions were posited to better understand relationships among writing conditions and psychological well-being:

Hypothesis 4: Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in reported caregiver burden when compared to caregivers in the time-management control condition.

Research Question 2: Do significant differences in participants' burden change scores arise between benefit finding and expressive disclosure conditions?

Hypothesis 5: Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in reported stress when compared to caregivers in the time-management control condition.

Research Question 3: Do significant differences in participants' stress change scores arise between benefit finding and expressive disclosure conditions?

Hypothesis 6: Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in reported depression when compared to caregivers in the time-management control condition.

Research Question 4: Do significant differences in participants' depression change scores arise between benefit finding and expressive disclosure conditions?

Emotion Regulation Difficulty

As mentioned, emotion regulation difficulty is another issue commonly reported among cancer survivor caregivers (Baumbaeur et al., 2006) and is also a predictor of high quality support provision (Reizer et al., 2012).The chronic presence of distressing and demanding situations such as being a caregiver for another, and having to take on additional responsibilities while continuing to feel concern over the health of a loved one, can erode an individual's capacity to regulate negative emotions (Kurtz et al., 1995). Expressive writing has proven effective in reducing emotion regulation difficulty and promoting increases in self-regulation of emotional experience (King, 2002). As such, it was predicted in the current study that:

Hypothesis 7: Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in emotion regulation difficulty as compared to the time-management control condition.

It was again important to ascertain whether differences between the two treatment conditions exist for changes in relational satisfaction, as this may provide additional evidence for a theoretical explanation behind expressive writing effectiveness. Thus, the following research question asked:

Research Question 5: Do significant differences in caregivers' emotion regulation change scores arise between benefit finding and expressive disclosure conditions?

Empathy

As evidenced, the capacity to experience empathy or compassion toward others is another psychological process that can erode due to prolonged periods of burden and distress (Boyle, 2011). Further, researchers have purported that empathy is predictive of the quality of social support provided to others (Reizer et al., 2012; Rini & Dunkel-Schetter, 2010) as well as the quality of care one receives from caregivers (Schulz et al., 2007). Similar studies utilizing reflective writing have cultivated increases in reported empathy effectively (DasGupta & Charon, 2004; Grant, Kinman, & Alexander, 2014). Further, Romero (2008) found that perspective-taking (an aspect of empathy; Davis, 1980) significantly increased following an expressive writing intervention that was designed to promote forgiveness for interpersonal transgressions. As such, it was predicted in the current study that:

> **Hypothesis 8:** Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in empathy compared to the time-management control condition.

Although reported increases in empathy would not necessarily provide evidence as to whether self-regulation or disinhibition theory appear to explain benefits associated with expressive writing, it is still important to understand whether treatment conditions differentially affect empathy in the HSCT context, as empathic responding is an important predictor of caregiving quality (Hojat, 2007). As such, differences between the two treatment conditions were assessed with the question:

> **Research Question 6:** Do significant differences in caregivers' empathy change scores arise between benefit finding and expressive disclosure conditions?

Relational Satisfaction

Relational satisfaction is an additional determinant of the quality of care one receives in caregiving contexts (Manne et al., 1999) and is another predictor of the quality of support provision an individual offers (Pasch, Bradbury, & Sullivan, 1997). It is also another variable found to be positively affected by expressive writing therapy (Baddeley & Pennebaker, 2011), As such, it is posited that for HSCT caregivers:

Hypothesis 9: Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in relational satisfaction compared to the time-management control condition.

It is important for researchers to also ascertain whether benefit-finding or expressive disclosure writing cultivates differential changes in relational satisfaction. This is particularly true for HSCT caregiver contexts, as relational satisfaction can affect the care and communication a caregiver engages in with a care recipient (Brunstein et al., 1996; Manne et al., 1999). Thus, the next research question asked:

Research Question 7: Do significant differences in relational satisfaction change scores arise between benefit finding and expressive disclosure conditions?

Social Support Quality

As evidenced, the provision of sensitive, high quality support messages can be contingent upon the psychological and relational well-being of support providers (Applegate, 1980; Burleson, 1984, 2003; Reizer et al., 2012; Revenson & Majerovitz, 1990). Although researchers have ascertained myriad predictors of support provision quality, no published work has assessed whether increases in individuals’ support provision quality occur following interventions that are designed to cultivate psychological or relational improvements. Before assessing whether changes in psychological or relational well-being predicted support quality change, it was important to assess whether changes in reported support quality actually occurred. Based on research suggesting that well-being predicts support quality (Reizer et al., 2012; Teschendorf, 2007), the following hypotheses and research questions were posited:

Hypothesis 10: Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in VPC quality when reporting on naturally-occurring supportive acts.

Research Question 8: Do significant changes in VPC support quality during naturally-occurring support interactions arise between benefit finding and expressive disclosure conditions?

Hypothesis 11: Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in VPC quality when responding to a hypothetical distressing situation.

Research Question 9: Do significant changes in VPC responses to a distressing hypothetical scenario arise between benefit finding and expressive disclosure conditions?

Finally, as evidenced by prior research, the aforementioned psychological and relational variables of stress, depression, burden, emotion regulation, empathy, and support quality have all been found to predict the quality of social support that an individual receives (Reizer et al., 2012; Revenson & Majerovitz, 1990; Teschendorf et al., 2007). A primary goal of this study was to assess whether changes in psychological and/or relational well-being predicted changes in VPC support quality that participants reportedly exhibit. As such, the last research question for this study was dependent upon finding VPC changes in support quality post-intervention. If significant increases in VPC support quality were observed, it was important to assess which of the aforementioned psychological or relational variables significantly predicted changes in VPC quality. Thus, the final research question asked the following:

Research Question 10: If changes in VPC support quality are observed for naturally-occurring support situations, or responses to a hypothetical scenario, were changes in psychological or relational variables predictive of changes in support quality?

Summary

Hematopoietic stem cell transplant (HSCT) cancer survivors are an understudied population known for having a high likelihood of negative and long-term health effects following treatment (Sryjala et al., 2012). A strong predictor of a care recipient's well-being is the quality of social support provision that person receives (MacGeorge et al., 2011). Research suggests that the reception of high quality social support decreases risk of morbidity and early mortality and is accompanied by a host of other positive physical and psychological outcomes (Reblin & Uchino, 2008). This study sought to determine whether increases in spousal HSCT caregivers' verbal person-centered (VPC) support provision quality is reported following an expressive writing intervention.

Cancer caregivers' often experience a host of their own psychological or physical difficulties due to the burden and stress associated with helping a loved one manage the cancer experience (Braun et al., 2007; Teschendorf et al., 2007). Expressive writing therapy has been found to be predictive of improvements in well-being (Lepore & Smyth, 2002). Thus, caregivers' improvements in psychological well-being may in turn cultivate increases in their motivation to provide high quality social support to spousal counterparts (i.e., HSCT survivors) (Applegate, 1980), potentially benefiting both members of the dyad (although this cannot be ascertained in the current investigation). Provided below is a summary of the Research Questions and Hypotheses that were assessed based on this literature. The remaining sections then outline the methodological approach used to answer each of these research questions and hypotheses, before discussing study results and implications.

Table 1. Summary of Research Questions and Hypotheses.

Research Questions	**Hypotheses**
1. Do HSCT cancer survivor caregivers report relatively high or relatively low mean scores on burden, depression, and perceived stress?	1. Caregivers' perceived support, resilience, and relational satisfaction will uniquely and negatively predict reported feelings of caregiver burden.
2. Do significant differences in participants' burden change scores arise between benefit finding and expressive disclosure conditions?	2. Caregivers' perceived support, resilience, and relational satisfaction will uniquely and negatively predict reported levels of stress.
3. Do significant differences in participants' stress change scores arise between benefit finding and expressive disclosure conditions?	3. Caregivers' perceived support, resilience, and relational satisfaction will uniquely and negatively predict reported levels of depression.
4. Do significant differences in participants' depression change scores arise between benefit finding and expressive disclosure conditions?	4. Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in reported caregiver burden when compared to caregivers in the time-management control condition.
5. Do significant differences in participants' emotion regulation change scores arise between benefit finding and expressive disclosure conditions?	5. Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in reported stress when compared to caregivers in the time-management control condition.
6. Do significant differences in participants' empathy change scores arise between benefit finding and expressive disclosure conditions?	6. Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in reported depression when compared to caregivers in the time-management control condition.
7. Do significant differences in participants' relational satisfaction change scores arise between benefit finding and expressive disclosure conditions?	7. Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in emotion regulation difficulty when compared to caregivers in the time-management control condition.
8. Do significant changes in VPC support quality during naturally-occurring support interactions arise between benefit-finding and expressive disclosure conditions?	8. Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in empathy when compared to caregivers in the time-management control condition.
9. Do significant changes in VPC responses to a distressing hypothetical scenario arise between benefit finding and expressive disclosure conditions?	9. Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in relational satisfaction when compared to caregivers in the time-management control condition.
10. If changes in VPC support quality are observed for naturally-occurring support situations, or responses to a hypothetical scenario, were changes in psychological or relational variables predictive of changes in support quality?	10. Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in VPC quality when reporting on naturally-occurring supportive acts.
	11. Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in VPC quality when responding to a hypothetical distressing situation.

Chapter II: Methods

Participants

Participants for this study were recruited using Fred Hutchinson Cancer Research Center's database of Hematopoietic stem cell transplant (HSCT) survivors. Spousal caregivers of HSCT recipients who had received a transplant as cancer treatment within the past three years were eligible for participation. After recruitment, assignment, and attrition, a total of 64 participants completed the study. The majority of participants were female (87.5%) and the majority of participants' spouses were male (82.8%). Age of participants ranged from 25 to 75 years (*M* = 56.64, *SD* = 12.06). Age of participants' spouses was similar, ranging from 28 to 74 years (*M* = 57.70, *SD* = 12.02). Ethnicity was predominately Caucasian/White (92.2%) with one African American/Black (1.6%), one (1.6%) Hispanic/Latino, and one (1.6%) Pacific Islander. Two individuals chose "Other" for their reported ethnicity (3.1%). Length of time in months since participants' partner had been diagnosed with cancer ranged from 0 (i.e.,, their partner recently experienced cancer recurrence) to 168 months (i.e.,, it had been 14 years since their partner's initial diagnosis of first cancer; note that cancer survivors who had an initial diagnosis many years ago had battled a recurring cancer within the past three years that incurred the need for a HSCT). Mean length of time since cancer diagnosis was 34.30 months (*SD* = 37.29), which is approximately three years. Average relationship length for couples was 28.95 years (*SD* = 15.55).

Procedures

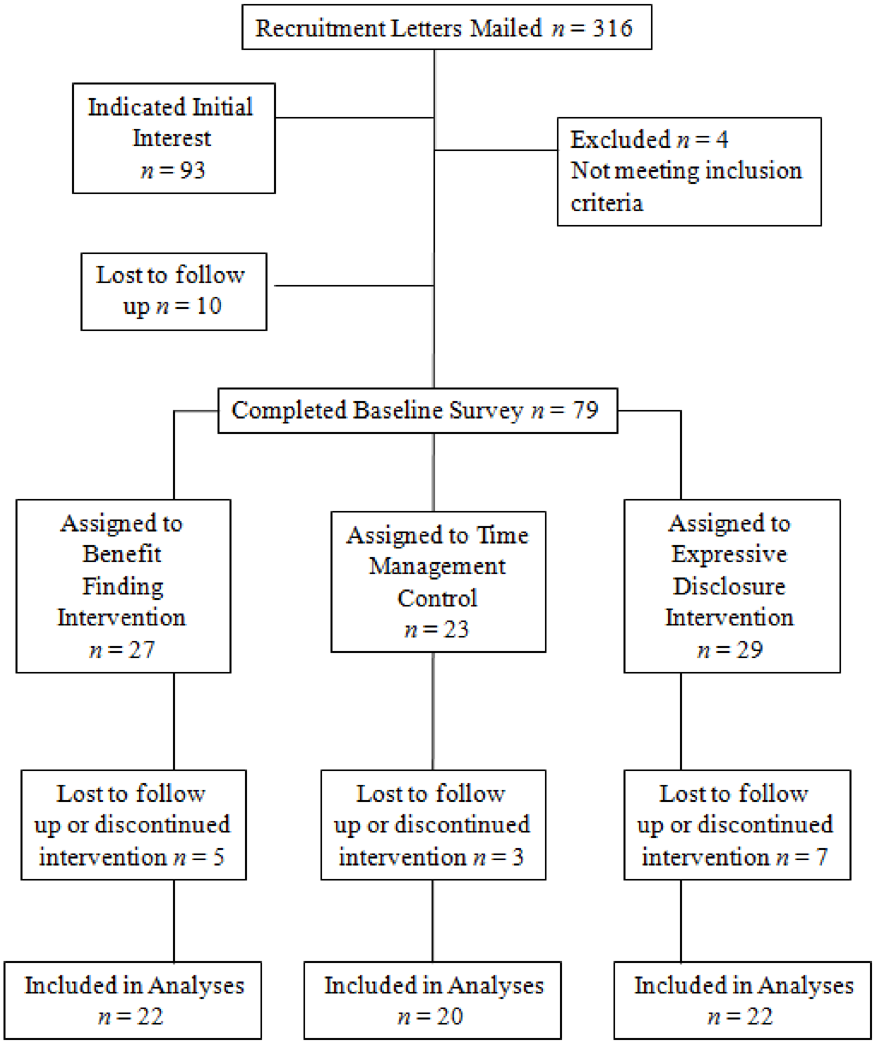
Recruitment. Approval for this study was gained through the Fred Hutchinson Cancer Research Center Institutional Review Board and from the University of Washington. Once study approval was obtained, potential participants (i.e., spousal caregivers of HSCT cancer survivors

1-3 years post-transplant; *N* = 316) were contacted via mailed recruitment letters that detailed the nature of the study and directed interested participants to call the study phone line for more information and/or to set up a study start date. Participants were also informed that they would be contacted by a researcher via telephone to follow-up on the mailed letter and inquire about potential interest. Interested participants were told that they could complete the study at home (or in their place of choice) as long as they had internet access and could complete all procedures away from other individuals.

Assignment to conditions. Of the 316 individuals contacted, 79 individuals (25%) indicated initial interest in participation. These participants were each individually randomly assigned to one of three conditions (expressive disclosure [ED], benefit-finding [BF], or a time-management [TM] control group) using an online random number generator (see www.random.org). Specifically, a discrete sequence generator (for the numerals 1, 2, 3) was employed for each participant as she or her entered the study, with an individual's condition assignment defined as the first number in the randomly generated three-number sequence (1 = Benefit Finding, 2 = Time Management/Control, and 3 = Expressive Disclosure). The website uses atmospheric noise to determine the random numbers as compared to pseudo-random number generators that provide numbers based on built-in seeds, and as such, may be the reason why sequences with a 3 in the first position appeared more often than the other two numerals (due to fluctuations in atmospheric noise). As a result, it turned out that there were more participants assigned to the first and third conditions compared with the second. Despite this limitation, this method allowed for random assignment to conditions on a rolling recruitment basis.

After being assigned to a condition, each participant was emailed a link to a secure online website that s/he could access from any location and where each completed a pretest survey reporting on their levels of perceived caregiver burden, stress, depression, resilience (pretest only), support availability (pretest only) emotion regulation difficulty, empathy, and relational satisfaction. Participants also submitted qualitative descriptions of one naturally-occurring support conversation that had recently occurred between them and their partners. Finally, participants offered qualitative descriptions of the support messages they would offer to their partner in response to a hypothetical scenario. After approximately 20% attrition, 64 participants (with roughly equal proportions in each group) completed the study (see Figure 1 for interest, enrollment, assignment, and follow-up information).

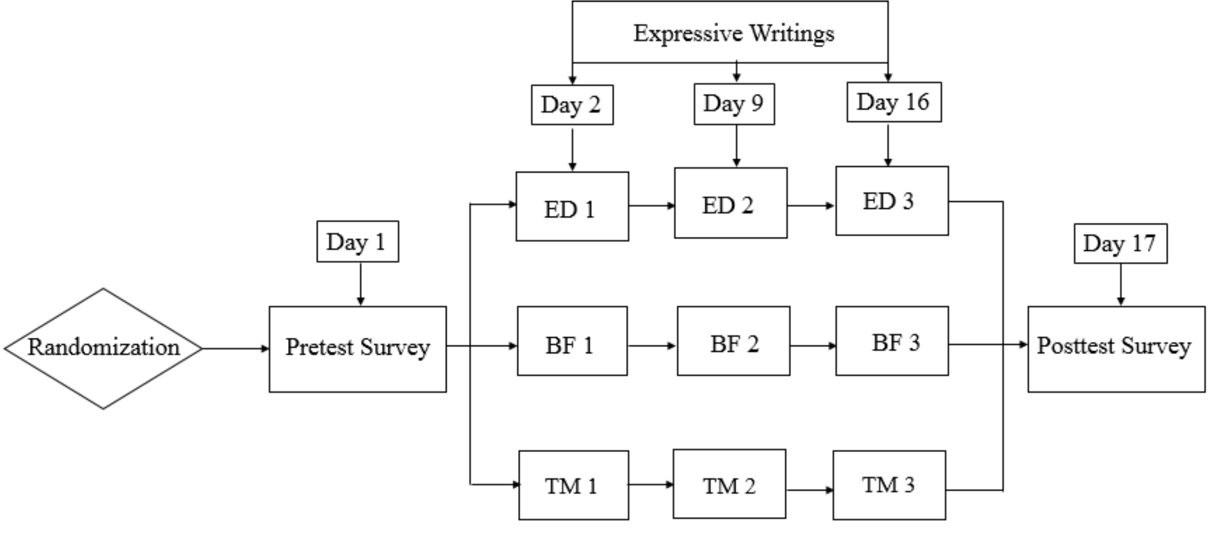
Figure 1.
Participant Interest, Enrollment, Assignment, and Follow up Information



Notes: Reasons given for discontinuation of intervention included difficulty/flare-up with partners' GVHD, partner hospitalization, and partner recurrence of cancer (*n* = 5). Remaining participants were unreachable/lost to follow up (*n* = 6 from expressive disclosure condition, *n* = 1 from control condition, *n* = 3 from benefit-finding condition). The *n* = 4 individuals who were excluded for not meeting inclusion criteria lacked internet access.

Experimental conditions. One day after completing the pretest survey, participants were provided a link to a writing prompt based on the condition to which they were randomly assigned. Participants completed and submitted their response to the prompt online. One week after the first writing prompt was completed, participants were emailed a secure link to a second prompt, and, finally, one week later participants were emailed a secure link to a third prompt (see Appendix A for writing prompts specific to each condition and time period). One day after the third prompt was complete, participants submitted a posttest survey detailing posttest levels of caregiver burden, stress, depression, emotion regulation difficulty, empathy, relational satisfaction. Participants also submitted a description of a recent naturally-occurring support situation between them and their partner. Finally, participants submitted qualitative descriptions of the responses they would provide to their partner in the context of a very similar hypothetical scenario as the one used at pretest. The total time commitment for participants was approximately 4.5 hours over a 17-day span. Because of the substantial time commitment, once participants completed all aspects of the intervention they were compensated $100.00 for their time (see Figure 2 for a visual depiction of the timeline).

Figure 2.
Study Timeline



Notes: ED = Expressive Disclosure treatment group *(n* = 22)*;* BF = Benefit Finding treatment group *(n* = 22)*;* TM = Time Management control group *(n* = 20).

Measures

As described previously, all participants accessed an online link to complete measures electronically at pretest and posttest. All measures were self-reported, and instructions were given for how to appropriately answer each scale or prompt (see Appendix B for all scales and accompanying instructions). The entire set of measures took approximately 60-90 minutes to complete.

Caregiver burden. Participants indicated their degree of burden in caring for their partner using the Caregiver Burden Scale (Zarit, Reever, & Bach-Peterson, 1980). This measure has proved reliable across previous studies, with Cronbach's *alpha* estimates from .88 to .92. (Chou, Chu, Tseng, & Lu, 2003; Thompson, Futterman, Gallagher-Thompson, Rose, & Lovett, 1993). The Caregiver Burden Scale is a 22-item measure that captures level of burden using the following set of 5-point rating scale response options with 0 = Never, to 4 = Always. Sample questions include "Do you feel stressed between caring for your partner and trying to meet other responsibilities for your family or work?" and "Are you afraid of what the future holds for your partner?" The sum across all items is computed for the score. Scores of 0-20 are indicative of minimal burden, 21-40 of moderate burden, 41-60 of moderate to severe burden, and 61-88 of severe burden. Sample pretest reliability for this study was $\alpha = .91$, and at posttest was .93.

Stress. The Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) was used to capture participants' stress levels. This measure has demonstrated strong validity and reliability across various samples, with Cronbach's alphas ranging from .84 to .86 (Cohen et al., 1983). The PSS is a 10-item scale that gauges a person's thoughts and feelings over a particular time period. For this study, participants were asked their extent of agreement with certain thoughts/feelings occurring over the previous three days. Example questions include "In the past three days, how often have you been upset about something happening unexpectedly?" and "In the past three days how often have you felt "nervous" or "stressed"? Responses were on a 6-point rating scale, with 0 = Never, to 4 = Very Often. Summed scores were calculated after reverse scoring negatively worded items. Sample pretest and posttest PSS reliability was α = .92 and .91, respectively.

Depression. The Patient Health Questionnaire (Kroenke, Spitzer, & Williams, 2001) is a 10-item measure designed to capture severity of depression. This measure has demonstrated good sensitivity and strong reliability across numerous studies with alphas ranging from .80 to .92 (Kroenke, Spitzer, Williams, & Lowe, 2010). Participants respond to the broad question: "Over the past three days, how often have you felt bothered by any of the following problems?" for which several items are listed, such as "Little interest or pleasure in doing things" and "Feeling down, depressed, or hopeless." Participants then indicate their response using a 4-point rating scale (0 = Not At all, to 3 = Nearly Every Day). Depression severity is calculated by summing participants' responses, such that scores of 0-4 are indicative of minimal depression, 5-9 of mild depression, 10-14 of moderate depression, 15-19 of moderately severe depression, and 20-27 of severe depression. Sample pretest reliability was estimated at α = .77, and posttest at α = .85.

Resilience. Participants completed The Brief Resilience Scale (Smith, Dalen, Wiggins, Tooley, Christopher, & Bernard, 2008) at pretest only to be used in the first set of analyses examining caregiver well-being and stress buffers (see forthcoming Data Analysis Plan). This scale is considered a valid and reliable estimate of resilience across a number of samples, with alphas ranging from .80 to .91 (Smith et al., 2008). Sample questions included in the scale consist of "I tend to bounce back quickly after hard times" and "I have a hard time making it through stressful events." Responses are captured on a 5-point scale, with 1 = Strongly Disagree, to 5 = Strongly Agree. Sample reliability was α = .93.

Support availability. Availability of support was also captured at pretest only and used in the first set of analyses that examined caregiver well-being and stress buffers (see forthcoming Data Analysis Plan). Support availability was measured using the Multidimensional Scale of Perceived Social Support Scale (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). Studies assessing the MSPSS have found this measure to be both valid and reliable, with alphas estimated from .81 to .94 across friend, family, and significant other subscales (Zimet, Powell, Farley, Werkman, & Berkoff, 1990). The MSPSS is a 12-item scale that gauges individuals' perceptions of the social support they have access to from network members. Sample questions include "There is a special person in my life who cares about my feelings" and "I can count on my friends when things go wrong." Responses are captured on a 5-point scale, with 1 = Strongly Disagree, to 5 = Strongly Agree. Sample reliability was α = .94.

Relational satisfaction. A modified version of the Investment Model Scale (Rusbult, Martz, & Agnew, 1998) was used to capture levels of reported relational satisfaction. The Investment Model Scale captures four separate constructs: relational satisfaction, commitment, investment size, and quality of alternatives, however, only the relational satisfaction subscale was used in the current study. This portion of the investment model scale has demonstrated strong validity and reliability across studies, with alphas estimated from .92 to .95 (Rusbult et al., 1998). This 5-item measure employed an 8-point rating scale, with 1 = Do Not Agree At All, to 8 = Agree Completely. For these items, participants were asked to indicate their level of agreement to statements such as "My partner fulfills my needs for intimacy" and "I feel satisfied with our relationship." Sample reliability was estimated at α = .96 at pretest and .95 at posttest.

Emotion regulation difficulty. Participants' emotion regulation difficulty was captured using the Difficulty in Emotion Regulation questionnaire (DERS; Gratz & Roemer, 2004). This scale has demonstrated robust reliability with estimates above .90 for the entire scale and above .80 for all subscales (Gratz & Roemer, 2004). The DERS measures six different subcomponents of emotion regulation difficulty including non-acceptance of emotional responses, difficulty with emotional goal-directed behavior, difficulty with emotional impulse control, lack of awareness from an emotional standpoint, lack of emotion regulation strategies, and lack of clarity surrounding emotional experience. Participants are asked to indicate their level of agreement with statements such as "I know exactly what I am feeling" and "When I'm upset I can still get things done." Response options were on a 5-point rating scale as follows: 1 = Almost never (0-10%), 2 = Sometimes (11-35%), 3 = About Half the Time (36-65%), 4 = Most of the Time (66-90%), and 5 = Almost Always (91-100%). Higher scores indicate greater difficulty in emotion regulation difficulty.

Sample pretest and posttest reliabilities were $\alpha = .93$ and .92, respectively, for non-acceptance of emotional responses (6 items). For difficulty with emotional goal-directed behavior, reliabilities were .82 and .88 at pretest and posttest (5 items). For difficulty with emotional impulse control, reliabilities were .74 and .70 at pretest and posttest (5 items after the removal of one problematic item). For lack of awareness from an emotional standpoint, reliabilities were .89 and .81 at pretest and posttest (6 items); for lack of emotion regulation strategies , reliabilities were .80 and .81 at pretest and posttest (8 items); and for lack of clarity surrounding emotional experience, pretest and posttest reliabilities were .88 and .81 (5 items). For the purpose of this study, the grand mean across all items was used (35 items). The overall estimated reliability for the entire scale was $\alpha = .93$ at pretest, and .91 at posttest.

Empathy. Participants' empathy was captured using the empathic concern subscale of the Interactional Reactivity Index (Davis, 1980; 1983). This subscale has demonstrated acceptable validity (Davis, 1983) and reliability across studies, with alphas consistently at or above .70 (Davis, 1980). 7-item subscale captures empathic concern by asking participants to rate their level of agreement to statements such as "I often have tender concerned feelings for people less fortunate than me," and "I am often quite touched by the things that I see happen" on a 5-point scale, with 1 = Does Not Describe Me Well At All, to 5 = Describes Me Very Well. Sample reliability for this scale was estimated at $\alpha = .73$ and .82 at pretest and posttest, respectively.

Verbal person-centered support quality. Burleson's (1982) Verbal Person-Centered (VPC) social support framework was used to measure the quality of supportive messages that participants provided, both at pretest and posttest. VPC support was captured in two different ways: first for participant responses to *hypothetical* scenarios, and second for participants' self-reports of recent *naturally-occurring* support conversations. A description of each is provided below, followed by coding/measurement procedures.

Supportive responses to naturally occurring support conversations. Participants were also asked to recall naturally-occurring conversations in which they talked with their partner about an issue that their partner had found distressing over the past three days. Participants free-wrote their responses and were asked to specifically detail what their partner was upset about, what s/he said during the interaction, and what the participant then said in response to their partner's distress. The specific prompt used to garner this information can be found in Appendix C. Latent content analysis techniques (Burleson, 1984) were used to code responses for their degree of support quality using the verbal person-centered coding scheme described below. After participants reported on a naturally-occurring support interaction, they were asked again to gauge the severity of that situation on a 5-point rating scale, with 1 = Not At All Severe, 5 = Extremely Severe. This variable was used as a control variable in the final set of analyses.

Supportive responses to a hypothetical scenario. Participants were asked to free-write their responses to a hypothetical scenario in which their partner was experiencing distress over his/her health. Burleson (1984) notes that when using hypothetical scenarios it is important for situations to be tailored toward specific study populations. Much of the VPC literature using hypothetical scenarios to capture VPC quality has relied on particular samples (e.g., college students; see High & Dillard, 2012) thus existing scenarios often include distressing situations pertinent to a young adult currently attending college (e.g., loss of scholarship, or romantic breakup; see High & Dillard, 2012). For this study, however, the scenario needed to be modified so that it was a realistic situation for caregivers to encounter. As such, the situation that participants responded to in the current study consisted of the following:

> Your partner is feeling upset about his/her health. Although cancer treatments have finished, s/he says that s/he worries a lot of the time about the potential for cancer recurrence. S/he tells you s/he is feeling sad and worried that the cancer may return along with other long term health issues. What do you say to make him/her feel better about this situation?

At both pre and posttest, participants were asked to detail specifically what they would say to their partner if this situation were to occur.

Results were then coded for their degree of VPC support (see Appendix B for full instructions). Specifically, latent content analysis techniques (Burleson, 1984) were used to code responses for their degree of support quality using the verbal person-centered coding scheme described below. After participants detailed their responses to the hypothetical situation, they were asked to respond to two questions designed to capture perceived realism and severity of the hypothetical situation. The first question asked how severe they perceived the situation to be on a 5-point rating scale, with 1 = Not At All Severe, to 5 = Extremely Severe. The second question asked participants how realistic the situation was, again on a 5-point rating scale, with 1 = Not At All Realistic, to 5 = Very Realistic. Severity of the hypothetical scenario was used as a control variable in the final set of analyses, whereas realism of the hypothetical was used to gauge how likely it is that the situation is something that might naturally occur for participants. Perceived realism of the hypothetical was high, with a mean of 4.38 points (*SD* = .88).

VPC coding. VPC for each of the situations was captured specifically using a hierarchical coding system developed by Applegate (1980). Many studies assessing the VPC of support messages do so by having participants provide descriptions of the supportive messages they would provide to others in distress, as is the case with the current investigation (Burleson, 1982; Henningson, Serewicz, & Carpenter, 2009). Applegate's (1980) coding system is then used to explicate the degree of sensitivity and "perspectivity" elucidated in the messages (Burleson, 1984). The coding system consists of nine hierarchically-categorized levels of comfort that reflect the degree to which a distressed person's perspective and feelings are legitimized, acknowledged, or elaborated upon by a support provider. The lower three levels of the nine-category coding system recognize low person-centered support, the middle three categories recognize moderate person-centered support, and the last three categories recognize the presence of high person-centered support (Burleson, 1994). Extensive validation of the VPC coding makes it a useful measure by which changes in support quality can be captured (Applegate, 1980; Burleson, 1985; High & Dillard, 2012).

Two coders, who received approximately three to four hours of training in VPC coding, assessed support provision messages for their degree of support quality (see Appendix D for codebook). This amount of training is consistent with previous research using coders to assess VPC quality (e.g., Faw, 2014). Pre- and posttest hypothetical and naturally-occurring support messages were each coded for VPC; however, coders were blind to both condition and pre- or posttest nature of messages. All messages were coded on a 9-point scale, with higher scores indicative of high VPC and vice versa, consistent with previous research (see Applegate, 1980; Burleson, 1984; High & Dillard, 2012).

Intercoder reliability was enhanced by having coders each first separately code 5% of cases and then come together to discuss disagreements in VPC coding. Once differences were identified and reconciled, they coded an additional 10% of cases on their own and then compared ratings to ensure acceptable levels of agreement. Intercoder reliability was calculated across 15% of the combined data, with a total agreement of 83.3%, Scott's pi = .78. The Pearson bivariate correlation between coder ratings was estimated at $r = .97$, and the intraclass correlation coefficient was also estimated at .97. Because intercoder agreement was above the standard criterion of .70, the remaining data were coded separately.

Data Analysis Plan

The first set of analyses was conducted to assess caregiver reports of psychological well-being. Specifically, pretest descriptive statistics were used to answer Research Question 1, which measured reports of caregiver psychological well-being compared to the general population. Next, multiple regression analyses with standard predictor entry were used to evaluate Hypotheses 1-3, which tested whether previously established stress buffers uniquely and positively predicted reports of caregiver burden, depression, and stress, respectively. These hypotheses were also tested using pretest data only, to capture relationships among variables prior to any intervention effects.

The second set of analyses tested expressive writing intervention effects on pretest-posttest growth in caregiver well-being and support quality. These were done in stages. First, manipulation checks (to ascertain whether participants experienced differences across expressive writings types) were conducted using one-way ANOVAs to compare group differences on the degree of difficulty and meaningfulness participants felt after completing their assigned condition (some form of expressive writing). Finally, differences between groups were tested using two sets of orthogonal a priori comparisons to determine whether treatment expressive writing cultivated increases in various forms of caregiver well-being and caregiver support quality (two writing treatments compared to each other, and combined treatments compared to the control writing condition) (Hypotheses 4-11 and Research Questions 2-10).

These analyses were done using sequential predictor entry. In general, Block 1 included the group and pretest main effects, and Block 2 included the interaction effect between group and pretest. (This use of blocking allows for testing the incremental variance accounted for by the interaction term.) The exception to this was for modeling support quality: For these two outcomes, perceived severity of the support situation was controlled for in Block 1 before testing the main effects and interaction of group and pretest. All analyses were conducted in *SPSS 19*. For ease of results interpretation, in all regression analyses, metrical predictors were standardized (*z*-scores), and groups were effect coded.

Chapter III: Results

Caregiver Well-being

The first set of analyses were designed to better understand caregiver burden, depression, and stress for participants, as hematopoietic stem cell transplant (HSCT) cancer survivor caregivers are currently an understudied population and we know little about their reported psychological functioning. Specifically, Research Question 1 examined whether HSCT cancer survivor caregivers reported relatively high or relatively low mean pretest scores on overall caregiver burden, depression levels, and stress levels compared to the general population. By garnering an answer to this question we can better understand the average reported well-being before testing whether caregiver well-being can be improved upon through the use of expressive writing.

Reports of caregiver burden were assessed first. As discussed in Chapter II, the Caregiver Burden scale consists of four categories of burden that participants can fall into: 0-20 (little or no burden), 21-40 (mild to moderate burden), 41-60 (moderate to severe burden), and 61-88 (severe burden). Results of descriptive statistics revealed that prior to the intervention, caregivers' predominately fell into the "mild to moderate" burden category, with mean scores at the low end of the spectrum (*M* = 23.71, *SD* = 12.29). The maximum burden score reported was 57 points, indicating moderate to severe caregiver burden, but this was not typical across the sample.

Reported level of depression was evaluated next. Depression scores could fall into five possible categories: 1-4 (minimal depression), 5-9 (mild depression), 10-14 (moderate depression), 15-19 (moderately severe depression), and 20-27 (severe depression). Participants' mean depression score at pretest was 5.09 points (*SD* = 3.52), indicating that the majority of participants reported experiencing mild levels of depression. Maximum level of reported depression was 13 points, falling into the moderate category; however, this was not typical across the sample. These results indicate that the HSCT caregivers in this sample experience relatively mild levels of depression.

Finally, stress levels of participants were examined. Reports of stress can range from 0-40 points; however, average stress for this sample was estimated at 13.21 points (*SD* = 7.29). The minimum stress score was 4, and the maximum was 34, indicating that, although participants certainly ranged in reported stress levels, the average for this sample was similar to the average reported by individuals in the general population (Cohen, Kamarck, & Mermelstein, 1983).

Caregiver Well-being and Associated Stress Buffers

The next goal of this study was to assess whether known psychological stress buffers, including resilience, perceived support availability, and relational satisfaction, uniquely and negatively predicted reports of caregiver lack of well-being in terms of burden, depression, and stress. Descriptive statistics and zero-order correlations across the entire sample among these variables (at pretest) can be found in Table 2.

Table 2.

Correlations among Caregiver Well-being and Known Stress Buffers

Measure	*M*	*(SD)*	1.00	2.00	3.00	4.00	5.00	6.00
1. Burden	23.72	12.29	--					
2. Stress	1.18	.84	.55 **	--				
3. Depression	5.09	3.53	.32 *	.43 **	--			
4. Resilience	3.77	.89	-.20	-.51 **	-.25 *	--		
5. Support Availability	3.97	.85	-.20	-.27 *	-.29 *	.37 **	--	
6. Relational Satisfaction	5.89	1.92	-.57 **	-.34 **	-.19	.06	.57 **	--

Notes. *N* = 64. Correlations are among pretest data only. * $p < .05$, ** $p < .01$, *** $p < .001$.

Hypotheses 1-3 predicted that participants' degree of resilience, support availability, and relational satisfaction would negatively predict reports of caregiver burden, stress, and depression respectively. As seen in Table 2, resilience and support availability both negatively predict stress and depression, whereas relational satisfaction negatively predicts caregiver burden and stress. This said, it is unclear which of the predictors uniquely predict psychological outcomes when controlling for each other's presence, particularly given that support availability is significantly related to resilience and relational satisfaction, more so than it is to any of the three outcomes. Thus, to test the hypotheses and determine which, if any, of the buffers is uniquely predictive, a series of multiple regressions were performed with resilience, support availability, and relational satisfaction as predictors, and caregiver burden, stress, and depression as three separate criterion variables. The results are presented together in Table 3. As can be seen, the model predicting caregiver burden (Hypothesis 1) indicated that resilience and relational satisfaction each uniquely and negatively predicted reported caregiver burden: For every standard deviation increase in each, there was an expected decrease of 3.26 and 8.95 points in burden, respectively, holding all else constant. This was somewhat surprising given the lack of a direct relationship between resilience and burden (Table 2); however, after controlling for shared variance each of these buffers, resilience and relational satisfaction were unique negative predictors of feelings of burden. As such, Hypothesis 1 was partially supported.

The second regression for Hypothesis 2 predicted levels of stress for caregivers. Similar to the results for burden, model estimates (see Table 3) indicated that resilience and relational satisfaction uniquely and negatively predict reported levels of stress for this population: For every standard deviation increase in each, there was an expected decrease of .46 and .33 points in stress, respectively. Unlike the model for burden, however, support availability did not uniquely predict levels of stress; even though it had a direct relationship (see Table 2), after controlling for the shared variance among support availability and relational satisfaction, support availability was no longer predictive of caregiver stress. As such, Hypothesis 2 was only partially supported.

Results for the third regression model assessing predictors of depression (see Table 3) revealed that relational satisfaction, resilience, and support availability did not uniquely predict level of depression, and therefore Hypothesis 3 was not supported. This said, both resilience and support availability did have direct relationships with caregiver depression (see Table 2), but they share too much variance with each other (and too little overall with the outcome) to be unique indicators.

Table 3.

Multiple Regression with Psychological Stress Buffers Predicting Caregiver Well-being

	R^2_{total}	$R^2_{adjusted}$	*F* (3,60)	*p*	*b*	*(SE)*	*t(60)*	*p*	sr^2
Burden	.40	.37	13.56	.00					
Mean					23.72	1.22	19.51	<.001	
Resilience					-3.26	1.34	-2.43	.02	.06
Support Availability					3.80	1.63	2.33	.02	.05
Relational Satisfaction					-8.95	1.52	-5.90	<.001	.35
Stress	.37	.34	11.83	.00					
Mean					1.18	.09	13.80	<.001	
Resilience					-.46	.09	-4.84	<.001	.25
Support Availability					.13	.11	1.12	.27	.01
Relational Satisfaction					-.33	.11	-3.11	<.001	.10
Depression	.11	.07	2.58	.06					
Mean					5.09	.43	11.98	<.001	
Resilience					-.63	.47	-1.35	.18	.03
Support Availability					-.65	.57	-1.13	.26	.02
Relational Satisfaction					-.28	.53	-.52	.60	.00

Notes. *N* = 64. Pretest variables used in analyses. Predictors standardized.

Expressive Writing Intervention Effects

Descriptive statistics or intervention conditions. The next, and primary, set of analyses for this study assessed the efficacy of expressive writing in improving participants' psychological well-being to determine whether this resulted in improved support provision quality. Means and standard deviations for the benefit finding (BF), expressive disclosure (ED), and time-management (TM) control conditions on each pretest and posttest variable are given in

Table 4. As expected (given the random assignment of individuals to conditions), simple 2-group *t*-tests comparing each pair of groups on each pretest measure showed no significant differences (all *p*s > .05). Further, a one-way ANOVA indicated that no significant differences arose across conditions for pre- and posttest perceptions of severity for hypothetical or naturally occurring support encounters (all *p*s > .05). (See Table 5 for pretest and posttest correlations among all variables across the entire sample.)

Table 4.

Descriptive Statistics Across Conditions for Caregivers

Measure	BF Treatment (*n* = 22)				ED Treatment (*n* = 22)				TM Control (*n* = 20)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	M	*(SD)*	*M*	*(SD)*	*M*	*(SD)*	*M*	*(SD)*	*M*	*(SD)*	*M*	*(SD)*
Burden	26.90	26.91	23.50	13.12	24.00	11.15	22.09	11.44	19.90	12.88	20.40	14.77
Stress	1.32	.94	1.27	.83	1.31	.90	1.26	.75	.87	.56	1.04	.71
Depression	5.09	3.79	3.59	3.20	5.05	3.18	4.36	2.83	5.15	5.15	5.20	3.99
Emotion Regulation	1.79	.49	1.84	.38	2.02	.67	2.02	.56	1.62	.46	1.80	.60
Empathy	4.35	.58	4.70	.38	4.40	.58	4.36	.60	4.56	.51	4.76	.45
Relational Satisfaction	5.88	2.02	6.04	1.98	5.30	1.98	5.62	1.88	6.55	1.59	6.43	1.81
VPC Hypothetical	4.91	2.06	5.27	2.09	4.73	2.12	5.32	2.06	4.95	1.50	4.55	1.79
Hypothetical Severity	2.36	1.65	3.59	1.05	1.95	1.25	3.45	1.18	2.85	1.50	3.80	1.01
VPC Natural	4.45	1.99	6.00	1.72	4.36	1.89	4.82	1.68	4.05	1.79	5.55	1.76
Natural Severity	3.24	1.26	2.73	1.08	2.64	1.68	2.32	1.39	3.05	1.57	3.20	1.32

Notes. BF = Benefit-finding treatment condition; ED = Expressive disclosure treatment condition; TM = Time-management control condition; Hypothetical Severity measures severity of hypothetical situation; Natural Severity measures severity of naturally occurring support; VPC = Verbal person-centered support (used to measure support quality).

Table 5.

Descriptives and Zero-Order Correlations across all Conditions at Prettest and Posttest

	M	*SD*	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
Pretest																						
1. Burden	23.72	12.29	--																			
2. Stress	1.18	.84	.56 **	--																		
3. Depression	5.09	3.52	.32 *	.43 **	--																	
4. Emotion Regulation	1.82	.56	.38 **	.60 **	.30 *	--																
5. Empathy	4.43	.56	.01	-.01	-.12	.09	--															
6. Relational Satisfaction	5.89	1.92	-.57 **	-.34 **	-.19	-.31 *	.08	--														
7. VPC Hypothetical	4.86	1.90	.28 *	.20	.17	.02	.21	.06	--													
8. Hypothetical Severity	2.38	1.50	.02	.05	.04	.09	.17	.14	.06	--												
9. VPC Natural	4.30	1.87	.20	.39 **	.20	.26 *	.17	-.01	.31 *	-.09	--											
10. Natural Severity	3.67	1.41	.16	.29 *	.21	.06	.13	.01	.21	.33 **	-.04	--										
Posttest																						
11. Burden	22.05	12.97	.92 **	.54 **	.33 **	.36 **	-.05	-.54 **	.23	.01	.14	.14	--									
12. Stress	1.18	.76	.63 **	.82 **	.42 **	.59 **	-.03	-.32 **	.11	.09	.27 *	.27 *	.67 **	--								
13. Depression	4.36	3.36	.40 **	.39 **	.78 **	.21	-.03	-.29 *	.15	.04	.21	.15	.41 **	.48 **	--							
14. Emotion Regulation	1.89	.52	.44 **	.50 **	.31 *	.82 **	-.06	-.30 *	-.06	.08	.12	.07	.48 **	.60 **	.28 *	--						
15. Empathy	4.60	.51	.06	-.10	-.25 *	-.15	.55 **	.18	.01	.32 *	.11	.14	.00	-.06	-.07	-.25 *	--					
16. Relational Satisfaction	6.02	1.89	-.67 **	-.38 **	-.20	-.33 **	.07	.91 **	.04	.06	.08	-.06	-.66 **	-.43 **	-.28 *	-.36 **	.09	--				
17. VPC Hypothetical	5.06	1.99	.29 *	-.08	-.08	-.09	.10	.01	.49 **	.05	.21	.10	.22	.09	-.12	-.11	.03	-.10	--			
18. Hypothetical Severity	3.61	1.08	.34 **	.36 **	.22	.19	.17	.01	.30 *	.31 *	.32 *	.34 **	.37 **	.39 **	.31 *	.17	.24	.00	.07	--		
19. VPC Natural	5.45	1.76	.09	.02	-.16	-.27 *	-.04	.07	.15	-.09	.26 *	.06	.10	-.02	-.07	-.27 *	.41 **	.03	.16	.04	--	
20. Natural Severity	3.25	1.46	.12	.29 *	.17	.19	.04	.14	.16	.27 *	.10	.45 **	.22	.35 **	.18	.17	.24	.05	.04	.42 **	.24	--

Note. *N* = 64. Emotion Regulation = Emotion Regulation Difficulty; VPC = Verbal person-centered support (used to measure support quality)

* *p* < .05, ** *p* < .01, *** *p* < .001.

Intervention manipulation checks. Prior to the analyses of intervention effects, a manipulation check was conducted to ensure that participants in each condition reported different experiences based upon what they were assigned. Specifically, at posttest, participants answered five questions utilized in other expressive writing studies (see Greenberg & Stone, 1992; King & Miner, 2000; Romero, 2008). In particular, participants were asked to rate how upsetting, meaningful, emotional, and difficult their writings were using a rating scale of 1 (Not at All) to 4 (Very Much). They were also asked how much they valued confidentiality of responses. Descriptive statistics for these data are given in Table 6.

Analyses of variance with follow-up Tukey’s pairwise contrasts to control for Type I error inflation showed that participants in the expressive disclosure (ED) condition rated their writings as significantly more upsetting, meaningful, emotional, and difficult than the time management (TM) control condition (*p*s < .01), and, similarly, they valued having their writings stay anonymous significantly more than those in the TM control condition ($p < .01$). Participants in the benefit finding (BF) condition rated their narratives as significantly more meaningful and emotional than did participants in the TM control condition (*p*s < .05), but they did not differ from the control condition on how upsetting and difficult the writings were nor did they differ from on how much they valued the writings staying anonymous. There were no significant differences between the two treatments themselves. Together, these results suggest that the manipulation was effective in prompting treatment conditions to write/experience more about emotional aspects of their spouse’s HSCT process.

Table 6.
Manipulation Check: Participant Ratings of Expressive Writings

	Benefit Finding		Expressive Disclosure		Control		
	M	*SD*	*M*	*SD*	*M*	*SD*	*F*
Upsetting	2.18	1.05	2.59	1.29	1.50	.76	5.54 **
Meaningful	3.14	.68	3.45	.96	2.40	1.14	6.58 **
Emotional	3.05	.88	3.14	.94	2.10	1.07	6.01 **
Difficult	2.14	.88	2.77	1.30	1.60	.75	6.98 **
Anonymous	2.68	.94	3.23	1.15	2.20	1.10	4.84 *

Note. $N = 64$. * $p < .05$, ** $p < .01$, *** $p < .001$.

For the final section of analyses, the data analysis plan called for the intervention effects to be tested using a priori contrasts: When evaluating pre- and posttest change between the benefit-finding (BF) and expressive disclosure (ED) conditions compared to the time-management (TM) control condition, the treatments were coded as +1 and the TM control condition was coded as -1. When evaluating differences between the two treatments themselves (i.e., not using the TM control condition in these analyses), the benefit finding (BF) condition was coded as +1, and the expressive disclosure (ED) condition coded as -1.

Pretest-Posttest Change in Caregiver Burden, Stress, and Depression

The first set of intervention-related hypotheses predicted that, following the intervention, the treatment conditions (BF and ED) would report significantly lower caregiver burden (Hypothesis 4), stress (Hypothesis 5), and depression levels (Hypothesis 6), compared to the TM control condition. Alternately, the first set of research questions inquired as to whether significant differences in caregiver burden (Research Question 2), stress (Research Question 3), and depression (Research Question 4) arose between the BF and ED treatment conditions. The nature of these relationships are each evaluated below, such that effects between treatment and control conditions on burden are tested first, and are followed by the assessment of whether differential effects arose between the two treatment conditions on burden. This same organizational scheme was then used to evaluate changes in stress and depression, respectively.

Burden

Treatments vs. TM Control. To evaluate Hypothesis 4, a regression model tested effects on change in caregiver burden between treatment and control conditions following the intervention, controlling for pretest (in Block 1) as well as testing whether treatment effects were moderated by pretest (Block 2). As shown in Table 7, neither Block 1 (main effects of pretest and group) nor Block 2 was significant. Results of Block 2, which included all predictors, indicated that only the intercept was significant, which suggests that, *across all groups*, mean caregiver burden significantly declined by 1.94 points from pretest to posttest. As such, Hypothesis 4 was not supported.

Table 7.
Model Results for Change in Burden: Treatment Conditions vs. Control Condition

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	*b*	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	*b*	sr^2
Model Fit	.02	.00			.01	.03	.00		
Coefficients									
Intercept			-1.95 *					-1.94 *	
Condition			-.80	.02				-.80	.02
Pretest			-.34	.00				-.11	.00
Cond*Pre								-.46	.00

Note. N = 64. Block 1 F-change test df = 2,61; Block 2 df = 1,60; Condition effect-coded with 1=treatments, -1=control; pretest standardized.
* $p < .05$, ** $p < .01$, *** $p < .001$.

BF vs. ED treatments. To evaluate whether differences arose between the two treatment conditions on burden (Research Question 2), a regression model tested effects on change in caregiver burden between the treatment conditions, controlling for pretest (in Block 1) as well as testing whether treatment effects were moderated by pretest (Block 2). As shown in Table 8, Block 1 of the model, which included the main effects of pretest and condition, did not account for significant variation in posttest caregiver burden scores, $R^2 = .02$, $p > .05$. Block 2, which included the interaction between pretest and condition, was also not significant ($p > .05$). Results of the final model, which included all predictors, indicated that only the intercept was significant, which suggests that, across both treatment conditions, mean caregiver burden significantly decreased by 2.78 points from pretest to posttest.

Table 8.

Model Results for Change in Burden: Benefit Finding vs. Expressive Disclosure

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2
Model Fit	.02	.00			.00	.02	.00		
Coefficients									
Intercept			-2.75 ***					-2.78 ***	
Treatment			.23	.00				.24	.00
Pretest			-.60	.02				-.68	.02
Treat*Pre								-.04	.00

Note. $N = 43$. Block 1 F-change test $df = 2,41$; Block 2 $df = 1,40$; Treatment effect-coded with 1=benefit finding, -1=expressive disclosure; pretest standardized.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Stress

Treatments vs. TM Control. Hypothesis 5 predicted that expressive disclosure and benefit finding (combined treatment conditions) would report significant decreases in reported stress following the intervention when compared to the time-management control condition. To evaluate this hypothesis, a regression model testing effects on pretest-posttest change in stress was conducted. As shown in Table 9, Block 1 (main effects of pretest and condition) did account for significant variation in stress, $R^2 = .43$, $p < .001$, and Block 2, which included the interaction between pretest and condition, was also significant ($p < .001$). Results of the final model, which included all predictors, indicated that the intercept was significant, suggesting that, across all conditions, mean stress scores significantly declined by .19 points from pretest to posttest. Further, Block 2 indicated that the combined BF and ED treatment conditions trended toward significantly more increase in stress levels (.24 points) compared to the TM control condition, holding all else constant ($p < .10$). The model estimate indicated that pretest negatively predicted change, suggesting that for every standard deviation increase in pretest stress, there was an expected decrease of .46 point in stress from pretest to posttest. This negative relationship is a natural and common occurrence: Individuals who start out with higher scores have less room to increase than those who start out with lower scores (Wang, Zhang, McArdle, & Salthouse, 2009). Finally, results indicated that the interaction between pretest depression and condition was significant.

Table 9.

Model Results for Change in Stress: Treatment vs. Control Conditions

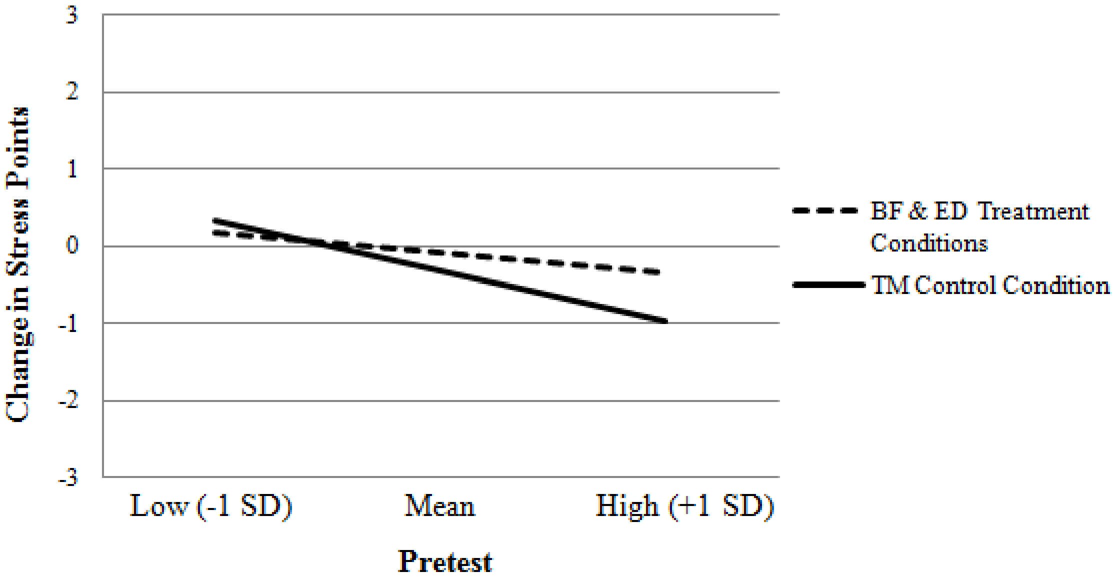
	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2
Model Fit	.43 ***	.41			.08 ***	.51 ***	.48		
Coefficients									
Intercept			-.21 **					-.19 **	
Condition			.13 †	.03				.12 †	.03
Pretest			-.43 ***	.38				-.46 ***	.43
Cond*Pre								.20 **	.08

Note. $N = 64$. Block 1 F-change test $df = 2,61$; Block 2 $df = 1,60$; Condition effect-coded with 1 = treatment conditions, -1=control condition; pretest standardized.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

To understand the nature of the interaction in the above model, I computed model-implied values for treatment and control conditions across three levels of pretest (-1 *SD*, mean, and +1 *SD*). As shown in Figure 3, the interaction indicates that the TM Control condition had slightly more decline in stress than did the treatment conditions for individuals who had relatively higher pretest stress levels. Overall, however, Hypothesis 5 was not supported.

Figure 3.
Interaction between Pretest and Condition on Pre-Post Change in Stress



BF vs. ED treatments. The next regression evaluated Research Question 3, which determined whether changes in stress differed between the two treatment conditions. As shown in Table 10, Block 1 of the model, which included the main effects of pretest and condition, did account for significant variation in posttest stress scores, $R^2 = .26$, $p < .01$. Block 2, which included the interaction between pretest and condition, was not significant ($p > .05$). As seen before, pretest stress scores significantly negatively predicted posttest stress scores (there was an expected decline of .22 points in stress from pretest to posttest for every standard deviation increase in pretest stress).

Table 10.

Model Results for Change in Stress: Benefit Finding vs. Expressive Disclosure

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	*b*	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	*b*	sr^2
Model Fit	.26 **	.23			.03	.29 **	.23		
Coefficients									
Intercept			-.07					-.04	
Treatment			-.02	.00				-.02	.00
Pretest			-.24 ***	.26				-.22 **	.19
Treat*Pre								.13	.03

Note. N = 43. Block 1 F-change test df = 2,41; Block 2 df = 1,40; Treatment effect-coded with 1=benefit finding, -1=expressive disclosure; pretest standardized.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Depression

Treatments vs. TM Control. Hypothesis 6 predicted expressive disclosure and benefit finding combined treatment conditions) would report significant decreases in reported depression following the intervention when compared to the time-management control condition. Block 1 of the regression model, which included the main effects of pretest and condition, did account for significant variation in posttest depression scores, $R^2 = .21$, $p < .01$ (Table 11). Block 2, which included the interaction between pretest and condition, was also significant ($p < .05$; Table 10). Results of the final model, which included all predictors, indicated that the combined treatment conditions reported significantly more decline (by 1.16 points) in depression level, on average, compared to the TM control condition, holding all else constant.

Additionally, pretest negatively predicted change, indicating that for every standard deviation increase in pretest depression scores, there was an expected decline of .70 points in depression from pretest to posttest. Finally, the model indicated that the interaction between pretest depression and condition was significant.

Table 11.

Model Results for Change in Depression: Treatment Conditions vs. Control Condition

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	*b*	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	*b*	sr^2
Model Fit	.21 **	.18			.07 *	.28 **	.25		
Coefficients									
Intercept			-.52 †					-.53 †	
Condition			-.58 *	.06				-.58 *	.06
Pretest			-.90 **	.16				-.70 *	.08
Cond*Pre								-.64 *	.07

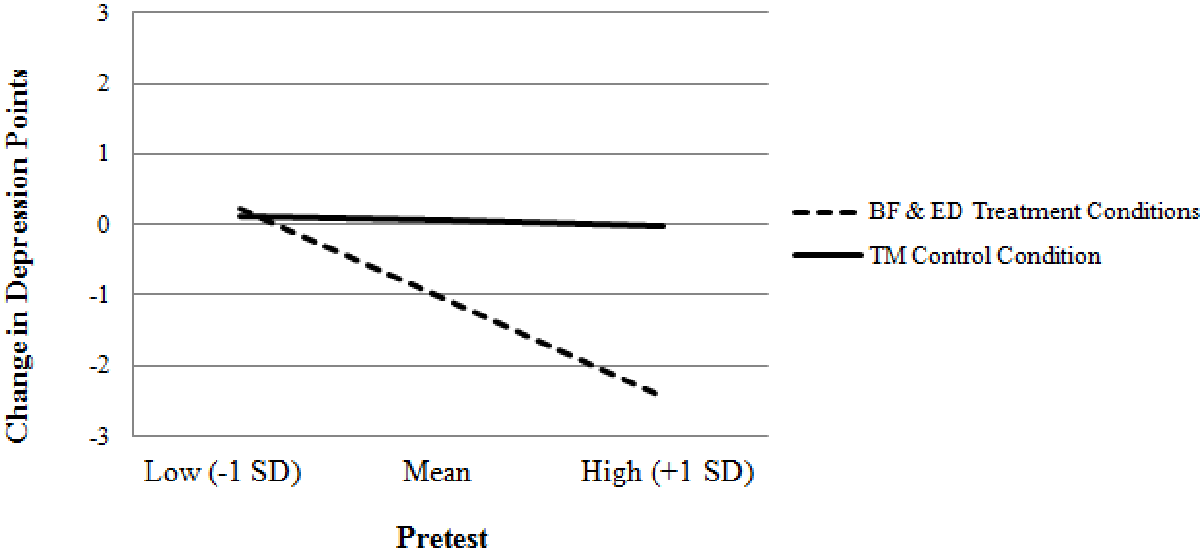
Note. *N* = 64. Block 1 *F* -change test *df* = 2,61; Block 2 *df* = 1,60; Condition effect-coded with 1=treatments, -1=control; pretest standardized.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

To understand the nature of the interaction in the above model, I computed model-implied values for treatment and control conditions across three levels of pretest (-1 *SD*, mean, and +1 *SD*). As shown in Figure 4, the interaction is ordinal, indicating that treatment effects (better declines in depression) were greatest for individuals with more depression at pretest. Overall, results indicated support for Hypothesis 6.

Figure 4.

Interaction between Pretest and Condition on Pre-Post Change in Depression



BF vs. ED treatments. The next regression assessed whether changes in posttest depression arose between the BF and ED treatment conditions (Research Question 4). As shown in Table 12, Block 1 of the model, which included the main effects of pretest and condition did account for significant variation in posttest depression scores, $R^2 = .30$, $p < .001$. Block 2, which included the interaction between pretest and condition, showed a trend ($p < .10$). Results of the final model, which included all predictors, indicated that the intercept was significant (mean depression across both treatment conditions significantly decreased by .78 points from pretest to posttest across both groups). Additionally, pretest negatively predicted change, indicating that for every standard deviation increase in pretest depression scores there was an expected decline of 1.02 points in depression from pretest to posttest.

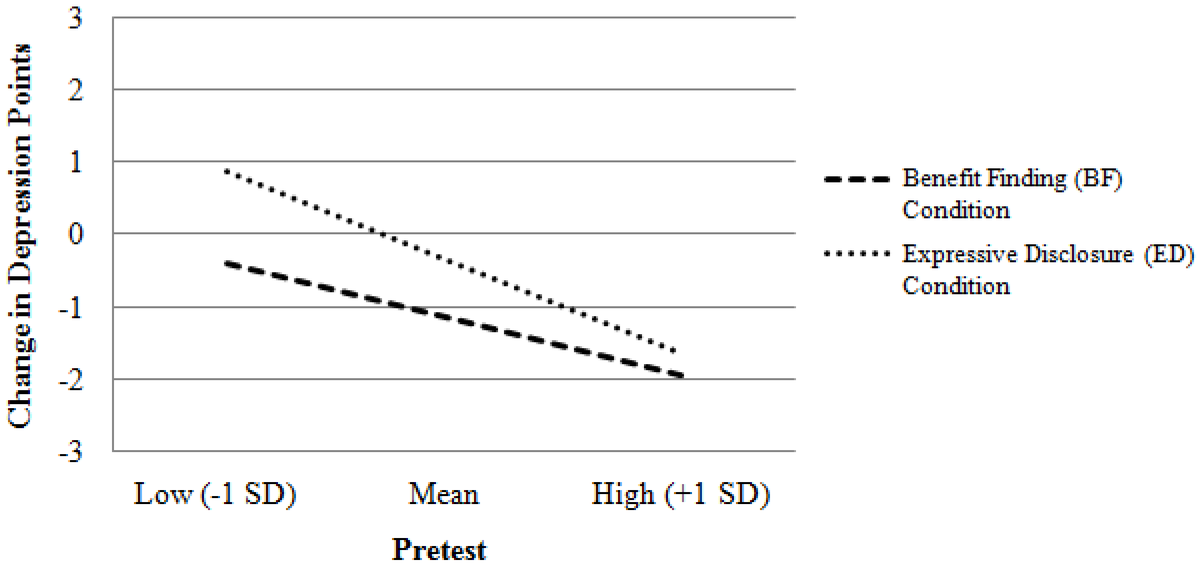
Table 12.
Model Results for Change in Depression: Benefit Finding vs. Expressive Disclosure

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2
Model Fit	.30 ***	.27			.05 †	.35 ***	.31		
Coefficients									
Intercept			-1.09 **					-.78 *	
Treatment			-.40	.03				-.39	.02
Pretest			-1.31 ***	.28				-1.02 **	.13
Treat*Pre								.24 †	.05

Note. $N = 43$. Block 1 F-change test $df = 2,41$; Block 2 $df = 1,40$; Treatment effect-coded with 1=benefit finding, -1=expressive disclosure; pretest standardized.
† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Because the model results indicated that the interaction between pretest depression and condition trended toward significance, I computed model-implied values for both treatment conditions across three levels of pretest (-1 *SD*, mean, and +1 *SD*) (see Figure 5).

Figure 5.
Interaction between Pretest and Treatment Condition on Pre-Post Change in Depression



The interaction in Figure 5 indicates that the difference between conditions (favoring the BF condition) was greater for lower levels of pretest depression. In other words, there is a statistical trend for BF to yield greater benefits over ED for individuals presenting less initial depression.

Pretest-Posttest Change in Emotion Regulation Difficulty

Treatments vs. TM control. Hypothesis 7 predicted that, following the intervention, the combined BF and ED treatment conditions would report significant decreases in emotion regulation difficulty compared to the TM control condition. A regression model assessed effects on change in emotion regulation difficulty between treatment and control conditions. As shown in Table 13, Block 1 of the model, which included the main effects of pretest and condition, did account for significant variation in posttest emotion regulation difficulty scores, $R^2 = .19$, $p < .01$. Block 2, which included the interaction between pretest and condition, was also significant ($p <$

.05). Results of the final model indicated that mean emotion regulation difficulty significantly increased across all conditions by .12 points from pretest to posttest.

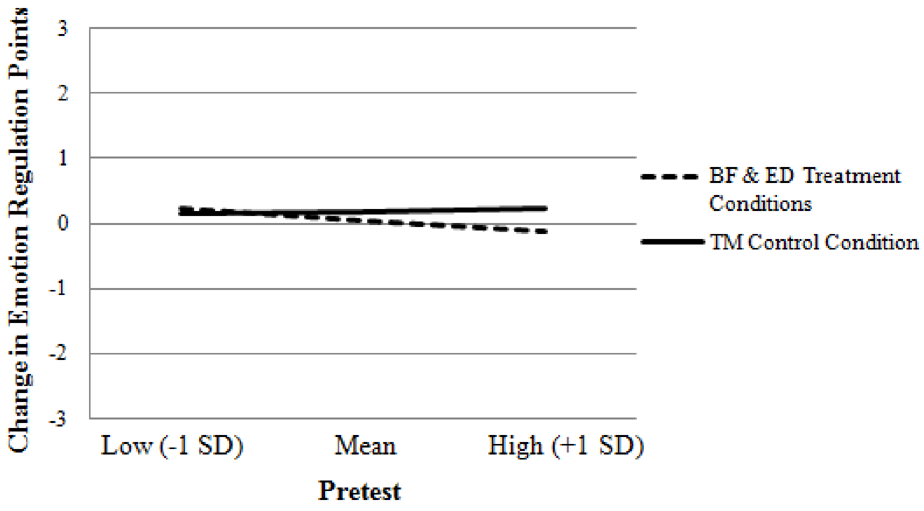
Table 13.
Model Results for Change in Emotion Regulation: Treatment Conditions vs. Control Condition

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2
Model Fit	.19 **	.16			.05 *	.24 **	.20		
Coefficients									
Intercept			.10 *					.12 **	
Condition			-.05	.02				-.07	.03
Pretest			-.13 **	.15				-.07	.03
Cond*Pre								-.10 *	.05

Note. $N = 64$. Block 1 F-change test $df = 2,61$; Block 2 $df = 1,60$; Condition effect-coded with 1=treatments, -1=control; pretest standardized.
* $p < .05$, ** $p < .01$, *** $p < .001$.

Moreover, results of the model above indicated that the interaction between pretest emotion regulation and condition was significant. To understand the nature of the interaction, I computed model-implied values for treatment and control conditions across three levels of pretest (-1 *SD*, mean, and +1 *SD*) (see Figure 6).

Figure 6.
Interaction between Pretest and Condition on Pre-Post Change in Emotion Regulation Difficulty



As shown in Figure 6, the interaction indicates that the treatment benefits (better declines in emotion regulation difficulty) were only present for individuals with more emotion regulation difficulty at pretest. Overall, however, results indicated that Hypothesis 7 was partially supported.

BF vs. ED treatments. Research Question 5 sought to determine whether there were significant differences in emotion regulation difficulty scores between the BF and ED treatment conditions at posttest. A regression was used to assess changes in posttest emotion regulation difficulty between treatments. As shown in Table 14, Block 1 of the model which included the main effects of pretest and condition, did account for significant variation in emotion regulation change, $R^2 = .33$, $p < .001$. Results of the final model, which included all predictors, indicated no significant pretest-posttest change ($p > .05$), no treatment effect, and no treatment by pretest interaction; only pretest emotion regulation difficulty negatively predicted change from pretest to posttest on emotion regulation difficulty (for every standard deviation increase in pretest, there was an expected decline of .15 points in change from pretest to posttest.)

Table 14.

Model Results for Change in Emotion Regulation: Benefit Finding vs. Expressive Disclosure

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2
Model Fit	.33 ***	.30			.03	.36 ***	.32		
Coefficients									
Intercept			.03					.06	
Treatment			-.01	.00				-.01	.00
Pretest			-.18 ***	.33				-.15 ***	.20
Treat*Pre								.18	.03

Note. $N = 43$. Block 1 F-change test $df = 2,41$; Block 2 $df = 1,40$; Treatment effect-coded with 1=benefit finding, -1=expressive disclosure; pretest standardized.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Pretest-Posttest Change in Empathy

Treatments vs. control. Hypothesis 8 posited that, following the intervention, both treatment conditions would report significant increases in empathy compared to the control condition. As shown in Table 15, Block 1 of the regression model for pretest-posttest change in empathy was significant, $R^2 = .31$, $p < .001$, but Block 2 (interaction term) was not. The final results indicated that that, across all conditions, mean empathy significantly increased by .19 points from pretest to posttest, and that pretest once again negatively predicted change. However, there was no difference between treatments and the TM control condition, nor was there an interaction between condition and pretest. Hence, these results suggest Hypothesis 8 was not supported.

Table 15.

Model Results for Change in Empathy: Treatment vs. Control Conditions

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	*b*	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	*b*	sr^2
Model Fit	.31 ***	.29			.02	.33 ***	.29		
Coefficients									
Intercept			.20 **					.19 **	
Condition			-.07	.02				-.06	.01
Pretest			-.29 ***	.31				-.25 ***	.18
Cond*Pre								-.07	.01

Note. *N* = 64. Block 1 *F* -change test *df* = 2,61; Block 2 *df* = 1,60; Condition effect-coded with 1 = Treatment Conditions, -1=Control Condition; pretest standardized.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

BF vs. ED treatments. Research Question 6 sought to determine whether there were significant differences in empathy change between the BF and ED treatment conditions. As shown in Table 16, Block 1 of the model was significant. The results from the final block indicate that there was significant increase in empathy for both groups between pretest and posttest (.17 points), and that, as expected, pretest significantly negatively predicted change.

More interestingly, the BF condition reported significantly higher increase from pretest to posttest on empathy (.36 points) than the ED condition ($p < .05$).

Table 16.

Model Results for Change in Empathy: Benefit Finding vs. Expressive Disclosure

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2
Model Fit	.44 ***	.41			.00	.44 ***	.40		
Coefficients									
Intercept			.16 *					.17 *	
Treatment			.18 *	.10				.18 *	.10
Pretest			-.33 ***	.32				-.35 ***	.24
Treat*Pre								.04	.00

Note. N = 43. Block 1 F-change test df = 2,41; Block 2 df = 1,40; Treatment effect-coded with 1=benefit finding, -1=expressive disclosure; pretest standardized.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Pretest-Posttest Change in Relational Satisfaction

Treatments vs. Control. Hypothesis 9 posited that, following the intervention, both BF and ED conditions (combined) would report more increase in relational satisfaction compared to the TM control condition. As shown in Table 17, Block 1 of the model, which included the main effects of pretest and condition, did not account for significant variation in posttest relational satisfaction, $R^2 = .08$, $p > .05$, nor did Block 2 (interaction term). These results indicate that change in relational satisfaction did not significantly differ for the treatment and control groups; Hypothesis 9 was not supported.

Table 17.

Model Results for Change in Relational Satisfaction: Treatment Conditions vs. Control Condition

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2
Model Fit	.08 †	.05			.03	.11	.06		
Coefficients									
Intercept			.07					.02	
Condition			.14	.02				.18	.04
Pretest			-.16	.04				-.07	.01
Cond*Pre								-.16	.03

Note. N =64. Block 1 F -change test df = 2,61; Block 2 df = 1,60; Condition effect-coded with 1=treatment, -1=control; pretest standardized.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

BF vs. ED treatments. Research Question 7 sought to determine whether the two treatment interventions significantly differed in pretest-posttest change in relational satisfaction. As shown in Table 18, Block 1 of the model which included the main effects of pretest and condition, did not account for significant variation in posttest relational satisfaction scores R^2 = .09, $p > .05$. The intercept for this block, however, trended towards significance, indicating that, overall there was a trend for an increase of .24 points from pretest to posttest on relational satisfaction across both conditions ($p < .10$). Additionally, there was a trend ($p < .10$) for pretest to negatively predict change.

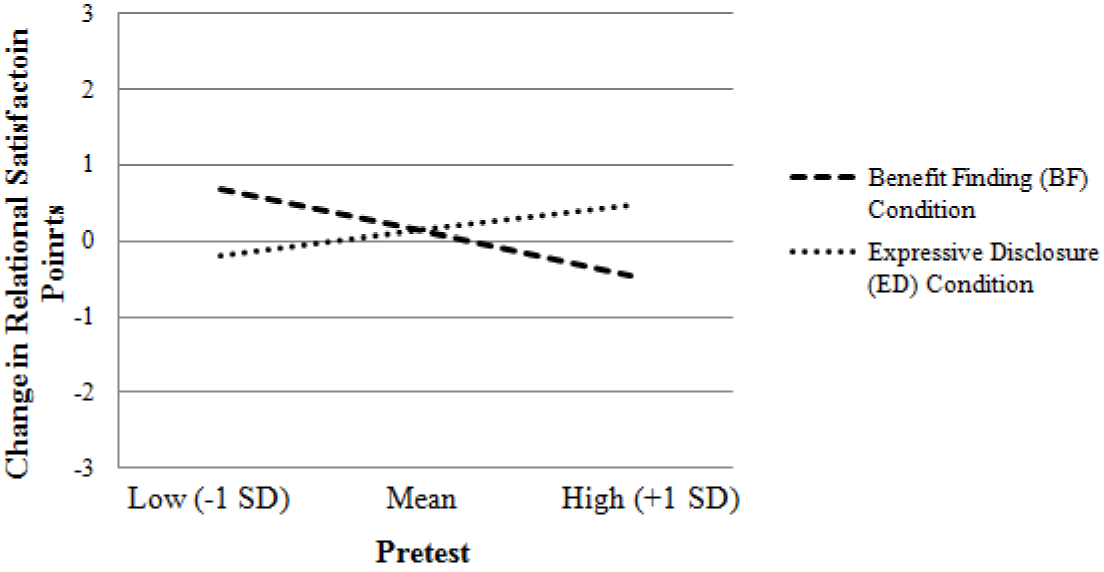
Table 18.
Model Results for Change in Relational Satisfaction: Benefit Finding vs. Expressive Disclosure

	Block 1				Block 2				
	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2
Model Fit	.09	.05			.20 **	.30 **	.24		
Coefficients									
Intercept			.24 †					.13	
Treatment			-.05	.00				-.01	.00
Pretest			-.24 †	.08				-.12	.02
Treat*Pre								-.45 **	.20

Note. $N = 43$. Block 1 F-change test $df = 2,41$; Block 2 $df = 1,40$; Treatment effect-coded with 1=benefit finding, -1=expressive disclosure; pretest standardized.
† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

More interestingly, Block 2 of this model, which included the interaction between pretest and condition, was significant ($p < .05$). To understand the nature of the interaction, model-implied values for BF and ED conditions across three levels of pretest (-1 *SD*, mean, and +1 *SD*) were computed and plotted. As can be seen in Figure 7, the interaction was in fact disordinal: For individuals with relatively low satisfaction at pretest, the BF condition was beneficial (higher pre-post increases), whereas individuals with relatively high relational satisfaction benefited from the ED condition (higher pre-post increases).

Figure 7. *Interaction between Pretest and Condition on Pre-Post Change in Relational Satisfaction*



Pretest-Posttest Change in Support Quality for Naturally-occurring Scenarios

Treatments vs. control. Similar to the prior hypotheses, Hypothesis 10 stated that the combined treatments (ED and BF conditions) would have greater increase in support quality (assessed by coding participant reports of naturally-occurring supportive acts) compared to the TM control condition. Pretest severity was used as a control variable in Block 1; Blocks 2 and 3 tested main effects of condition and pretest support quality, and their interaction, respectively.

As shown in Table 19, Block 1 was not significant ($p > .05$); however, Block 2, which included the main effects of pretest and condition, did account for significant variation in pretest-posttest change in support quality, $R^2 = .44$, $p < .001$. Block 3, which included the interaction between pretest and condition, was not significant ($p > .05$). Examination of the final model results shows that the change between pretest and posttest was not significant, and that pretest (negatively) predicted change. The intercept was significant however, which suggests that significant change in VPC occurred across all conditions. Nonetheless, these results do not support Hypothesis 10.

Table 19.
Model Results for Support Quality in Naturally Occurring Support

	Block 1				Block 2					Block 3				
	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2
Model Fit	.01	.00			.44 ***	.44 ***	.41			.01	.46 ***	.42		
Coefficients														
Intercept			1.18 ***					1.21 ***					1.25 ***	
Pre Severity			.18	.01				.30	.02				.31	.02
Condition								-.07	.00				-.08	.00
Pretest								-1.47 ***	.43				-1.34 ***	.29
Cond*Pre													-.28	.01

Note. $N = 64$. Block 1 F-change test $df = 2,61$; Block 2 $df = 2,59$; Block 3 $df = 1, 58$. Condition effect-coded with 1=treatments, -1=control; pretest standardized. † $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

BF vs. ED treatments. Research Question 8 questioned whether changes in support quality differed between BF and ED conditions on naturally-occurring supportive interactions. As shown in Table 20, severity ratings were not significant (Block 1), but treatment and pretest were significant (Block 2); there was no significant interaction between pretest and treatment (Block 3). Examination of the final model regression coefficients shows that both groups, on average, increased by 1.33 points on support quality for naturally-occurring scenarios and, further, that the BF condition experienced significantly greater increase from pretest to posttest on support quality compared to the ED condition ($p < .05$). Finally, as was found in most of the models in the present study, the pretest was negatively predictive of change: The higher individuals were on initial support quality, the less change they made from pretest to posttest.

Table 20.
Model Results for Change in Naturally Occurring Support Quality: Benefit-Finding vs. Expressive Disclosure

	Block 1				Block 2					Block 3				
	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	b	sr^2
Model Fit	.01	.00			.54 ***	.55 ***	.51			.02	.56 ***	.52		
Coefficients														
Intercept			1.02 **					1.07 ***					1.33 ***	
Pre Severity			-.19	.01				-.15	.00				-.10	.00
Treatment								.69 *	.08				.62 *	.06
Pretest								-1.64 ***	.47				-1.82 ***	.44
Tre*Pre													.17	.02

Note. $N = 44$. Block 1 F-change test $df = 1,41$; Block 2 $df = 2,39$; Block 3 $df = 1, 38$. Treatment effect-coded with 1=treatments, -1=control; pretest standardized. † $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Pretest-Pretest-Posttest Change in Support Quality for Hypothetical Scenarios

Treatments vs. control. Hypothesis 11 posited that the combined treatments would exhibit more increase from pretest to posttest in support quality (assessed by coding participant responses to a hypothetical scenario) compared to the TM control condition. Results of Block 1 showed that pretest severity ratings were not significant predictors of pretest-posttest support quality change, $R^2 = .00$, $p > .05$. Block 2 of the model, which included the main effects of pretest and condition, did account for significant variation in posttest support quality, $R^2 = .26$, $p < .001$ (the treatment effect was positive and nearly significant, with a .88 point treatment benefit over controls, and the pretest effect was once again negatively predictive). Block 3, which included the interaction between pretest and condition, was not significant ($p > .05$). These results indicate that Hypothesis 11 was not supported (see Table 21).

Table 21.
Model Results for Change in Hypothetically Occurring Support: Treatment vs. Control Conditions

	Block 1				Block 2					Block 3				
	R^2_{total}	R^2_{adj}	*b*	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	*b*	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	*b*	sr^2
Model Fit	.00	.00			.26 ***	.26 ***	.23			.03	.29 ***	.25		
Coefficients														
Intercept			.20					.04					.06	
Pre Severity			.00	.00				.13	.00				.16	.01
Condition								.44 †	.04				.43 †	.04
Pretest								-.91 ***	.22				-1.20 ***	.23
Cond*Pre													.45	.03

Note. $N = 64$. Block 1 *F*-change test $df = 2,61$; Block 2 $df = 2,59$; Block 3 $df = 1, 58$. Condition effect-coded with 1=treatments, -1=control; pretest standardized. † $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

BF vs. ED treatments. Research Question 9 was designed to assess whether the two treatments significantly differed in pretest-posttest change in support quality when responding to a hypothetical scenario. As shown in Table 22, Block 1 of the regression model, which included participant ratings of severity of the hypothetical situations, was not significant, $R^2 = .02$, $p > .05$. Block 2 of the regression model, which included the main effects of pretest and condition, did account for significant variation in posttest support quality, $R^2 = .23$, $p < .01$; Block 3 (interaction term) was not significant. Overall, only the pretest was uniquely predictive of change (for every standard deviation increase in pretest support quality, there was an expected .72 decline in change from pretest to posttest for responses to hypothetical scenarios).

Table 22.

Model Results for Change in Hypothetical Support Quality: BF vs. ED Treatment Conditions

	Block 1				Block 2					Block 3				
	R^2_{total}	R^2_{adj}	*b*	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	*b*	sr^2	R^2_{change}	R^2_{total}	R^2_{adj}	*b*	sr^2
Model Fit	.02	.00			.21 **	.23 **	.17			.04	.27 **	.20		
Coefficients														
Intercept			.48 †					.48 †					.32	
Pre Severity			.28	.02				.31	.03				.41	.05
Treatment								-.12	.00				-.12	.00
Pretest								-.81 **	.20				-.72 **	.15
Tre*Pre													-.20	.04

Note. $N = 44$. Block 1 *F*-change test $df = 1,41$; Block 2 $df = 2,39$; Block 3 $df = 1, 38$. Treatment effect-coded with 1=treatments, -1=control; pretest standardized. † $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Predictors of Change in Support Quality

Research Question 10 was contingent upon finding significant changes in VPC support quality for either hypothetical or naturally-occurring support provision. Specifically, this research question sought to determine whether changes in any of the psychological or relational predictors were significantly predictive of change in VPC quality following the intervention. Two regressions were conducted utilizing standard predictor entry, in which each psychological/relational change variable was entered into the model and the criterion variables were change in VPC for naturally-occurring support, and for responses to the hypothetical scenario, respectively.

For the naturally-occurring supportive acts, change in empathy emerged as the only significant *unique* predictor of change in quality of VPC (see Table 23), suggesting that the cultivation of increased empathy following the intervention played a significant role in promoting increased VPC.

Table 23.

Psychological and Relational Change Predicting Change in VPC for Naturally Occurring Support Acts

	Block 1			
	R^2_{total}	R^2_{adj}	*b*	sr^2
Model Fit	.26 *	.18		
Coefficients				
Intercept			.94 ***	
Burden			.04	.01
Depression			.05	.00
Stress			-.06	.00
Emotion Regulation			1.08	.02
Empathy			1.67 **	.14
Relational Satisfaction			-.44	.02

Note. *N* = 64. *df* = 6,58; † $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

None of the psychological variables predicted change in responses to hypothetical support scenarios, however (see Table 24).

Table 24.

Psychological and Relational Change Predicting Change in VPC for Responses to Hypothetical Scenarios

	Block 1			
	R^2_{total}	R^2_{adj}	*b*	sr^2
Model Fit	.06	.00		
Coefficients				
Intercept			-.01	
Burden			-.05	.01
Depression			-.06	.00
Stress			.72	.03
Emotion Regulation			.38	.00
Empathy			.40	.01
Relational Satisfaction			-.12	.00

Note. *N* = 64. *df* = 6,58; † $p < .10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

This concludes the assessment of all posited research questions and hypotheses. Provided below (Table 25) is a summary table of each, with corresponding findings, for ease of interpretation.

Table 25. Summary of Research Questions, Hypotheses and Results

Research Questions	**Findings**
1. Do HSCT cancer survivor caregivers report relatively high or relatively low mean scores on burden, depression, and perceived stress?	Participants reported mild to moderate burden, average stress, and mild depression levels.
2. Do significant differences in participants' burden change scores arise between benefit finding and expressive disclosure conditions?	BF and ED conditions did not differ in change in burden; significantly lower burden was reported across both conditions by 2.78 points.
3. Do significant differences in participants' stress change scores arise between benefit finding and expressive disclosure conditions?	Stress significantly declined across both conditions by .22 points.
4. Do significant differences in participants' depression change scores arise between benefit finding and expressive disclosure conditions?	Mean depression declined across both conditions by .78 points; participants with *low* pretest depression fared better in the BF condition than the ED condition.
5. Do significant differences in participants' emotion regulation change scores arise between benefit finding and expressive disclosure conditions?	There were no differences in emotion regulation difficulty by treatment condition.
6. Do significant differences in participants' empathy change scores arise between benefit finding and expressive disclosure conditions?	BF condition reported greater increases in empathy than the ED condition.
7. Do significant differences in participants' relational satisfaction change scores arise between benefit finding and expressive disclosure conditions?	and disordinal: for participants with low pretest satisfaction the BF condition was beneficial whereas participants with higher pretest satisfaction benefited from the ED
8. Do significant changes in VPC support quality during naturally-occurring support interactions arise between benefit-finding and expressive disclosure conditions?	Both conditions increased by an average of 1.33 points, with the BF condition reporting higher increases than the ED condition.
9. Do significant changes in VPC responses to a distressing hypothetical scenario arise between benefit finding and expressive disclosure conditions?	No signficant differences between the two treatment conditions on VPC in response to a hypothetical situation were reported.
10. If changes in VPC support quality are observed for naturally-occurring support situations, or responses to a hypothetical scenario, were changes in psychological or relational variables predictive of changes in support quality?	Empathy change predicted change in VPC for naturally occurrring support acts; no psychological variables predicted change for hypothetical VPC responses.
Hypotheses	**Findings**
1. Caregivers' perceived support, resilience, and relational satisfaction will uniquely and negatively predict reported feelings of caregiver burden.	PS: Resilience and satisfaction negatively predict reports of caregiver burden; perceived support availability positively predicted reports of burden when controlling for other variables
2. Caregivers' perceived support, resilience, and relational satisfaction will uniquely and negatively predict reported levels of stress.	PS: Resilience and satisfaction negatively predict stress.
3. Caregivers' perceived support, resilience, and relational satisfaction will uniquely and negatively predict reported levels of depression.	NS: No significant relationships among variables.
4. Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in reported caregiver burden when compared to caregivers in the time-management control condition.	NS: Treatment conditions did not differ from the control condition, however, significantly lower burden was reported across all groups by 1.94 points
5. Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in reported stress when compared to caregivers in the time-management control condition.	NS: Mean stress scores significantly declined across all conditions; XX suggests greater decline in stress for individiuals with higher stress at pretest, particularly for the TM control condition
6. Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in reported depression when compared to caregivers in the time-management control condition.	S: Participants in treatment conditions reported significantly more decline in depression than those in control condition. XX was significant, suggesting greater declines in depression for those with higher depression scores at pretest.
7. Following the intervention, caregivers in expressive writing conditions will exhibit significant decreases in emotion regulation difficulty when compared to caregivers in the time-management control condition.	NS: Emotion regulation difficulty significantly increased across all groups; benefits of treatment groups (i.e. lower emotion reg. difficulty) only occurred for those high in emotion regulation difficulty at pretest.
8. Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in empathy when compared to caregivers in the time-management control condition.	NS: Significant increases in empathy were reported across all conditions.
9. Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in relational satisfaction when compared to caregivers in the time-management control condition.	NS: No significant change in relational satisfaction arose between treatment and control conditions.
10. Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in VPC quality when reporting on naturally-occurring supportive acts.	NS: Significant increases in quality of naturally occurring support provision was reported across all conditions.
11. Following the intervention, caregivers in expressive writing conditions will exhibit significant increases in VPC quality when responding to a hypothetical distressing situation.	NS/Trend: Treatment groups trended toward reporting significantly higher support in response to the hypothetical situation compared to participants in the control condition.

Notes: XX = Interaction; BF = Benefit-finding condition; ED = Expressive disclosure condition; TM = Time-management control condition; NS = Not supported; PS = Partially supported; S = Supported

Chapter IV: Discussion

The current study sought to better understand reported psychological and relational well-being of hematopoietic stem cell transplant (HSCT) cancer survivor caregivers and to then assess whether an expressive writing intervention increased caregiver well-being successfully. Furthermore, because aspects of individuals' well-being are known to predict the quality of social support they provide to others, reported changes in the support provision that HSCT caregivers provided via responses to hypothetical scenarios and reported naturally-occurring supportive acts were also assessed.

The sample reported on in this study consisted of spousal cancer caregivers of HSCT survivors who were between one and three years post-transplant. Caregivers completed a 17-day intervention in which a pretest survey captured baseline reports of their psychological and relational well-being as well as their reported support provision quality. Participants were randomly assigned to one of two expressive writing conditions (benefit-finding [BF] or expressive disclosure [ED]) or a time-management (TM) control condition. Based on the condition to which they were assigned, participants provided responses to three writing prompts spaced at one-week intervals. One day after the submission of the third prompt, participants completed a posttest survey re-assessing reports of psychological and relational well-being and reported support provision quality.

Overall, results from this sample suggested that these HSCT cancer survivor caregivers experience relatively high psychological and relational functioning according to pretest reports. Additionally, results indicated that HSCT caregivers' psychological resilience and relational satisfaction may serve as potential buffers for psychological maladies. Results specific to the expressive writing intervention suggest that expressive writing may be an effective resource for decreasing HSCT caregivers’ overall depression, burden, stress, and emotion regulation difficulty as well as increasing their empathic responding; however, these results were at times contingent upon writing condition and/or pretest level of functioning, as will be discussed. Finally, results indicate that expressive writing may be an effective means of increasing the quality of social support a caregiver provides; however, this too was contingent upon writing condition, and significant changes in reported support quality only occurred for reports of naturally-occurring support interactions rather than participant responses to hypothetical scenarios. A more in-depth discussion regarding each of these findings is expounded in the following sections as are the theoretical and practical implications of this investigation. I end by discussing limitations of the current study and directions for future research.

Caregiver Well-being

The first section of this study was designed to garner an understanding of reported caregiver burden, depression, and stress scores across the sample at pretest. Results indicated that mean scores for this sample fell into the “mild to moderate” category for caregiver burden, the “mild” category for depression, and that reported stress was similar to reported stress scores for members of the general population (Cohen et al., 1983). Overall, findings indicate that these HSCT caregivers experience relatively high psychological functioning 1-3 years post-transplant. Such findings could arise for a number of reasons. First, participants may report relatively high functioning due to the fact that pre-transplant experiences are typically extremely stressful and burdensome, and they have moved beyond that time. For example, HSCT treatment is accompanied by a number of health risks and potentially deadly complications (American Cancer Society, 2013).

Further, there is the potential for immediate physical side-effects of the transplant that may be difficult to cope with (Williams, Chien, Gladwin, & Pavletic, 2009; Zamkoff et al., 2003). As such, participants reporting on psychological functioning at 1-3 year post-transplant may have recently experienced significant reductions in perceived caregiver burden, depression, and stress when comparing their current way of living to previous experiences pre-and immediately post-transplant. In any case, by 1-3 years post-transplant, these HSCT caregivers report experiencing relatively high levels of psychological functioning, offering hope for individuals who experience difficulty when going through this process in the future. Nonetheless, it is important to consider the fact that findings could be an artifact of HSCT caregivers who were *willing* to be a part of this study, given the fact that a number of caregivers who declined participation cited difficulty and constraint in current life-circumstances as an explanatory reason for non-interest. This possibility is discussed in greater detail below.

The next section of results were designed to understand whether previously purported psychological stress buffers negatively predicted reports of caregiver burden, depression, and stress for this sample. Specifically, research suggests that having a high degree of psychological resilience in the face of traumatic events can serve as a buffer against psychological malady (Beasley et al., 2003; Southwick et al., 2005), that perceiving a high degree of support availability from loved ones also serves as a buffer (Cohen, 1992), and that relational satisfaction can as a source of uplift when an individual is satisfied with a person they are caring for (Francis et al., 2010). To assess whether these same relationships emerged in the current context, it was predicted that psychological resilience, perceived support availability, and relational satisfaction would each uniquely negatively predict reports of caregiver burden, depression, and stress.

Results suggested that psychological resilience and relational satisfaction did negatively predict reports of caregiver burden and stress. They did not, however, appear to have an effect on reported depression levels in this study. Furthermore, perceived support availability did not negatively predict any of the three variables (caregiver burden, depression, or stress) and in fact, positively predicted *feelings of burden* for this sample. This is an important finding considering it contradicts previous research on support availability (Wills, 1990) and deserves further exploration of why it may have occurred.

One possible explanation is that, in spousal caregiving situations, the support that is available to a caregiver may not always match the caregivers' support needs. Cohen and McKay (1984) note that the reception of support is only effective when it provides adequate coping resources for a recipient. When HSCT caregivers communicate with family and friends about distressing issues, however, many of the topics are likely to center on issues related to HSCT cancer survivors themselves. As such, the focus of a support conversation may not center on the emotional needs of a caregiver but, instead, focus more heavily on the well-being of the cancer survivor. As one participant noted in her writings, "sometimes we caregivers get placed on the backburner." Such a statement appears to be indicative of the fact that the needs of cancer survivors remain the primary focus for family and friends, whereas the needs of caregivers may be at times undermined or forgotten.

Conversely, this finding may instead be indicative of the fact that having a high degree of support availability from friends and family members could incur an over-emphasis on the distressing issues that a caregiver faces. For example, it is likely that a caregiver's family members and friends attempt to be supportive by inquiring about the caregiver's (and spouse's) health and well-being. In doing so, a caregiver may be forced to reflect continually upon arising or ongoing issues that s/he is faced with, thus promoting an overemphasis on distressing concerns and increasing a caregiver's perception of burden. Indeed, research suggests that some social support can cultivate co-rumination, which is then associated with increases in psychological distress (Boren, 2014). Although each of the aforementioned possibilities are speculative, future research should attempt to assess whether a high degree of support availability can be "too much of a good thing" in certain contexts, particularly contexts that include ongoing psychological and physical stressors. Further, research may wish to assess the relationship between support availability and burden, stress, and depression for a population that experiences higher levels of these psychological maladies, as scores on these variables were relatively low for the sample in this study.

Expressive Writing Intervention Effects

The next portion of this study assessed whether expressive writing promoted increases in HSCT caregivers' psychological well-being, relational well-being, and support quality. Findings revealed that expressive writing led to both positive *and negative* changes for participants, often depending on writing condition assignment and/or reported pretest levels of certain variables. Overall, however, expressive writing may be useful for HSCT caregivers when strategically implemented so as to enhance positive outcomes and minimize any resulting negative effects. I expound upon this idea below by first discussing the positive effects of the intervention and then discussing ways that the intervention appears to have hindered participant well-being.

Caregiver Burden and Stress

A number of positive outcomes resulted from the expressive writing intervention, although these outcomes were often not as initially predicted. As discussed, each participant was randomly assigned to one of three writing conditions: benefit-finding (BF) in which participant wrote solely about positive outcomes resulting from the cancer experience; expressive disclosure (ED) in which participants wrote about negative thoughts and feelings associated with the cancer experience; and finally, a time-management (TM) control condition in which participants wrote about life tasks and activities in a neutral (i.e., non-emotional) way.

Specific to caregiver burden, results suggested that, although posttest burden did not significantly decrease *within* certain writing conditions, there were significant decreases in mean pre- to posttest burden scores *across* all conditions, which included the time-management (TM) control group. Essentially, regardless of writing condition, participants' reports of caregiver burden significantly decreased following the intervention. Similar results arose for reported posttest stress levels in that significant posttest declines in mean stress were reported across all three conditions, meaning that regardless of treatment condition, participants' average stress scores were significantly lower after the intervention. Upon further examination however, a significant interaction emerged suggesting that individuals who reported higher stress at pretest experienced greater reductions in stress at posttest, particularly for individuals assigned to the TM control condition.

Together, these results point to the efficacy of TM writing in reducing burden or stress for HSCT caregivers, potentially more so than BF or ED writing. Interestingly, this is not the first study to find positive effects for time-management (TM) writing for caregivers. Mackenzie and colleagues (2007) found similar results for caregivers of older adults, in that TM writing cultivated increases in physical and psychological well-being post-expressive writing. Such findings suggest that thinking actively about and organizing one's daily or weekly activities may be a beneficial activity, particularly considering caregivers often report that difficulty with time-management is a source of significant stress (Jones & Jones, 1994). They also work to challenge whether TM should actually be considered useful as a "control" activity.

These findings suggest that emotional expression may not be a panacea for promoting increases in health and well-being for certain populations. Although a plethora of research has found beneficial health effects to coincide with emotional disinhibition (Smyth, 1998), other research points to the potential for emotional suppression to be a healthy activity, particularly for older adults who report high levels of stress (Consedine, Magai, & Bonanno, 2002). Essentially, researchers should not assume that the expression or disinhibition of emotion is exclusively associated with positive health outcomes for all individuals. For example, findings of a study by Gross and Levenson (1993) suggested mixed results as far as decreased somatic activity and heart rate but increases sympathetic nervous system activity for individuals who were asked to suppress negative emotions.

In addition, research conducted by Consedine and colleagues (2002) asserts that the inhibition or expression of various *types* of negative emotions (e.g., sadness, anger) can differentially influence individuals and that certain personality traits, cultural orientations, and social expectations can have differential influences on whether emotional suppression or expression is healthy. Thus, research that is conducted with more nuance may help ascertain when, why, and how emotional expression or emotional suppression works to impact health outcomes, dispelling the argument that all emotional expression is healthy whereas emotional suppression is not (Pennebaker & Seagal, 1999). Future expressive writing interventions should consider further investigating differences that arise in reported health and well-being across diverse populations and age-groups, particularly considering the fact that most expressive writing studies have been conducted with relatively young (college-aged) individuals (Frattaroli, 2006).

Depression

Changes in caregiver depression also arose following the expressive writing intervention, and these changes were more likely to follow the hypothesis that expressive writing treatment conditions would report greater decreases in depression compared to the control condition. Specifically, results revealed that significant decreases in depression did emerge for individuals assigned to treatment conditions (BF and ED) when compared to the TM control condition. Further, a significant interaction emerged between pretest level of depression and reported depression change, such that individuals who had higher levels of depression at onset reported greater decreases in depression at posttest when assigned to either the BF or ED writing condition.

Such findings suggest that expressive writing benefits may arise for individuals' dependent on depression levels at study onset. More specifically, previous research suggests that depression is likely to be preceded by a high degree of stress. Nonetheless, experiencing stress does not necessarily equate to having depression (Stroud, Davila, & Moyer, 2008). As such, expressive writing may be beneficial for individuals who report experiencing depression, whereas TM writing may be more effective for individuals experiencing moderate to high levels of stress but not depression (the previous results related to stress would support this supposition, although further research needs to be conducted to adequately test this prediction).

Existing research may shed light on why expressive writing works differentially for individuals experiencing high levels of stress versus those with high levels of depression. Stress is thought to arise when people are confronted with situations that are perceived as challenging or demanding (Sarafino, 2012). As such, stress is considering a somewhat controllable psychological malady compared to more severe psychological issues such as depression, particularly when stress arises due to manageable issues such as daily activities or tasks, as is often the case for caregivers (Jones & Jones, 1994). TM writing, then, offers an outlet for participants who experience stressors (that are at least partially likely to coincide with time-management issues) to engage in a conscious assessment of how they manage this type of pressure. As other scholars have speculated, TM writing may then turn into an activity that encourages healthy, problem-focused coping if it indeed aids individuals in understanding and reflecting upon issues that contribute to feelings of stress (MacKenzie et al., 2007). Future research should consider testing TM writing as a treatment condition for populations that are likely to experience stress over managing life tasks and activities. Comparing TM writing conditions to a more neutral control condition (e.g., writing about one's living space; Crowley et al., 2012) may give researchers a better understanding of how TM writing could act as a constructive resource for participants, considering it is associated with positive outcomes for caregiving populations in this study and others (MacKenzie et al., 2007).

On the other hand, depression is considered a more severe form of psychological distress. Individuals who experience depression are more likely to engage in maladaptive emotion-focused forms of coping such as rumination or avoidance, wherein they either experience intrusive negative thoughts or suppress negative feelings altogether (Li, Digiuseppe, & Froh, 2006). Findings associated with depression (and with stress) in this study may help shed light on which theoretical mechanism appears to more adeptly explain the effectiveness of expressive writing for these psychological maladies.

As discussed in Chapter I, two primary theories have been proposed as explanatory mechanisms behind the success of expressive writing: disinhibition theory and self-regulation theory. Disinhibition theory suggests that individuals often experience emotional suppression, rumination, or avoidance after a traumatic event (Pennebaker & Beall, 1986). When undertaking expressive writing tasks, participants are asked to engage in a form of writing that actively encourages them to confront previously withheld thoughts or feelings, thus promoting a cathartic release of emotion that cultivates increases in health and well-being (Pennebaker, 1997). Indeed, this appeared to occur for individuals in the expressive disclosure treatment condition, as all participants wrote about difficult thoughts and emotions pertaining to the HSCT experience. Nonetheless, although disinhibition theory would explain findings related to decreased depression for participants in the expressive disclosure condition, it does not explain adequately why individuals in the benefit-finding condition also experienced decreases in depression and, further, why individuals in the TM control condition experienced significant decreases in stress. As such, although disinhibition theory may play a role in the effectiveness of *expressive disclosure* writing, it would seem that, at least for this sample and in this context, self-regulation theory might be a more adequate explanatory mechanism for why individuals in *both* ED and BF treatment conditions found benefit from their writings.

More specifically, as mentioned in Chapter I, proponents of self-regulation theory maintain that it is not necessary to only focus on negative aspects of a traumatic experience in order to incur health benefits from expressive writing (King, 2002). Instead, self-regulation researchers purport that the sheer act of writing can induce greater self-regulation of emotional processes, which then, consciously or unconsciously, may increase individuals’ understanding of how their cognitions and emotional experiences impact personal goals and outcomes. As example, below is a portion of one participant’s thoughts after being assigned to the *expressive disclosure* condition. This person writes:

> As I think about the future…a massive cloud of sadness kind of consumes me. Here's an example......there is a woman my wife and I know whose husband died recently....three years ago......who when asked how things were going as a widow, she said the biggest sadness came from the notion that if she was late getting home from a trip, or the grocery store or where ever, nobody would know it or care about it. In other words, you really are alone as far as day to day things and takes some getting used to. It's how I feel thinking forward. We have been married for 48 years and I just don't know any other way to live but.....with her. Thinking about that as I frequently do, brings that sadness cloud. By moving closer to my daughter and her family may help, but they have lives and the boys are growing fast and it will not be long before they move on. I feel a strong responsibility to not put that burden on my wife but she frequently will start the subject and inevitably we talk about how it will be without her. It's just a sad chat. The other side of this though is that I feel guilty when I kind of look forward as business as usual. Balancing that is hard. We are currently at our vacation home and she is saying goodbye to her friends here knowing that this may be the last time she sees them...I think about how if she passes away, I will loose [*sic*] them too. So I spend a lot of time wondering how it all works when she is gone...if she is gone. I also think about how to make her remaining life, no matter how long, as satisfying as possible. Fortunately, we are in alignment on that.

Although components of this participant's writings would suggest that emotional disinhibition may be occurring, further examination of the excerpt points to the potential for self-regulation processes to be transpiring. King (2002) notes that increases in self-regulation can be cultivated when individuals achieve a greater understanding of emotional thoughts and reactions, personal goals, and potential paths for achieving these goals. This is embedded within the excerpt above. For example, by hearing of a widow's experiences, this participant comes to recognize the fact that he, too, may feel the way this widow does if he loses his wife: alone. He also acknowledges that he struggles with the thought of moving closer to other family members as he does not wish to be a burden. Thus, although he is trying to help his wife enjoy the time she has left, he acknowledges this internal struggle in attempting to also prepare for, and manage, his life situation once she is gone.

Although they differ topically, similar cognitive insights can be gleaned within excerpts of both benefit-finding and time-management writings as well (see Appendix F for further examples of all writing prompts), suggesting that negative emotion is perhaps not critical to the process of expressive writing. It is possible that emotional disinhibition may be particularly effective for individuals experiencing certain types of trauma and/or traumas they have not previously disclosed to others (Klein & Boals, 2001; Pennebaker & Beall, 1986), but it would appear that self-regulation serves as a stronger explanatory mechanism for why both ED and BF conditions experienced decreases in depression in this context.

Emotion Regulation Difficulty

Treatment effects related to emotion regulation difficulty suggested that, across all three writing conditions, mean emotion regulation difficulty scores significantly increased from pretest to posttest. When assessing differences between treatment and control conditions, however, a significant interaction was observed such that individuals who reported greater emotion regulation difficulty at pretest reported significantly lower emotion regulation difficulty scores at posttest when assigned to one of the two expressive writing treatment conditions. This suggests that expressive writing—whether positively or negatively focused—may only be effective for individuals who are experiencing emotion regulation difficulty at onset. Because mean emotion regulation difficulty increased across conditions for this population, researchers may wish to consider a particular cutoff score on emotion regulation difficulty as a form on inclusion criteria in research that seeks to assess populations vulnerable to emotion regulation difficulty in the future.

Self-regulation theory is a particular theoretical framework proposed as the mechanism through which benefit-finding works (and some suggest through which any type of expressive writing works, see King, 2002). Conversely, disinhibition theory is most often proposed as the mechanism underlying the success expressive disclosure writing. King suggests that cognitive reappraisal is a form of self-regulation, and Lu and Stanton (2010) found that a combined cognitive reappraisal/expressive disclosure condition was most effective at promoting health outcomes. As such, perhaps for some populations the recognition and expression of *both* negative and positive outcomes related to a trauma may promote *both* disinhibition and self-regulation of emotion, thus incurring the greatest health benefits. As Smyth and Pennebaker (2008) note, and as evidenced in the previous set of findings, in real life processes, there can be multiple theoretical explanations underlying the effectiveness of expressive writing, and these theoretical mechanisms may change or overlap based on writing topic, population, and other psychological, social, or environmental factors. Thus, future research could consider assessing whether emotion regulation difficulty significantly decreases for caregivers when writing about positive and negative outcomes regarding their experiences, compared to writing separately about each.

Although speculative, this finding also suggests that perhaps for caregiving populations, a combination of *both* positive and negative emotional expression in writing would be beneficial for individuals experiencing difficulty in regulating negative emotions. Future research may wish to compare separate BF and ED writing conditions to a combined BF/ED condition. Previous research that has assessed differential disclosure instructions for expressive writing interventions found that a combined expressive disclosure and cognitive reappraisal writing was more effective in enhancing health outcomes for participants when compared to solely an expressive disclosure condition or a cognitive reappraisal condition (Lu & Stanton, 2010).

Empathy

Findings assessing changes in caregiver empathy suggested that mean empathy scores significantly increased post-intervention across all three writing conditions. Further, when assessing changes in empathy between the two treatment conditions, findings suggested that the benefit-finding (BF) condition reported significantly higher increases in empathy post-intervention compared to the expressive disclosure (ED) writing condition. This suggests that writings which include greater focus on neutral or positive caregiver experiences may incur greater increases in empathy toward others. Results of an independent samples *t*-test support this assertion by illustrating that the BF and time-management (TM) control conditions demonstrated significantly higher posttest empathy scores compared to the ED condition. Thus, the finding suggesting a significant mean increase in empathy across all conditions from pre to posttest may have been a result of increased empathy for participants in the BF and TM control conditions primarily.

Although participants in the TM control condition did not necessarily write about their emotions related to the HSCT experience, most caregivers in this condition still wrote about a high number of activities with their spouse, particularly activities focused on the continued management/treatment of their spouse's health. As an example, a portion of a participant's TM control writing began with the following:

> In the past week, I have gone to my spouse's chemo twice. It is a forty minute drive from our home. He drives there, the chemo session is about 1 1/2 - 2 hours long. We both do reading and some idle chatting while there, then I drive us home.

The participant then continued to discuss both health and non-health related activities that occurred within the prior week for her and her partner following this excerpt. Thus, although participants in the TM control condition were writing in a non-emotional way about their daily or weekly activities, the activities themselves typically involved their spouse, therefore encouraging a continued focus on self- and other as managing difficult life experiences together.

It is possible that when prompting individuals to write about experiences they have gone through *with someone* (as opposed to writing about individual traumas or time-management) increases in empathy may be more likely to arise likely to arise. Empathy is a social construct that involves concern for others inherently; as such, it is logical that writings that incorporate difficult life activities experienced with another could cultivate increases in empathy. Indeed, previous interventions that successfully increased individuals' empathy have included a focus on the incorporation of both self- and other (see for example, Block-Lerner et al., 2007; DasGupta & Charon, 2004). Future research should further examine whether a focus on self- and other writing prompts encourage increases in empathy, particularly in caregiving contexts as empathy is a known predictor of quality of care.

Relational Satisfaction

Results assessing changes in relational satisfaction suggested that satisfaction within treatment conditions did not significantly increase following the intervention across all participants. Nonetheless, a significant disordinal interaction emerged in which individuals with relatively low relational satisfaction at pretest experienced higher pre-post increases in relational satisfaction when assigned to the BF condition. Conversely individuals with relatively high relational satisfaction at pretest experienced higher pre-post increases in relational satisfaction when assigned to the ED condition.

For individuals with low relational satisfaction at study onset, cultivating an attentional focus specific to positive experiences involving their spouse could be the explanatory mechanism behind increases in satisfaction for those in the BF condition. Previous research finds that individuals who tend *not* to judge, or negatively evaluate, the quality of their relationship report greater relational satisfaction (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007), whereas individuals who do tend to focus on negative aspects of their relationships are more likely to then experience negative relational outcomes (Vangelisti, 2011). It is perhaps as Murray, Holmes, and Griffin (1996) write, “contentment depend[s] not on individuals’ acceptance of a stern reality but on their ability to see themselves and their worlds in the best possible light” (p. 82). Thus, by asking participants (who likely tend to view their relationship in a negative way) to instead focus solely on positive outcomes related to their and their spouses’ HSCT experience, greater relational satisfaction can ensue.

Interestingly, however, the inverse relationship was observed for participants with already high levels of relational satisfaction, in that ED writing further increased their relational satisfaction as opposed to BF writing. It is possible that participants high in reported relational satisfaction tend not to express negative emotions when interacting with their partner and thus would experience positive outcomes when having the opportunity to disinhibit negative feelings such as with ED writing. Previous studies support this hypothesis, as research suggests that the expression of negative emotion within a romantic relationship is often associated with lower levels of relational satisfaction (see Guerrero & Floyd, 2006) and that individuals in satisfying relationships are less likely to display emotions such as anger, sadness, or fear toward their partner than individuals in dissatisfying relationships (Gottman, 1994; Weiss & Heyman, 1997).

Importantly, this does not mean that relational partners don’t *experience* negative emotions; it implies instead that they are less likely to *express* negative emotions when interacting with their partner. As such, ED writing would have given participants an outlet for expressing negative emotions with less fear of social ramification. Thus, already satisfied participants may have experienced increases in relational satisfaction after having the opportunity to express any pent up negativity pertaining to the HSCT experience. Nonetheless, these are speculations, and future research should test such assumptions to determine whether similar findings re-emerge.

Implications for Expressive Writing Therapy

Overall, these results suggest that expressive writing therapy can play a role in enhancing HSCT caregivers’ psychological and relational well-being, although certain factors at study onset may need to be taken into account if conducting a similar study—or applying these data—in the future. First, if attempting to decrease psychological malady for caregivers, it is important to note that all three types of writing conditions may be effective at alleviating feelings of burden and stress, but time-management writing appears to work well for highly stressed individuals. As such, perhaps time-management would be better investigated as a potential treatment condition, and a more neutral control condition could be incorporated (e.g., describing living situations; Crowley et al., 2012). Second, emotion regulation difficulty may actually increase following expressive writing; thus, it may be important to evaluate difficulty of emotion regulation at study onset and potentially exclude individuals who report extreme difficulty with self-regulation.

In general, this study suggested that components of disinhibition theory may have contributed to positive outcomes experienced by the expressive disclosure condition via cathartic release of negative emotion. However, results also suggested that the tenets of self-regulation were supported and served as a strong explanatory mechanism for why certain benefits were purported across *all* writing conditions. Overall it is likely that, as Smyth and Pennebaker (1998) note, there may be many complex and intertwined theoretical mechanisms underlying expressive writing effectiveness. As such, future research should continue to parse out when, and why, expressive writing appears to work for specific populations.

Changes in Support Quality

One of the primary goals of this study included assessing whether increases in verbal person-centered (VPC) support provision quality arose following the expressive writing intervention, and whether changes in psychological or relational variables predicted change in VPC. Support quality was measured in two ways: by asking participants to report on naturally-occurring support situations with their partner and by capturing participant responses to a distressing hypothetical situation. Results specific to each will be expounded upon before discussing combined theoretical implications.

Naturally-Occurring Support

Results for VPC change in reports of naturally-occurring support conversations suggested that the treatment conditions did not significantly differ from the control condition in reported

VPC quality. Nonetheless, when comparing differences *between* the two treatment conditions, those in the BF condition experienced significant increases in VPC support quality compared to the ED condition. As discussed in Chapter I, there are nine categories of VPC support that a person can provide (Burleson, 1982). These nine categories are further delineated into three overarching categories of support quality (LPC, MPC, and HPC support) (Jones & Bodie, 2014). Participants' average pretest support quality was in the MPC category, as was their posttest support quality. Nonetheless, posttest supportive messages included greater acknowledgement of feelings and increased use of explanation than did pretest reports of support.

Upon examining change in psychological or relational variables as potential predictors of change in VPC, empathy change emerged as a significant predictor of VPC change for naturally-occurring reports of support. This finding suggests that BF writing may cultivate increases in empathy and that increased empath—at least in part—explains increased support quality at posttest. Other research looking specifically at VPC support quality has already suggested that empathy is associated with higher VPC (Burleson, 1983), and research looking more broadly at supportive behavior suggests that empathy is associated with helping behaviors (Stiff, Dillard, Somera, Kim, & Sleight, 1988). Although empathy is sometimes thought to be trait- as opposed to state-like in nature (Davis, 1980), research has found that empathy can be cultivated (Block-Lerner et al., 2011), which is consistent with current study findings.

Future research should focus on determining whether change in empathy, and therefore in support quality, is motivated by altruism, by egoism, or by a combination of the two. More specifically, Batson and colleagues (1981) suggest that empathy can promote prosocial behavior via either the arousal of sympathy and regard for others' emotional well-being (altruism), or via emotional contagion, wherein an individual helps another to reduce the distress s/he incurred by witnessing the suffering of another (egoism). Because empathic concern can induce distress support providers, it is important to understand the process by which change in empathy occurs if this research is to be replicated. Specifically, if participants' change in empathy was motivated by increased emotional contagion (and therefore increased personal distress experienced during supportive encounters) then increasing empathy via expressive writing could have detrimental effects on participants. Stiff and colleagues (1988) found that empathy can indeed be motivated by altruism; however, Batson and colleagues' (1981) work suggests that *both* egoism and altruism motivate helping behavior. Because these theoretical accounts of empathic motivation differ, it is a relationship worth exploring in the future.

Other research has also found that writing about emotional experiences can be an effective tool for increasing empathy (DasGupta & Charon, 2004); however, prior work has not connected changes in empathy to changes in support provision quality. If future research is to continue assessing the effects of expressive writing on empathy and support provision, results of the current study suggest that the emotional valence prompted by expressive writing formats is critical to consider, as only individuals who wrote *positively* about their experience with their partner's cancer experienced significant combined increases in empathy and support provision quality. These results suggest that caregivers may benefit from the incorporation of BF forms of expressive writing therapy into life routines, as doing so may promote increases in particular aspects of their psychological well-being, that may then enhance their supportive communicative exchanges.

Supportive Responses to Hypothetical Scenarios

Results of this study suggested that when participants provided supportive responses to the hypothetical scenario, treatment conditions trended toward reporting significant increases in

VPC quality compared to the control condition ($p = .07$). Although this relationship was not statistically significant, it is still worth speculating as to the reason for this trend considering the previous finding that the BF condition reported increases in naturally-occurring support quality. I offer several ideas.

First, for the hypothetical situation, participants may have trended toward reporting significantly higher quality VPC responses because they had responded to the same scenario 17 days prior. In the meantime, some participants might also have been thinking about how they would have responded differently to the scenario and thus altered their responses at posttest, not necessarily due to changes they would actually enact, but simply due to having thought about how they would have enhanced their initial response. Conversely, upon seeing the same scenario at posttest, participants may have come to realize that they were being assessed on the quality of their responses, thus trying to provide a response they thought researchers were looking for (i.e., the cooperative-subject effect; Kirk, 2013). Consistent with predictions, however, this trend toward significant increases in VPC could be due to true participant change in the quality of VPC that participants would actually provide. To determine whether this might be the case, it was important to assess whether change in measured psychological or relational variables predicted VPC change. Results of a regression analysis, however, indicated that no measured change in any of the psychological or relational variables included in this study predicted change in VPC quality for responses to the hypothetical scenario.

Because support quality increased for the BF condition when reporting on naturally-occurring support, and because a similar trend for treatment conditions when responding to a hypothetical scenario was also found, it is possible that the emotional nature of BF and ED writings could have prompted what has been called *post-traumatic growth* for participants in either treatment condition and that this then fostered changes in support provision quality. Post-traumatic growth (PTG) is defined as the experience of positive self-change in light of life-difficulties (Hefferon, Grealy, & Mutrie, 2009), and one such mechanism that promotes PTG includes constructing a narrative of one's experience with a trauma (Neimeyer, 2004). Research also suggests that disclosure of emotion prompts PTG (Tedeschi & Calhoun, 2004). In the present study, participants would have enacted both narrative construction and emotional disclosure when assigned to either treatment condition. Post-traumatic growth has been associated with greater compassion toward others, a heightened feeling that helping others is important (Cacciatore, 2007), positive reappraisal of close relationships (Hefferon et al., 2009) and greater positive emotional expression (Neimeyer, 2004).

Although it is not possible to determine whether PTG is what underlies change in VPC definitively, post-hoc linguistic inquiry word count (LIWC) analyses of pre and posttest responses to hypothetical scenarios revealed that participants in the two treatment conditions did incorporate significantly more positive emotion words ($M = 5.65$, $SD = 3.21$) in their responses to the hypothetical scenario at posttest compared to the control condition ($M = 3.42$, $SD = 1.82$), $t(56) = 3.042$, $p < .05$. Upon inspecting LIWC word usage in reports of naturally-occurring support for the BF condition versus the ED and TM control conditions, results indicated that, although significantly more positive words were not utilized by the BF, significantly *less* negative words were used by those in the BF condition ($M = 2.18$, $SD = 1.91$) compared to the other conditions ($M = 4.03$, $SD = 4.09$), $t(57) = 2.34$, $p < .05$, suggesting that psychological or emotional change outside of that measured in the current study may still explain changes in VPC quality.

Implications for Social Support Research

It is interesting to note that significant increases in naturally-occurring reports of VPC emerged for individuals assigned to the BF writing condition but that this same relationship did not emerge for participants when detailing supportive responses to the hypothetical scenario. Previous studies have tested whether participants' degree of VPC expressed in response to hypothetical scenarios is enacted at the same level as VPC expressed in naturally-occurring support interactions, with findings suggesting that this is the case (Applegate, 1980). As such, Burleson (1984) argued that participant responses to hypothetical scenarios may be the best way to obtain an estimate of an individuals' comforting ability, because scenarios offer a controlled way of capturing VPC quality without external influences on support provision that can arise in natural support situations. In the current study, however, if VPC were enacted relatively consistently across hypothetical responses and reports of naturally-occurring support provision, findings should have indicated significant increases in support provision quality for the BF condition when responding to hypothetical scenarios since this appeared to occur for naturally-occurring support conversations.

As noted, most support researchers maintain there are two primary determinants of VPC quality: a person's *ability* to provide high VPC support and a person's *motivation* to do so (Burleson, 1983, 1985; MacGeorge et al., 2011). Findings from the current study suggest that perhaps the use of hypothetical scenarios to capture VPC only work well when researchers are attempting to determine individuals' *ability* to provide support rather than attempting to capture VPC that may change based on motivational components. As Burleson (1984) asserts, hypothetical scenarios are able to capture "an individual's level of comforting *competence* (that is, their maximum level of ability)" (p. 70, italics in original); however, in the current situation, ability was not the primary characteristic under study. Rather, it was assumed that individuals possessed a certain ability to provide VPC support, but that they may not have been exercising this ability to its fullest extent due to psychological and motivational determinants that tend to undermine support quality in chronically stressful contexts. This fact might explain why significant differences in VPC change occurred for naturally-occurring support situations but not for participants' responses to hypothetical scenarios. To provide a more complete picture of overall change in support quality across conditions, a frequency distribution chart is provided below that details the number of LPC, MPC, and HPC types of support provided at pre and posttest for hypothetical and naturally occurring support acts. (Note: See Appendix E for a complete description of the types of LPC, MPC, and HPC support).

Table 26. *Frequency Distribution for Pre and Posttest LPC, MPC, and HPC Support across Natural and Hypothetical Support Scenarios.*

	Nat. Pretest	Nat. Posttest	Hyp. Pretest	Hyp. Posttest
LPC1	1 (1.6%)	0 (0%)	1 (1.6%)	1 (1.6%)
LPC2	11 (18.8%)	1 (1.6%)	5 (9.4%)	4 (7.8%)
LPC3	20 (50%)	15 (25%)	15 (32.8%)	18 (35.9%)
MPC4	2 (53.1%)	3 (29.7%)	5 (40.6%)	2 (39.1%)
MPC5	5 (60.9%)	7 (40.6%)	15 (64.1%)	4 (45.3%)
MPC6	18 (89.1%)	18 (68.8%)	6 (73.4%)	21 (78.1%)
HPC7	5 (96.9%)	15 (92.2%)	14 (95.3%)	6 (87.5%)
HPC8	2 (100%)	3 (96.6%)	1 (96.9%)	7 (98.4%)
HPC9	0 (0%>)	2 (100%)	2 (100%)	1 (100%)

Notes. *N* on left side of column, cumulative percentage on right. Nat.= Naturally Occurring Support Acts; Hyp. = Hypothetical Support Scenario; LPC = Low person-centered support; MPC = Moderate person-centered support; HPC = High person-centered support

As evidenced, participants responding to naturally occurring support had higher levels of MPC and HPC support at posttest compared to pretest, whereas approximately three-quarters of participants fell into the LPC or MPC categories of support quality at both pre and posttest when responding to the hypothetical scenario. As such, when researchers are examining motivation to provide support, rather than ability to provide support, capturing VPC via a data collection method that allows for motivational influences on support provision quality (e.g., via dyadic interaction or reported support conversations, as opposed to responses to hypothetical scenarios) may be more effective at accurately determining a person's enacted VPC. The potential for VPC data collection method to affect reported VPC quality may also help explain the existence of conflicting findings related to empathy and VPC quality, wherein some research has shown empathy to be significantly predictive of VPC and other research has not (Burleson, 1983, 1985).

In the current study, change in empathy was the sole significant predictor of change in VPC, but only for naturally-occurring support provision. Perhaps this is because capturing reported VPC through the use of hypothetical scenarios is less likely to actually incite empathic responding, thus explaining why change in empathy did not contribute to change in VPC quality for hypothetical responses in the current study. Little research has been conducted on methods of capturing support provision quality, so future work should focus on testing different methods of data collection, perhaps by combining multiple methods of capturing VPC (e.g., dyadic interactions, hypothetical responses, reports of occurring support) to assess differences in reports across each after controlling for potential external influences on VPC quality such as severity of situation, relationship type, and relationship length.

In summary, this study allows researchers to garner a greater understanding of the support process from providers' perspectives. Although researchers acknowledge that both ability and motivation can influence support provider's willingness to engage in high quality comforting, less work has focused on elucidating how change in motivational factors may cultivate change in support provision quality. As MacGeorge and colleagues (2011) note, it is theoretically advantageous for researchers to determine how one’s ability (e.g., competence) to provide high quality support differs from one’s willingness to do so. Such an understanding opens the door for dyadic research to be conducted on conversants’ motivation to process and respond to each other’s needs.

Bodie (2013) argues that positive support outcomes are greater for *recipients* when they are more motivated to process received supportive messages; however, this same process has not yet been studied from a provider perspective. It is possible that by increasing support provider well-being, providers may become more motivated to process support recipients’ implicit or explicit need for support, and thus, are more likely to respond to these needs effectively. Findings of the current study provide a pathway for examining whether increases in provider well-being promote greater sensitivity toward support recipient needs. More research needs to be conducted on whether increases in VPC support quality correspond with increases in well-being for providers and recipients; nonetheless, this investigation provides a stepping-stone for researchers to continue the study of how, when, and why, support message quality can be enhanced.

Implications for Practitioners

This study points to a number of recommendations for practitioners should they decide to use EWT interventions in an attempt to enhance caregiver well-being or support quality. Findings suggest it is important for practitioners to assess the demographic characteristics and psychological functioning of participants before initiating a writing intervention. The current study suggests that specific expressive writing benefits (or drawbacks) can be contingent on pretest characteristics such as depression, stress, emotion regulation difficulty, and relational satisfaction, as evidenced by their corresponding interaction with the condition to which a participant is assigned. As Seih, Chung, and Pennebaker (2011) note, EWT is not necessarily a cure-all for individuals who have experienced trauma. Theoretical explanations attempting to explain underlying mechanisms of EWT efficacy still conflict. As such, conducting purposeful, nuanced, investigations will help shed light on when, why, and how, expressive writing works across population types. In addition, practitioners may wish to consider using time-management writing as a form of treatment rather than a control condition, particularly for populations of caregivers that are likely to experience burden or stress due to time-demands.

This investigation found that TM writing promoted positive psychological change for participants, which echoes the findings of research conducted by MacKenzie and colleagues (2007) on caregivers and the use of TM writing. As such, further exploration of TM as a treatment condition is warranted. Finally, practitioners should carefully consider the content of expressive writing prompts that are used when encouraging participants to engage with prior traumatic experiences. Expressive writing (EW) is a term that encompasses various way of writing, meaning that not all expressive writing interventions and/or expressive writing prompts are the same (for a review of EW studies and of EW methodological considerations see Frattaroli, 2006). The expressive writing prompts used in this study were based upon research conducted specific to cancer contexts (see Stanton & Danoff-Burg, 2002). Other studies have utilized different expressive writing prompts (see Pennebaker & Beall, 1986; Crowley, 2014 for examples). The wording of prompts may indeed alter outcomes for participants. Thus, practitioners should be cognizant of the outcomes they are attempting to cultivate and design or utilize prompts in accordance with specific study goals.

Study Limitations

Although this study makes theoretical and practical strides in expressive writing and support provision research, a number of limitations should be taken into account. Perhaps one of the most notable limitations of this study is that it assessed support provision quality but relied on only one interactant's view of a process that is inherently dyadic in nature. It is imperative that future research assess whether support quality can be improved upon in naturally-occurring situations wherein the other dyad member is present. Furthermore, it is important for researchers to assess whether support *recipients'* view of a provider's support quality changes from pre- to posttest after having support providers engage in an intervention designed to enhance support quality. Naturally-occurring support encounters do not occur in a vacuum but are instead influenced by context, relationship status, environmental factors, psychological well-being of interactants, relationship length, previous interactions, provider/recipient expectancies, severity of a situation, and more (MacGeorge et al., 2011).

Further, other provider behaviors such as exhibited nonverbal immediacy (NVI) can impact the support process (Jones & Guererro, 2001), and potential change in these behaviors should also be assessed. As such, merely evaluating whether verbal VPC quality is improved upon following an intervention does not paint a clear enough picture of whether this results in positive personal and relational outcomes for support providers and recipients. Research should also evaluate whether changes in VPC quality tend to be lasting or relatively fleeting. Support providers' interaction tendencies may revert back to patterned ways of responding (Wenk-Sormaz, 2005) if expressive writing is not completed in a more continual "diary-like" way.

An additional limitation of this study is that it was conducted with a very specific participant population (HSCT cancer survivor caregivers 1-3 years post-transplant) with a very homogenous sample (predominately Caucasian females who were approximately 50 years of age). Cancer contexts are filled with multiple, and ongoing, support encounters that remain centered on likely very similar topics (e.g., a cancer survivors' physical/mental health), thus emerging results may have been different had a more general population been utilized, one in which supportive encounters do not tend to center on similar topics of discussion. Results may also have been different if participants and their spouses were at a different phase in the cancer experience (e.g., immediately following diagnosis; during active treatment). Last, this sample reported generally robust levels of resilience and support availability, coupled with relatively low levels of burden, stress, and depression at study onset. As such, a number of findings may have been influenced by the fact that participants had high levels of psychological functioning at onset, thus incurring a ceiling effect in which they did not have much room to increase over the course of the intervention. Each of these limitations points to the fact that it is important to determine whether similar findings arise across diverse populations.

Finally, it is important to note that a number of unmeasured factors could have influenced the quality of support provision that providers' reported exhibiting in naturally occurring support interactions, which in turn could have influenced findings related to changes in support provision quality. For example, where support conversations took place (e.g., public or private setting), how much time providers and recipients had to discuss a distressing situation, support providers' mood or affective state, perceived responsibility for distress, whether facework or politeness strategies were enacted, and whether other individuals were present could have all impacted the communication that occurred within these conversations (Burleson et al., 2005; Goldsmith, 2000; Jones & Burleson, 1997). As such, future research should consider assessing change in support quality that occurs in a controlled setting that is uniform for all participants, to assess whether findings can be replicated.

Conclusion

Results of this study demonstrated that it is possible to significantly improve various aspects of caregivers' well-being after a relatively brief intervention that is low-cost and that can be completed at participants' location of choice. This is particularly important in caregiving contexts, as many caregivers experience high levels of stress and burden (Braun et al., 2007) yet may not feel as though they have the time to address their own psychological needs adequately (Golant & Haskins, 2008; Jones & Jones, 1994). Furthermore, results indicated that caregivers' who were assigned to the benefit-finding writing condition experienced significant increases in naturally-occurring support provision quality following the intervention, which may incur additional positive outcomes for their own, and their partner's, well-being (MacGeorge et al., 2011; Reblin & Uchino, 2008).

High quality social support is tied to myriad aspects of physical, psychological, and relational functioning (Burleson, Albrecht et al., 1994; Cohen & Wills, 1985; Gruenewald & Seemen, 2010), thus finding lasting ways to increase support quality is an important scholarly endeavor. Overall, much additional research is needed to better understand when and how expressive writing works best, as well as whether it will remain a useful tool for increasing individuals' motivation to provide high quality social support. Future research is ripe for opportunity in this area of study, and the current investigation provides a step toward demonstrating that the improvement of psychological well-being may promote higher quality supportive interactions between support providers and recipients in caregiving contexts.

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Appendix A. Writing Prompts

Control Group Writing Prompts

Time-Management (Control) Session 1:

During each of the three writing sessions, we would like you to write about an assigned topic. You should write about the specific topic in detail without discussing any of your thoughts and feelings surrounding the topic, but rather focus on a factual description. Today, we want you to write about the activities you engaged in during the *previous week (the past seven days)*. Again, please describe them in detail without referring to your thoughts or feelings associated with them.

Time-Management (Control) Session 2:

During each of the three writing sessions, we would like you to write about an assigned topic. You should write about the specific topic in detail without discussing any of your thoughts and feelings surrounding the topic, but rather focus on a factual description. Today, we want you to write about the activities you have engaged in over the *past* 24 hours. Again, please describe them in detail without referring to your thoughts or feelings associated with them.

Time-Management (Control) Session 3:

During each of the three writing sessions, we would like you to write about an assigned topic. You should write about the specific topic in detail without discussing any of your thoughts and feelings surrounding the topic, but rather focus on a factual description. Today, we want you to write about your plans for the *upcoming week*. Again, please describe them in detail without referring to your thoughts or feelings associated with them.

Note: The control condition prompts were taken from:

Smyth, J. M., Nazarian, D., & Arigo, D. (2008). Expressive writing in the clinical context. In A. Vingerhoets, I. Nyklick, & J. Denollet (Eds.), *Emotion regulation: Conceptual and clinical issues* (pp. 215-233). New York, NY: Springer

Expressive Disclosure Writing Prompts

Expressive Disclosure Session 1:

What we would like you to write about for these three sessions are your deepest thoughts and feelings about your experience with your spouse/partner’s cancer. We realize that you likely have experienced a full range of emotions, and we want you to focus on any and all of them. In your writing, I want you to really let go and explore your very deepest emotions and thoughts. You might think about the various feelings and changes that you experienced before the diagnosis, after the diagnosis, during treatment, and now. Whatever you choose to write, it is critical that you really focus on your deepest thoughts and feelings. Ideally, we would like you to focus on feelings, thoughts, or changes that you have not discussed in great detail with others. You might also tie your thoughts and feelings with your spouse/partner’s cancer to other parts of your life – you childhood, people you love, who you are, or who you want to be. Again, the most important part of your writing is that you really focus on your deepest thoughts and emotions. The only rule we have is that you write continuously for the entire 15 minutes. If you run out of things to say, just repeat what you have already written. Don’t worry about grammar, spelling, or sentence structure. Don’t worry about deleting things, unless you want to. Just write.

Expressive Disclosure Session 2:

You’ve reached the second writing session for this study and are receiving the same writing prompt as before: What we would like you to write about for these three sessions are your deepest thoughts and feelings about your experience with your spouse/partner’s cancer. We realize that you likely have experienced a full range of emotions, and I want you to focus on any and all of them. In your writing, we want you to really let go and explore your very deepest emotions and thoughts. You might think about the various feelings and changes that you experienced before the diagnosis, after the diagnosis, during treatment, and now. Whatever you choose to write, it is critical that you really focus on your deepest thoughts and feelings. Ideally, we would like you to focus on feelings, thoughts, or changes that you have not discussed in great detail with others. You might also tie your thoughts and feelings with your spouse/partner’s cancer to other parts of your life – you childhood, people you love, who you are, or who you want to be. Again, the most important part of your writing is that you really focus on your deepest thoughts and emotions. The only rule we have is that you write continuously for the entire 15 minutes. If you run out of things to say, just repeat what you have already written. Don’t worry about grammar, spelling, or sentence structure. Don’t worry about deleting things, unless you want to. Just write.

Expressive Disclosure Session 3:

You have reached the final writing session for this study. As with the last two writing sessions, what we would like you to write about for these three sessions are your deepest thoughts and feelings about your experience with your spouse/partner’s cancer. We realize that you likely have experienced a full range of emotions, and I want you to focus on any and all of them. In your writing, we want you to really let go and explore your very deepest emotions and thoughts. You might think about the various feelings and changes that you experienced before the diagnosis, after the diagnosis, during treatment, and now. Whatever you choose to write, it is critical that you really focus on your deepest thoughts and feelings. Ideally, we would like you to focus on feelings, thoughts, or changes that you have not discussed in great detail with others. You might also tie your thoughts and feelings with your spouse/partner’s cancer to other parts of your life – you childhood, people you love, who you are, or who you want to be. Again, the most important part of your writing is that you really focus on your deepest thoughts and emotions. The only rule we have is that you write continuously for the entire 15 minutes. If you run out of things to say, just repeat what you have already written. Don’t worry about grammar, spelling, or sentence structure. Don’t worry about deleting things, unless you want to. Just write.

Benefit Finding Writing Prompts

Benefit Finding Session 1:

What we would like you to write about for these three sessions are any POSITIVE thoughts and feelings about your experience with your spouse/partner's cancer. We realize that many difficult emotions accompany a cancer diagnosis, but also that a full range of emotions often include some positive emotions, thoughts, and/or life-changes. In this writing exercise we want you to focus only on the positive thoughts and feelings you have experienced over the course of your spouse/partner's cancer. You might think about the various feelings and changes that you experienced before the diagnosis, after the diagnosis, during treatment, and now. Whatever you choose to write, it is critical that you really focus on positive thoughts and feelings. Ideally, we would like you to focus on feelings, thoughts, or changes that you have not discussed in great detail with others. You might also tie your thoughts and feelings with your spouse/partner's cancer to other parts of your life – you childhood, people you love, who you are, or who you want to be. Again, the most important part of your writing is that you really focus on positive thoughts and emotions. The only rule we have is that you write continuously for the entire 15 minutes. If you run out of things to say, just repeat what you have already written. Don't worry about grammar, spelling, or sentence structure. Don't worry about deleting things, unless you want to. Just write.

Benefit Finding Session 2:

You've reached the second writing session for this study and are receiving the same writing prompt as before: what we would like you to write about for these three sessions are any POSITIVE thoughts and feelings about your experience with your spouse/partner's cancer. We realize that many difficult emotions accompany a cancer diagnosis, but also that a full range of emotions often include some positive emotions, thoughts, and/or life-changes. In this writing exercise we want you to focus only on the positive thoughts and feelings you have experienced over the course of your spouse/partner's cancer. You might think about the various feelings and changes that you experienced before the diagnosis, after the diagnosis, during treatment, and now. Whatever you choose to write, it is critical that you really focus on positive thoughts and feelings. Ideally, we would like you to focus on feelings, thoughts, or changes that you have not discussed in great detail with others. You might also tie your thoughts and feelings with your spouse/partner's cancer to other parts of your life – you childhood, people you love, who you are, or who you want to be. Again, the most important part of your writing is that you really focus on positive thoughts and emotions. The only rule we have is that you write continuously for the entire 15 minutes. If you run out of things to say, just repeat what you have already written. Don't worry about grammar, spelling, or sentence structure. Don't worry about deleting things, unless you want to. Just write.

Benefit Finding Session 3:

You have reached the final writing session for this study. As with before, what we would like you to write about for these three sessions are any POSITIVE thoughts and feelings about your experience with your spouse/partner's cancer. We realize that many difficult emotions accompany a cancer diagnosis, but also that a full range of emotions often include some positive emotions, thoughts, and/or life-changes. In this writing exercise we want you to focus only on the positive thoughts and feelings you have experienced over the course of your spouse/partner's cancer. You might think about the various feelings and changes that you experienced before the diagnosis, after the diagnosis, during treatment, and now. Whatever you choose to write, it is critical that you really focus on positive thoughts and feelings. Ideally, we would like you to focus on feelings, thoughts, or changes that you have not discussed in great detail with others. You might also tie your thoughts and feelings with your spouse/partner's cancer to other parts of your life – you childhood, people you love, who you are, or who you want to be. Again, the most important part of your writing is that you really focus on positive thoughts and emotions. The only rule we have is that you write continuously for the entire 15 minutes. If you run out of things to say, just repeat what you have already written. Don't worry about grammar, spelling, or sentence structure. Don't worry about deleting things, unless you want to. Just write.

Note: The expressive disclosure and benefit finding prompts were taken from:

Stanton, A., & Danoff-Burg, S. (2002). Emotional expression, expressive writing, and cancer. In S. J. Lepore & J. M. Smyth (Eds.), *The writing cure: How expressive writing promotes health and emotional well-being* (pp. 31-52). Washington, D. C.: American Psychological Association.

Appendix B. Study Measures.

Caregiver Burden

Zarit, S. H., Reever, K. E., Bach-Peterson, J. (1980). Relatives of the impaired elderly: Correlates of feelings of burden. *Gerontologist, 20,* 649-655.

Instructions: The following questions reflect how people sometimes feel when they are taking care of another person. After each question, choose how often you feel that way out of the following response options:

1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, 5 = Nearly always

1. Do you feel that your partner asks for more help than he/she needs?
2. Do you feel that because of the time you spend with your partner you do not have enough time for yourself?
3. Do you feel stressed between caring for your partner and trying to meet other responsibilities for your family or work?
4. Do you feel embarrassed over your partner’s behavior?
5. Do you feel angry when you are around your partner?
6. Do you feel that your partner currently affects your relationship with other family members or friends in a negative way?
7. Are you afraid about what the future holds with you and your partner?
8. Do you feel that your partner is dependent on you?
9. Do you feel strained when you are around your partner?
10. Do you feel that your health has suffered because of your involvement with your partner?
11. Do you feel that you do not have as much privacy as you would like because of your partner?
12. Do you feel that your social life has suffered because you are caring for your partner?
13. Do you feel uncomfortable having friends over because of your partner?
14. Do you feel that your partner seems to expect you to take care of him or her as if you were the only one s/he could depend on?
15. Do you feel that you do not have enough money to care for your partner in addition to the rest of your expenses?
16. Do you feel that you will be unable to take care of your partner much longer?
17. Do you feel that you have lost control of your life since your partner’s illness?
18. Do you wish you could just leave the care of your partner to someone else?
19. Do you feel uncertain about what to do about your partner?
20. Do you feel you should be doing more for your partner?
21. Do you feel you could do a better job in caring for your partner?
22. Overall how burdened do you feel in caring for your partner?

Scoring: 0 – 20 = Little or no burden, 21-40 = Mild to moderate burden, 41-60 = Moderate to severe burden, 61-88 = Severe burden

Perceived Stress Scale

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24,* 386-396.

Instructions: The questions in this scale ask you about your thoughts and feelings over the past three days. In each case you will be asked to indicate how often you felt or thought a certain way.

Response options: 0 = Never, 1 = Almost never, 2 = Sometimes, 3 = Fairly often, 4 = Very often

1. In the past three days how often have you been upset because of something that happened unexpectedly?
2. In the past three days, how often have you felt that you were unable to control the important things in your life?
3. In the last three days how often have you felt nervous and "stressed"?
4. In the last three days how often have you felt confident about your ability to handle your personal problems? (R)
5. In the last three days how often have you felt that things were going your way? (R)
6. In the last three days how often have you felt that you could not cope with all of the things that you had to do?
7. In the last three days how often have you been unable to control irritations in your life? (R)
8. In the last three days how often have you felt that you were on top of things? (R)
9. In the last three days how often have you been angered because of things that were outside of your control?
10. In the last three days how often have you felt difficulties were piling up so high you could not overcome them?

Patient Health Questionnaire

Kroenke K., Spitzer R. L., & Williams J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*(9), 606-613.

Instructions: Over the last 3 days how often have you been bothered by any of the following problems?

Responses include the following options: 0 = Not at all, 1 = Several days, 2 = More than half the days, 3 = Nearly every day

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless
3. Trouble falling asleep, staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down
7. Trouble concentrating on things, such as reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have noticed. Or the opposite being so fidgety or restless that you have been moving around a lot more than usual
9. Thoughts that you would be better off dead or of hurting yourself
10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people

Total Score	Depression Severity
1-4	Minimal depression
5-9	Mild depression
10-14	Moderate depression
15-19	Moderately severe depression
20-27	Severe depression

Resilience

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine, 15,* 194-200.

Instructions: "Please indicate the extent to which you agree with each of the following statements by using the following scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree."

1. I tend to bounce back quickly after hard times.
2. I have a hard time making it through stressful events. (R)
3. It does not take me long to recover from a stressful event.
4. It is hard for me to snap back when something bad happens. (R)
5. I usually come through difficult times with little trouble.
6. I tend to take a long time to get over setbacks in my life. (R)

Multidimensional Scale of Perceived Social Support

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment, 52*, 30-41.

Instructions: Please indicate how much you agree or disagree with the following statements:

Responses are on a 1 (strongly disagree) to 5 (strongly agree) scale.

1. There is a special person who is around when I am in need.
2. There is a special person with whom I can share my joys and my sorrows.
3. My family really tries to help me.
4. I get the emotional help and support I need from my family.
5. I have a special person in my life who cares about my feelings.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with whom I can share my joys and my sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

Relational Satisfaction

Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships, 5,* 353-387. doi: 10.111/j.1475-6811.1998.tb00177.x

Instructions: Please indicate your agreement with the statements below using the following set of response options: 0 = Do not agree at all, 4 = Agree Somewhat, 8 = Agree completely.

1. I feel satisfied with our relationship.
2. My relationship is much better than others' relationships.
3. My relationship is close to ideal.
4. Our relationship makes me very happy.
5. Our relationship does a good job of fulfilling my needs for intimacy, companionship, etc.

Difficulty in Emotion Regulation Questionnaire

Gratz, K. L., & Roemer, E. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26,* 41-54.

Instructions: Indicate how much each statement applies to you using the following scale: 1 = Almost never, 2 = Sometimes, 3 = About half the time, 4 = Most of the time, 5 = Almost always

1. I am clear about my feelings. (CLARITY) (R)
2. I pay attention to how I feel. (AWARE) (R)
3. I experience my emotions as overwhelming and out of control. (IMPULSE) (R)
4. I have no idea how I am feeling. (CLARITY)
5. I have difficulty making sense out of my feelings. (CLARITY)
6. I am attentive to my feelings. (AWARE) (R)
7. I know exactly how I am feeling. (CLARITY) (R)
8. I care about what I am feeling. (AWARE) (R)
9. I am confused about how I feel. (CLARITY)
10. When I'm upset, I acknowledge my emotions. (AWARE) (R)
11. When I'm upset, I become angry with myself for feeling that way. (ACCEPT)
12. When I'm upset, I become embarrassed for feeling that way. (ACCEPT)
13. When I'm upset, I have difficulty getting work done. (GOALS)
14. When I'm upset, I become out of control. (IMPULSE)
15. When I'm upset, I believe that I will remain that way for a long time. (STRAT)
16. When I'm upset, I believe that I'll end up feeling very depressed. (STRAT)
17. When I'm upset, I believe that my feelings are valid and important. (AWARE) (R)
18. When I'm upset, I have difficulty focusing on other things. (GOALS)
19. When I'm upset, I feel out of control. (IMPULSE)
20. When I'm upset, I can still get things done. (GOALS)(R)
21. When I'm upset, I feel ashamed with myself for feeling that way. (ACCEPT)
22. When I'm upset, I know that I can find a way to eventually feel better. (STRAT) (R)
23. When I'm upset, I feel like I am weak. (ACCEPT)
24. When I'm upset, I feel like I can remain in control of my behaviors. (IMPULSE) (R)
25. When I'm upset, I feel guilty for feeling that way. (ACCEPT)
26. When I'm upset, I have difficulty concentrating. (GOALS)
27. When I'm upset, I have difficulty controlling my behaviors. (IMPULSE)
28. When I'm upset, I believe there is nothing I can do to make myself feel better. (STRAT)
29. When I'm upset, I become irritated with myself for feeling that way. (ACCEPT)
30. When I'm upset, I start to feel very bad about myself. (STRAT)
31. When I'm upset, I believe that wallowing in it is all I can do. (STRAT)
32. When I'm upset, I lose control over my behaviors. (IMPULSE)
33. When I'm upset, I have difficulty thinking about anything else. (GOALS)
34. When I'm upset, I take time to figure out what I'm really feeling. (AWARE) (R)
35. When I'm upset, it takes me a long time to feel better. (STRAT)
36. When I'm upset, my emotions feel overwhelming. (STRAT)

Empathy

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology, 44,* 113–126.

Instructions: The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

A = Does not describe me well – E = Describes me very well

1. I often have tender, concerned feelings for people less fortunate than me.
2. Sometimes I don’t feel very sorry for other people when they are having problems. (R)
3. When I see someone being taken advantage of, I feel kind of protective towards them.
4. Other people’s misfortunes do not usually disturb me a great deal. (R)
5. When I see someone being treated unfairly, I sometimes don’t feel very much pity for them. (R)
6. I am often quite touched by things that I see happen.
7. I would describe myself as a pretty soft-hearted person.

Appendix C. Pre and Posttest Hypothetical Scenario

Baseline and Posttest Hypothetical:

Below is a hypothetical scenario that may, or may not, be similar to something you have experienced with your partner in the past. Even if you have not experienced this situation with your partner, try to think about how you would respond to your partner if s/he encountered this situation. Please then write your response out below as if you were speaking to your partner. Please be as detailed as possible in describing precisely what you would say to your partner in this situation.

Remember: Try not to think about how you have responded to your partner in the past, or how you think you *should* respond in the situation below. There is no right or wrong way to respond, it is just important to detail how you think you would respond to this scenario.

Scenario: Your partner is feeling upset about his/her health. Although cancer treatments have finished, s/he says that s/he worries a lot of the time about the potential for cancer recurrence. S/he tells you s/he is feeling sad and worried that the cancer may return along with other long term health issues. What do you say to make him/her feel better about this situation?

Appendix D. Naturally-occurring Supportive Acts Prompt

The purpose of this prompt is to help us garner information about the communication you engage in with your partner.

We would like you to describe you and your partner's communication with one another concerning one issue or situation that your partner found emotionally distressing within the past 3 days and what you said in response.

Situations/issues can include mostly anything and they can even consist of situations that s/he found upsetting or distressing but you perhaps didn't. Examples might include: your partner mentioning physical pain to you; your partner feeling sad about his/her condition; your partner mentioning negative feelings s/he was having - it does not have to consist of one of these situations, and *it doesn't even have to relate to his or her health,* these are simply examples to help you think.

Please recall one situation within the past three days in which your partner mentioned something s/he was distressed about. Please then describe the situation in detail by explaining all that you can remember about what your partner said, and what you said in response**,** during the situation.

Please be as detailed as possible and describe the entire interaction you had with your spouse during this discussion.

Please spend no more than 10 minutes working on this. Thank you for your time.

Appendix E. Latent Content Analysis Codebook: Coding for Support Quality

Latent Content Analysis Codebook: Coding for Support Quality

Notes: We will be using the information in this codebook to assist us in quantifying the quality of social support that has been provided by spousal caregivers of cancer survivors to cancer survivors themselves. Essentially, this codebook will help us accurately categorize the quality of support that caregivers have offered.

When utilizing this codebook, we will be coding support quality in two different ways. First, we will code caregivers' descriptions of naturally-occurring support encounters across different time points; second we will code caregivers' quality of support embedded within their responses to hypothetical support situations. We will specifically be coding for the "verbal person-centeredness" of support attempts (Burleson, 1994; defined and discussed next).

Coding for verbal person-centeredness

The verbal person-centeredness of a support message has been defined as "the extent to which messages explicitly acknowledge, legitimize, and contextualize the feelings and perspectives of a distressed other" (Bodie, Burleson, Holmstrom et al., 2011, p. 231).

There are three different levels of verbal person-centered support, low (LPC), moderate (MPC), and high (HPC) person-centered messages. Furthermore, within each subcategory of VPC, there are 3 different categories of LPC messages, 3 categories of MPC messages, and 3 categories of HPC messages for a total of nine categories a support message could fall into. Examples of each categorization are included below. VPC can be thought of as a hierarchical construct, so each level of VPC demonstrates a message that is higher in VPC than previous categorizations, and thus, is higher in support quality. Below is a Table based on High and Dillard's (2012) explanation of VPC. Please use this Table when deciding upon the degree of VPC a support message exhibits.

Verbal person-centeredness Coding Scheme

LPC (Low person-centered) Support Messages		
Level	**Definition**	**Example**
1	Support provider denounces, negatively judges, and/or condemns the cancer survivor's feelings.	"You shouldn't feel bad about being tired, I don't understand why you're stressed about this, it isn't anything to worry about."
2	Support provider challenges the feelings or actions of the cancer survivor	"Don't worry, you can find other things to eat. It's not that big of a deal, you'll get used to it."

3	Support provider dismisses or does not acknowledge the feelings of the cancer survivor (i.e.,, no part of the message focuses on the feelings of the cancer survivor).	“You know, I think the doctor would be a good person to talk to about this.” *Note: If the support provider changes the subject it would likely fall into this category
MPC (Moderate person-centered) Support Messages		
Level	**Definition**	**Example**
4	The support provider attempts to distract the cancer survivor by referencing an unrelated activity that they can focus on or go do. The provider tried to divert the survivor’s attention away from the stressful issue.	“You just need a day to stop thinking about your health; why don’t we go shopping to take your mind off of things.”
5	The support provider acknowledges the distress of the cancer survivor but doesn’t attempt to understand his/her feelings, nor does the provider attempt to help the survivor cope with his/her feelings.	“I’m sorry you’re worried about this. All we can do is hope for the best.” “I understand why you would feel that way, I’d be worried too.”
6	The support provider attempts to reduce the cancer survivor’s distress by offering some sort of non-feeling centered explanation of the situation. The provider mentions some sort of circumstance for interpreting the distressing situation. If the support provider tries to fix the situation but doesn’t elaborate on feelings it probably belongs here.	“Honey, I know it isn’t fun to have to change your diet. I would feel the same way, but it seems like the doctor thinks this will really help your energy levels increase and might even have an impact on your physical health as well.”
HPC (High person-centered) Support Messages		
7	The support provider acknowledges the cancer survivor’s feelings but doesn’t provide an elaborate explanation for the distress.	“I am so sorry this has happened and completely understand why you’re upset. Do you want to talk about it more? Is there anything I can do to help? Please know that you can talk to me about anything.
8	The support provider acknowledges the cancer survivor’s feeling and also provides an elaborated explanation of the other’s feelings.	I know how hard this is for you and I’m so sorry you have to go through this. You have been doing everything possible to keep yourself healthy. I know how hard things can be when

		you feel like you have no control over your health but maybe we can just keep talking with the doctor and continue to do our best to keep you in good shape through exercise and eating healthy.
9	The feelings of the cancer survivor are acknowledged and legitimized. The support provider attempts to provide a positive perspective on the situation, and/or tries to help the survivor understand his/her feelings in relation to a broader perspective or context.	Honey, I'm really sorry that you’re feeling sad and that stupid cancer has come into our lives at all. It is completely understandable that you’re upset. This is the most difficult thing we’ve ever had to face and you’ve been so strong through it all. But look how well you are doing! Every doctor we see is so encouraged by how well you are doing, saying that most people are not this far in their recovery. I love you very much and will be here for you for whatever you need. God has gotten us through so much he will see us through what’s left of this as well.

VPC Troubleshooting.

STEPS WHEN DECIDING VPC OF A SUPPORT MESSAGE:

Ask yourself whether the support message acknowledges the cancer survivor's feelings:

NO

↓

THIS IS A LPC MESSAGE

LPC1 Condemns survivors feelings

LPC2 Challenges survivors feelings

LPC3 Ignores survivors feelings

YES

↓

THIS IS EITHER A MPC OR HPC MESSAGE

↓

Does the message include perspective taking, elaboration of feelings, or a remedy?

NO

↓

THIS IS A MPC MESSAGE

MPC1 - Provides a distraction for the situation

MPC2 - Acknowledges distress but does not help survivor cope with it

MPC3 - Attempts to reduce distress by citing mitigating circumstance for situation

YES → **THIS IS A HPC MESSAGE →**

HPC1 Acknowledges distress but does not provide elaborate explanation

HPC2 Acknowledgment and elaborated explanation of feelings included

HPC3 Legitimization of feeling, elaboration, & perspective taking included

Appendix F. Anonymized Writing Examples.

Example 1: Expressive Disclosure Example Writing

> As with anyone, the diagnosis of cancer is something that was dreaded. Who would have thought that a walk into your doctor's office to have some blood work done would turn out to be a diagnosis of a rare form of lymphoma cancer for the love of your life of almost 25 years at that time!
>
> A few months of a few blood panels, physicals, biopsies, scans, etc. proved to be the Big "C" word that we did not want nor expect to hear - it won't happen in our family!
>
> Because of the rarity, instantly [he] reacted as if he was letting me and our children down. I can't even begin to explain the feelings I had watching him literally SOB sitting in the corner of our sectional. How was I going to explain this to our adult children, our families, our friends, and our co-workers?
>
> I instantly felt that I now needed to be the strong hold in the family. How was I possibly going to do this and hold myself together and at the same time be a caregiver to my husband? I am a planner and this was NOT in my plan!
>
> Appointment after appointment and test after test proved to be more stress than I ever could imagine. The feelings of hope that I could help my honey hold himself together and still be the man for our family he did so well with, began to consume my every moment of every day.
>
> Although I was and still am the type of individual who is fairly easily stressed, I new [sic] that I had to gain some form of composure to make it through this long journey we had ahead. Finding out about the treatments and ultimately the stem cell transplant was still more than I felt I could handle though. For someone who never knew what true "anxiety" was, well, it set in!
>
> Finding out that we had to make some decisions on where to go for the SCT and realizing how long we would be away from our home and our family & friends was one of the biggest stresses I had ever experienced! We owned a home, we had jobs - how were we possibly going to afford maintaining our household in [home city] when we had to go to Seattle for 4 months?
>
> The challenges of talking and working with 2 insurance companies had already become a burden and this journey had only begun. BUT out of nowhere, family, friends, and the community had a benefit for us! Thank God! It was one less worry for me, right? Well, not really - I began to feel guilty because people were doing this for us. I can't even begin to explain what I felt beyond the guilt.
>
> I had so many jobs to do now ~ attending the many many appointments. This meant I had

to take off work. How was I going to do this when I only had so many sick days and so much vacation? I had to talk with 2 insurance companies and try to keep things organized. How was I going to do all of this when insurance companies work the same hours as I do? How was I going to do this during the day when I worked? If I took time off work for all of the appointments, how was my work going to get done?

Time to go to Seattle ~
[Spouse] was not going to be working now. He only has 2 weeks paid vacation per year and 1 week sick leave. This had already been exhausted from his 6 months of treatments. We weren't going to have his income. I only have so much sick leave and vacation. I need to be on paid leave in order to continue to be eligible for insurance and for the District to continue to pay the premiums. How was this going to be possible? My department solicited others to donate sick leave - it was a huge success! Once less worry off my plate. EMOTIONS? Cry Cry Cry!!! Meanwhile, I cared and cared for my hubby through all of this, putting everything about me aside except in the shower and at work - these were my outlets for emotion.

SCCA and UW were our home (away from the apartment we rented). Thank goodness for my parents who helped "move" us and get us settled in Seattle! WELL, anxiety began to take over when they left! It was just me taking care of my hubby! No family, no friends, no nothing! Thank goodness for [Spouse’s] doctors who helped me - Ativan was a lifesaver for a while for me!

Time to buckle down came to me though and I was so determined to get my hubby through this. I did!!! Things went so very well in Seattle! The medical community who became our family and our friends were absolutely AMAZING and over-the-top! Everything went so very well with the exception of a few hiccups.

BUT, now it was time to say goodbye to SCCA and UW and that second family and go home! NO NO NO - we are scared and don't want to! I simply was not handling this very well whatsoever. I could not do it! Who was going to take care of my hubby as good as Seattle and me - NO ONE! We were not ready at all to come home back to [home city]!

Family and friends wanted to have parties to welcome us home! I could not handle AT ALL what everyone wanted to do for us. All I wanted to do was to stay home and take care of [spouse] who was so very sick and had no immune system. No one else could do things as well as I or Seattle. I did not want anyone to come around - I had to protect and care for my husband. I did not want to share him with anyone. I did not want to take him anywhere - just stay at home where he would be protected.

The time came when I had to go back to work. OH HELL NO - what was I going to do? How was [spouse] going to be cared for? How was he going to know when to take his medications during the day? Who was going to make his lunch? Who was going to help him shower? I could not handle it any longer!!!

After being back at work for about 6 weeks (it had been progressing slowly), I fell into a deep deep depression. I woke up one morning feeling as if I had failed my husband and caring for him. For weeks already I could only cry and cry. Work had become too much of a burden on me! After waking up one morning and not wanting to face the office, I began to cry and was almost hysterical - was curled in a ball and just rocked myself to no end. Poor [spouse] - he didn't know what to do. I was supposed to be caring for him and he found himself making calls to my mom, my supervisor, to try to care for me. Little did we know that I would be in intense counseling and outpatient observation for 6 weeks myself. My family, our adult children, and [spouse] did not know what to do. [My spouse] was still so sick himself. I CAN'T EXPLAIN HOW I FELT - there are just no words!

Slowly, with tons of work, I began to somewhat get back to what was our new some sort of normalcy.

This last 21+ months post SCT & our 4 month residency in Seattle, has been a continued challenge. Not knowing what the next 6-month blood panels and scans will show and how [spouse] will take the Rituxin/chemo maintenance, continued to bring the anxiety on but it was less of a challenge at least.

This past Friday was a day of celebration for us – [spouse's] final maintenance treatment. BUT, what does the future hold for [my spouse] and our family? It is likely that MCL will resurface, so how do we not worry and have anxiety? I simply cannot get over or through this.

Example 2: Benefit Finding Example Writing

I actually have experienced quite a few positive thoughts and feelings throughout this journey. That's been a difficult thing to explain to other people, but when you face something like this, it really helps to focus you on what really matters in life and that can be a really good thing. Some things I can think of right now are:

1. We have experienced so much support through this process and we feel so very loved. We are both in serving careers and we are used to serving and helping other people and get a lot of joy out of that. But, this situation turned that all upside down for us. All of the sudden, we were very much the ones in need of help. And, oh my goodness, we received so much love and help, it was amazing. First of all, our families were incredible. My parents live about 30 minutes away and during the time [spouse] was in the hospital for chemo and transplant, they took more days off of work than I can count to come and help us with the kids, take care of things at the house, etc. Our kids are little so we needed a lot of support with them while I was spending all day at the hospital with [spouse]. [Spouse's] mom lives comes to visit as often as she can. For about a 4 month period of time, she basically lived between here and home - back and forth for about 2 weeks at a time. When she was here, she stayed at our house and just took care of everything so we could do whatever we needed for [spouse’s] health. This also gave my parents a break for periods of time. [Spouse’s] family could not come as often as my parents or stay as long as his mom did, but they took their turns helping too. Many times they made the trip just to spend time with us, take me to Costco, get us dinner, etc. etc. They also kept the kids at their house for us several different times for a week or more. Besides our family, our friends and church community were amazing. We had meals delivered, child care provided, yard work done, our house cleaned (sanitized, really b/c of [spouse’s] immunity issues), leaves raked, groceries bought, etc. We also received cards, text messages, caring bridge responses, facebook messages, e-mails, phone calls etc. on a very regular basis. We just received so much support, it was almost overwhelming. Everyone should experience this at some point in their lives.

2. Our faith in Jesus has been the cornerstone for both of us through all of this. This has been such a difficult experience, but we honestly believe with all of our hearts that God loves us and He is in control. That means that we are not alone in fighting cancer. Each morning during my time of devotions, God would give me Bible verses of encouragement, or I would hear a song about His faithfulness. or read a devotion that just hit the spot. [Spouse] did not have the same level of energy through all of this, but he relied a lot on prayer and listening to old hymns, etc. We prayed a lot together and also asked other people to pray for us on a very regular basis. There were times when I was totally aware that God was giving me a peace and joy that there is absolutely no way I could manufacture on my own. Trusting that God is in control has made all the difference for us. Of course, we have prayed and prayed and prayed for complete healing for [spouse], but we also honestly got to the point where we accepted that NO MATTER WHAT happens, we can trust God to care for us - even if [spouse] dies and I am left with 2 little kids without him - I will not be alone. Do I want that to happen? Absolutely not. But, will I survive? Yes.

3. Finances - We learned fairly early on that [spouse] had pretty good insurance coverage and there is no out of pocket maximum for each year. This treatment definitely cost us a lot of money but insurance made a HUGE difference and we had some savings to cover the other. On top of that, our church has been very faithful to us. [Spouse] went on disability and I also had to take a medical leave when he had the transplant b/c SCCA requires a full time caregiver. But, I had a fair amount of sick leave built up and I was allowed to apply for leave share to cover the rest. So many co-workers donated leave to me, it was overwhelming. So, my entire leave was paid! Not having to worry about the financial side of things made a huge difference for us in all of this and definitely brought peace and feelings of gratitude. I don't know how people manage this without the resources we have!

4. Medical care and advances: We also experienced positive emotions because of the care [spouse] received. From the beginning, he received really excellent care. His oncologist was amazing. Dr. […..] not only knows her stuff, but she really cared about [spouse] as a person and us as a family. She cried on the phone with [spouse] once when she called to give him the good news that he was in remission. Amazing! We were also so grateful to be able to be treated by SCCA for the transplant process and recovery. We would go for appointments there and I would look around the waiting room at people who have traveled here from all over the world to receive this care. Also on the medical side of things - we are incredibly grateful to the young man who was [spouse's] anonymous stem cell donor. What a gift!

I just looked at my watch and I am over my 20 minutes - oops! But, I could keep going. I found very early on that having an attitude of gratitude would make all the difference in this journey - and it has. We have had so much to be grateful for, I cannot even recount all of it.

Example 3: Time-Management (Control) Example Writing:

> Yesterday morning was bone marrow biopsy day. I got up took my shower and got ready, then got my husband up to make sure he was ready to go to the hospital. I made sure that he had no cream in his coffee and then had to make sure he had nothing to drink after 6:00 am.
>
> We left for the hospital and arrived at 6:50 am and proceeded to check in. After check in, we went to labs to have his blood drawn. After that, we went to radiology to wait for the procedure. We got in a prep room and the put in his iv and then proceeded to take him to the operating room.
>
> I then went down to the cafeteria and got some coffee and sat by the window and checked my email and facebook. About a half hour later, on the way back to radiology, I stopped in the gift shop to find an angel pin for a very dear friend of mine that was in the hospital with terminal cancer. I couldn't find one, but the sales person had one on her lapel, and gave me that one, as she said I needed it more, and that's what she was there for to help someone else.
>
> I went to recovery and sat with my husband while he ate a boxed meal and waited until he could be released. By 9:30 we got to leave, and then we drove home to drop some items off. We left home about an hour later, dropped by a friends to leave some items and pick up some things, then we met some other friends for lunch.
>
> After lunch, we did some errands, then went home so my husband could get some rest, and wait for the garage door repair man to come and fix our garage door. I decided to go to the hospital to see my friend and give her the angel pin. I arrived at her room to find her family there, and left immediately so that they didn't see me, and I went down to the waiting area to sit and wait to give them time. I waited for about an hour, went back to her room and they were still there, so I left and sat in the waiting area for about another half hour.
>
> I finally left and got in my car and drove to the store. Had some items in my hand when I got the phone call from my friends [*sic*] daughter in law saying she had passed away. I asked if I could go down to the house and she said yes, so I called my husband to see if he wanted to go, but he didn't feel well, so I went myself. I spent several hours at her home with her husband and other family members eating and drinking and remembering our friend. I made some phone calls to friend for her husband to let them know that she was gone. I then went home, held my husband and went to bed.