Written Emotional Disclosure for Lay Caregivers of Older Adults

By

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I would like to thank all those who have believed in my ability to earn this degree. Without your care and support, I would not have succeeded.

Abstract

Caregiver status is associated with more negative psychological health. While support services exist to provide much needed psychological, social, and respite support, caregivers under-utilize services. Barriers to utilization include availability, accessibility, appropriateness and acceptability for individual caregiver needs and preferences, and affordability. Written disclosure as an intervention overcomes these barriers, allows for private disclosure of stigmatizing information, can be used in supplement to other therapeutic interventions, and allows for the processing of distressing emotions and cognitions.

The research questions inquired, 1) Will engaging in written emotional disclosure for twenty-minutes each day for three consecutive days, result in significant differences in psychosocial outcome variables for lay caregivers of older adults versus their control group counterparts who engage in a neutral writing task? Specifically, will either group exhibit changes in depression levels, overall distress, perceived stress levels, and perceived social support? If significant changes occur, how will the outcome variables change over the course of ten weeks, from the last writing trial to a delayed posttest? 2) Will caregiver status variables predict the overall effectiveness of the intervention within the experimental group?

Participants were 20 caregivers from the Midwest, assigned to either an experimental (*n* = 10) or control condition (*n* = 10). Measures assessing depression, social support, stress, and psychosomatic distress were administered at pretest and a delayed posttest. An assessment of the participants' writing experience was also administered. Participants engaged in writing tasks about either their caregiving experiences or potential safety measures for the care-recipients' homes.

Written emotional disclosure was not supported statistically as an effective intervention for this sample. However, descriptive data from the participants provided clinical support for the use of writing as a coping tool, similar to unstructured journaling research conducted by Lattanzi and Hale (1984). In general, caregiver status was not predictive of psychosocial functioning. Interpretations of the results and implications for future research were discussed.

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Introduction

Although fulfilling, providing care for a loved one also taxes one's social, psychological, and physical resources (e.g., Schulz & Salthouse, 1999). Lack of support combined with the chronic stress of caregiving can greatly affect one's health (e.g., Esterling, Antoni, Fletcher, Marguilies, & Schneiderman, 1994). Research assessing long-term effects of caregiving has shown that negative effects are significant and often continue even after caregiving duties have ended (e.g., Esterling, Kiecolt-Glaser, Bodnar, & Glaser, 1994). Such effects include decreased social contact, depression, anxiety, and decreased immune functioning. While a number of psycho-educational support services exist, caregivers report that it is often difficult to express their feelings and concerns to others and to utilize support or respite services (e.g., Rivera, Rose, Futterman, Lovett, & Gallagher-Thompson, 1991; Smyth & Pennebaker, 2001; Whittier, Coon, & Aaker, 2004).

Barriers to utilization include availability, accessibility, appropriateness and acceptability for individual caregiver needs and preferences, and affordability (L'Abate, 1999; Whittier et al., 2004). Written disclosure as an intervention overcomes these barriers, allows for the private disclosure of stigmatizing information, can be used as a supplement to other therapeutic interventions, and allows for the processing of distressing emotions and cognitions (e.g., L'Abate, 1999; Lepore, Silver, Wortman, & Wayment, 1996). While the effects of written emotional disclosure have not been overwhelmingly supported for clinical populations (e.g., Frisina, Borod, & Lepore, 2004), the potential therapeutic implications of this intervention were important to examine for caregivers. It is thought that the positive benefits of emotional disclosure are due to the active confrontation of stressful experiences or traumas, which allows people to appraise and cognitively process their feelings, thus gaining a greater understanding of their experiences (e.g., Donnelly & Murray, 1991; Pennebaker, 1997). Caregiver status is associated with more negative psychological health (e.g., Pinquart & Sorensen, 2003), and inaccurate cognitive appraisals are associated with psychological problems, such as depression and stress (e.g., McNaughton, Patterson, Smith, & Grant, 1995). Emotion-focused coping is utilized more often than problem-focused coping (e.g., Neary, 1993), and Lattanzi and Hale (1984) supported the use of unstructured writing (e.g., journaling) in order to cope with stressful experiences associated with caregiving duties. Thus, written disclosure was a viable option that needed to be examined either as an independent intervention or supplemental support for the caregiver population, especially considering that by 2007 an expected 39 million households will include a lay caregiver of an adult (National Alliance for Caregiving, 1997).

The current research project evaluated written emotional disclosure for familial caregivers of older adults.

CHAPTER I

Literature Review

Caregivers

Impact of Caregiving

As the population is increasing in age and living longer with more chronic ailments, the need for lay caregiver support will also increase (Martire & Schulz, 2001). By 2007 it is expected that 39 million households will include a lay caregiver of an adult (National Alliance for Caregiving, 1997). Not only is life-extending technology influencing the amount of people receiving informal care at home, but the current status of long-term care insurance and facilities is also impacting people's choices to age-in-place (e.g., Killeen, 1990).

Forty-three percent of older adults in the U.S. will pass briefly through a nursing home at some point in their lives (Greenwald, 1999), though an estimated 90% of those who need long-term care receive at least some assistance from a lay caregiver, while two-thirds depend completely on a lay caregiver (e.g., Baumgarten, Hanley, Infante-Rivard, Battista, Becker, & Gauthier, 1994). These percentages are astounding, considering that the majority of caregivers are women (mean age of 46) who also commonly provide care for their own children, while working outside of the home (National Alliance for Caregiving, 1997; Killeen, 1990).

Providing care for a loved one can be stressful enough to cause psychological and physical distress, and one need not identify their caregiver role as a negative experience for health declines to persist (Gallagher-Thompson & Powers, 1997;

Martire & Schulz, 2001). Caregivers are faced with the daily tasks of supporting and caring for an ill person, as well as dealing with legal, financial, and emotional concerns. These tasks, as well as other moderating variables such as social support (e.g., number of empathetic, unconditionally supportive, and trustworthy social ties) and coping, affect caregiver well-being (e.g., Gallagher-Thompson & Powers, 1997).

Providing care for a loved one can be such a taxing experience that caregivers end up living with negative psychological and physical health consequences (e.g., Schulz & Salthouse, 1999). Prolonged stressor exposure can cause long-term disturbances that may persist even after the distressing event has ended (e.g., Esterling, Kiecolt-Glaser, Bodnar, & Glaser, 1994). Diseases such as Alzheimer's force caregivers to witness disturbing cognitive and behavioral deteriorations that greatly increase emotional distress (e.g., Lawrence, Tennstedt, & Assman, 1998). It is common for caregivers to feel depressed, overwhelmed, frustrated, angry, resentful, guilty, and ashamed (e.g, Hagestad, 1986; Lawrence et al.). As normal as these feelings are for a caregiver, it is often difficult for caregivers to express their feelings and concerns to others, or to utilize support or respite services (e.g., Smyth & Pennebaker, 2001; Whittier, Coon, & Aaker, 2004). Such repression of feelings combined with the chronic stress of caregiving can greatly affect one's physical and psychological health (e.g., Esterling, Antoni, Fletcher, Marguilies, & Schneiderman, 1994; Kiecolt-Glaser, Dura, Speicher, Trask, & Glaser, 1991; Kiecolt-Glaser, Glaser, Gravenstein, Malarkey, & Sheridan, 1996; Kiecolt-Glaser, Marucha, Malarkey, Mercado, & Glaser 1995).

Varieties of supportive services exist and have been evaluated as effective for reducing caregiver strain and a wide array of negative physiological and psychosocial outcome variables for caregivers of older adults (e.g., Whittier et al., 2004). Supportive interventions include information, support groups, individual professional and peer-based counseling, respite services, and educational programs. Even though as a group, caregivers versus non-caregivers experience greater psychosocial and physical distress, with greater differences evident in psychological health (e.g., Pinquart & Sorensen, 2003; Schulz, O'Brien, Bookwala, & Fleissner, 1995), caregivers under-utilize support services (e.g., Rivera, Rose, Futterman, Lovett, & Gallagher-Thompson, 1991; Whittier et al., 2004).

Barriers to utilization include availability, accessibility, appropriateness and acceptability for individual caregiver needs and preferences, and affordability (L'Abate, 1999; Whittier et al., 2004). A reason frequently not cited by caregivers for under-utilization of services is stigma surrounding the uncomfortable, often shameful feelings associated with caregiving, for example, anger and resentment at one's caregiver role (Lawrence et al., 1998). Research also indicates that a combination of services is more effective than one service (Whittier et al., 2004). Thus, another barrier may include attitudes from professionals and caregivers that only one type of service is needed or appropriate, when, in fact, an array of services, all complimentary and/or supplementary is necessary. Yet, as caregivers exhibit difficulties with accessing and utilizing one support, barriers most likely would increase further with a combination of supports.

One intervention that overcomes the aforementioned barriers to utilization is a structured writing task, written emotional disclosure, developed by James Pennebaker and colleagues (e.g., Pennebaker & Beall, 1986). This intervention has positively effected change in psychosocial, physiological, and behavioral outcome variables in both college and clinical populations (e.g., Frisina, Borod, & Lepore, 2004; Smyth, 1998). The cost-effective intervention can be completed alone or in a group, the materials are readily available in one's home or at a service organization, and this tool can be used in conjunction with another supportive tool. Caregivers can complete the writing in the same room as the care-recipients rather than worrying about locating and utilizing respite services. The tasks can be utilized at any time throughout one's caregiver experience, and one will self-select the distressing topics about which to write and process. Finally, the opportunity for stigma is limited, yet the sharing of one's cognitive, behavioral, and emotional processes or experiences is allowed for based on one's personal preference.

The current study examined the use of written emotional disclosure with a sample of familial caregivers of older adults, in order to assess the intervention effects on psychosocial outcome variables. Because there is a vast literature examining psychosocial consequences due to familial caregiver roles, supportive interventions for caregivers, and written emotional disclosure effects for a variety of samples, meta-analyses and a representative sample of studies will be included in the following discussion.

Meta-analysis

Pinquart and Sorensen (2003) conducted a meta-analysis to assess differences in physical and psychological health between caregivers and non-caregivers. Sixty-three percent of the 84 studies examined caregivers of people with dementia. Control group and caregiver group differences were assessed in 86% of the studies, and in 68% of all studies, there were either no significant group differences or differences were controlled for. Pinquart and Sorensen justified the inclusion of studies that did not control for group differences by controlling for these differences in the meta-analysis. Overall, participant mean age was 62.5 years (*SD* = 8.6), 72% were female, 58.5% were spousal caregivers, while 35.8% were adult children. Seventy-eight percent of the participants completed high school, and 14% were ethnic minorities. The meta-analysis illustrated higher levels of stress and depression and lower levels of subjective well-being, physical health, and self-efficacy in caregivers versus non-caregiver controls. Overall, negative psychological effects were more pronounced than physical effects.

Studies in Pinquart and Sorensen's (2003) meta-analysis also were categorized according to caregivers of dementia versus mixed caregiver samples (e.g., dementia and physically frail), as well as non-caregiver controls. Results indicated that aside from depression, more negative effects were evident in the dementia-only sample. However, caregiver distress is predicted by a variety of variables, aside from care-receiver cognitive status (Gallagher-Thompson & Powers, 1997). Excluding depression and self-efficacy, outcome variables for the mixed samples were significantly more negative than the non-caregiver control levels. Studies utilizing spousal samples illustrated larger differences in perceived stress and depression between caregivers and controls than did studies utilizing non-spousal caregivers (e.g., adult children). Samples consisting primarily of women illustrated significantly more negative health consequences aside from stress than did samples that included men. Older versus younger samples showed higher levels of depression and lower levels of self-efficacy. Overall effect sizes for the aforementioned group differences were small to moderate. Pinquart and Sorensen cite three reasons for the lack of large effects. First, caregivers reported low levels of pretest burden and negative psychological effects (i.e., a "ceiling effect"). Second, negative effects of caregiving may have been underestimated, as caregiver-specific stressors often were not assessed. Third, small sample sizes were evident across studies, thus the necessary statistical power to detect potential effects was not available.

Implications

While amongst independent research articles somewhat mixed results are evident, Pinquart and Sorensen's (2003) meta-analysis indicates that overall, differences between caregivers versus non-caregivers in psychosocial and physical health exist. In general, caregivers versus non-caregiver controls are more likely to experience higher levels of stress and depression and lower levels of subjective well-being, physical health, and self-efficacy. Evidence for psychological effects of caregiving appears to be more conclusive than that for physical effects. As the current study examined caregiver status in relation to psychosocial and psychosomatic outcome measures, the following discussion outlining caregiver experiences and risk factors will focus on these variables.

For the general population, depression is one of the most prevalent psychological problems (e.g., L'Abate, 1999), and within the caregiving population, specifically for care-recipients with dementia, approximately 40 - 60% have depression based on self-report assessments (Redinbaugh, McCallum, & Kiecolt-Glaser, 1995). Depressive symptoms can negatively impact caregivers, for example, by affecting willingness and ability to provide care and tend to personal health (e.g., Schwarz & Dunphy, 2003). Researchers have examined the relationship among caregiver depression, social support levels, stress, and psychosomatic functioning. Somewhat mixed results have been produced by research on these caregiver outcome variables.

The effects of caregiving on social support and the ensuing effects of social support on psychological health are mixed. It appears that, overall, there is little association between social support networks and appraisal of such networks due to caregiver status and psychological health. However, Rivera, Rose, Futterman, Lovett, and Gallagher-Thompson (1991) found that depressed caregivers reported a greater need to confide in supportive others and to receive empathy and positive feedback, even though they reported lower service utilization than non-depressed caregivers. Depressed caregivers also reported more negative experiences with others than did non-depressed caregivers. This study suggests the importance of supportive services for caregivers experiencing depressive symptoms. More specifically, negative appraisals are likely due to inaccurate cognitions that can be addressed through a cognitive-behavioral therapeutic process.

Schwarz and Dunphy (2003) examined whether informal sources of support moderated the negative effects of stress on depressive symptoms. Results indicated that social support was not significantly related to stress or depressive symptomatology. Similarly, McNaughton, Patterson, Smith, and Grant (1995) found no differences in number of social support or satisfaction with emotional support; yet, caregivers were more depressed both at baseline and six-months later. Conversely, Waite, Bebbington, Skelton-Robinson, and Orrell (2004) found that depression levels were significantly higher for those lacking social support confidante. With regard to psychosomatic outcome variables, McNaughton et al. found that decreased social support significantly predicted subjective health ratings over the course of six months.

Gallant and Connell (1998) examined how caregiver demands affected health behaviors. Overall, caregiver depression and subjective burden were significantly related to health behaviors. Self-efficacy is the belief in one's ability to perform a desired behavior or achieve a desired outcome (Bandura, 1986). Self-efficacy significantly affected both depression and burden, thus indirectly influenced health behaviors. Variables that did not significantly affect health behaviors, either directly or indirectly included locus of control and social support. These results indicated that health was negatively affected by depression and burden, two common psychological issues for caregivers.

In line with self-efficacy and caregiver demands, cognitive appraisal and ensuing coping mechanisms are important elements with regard to whether one's situation is perceived as negative or positive (Lazarus & Folkman, 1984). Even when caregivers appraise caregiver-related stress as positive, stressor-related coping mechanisms can lead to negative health effects (Killeen, 1990). For example, by altering one's behavior to attend more effectively to caregiver-related tasks, a caregiver may limit personal rest, exercise, and social interactions (Killeen). Killeen (1990) assessed the relationship between perceived stress and coping methods with caregiver health. Results indicated that the duration of time spent caregiving significantly affected perceived health, although duration did not significantly affect perceived stress. As caregiver stress levels increased, perceived health decreased. This result is further clarified as research indicates that stress and depression are associated and that stress is predictive of depression within caregiver samples (e.g., Gallagher-Thompson & Powers, 1997; Schwarz & Dunphy, 2003).

In Killeen's (1990) study, all participants reported using emotion-focused and problem-focused coping. However, those reporting higher stress utilized more emotion-focused strategies directed at dealing with the stress, rather than problem-focused strategies directed at the source of stress. Similarly, Adamiak and Juczynski (2003) found that caregivers of people with Alzheimer's disease preferred emotion-coping strategies and that strong social support was necessary for effective coping. Bookwala, Zdaniuk, Burton, Lind, Jackson, and Schulz (2004) found that utilization of coping mechanisms was predicted by greater depressive symptoms and activity restriction. Supportive interventions, while beneficial for the caregiver population as a whole, might be potentially more effective for caregivers already experiencing higher levels of psychological, social, and physical strains.

Overall, those in greatest need for supportive services based on psychosocial and psychosomatic functioning are those with fewer social supports, higher depression and perceived stress levels. While there are mixed results with how these psychosocial variables affect each other, the variables are associated with perceived health, health behaviors, and coping mechanisms. Caregiver status variables that increase one's risk for negative psychosocial and health consequences include multiple role commitments, caring for a live-in family member for longer durations, lower education, and lack of respite services (e.g., Chumbler, Pienta, & Dwyer, 2004; Gallant & Connell, 1998; Killeen, 1990; Lorensini & Bates, 1997; Waite, Bebbington, Skelton-Robinson, & Orrell, 2004). Individual studies indicate younger caregivers are at a greater risk for negative effects (e.g., Gallant & Connell, 1998; Killeen, 1990), yet the meta-analysis conducted by Pinquart and Sorensen (2003) indicates that older caregivers are more likely to experience negative symptoms. Similarly, the meta-analysis also indicates greater psychological discrepancies between spousal caregivers versus controls than their adult children and control counterparts.

Interventions

These aforementioned studies highlight the importance of therapeutic support services for caregivers who are experiencing higher levels of psychosocial distress, lower perceived social support, and who have live-in care-recipients with behavioral and/or memory problems (e.g., Bookwala, Zdaniuk, Burton, Lind, Jackson, & Schulz, 2004; Lorensini & Bates, 1997). Such services include information and educational programs, support groups, individual professional and peer-based counseling, and respite services. Many valuable service agencies and programs exist to provide effective caregiver support.

Information services exist to educate caregivers about their experiences, the care-recipients' diagnoses, and available services to meet their needs. While these programs are effective at offering knowledge, they do not effect change in the negative psychosocial and physical consequences due to the caregiver duties and experience (e.g., Kennet, Burgio, & Schulz, 2000). Providing caregivers with information about available services also does not effect change in outcome variables, yet direct linking with services and follow-up has been shown to positively impact caregiver burden (e.g., Weuve, Boult, & Morishita, 2000). Similarly, educational programs alone can effectively offer knowledge and skills. Yet educational interventions are most effective when targeting specific problems or needs, followed by education about coping tools and problem-solving techniques (Bourgeois, Schulz, & Burgio, 1996; Gallagher-Thompson et al., 2000).

Psycho-educational groups are a common intervention and have been proven effective sources of support. Hosaka and Sugiyama (2003) found positive change in depression, anxiety, anger, fatigue, and confusion due to a group intervention. Mittelman, Roth, Coon, and Haley (2004) also illustrated the positive effects of an enhanced therapeutic counseling intervention for spousal caregivers of people with Alzheimer's. Toseland, Rossiter, Peak, and Smith (1990) found that support groups positively impacted social support. Yet, individual counseling has greater effects than does group support (e.g., Bourgeois et al., 1996), especially for non-spousal caregivers (e.g., Toseland et al.). This is the case as individual counseling facilitates cognitive-behavioral and emotional processing in order to cope more adaptively and to increase problem solving abilities. Whereas, support groups are more social in nature, most often allowing for the sharing of one's story, as well as the normalization and validation of one's experiences.

Respite services assist caregivers by relieving the duties, stress, and burden associated with the caregiver role. Respite services are provided in-home, at organizations such as adult day care, or at long-term care facilities for temporary short-term stays. In-home and daily respite support has positively impacted caregiver burden, stress, social interactions, depression, and anxiety (e.g., Bouregois et al, 1996; Lorensini & Bates, 1997). Lorensini and Bates (1997) found that time spent utilizing daycare respite services was unrelated to negative health effects, while Bouregois et al. (1996) found that consistent utilization of respite support leads to the greatest change in psychosocial outcome variables.

Overall, while each type of supportive service for caregivers can provide some amount of relief and change for caregivers' psychosocial and physical functioning, a combination of services is most effective for decreasing negative health consequences (Whittier et al., 2004). However, as caregivers under-utilize supportive services, the barriers to utilization become more difficult to overcome when caregivers need to access more than one service. Thus, new services need to be developed and evaluated according to caregiver needs and barriers to utilization. Services should effectively meet caregiver needs whether used alone or in combination with other services.

In Killeen's (1990) study, caregivers rated caregiving experiences according to perceptions of stress associated with the experiences. The five most stressful experiences included: 1) unrelenting nature of the caregiving role, 2) difficult behavior exhibited by the care-recipient, 3) lack of communication with the care-recipient, 4) use of resources (i.e., unawareness of resources, negative effects on care-recipient post utilization), and 5) facing reality (e.g., unfulfilled dreams, "letting go" of the care-recipient). Killeen's results also showed that as free time decreased, perceived stress increased significantly. Health care professionals should use these reported stressors along with the barriers to service utilization to develop, enhance, and support caregiver programs. It might be that caregivers for elders with dementia experience these top five caregiver stressors more severely than caregivers for elders with, for example, general frailty due to physical declines.

As descriptive literature about caregivers indicates, negative psychological health is associated with caregiver status, yet individual differences abound. As individual differences are evident within the caregiver population, moderator variables most likely have an effect on type and severity of health consequences experienced. These variables make it more difficult to discern exactly what types of interventions might have therapeutic effects for this population, or subsamples within the population. This population often does not utilize social support from friends and family or supportive services provided by health care professionals (e.g., Rivera et al., 1991; Smyth & Pennebaker, 2001; Whittier et al., 2004). There exists a gap between required psychosocial support services and provisions of services (Glueckauf & Loomis, 2003). While lack of knowledge about resources, as well as financial and time constraints may be the cause(s), another reason could include the common feelings of which caregivers feel ashamed, again for example, resentment and guilt (e.g., Lawrence et al., 1998). The feelings cited by the participants in Killeen's (1990) study appear to support the uncomfortable feelings due to not only the caregiver role and associated duties, but also the anticipated losses due to the care-recipients' declines.

It is necessary to examine continually how other, possibly less socially stigmatizing, psychotherapeutic interventions might benefit caregivers, in order to meet the individual needs of those who might utilize a supportive service. Such interventions must also overcome the other barriers to utilization: availability, accessibility, appropriateness and acceptability for individual caregiver needs and preferences, and affordability. Written emotional disclosure is a potential therapeutic support for this population, as it overcomes these barriers to service utilization. Considering the important role cognitive appraisal plays in caregiver perceptions of stress (McNaughton, Patterson, Smith, & Grant, 1995) and that emotion-focused coping appears to be utilized by caregivers more often than problem-focused coping (e.g., Neary, 1993), written emotional disclosure allows for cognitive and emotional processing of the caregiver experience. McNaughton et al. (1995) found that irrational beliefs significantly predicted depression and negative health outcomes. As written emotional disclosure is thought to function through a cognitive-behavioral process, it may be an effective tool for caregivers who appraise their situations negatively and have few social supports.

Written Emotional Disclosure

Theoretical Background

In order to process information, understand experiences, manage emotions, and create a sense of control and resolution over life experiences, people naturally construct narratives (e.g., Nichols & Schwartz, 2001; Pennebaker, 1993; Pennebaker & Seagal, 1999). The value of personal understanding and eventual cognitive, behavioral, and physiological changes due to disclosure and the creation of stories are implicit in psychotherapy (e.g., L'Abate, 1991; Pennebaker & Seagal). Narrative therapy is one psychotherapeutic example of the use of personal constructions of stories. Freeman (1984) stated that narratives are not accurate recollections of events, but rather personal creations. In narrative therapy, stories shape life; therefore, clients focus on understanding experiences and expanding their attention to alternative narratives of their lives (Nichols & Schwartz).

The construction of personal narratives also is the foundation for newer, alternative therapeutic interventions, such as written emotional disclosure. Writing has been utilized in empirical investigations for some time. For example, Phillips and Wiener (1966) examined empirically a writing therapy task, individual and group therapy, as well as a control task. The writing task produced equivalent results as did the two face-to-face interpersonal therapies. However, only in the last two decades has writing been critically examined and developed as an independent intervention through the work of James Pennebaker and colleagues (e.g., Frisina, Borod, & Lepore, 2004; Lepore & Smyth, 2002).

Numerous treatment interventions have been developed and studied for the processing of traumatic or stressful experiences, one of which is emotional disclosure through writing. Emotional disclosure refers to the translation of feelings into language through a self-reflective process (Smyth & Pennebaker, 2001). Though expression of emotions has been linked to positive physical health, until recently, the inhibition of emotional expression has not been linked to negative physical health (Smyth, 1998). Pennebaker (1985) originally believed that the inhibition of expression of personally stressful experiences over a long period of time could be related to physical disease processes. Specifically, it was thought that written expression freed physiological resources previously used for inhibition (e.g., Pennebaker, 1983). Pennebaker and other colleagues have addressed this issue through research, some specifically focusing on repressive coping styles. Repressive coping is a coping style involving repression, or inattention to and forgetting of threatening material (O'Leary, 1990). By not disclosing stressful experiences and translating emotions into a coherent language, one's chance of experiencing negative health effects increases. However, the process of repression or catharsis of emotions without cognitive processing of the events has not been supported as the process by which positive effects are gained (e.g., Lewis & Bucher, 1992).

The current hypothesis for the beneficial effects from written disclosure involves the cognitive processing of events and behavioral exposure, thus habituation, that comes through language (e.g., Paez, Velasco, & Gonzalez, 1999; Pennebaker & Seagal, 1999). Pennebaker and colleagues now attribute the positive benefits of emotional disclosure as being due to the active confrontation of stressful experiences or traumas. This allows people to cognitively process their feelings, thus gaining a greater understanding of their experiences (e.g., Donnelly & Murray, 1991; Harber & Pennebaker, 1992; Pennebaker, 1997). Through emotional or cognitive processing, the need for inhibition or repression of feelings is eliminated, thus preventing negative health consequences and rumination on negative events or thoughts (Johal & Bennett, 1999; Rachman, 1980). With regard to behavioral exposure theories, writing repeatedly about one's stressful experiences exposes the individual to previously feared and avoided thoughts and feelings (e.g., Bootzin, 1997; Johal & Bennett; Rachman). With increased exposure, come decreases and/or extinctions in negative appraisals and emotions due to habituation and a sense of mastery over difficult experiences, thoughts, and/or feelings (Bootzin; Greenberg, Wortman, & Stone, 1996; Johal & Bennett).

Although various interpersonal therapeutic orientations function based on different explanations about the processes underlying change, the general means and outcomes are similar, and there are many commonalities amongst orientations (e.g., Grencavage & Norcross, 1990). As with interpersonal psychotherapy, there is the possibility that multiple processes may be at work with written interventions. It is the hope that future research will more clearly identify the underlying process of written emotional disclosure.

Description

Gergen and Gergen (1988) describe important components of adaptive self-narratives, which are created to understand major life events. These components include a reason behind the story, events that relate to the reasoning, and a coherent order to the events. However, a well developed, coherent story may not be as important as the process of constructing a story (e.g., Harber & Pennebaker, 1992; Pennebaker, 1993). Pennebaker (e.g., 1993, 1999) conducted content analyses through the use of the Linguistic Inquiry and Word Count (LIWC) computer program (Pennebaker, Francis, & Booth, 2001), in order to understand the important components for effective narratives. LIWC counts words related to emotions and cognitive processes. Specifically, the percentage of negative words and positive words are examined, as well as words indicating insight or causal reasoning. These words provide a measure of whether participants are thinking actively while writing. Number of words, percentage of unique words, and word use are also analyzed. Overall, consistent with Gergen and Gergen, Pennebaker (e.g., 1999) identified the significance of creating a story. Positive health effects were associated with a moderate use of negative words, greater use of positive and causal words, more change in word use over the course of the writing tasks, and lower percentages of unique words. Thus, it appeared that those utilizing written disclosure need to make sense of emotions by organizing distressing experiences into coherent stories with new meaning (e.g., Harber & Pennebaker).

L'Abate (1999) describes four classifications of written tasks: structure, content, goals, and levels of abstraction. Structure refers to four levels of constrictions placed on the writing: open-ended, guided, focused, and programmed. Pennebaker's standard model for written emotional disclosure constitutes focused structure. Content is categorized as general versus specific, traumatic versus trivial, or explicit versus implicit. The use of structured, traumatic writing tasks have illustrated positive effects on various health variables, regardless of whether participants are instructed to write about general or specific experiences (e.g., Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Spera, Buhrfeind, & Pennebaker, 1993). Goals are categorized according to cathartic (e.g., express feelings) versus prescriptive (e.g., focus on the rehearsal of specific behaviors); both types of goals can be included in the writing task. Abstraction is either abstract (write about the meaning of life) or concrete (describe how you brushed your teeth).

Research methods have evolved in presentation over time, resulting in a standardized methodology for the study of written emotional disclosure. Smyth (1998) published a meta-analysis of written emotional expression literature to evaluate the overall effect of brief writing tasks. The interventions ranged from a single twenty minute session to a twenty minute session per week for four weeks. Smyth's analysis indicates that the longer the writing intervention lasts, the greater the improvements. Yet, significant results are evident from shorter time periods, as illustrated by the standard protocol of twenty minutes of writing over the course of three to four consecutive days. Regardless of the outcome variables examined in the studies, researchers used a similar format for the writing task directions, based on the work of Pennebaker and Beall (1986). Participants are randomly assigned to one of two or more conditions; most often one group discloses information about stressful experiences, while the other group objectively describes an event or environment. Both groups are then asked to write about their given topics for three to five consecutive days, fifteen to thirty minutes each day. Writing is completed in the laboratory without feedback from the researchers. The standard instructions for the emotional disclosure group are some variation on this protocol:

> For the next (# of days), I would like for you to write about your deepest thoughts and feelings about an extremely important emotional issue that has affected you and your life. In your writing, I'd like you to really let go and explore your deepest emotions and thoughts. You might tie your topic to your relationships with others, including parents, lovers, friends, or relatives, to your past, your present, or your future, or to whom you have been, who you would like to be, or who you are now. All of your writing will be completely confidential. Don't worry about spelling, sentence structure, or grammar. The only rule is that once you begin writing, continue to do so until your time is up. (Smyth & Pennebaker, 2001).

Variations

Structured writing task.

Cameron and Nicholls (1998) compared written emotional disclosure with self-regulation writing, which instructed participants to actively develop and appraise coping plans for the disclosed problems. This protocol differs from the standard, in that participants are directed to create and evaluate coping strategies to deal with distressing experiences. Both tasks resulted in fewer health care visits as compared with a control group, and participants rated both experimental tasks as more valuable, meaningful, and effective. The self-regulation task led to fewer clinic visits for participants coded as pessimists than did either of the other tasks, while also leading to increases in perceived control over the disclosed problems.

Fictional writing task.

Greenberg, Wortman, and Stone (1996) examined the effects a fictional writing task had on previously traumatized students as compared with students writing about personal traumas. Pennebaker's standard writing model was utilized, aside from directing participants to create fictional narratives. Results indicated that the effects for each writing group were comparable; i.e., students writing about a fictional trauma in the first person experienced the same significant health benefits at posttest. The important implication from this study is that as long as people evaluate and process thoughts and emotions about a real experience or a self-chosen fictional event, positive health benefits can result.

Programmed writing task.

L'Abate (1992) developed programmed writing workbooks for use as therapeutic interventions. One example is a workbook designed specifically for depression. L'Abate (1999) cited research on the effectiveness of this workbook for depressed undergraduate students. The workbook included six weeks of programmed writing tasks that were mailed to the subjects one week at a time. Subjects were assigned randomly to one of three workbook groups: the first book was based on family models of depression, the second on Beck's cognitive model of depression, and the third on the Minnesota Multiphasic Personality Inventory depression components. Each weekly task was based on these various models. Subjects had to spend thirty to sixty minutes, based on their pretest depression scores (taken from the Beck Depression Inventory and the Center for Epidemiological Studies Depression Scale), each week writing about various components of depression from their assigned model. Depression levels for each of the three workbook groups decreased from either medium or high to low, and all were significantly improved over the control group scores. These results were based on short-term effects, thus the long-term effectiveness of such a writing task is yet unknown.

Effectiveness

Within the field of psychology, previous research has supported written emotional disclosure as a positive, alternative therapeutic method for decreasing negative physical and psychological effects due to stressful experiences (e.g., Frisina et al., 2004; Smyth, 1998). Research participants who experienced positive results after the writing tasks included, for example, undergraduate students, people with arthritis, cancer, and chronic pain, and men laid off from their jobs (e.g., Francis & Pennebaker, 1992; Paez, Velasco, & Gonzalez, 1999; Zakowski, Ramati, Morton, Johnson, & Flanigan, 2004). As a self-guided therapeutic tool, written disclosure is appropriate for higher cognitively functioning individuals. Normality, or the absence of pathology, means that people are able to appraise situations and are mindful of potential changes (L'Abate, 1999). Reasons for no effects or negative effects for people with lower or disordered cognitive functioning include an inability to process and then respond to corrective self-feedback (L'Abate).

The therapeutic effects of written disclosure are comparable to those of verbal disclosure to a tape recorder and interpersonal disclosure with a therapist, at least with healthy participants (Donnelly & Murray, 1991; Esterling, Kiecolt-Glaser, Bodnar, & Glaser, 1994; Johal & Bennett, 1999; Murray, Lamnin, & Carver, 1989). In some cases, though, written disclosure may be more effective than verbal disclosure, due to social stigmas and pressures that can prevent emotional disclosure (Smyth & Pennebaker, 2001). Written disclosure has been shown to benefit both healthy and medically ill participants, as well as participants who have experienced trauma. The majority of studies have been limited to analogue populations drawn from undergraduate students, however, a number of researchers have utilized clinical participants. For example, Klapow et al. (2001) examined written emotional disclosure for symptom management in the elderly; Rosenberg et al. (2002) examined the effects of written disclosure for prostate cancer patients; Smyth, Shertzer, Hurewitz, Kaeli, and Stone (1998) examined written disclosure for asthmatics and rheumatoid arthritics.

The following discussion of the effectiveness of written emotional disclosure includes two meta-analyses (one for healthy samples, one for clinical samples) and representative research studies that included clinical samples and outcome data similar to that of the proposed study. Other empirical investigations will be included as supportive materials, without in-depth examinations of the studies.

Meta-analyses.

Smyth (1998) conducted a meta-analysis on written emotional disclosure studies utilizing healthy samples. Inclusion criteria were studies: 1) using a trauma versus neutral control writing task similar to the task developed by Pennebaker and Beall (1986), 2) inclusion of an outcome measure of health, 3) inclusion of data from which effect sizes could be computed, and 4) the use of a true experimental design. Thirteen studies were included in the final analyses. Five outcome variables were examined: reported health, psychological well-being, physiological functioning, general functioning, and health behaviors. Although Pennebaker was an author on eight of the thirteen studies, results indicate that the studies were not affected or biased by Pennebaker's involvement. A variety of moderating variables were examined for overall, well-being, and physiological functioning effect sizes. Age was unrelated to any of the three outcomes. Sex was related to overall effect sizes, in that studies with higher percentages of males resulted in higher overall effect sizes. Student versus non-student samples had higher mean effect sizes overall, physiologically, and psychologically. Writing task variations were also examined with regard to effect size. The number of writing sessions and the length of sessions were unrelated to each of the three effect size outcomes, while writing sessions spread out over longer time periods had higher mean overall effect sizes. Overall, written emotional disclosure led to improved reported health, psychological well-being, physiological functioning, and general functioning.

Based on Smyth's (1998) analysis, it appears that the written emotional expression task led to positive long-term outcomes. For example, the written task led to improvements in reported health, psychological well-being, physiological functioning, and general functioning. The short-term distress that occurred after the writing task in various studies was not related to any of the health outcomes in the meta-analysis. The strong effect on physiological measures provides support for the biological impact of not only writing therapy, but also emotional expression. Based on the analysis, writing may be more effective for males, possibly due to greater emotional repression exhibited in males than females. Writing therapy effects may also be more beneficial if the intervention is long-term rather than brief.

Frisina, Borod, and Lepore (2004) conducted a meta-analysis on written emotional disclosure studies utilizing clinical samples. The meta-analysis was conducted similarly to Smyth's (1998). Inclusion criteria were studies using the real-trauma writing task developed by Pennebaker and Beall (1986), including at least one quantitative dependent measure, data from which effect sizes could be computed, and the use of a true experimental design. Nine studies were included in the final analyses. Effect sizes were based on pretest and delayed posttest scores of at least one month after the final writing session. Immediate pretest scores were excluded, as the writing tasks lead to more negative effects before eventually leading to improvements.

Dependent health measures were classified as either physical or psychological. With regard to psychological effect, there was an overall marginal improvement, which was not significantly different from zero. The overall physical health effect was significantly higher than the psychological effect. Within the psychological variables assessed, depression, mood, anxiety, and sleep quality were all positively affected. This meta-analysis illustrates some moderate psychological health benefits of written emotional disclosure for clinical populations.

Clinical populations.

While written emotional disclosure research has been conducted with numerous healthy populations, very few researchers have utilized clinical samples. Frisina et al. (2004) included only nine empirical investigations of written disclosure with clinical populations. Three of Frisina et al.'s studies are discussed briefly. These studies included elderly primary care patients and cancer patients. All studies utilized an experimental and control condition with directions based on standardized protocol developed by Pennebaker and Beall (1986). Each study altered the standardized writing protocol to allow for the completion of tasks in participants' homes, in order to accommodate the needs of clinical populations and to overcome barriers to service utilization. In the written form, narrative therapy, or disclosure is a cost-effective tool that can be utilized in the home with minimal directions from professionals (e.g., L'Abate, 1991). Participants were contacted by telephone or mail throughout the studies, and were contacted by phone at the beginning and end of each writing task. One methodological problem across studies was sample size. However, with respect to clinical populations versus college populations, meeting power criteria is a difficult task. Even so, results should be interpreted with caution.

Zakowski, Ramati, Morton, Johnson, and Flanigan (2004) examined the effects of written emotional disclosure on social constraints and psychological distress among patients living with prostate or a form of gynecological cancer. Psychosomatic distress, perceived social support, and resulting constraint with regards to expression of thoughts and/or feelings about particular stressors were assessed. Participants were directed to write about either cancer or how they spend their time.

Distress outcomes were not significantly affected by the intervention. There was, however, a significant interaction effect of social constraints by condition on distress. Participants in the control condition reporting high levels of social constraint exhibited the highest levels of distress at follow-up, while the high social constraint experimental group participants exhibited low levels of distress at follow-up. This suggests a buffering effect of disclosure for individuals with perceived low, unsupportive social support. Even so, the effect sizes were small, and while only twenty-one percent of the sample exhibited clinical levels of distress, these levels did not decrease enough to meet non-clinical criteria. Similarly, participants reporting high social constraint in the control condition exhibited high levels of avoidance, whereas those in the experimental group exhibited low levels of avoidance at follow-up. Again, this finding illustrates the positive effect disclosure has for people who are unable to discuss their thoughts and feelings about particular stressors, for example, cancer. Written emotional disclosure is an alternative support for this population. There was no effect on frequency of intrusive thoughts. The manipulation check indicated that experimental participants rated their essays as more personal, and there was a significantly different increase in emotional disclosure across the three writing trials versus control participant essays. Self-report measures limited the interpretability of the findings; however, perceived functioning is an important indicator of actual functioning (e.g., Lazarus & Folkman, 1984). Other possible causes of the significant effects are the use of supplemental support services, such as support groups. While only three modes of support were assessed (journaling, support groups, individual counseling), only 16% of participants utilized one of these supports.

Klapow et al. (2001) examined the use of written emotional disclosure for elderly primary care patients. The principal goal of this descriptive study was to assess whether written disclosure could be altered in presentation, in order to suit the lifestyles and needs of a specific clinical population. Participants wrote about either the most distressing event of their lives or what they did to stay healthy. Participants completed the first of three, 20-minute tasks in a private office, while the remaining two tasks were completed in the participants' homes over the span of two weeks. Primary outcome measures included a distress score and somatic symptom score. Health care utilization and expenses were assessed three months prior to the writing task, during the intervention, and three months after the intervention ended.

Klapow et al.'s (2001) study was exploratory and descriptive in nature, thus no causal inferences can be drawn from the results. While the results indicated between-group trends that might support written emotional disclosure as a potential therapeutic intervention for this population, the findings were in no way conclusive. In fact, the changes from pretest to posttest were minimal. The somatic symptom and distress scores decreased in the experimental group, while increasing in the control group. However, median change for somatic symptoms was zero, thus while the trend was supportive of written disclosure, change was not evident. Both groups had decreased health care visits and costs, however within each of these categories, the treatment group reductions were approximately twice that of the control group. There was a great deal of within-group variability, which suggests for future researchers the possibility of examining which subgroups of populations benefit the most from such an intervention. Stanton, Danoff-Burg, and Huggins (as cited in Stanton & Danoff-Burg, 2002) empirically examined similar outcome measures in a sample of women with breast cancer. Distress was found to decrease the most for women high in avoidance, somatic symptoms decreased significantly for the expressive writing group, and cancer-related medical visits also decreased.

Rosenberg et al. (2002) examined the effectiveness of written disclosure for a sample of men living with prostate cancer. The primary hypotheses for this study were that participants in the experimental group would exhibit decreases in health care utilization and psychological symptoms, while exhibiting improvements in immune functioning, physical symptoms, and disease markers. Experimental participants were directed to write about their experiences with prostate cancer and also were given the option to write about other distressing experiences.

Overall, the results for Rosenberg et al. (2002) provided inconsistent support for written emotional disclosure as an effective therapeutic tool for men living with prostate cancer. However, the authors briefly described the results in the discussion section. Participants for both groups had higher than average (more positive or hardy) scores than the general population. As discussed in Zakowski et al. (2004), people living with cancer are quite well-adjusted. Walker, Nail, and Croyle (1999) cited similar conclusions within a sample of women with breast cancer. The participants were well-adjusted psychologically, and no changes were evident after disclosure tasks, also possibly due to a "ceiling effect". For Rosenberg et al.'s study, there was no room for improvement with regard to psychological functioning, and neither group exhibited a worsening of symptoms.

Implications

The health implications of written emotional disclosure interventions have been empirically investigated (e.g., Cameron & Nicholls, 1998; Donnelly & Murray, 1991; Klapow et al., 2001; Zakowski et al., 2004). Samples included both healthy, younger and clinical, older subjects. Results are mixed, as suggested by the aforementioned meta-analyses and studies similar to one conducted by Kloss and Lisman (2002), for example. Meta-analyses indicated larger effect sizes for studies utilizing healthy samples versus those utilizing clinical samples. Smyth (1998) cited medium effect sizes for reported health, psychological well-being, and physiological functioning among healthy samples. Within studies examining clinical populations, Frisina et al. (2004) cited a large effect size for pain and medium effects sizes for various physiological functioning outcome variables. Medium effect sizes for sleep quality, positive affect, and depression were also cited. While the overall effect sizes across all studies were moderate, there were positive changes that support the use of written emotional disclosure.

In a number of studies, psychological improvements were evident either through non-significant trends or significant results, for example, in mood, depression, cognitive processing of stressful events, and self-esteem (e.g., Donnelly & Murray, 1991; Lepore, 1997; Paez, Velasco, & Gonzalez, 1999; Zakowski et al., 2004). Throughout the majority of studies, participants experienced a worsening of symptoms from pretest to immediate posttest assessments (e.g., Donnelly & Murray; Greenberg, Wortman, & Stone, 1996; Paez et al.). When people critically examine difficult experiences, thoughts, and feelings, oftentimes, they feel more upset before they have the opportunity to naturally process and make sense of the experiences. As evidenced in the non-clinical samples, subjects who actively confronted and processed traumatic or distressing experiences, illustrated the pattern of immediate decreased functioning with an eventual improvement beyond baseline. No study resulted in long-term negative psychological effects.

While neither Zakowski et al. (2004) nor Rosenberg et al. (2002) found a significant effect on objective immune functioning measures, another study utilizing a clinical sample has [i.e., Smyth, Stone, Hurewitz, and Kaell (1999)]. Smyth et al. (1999) examined the physiological effects of written disclosure for adults with asthma and rheumatoid arthritis. Significant differences were apparent. For each study, the experimental participants exhibited significant improvements, while control participants exhibited no change in physiological measures.

Studies utilizing healthy, college samples also illustrated that written emotional disclosure was associated with improved immune functioning. Pennebaker, Kiecolt-Glaser, and Glaser (1988), Esterling, Antoni, Kumar, and Schneiderman (1990), and Esterling, Antoni, Fletcher, Marguilies, and Schneiderman (1994) showed that college students assigned to write about stressful or traumatic experiences showed increased immune functioning compared to those students in control conditions who wrote about trivial topics. Specifically, both studies showed that those who were considered high disclosers had better immune functioning than low disclosers. Francis and Pennebaker (1992) showed those university employees who wrote about stressful experiences exhibited improved liver functioning compared to controls, although other physiological measures were not significantly different.

Overall, empirical support for the use of written emotional disclosure as a therapeutic tool is inconsistent with clinical samples, although studies with healthy samples are consistently more promising. Reasons for the limited support for clinical samples might be that written emotional disclosure simply is not an effective intervention for people experiencing more serious health problems. However, as the limited research illustrates, positive health benefits have occurred with moderate effect sizes. Two other possible explanations for the different effects between clinical and non-clinical samples exist. First, it might be that outside of controlled, laboratory environments, with populations experiencing more significant health problems, the writing tasks need to be altered (e.g., increased over time) to significantly impact health problems. Second, it might be that for some populations, the chosen outcome variables either are assessed with insensitive measures, or the outcome variables (e.g., disease markers of cancer) are less likely to change without invasive treatments (e.g., chemotherapy). The samples used in clinical studies were psychologically well-adapted. A similar effect is not uncommon in certain caregiver samples; however, overall, caregivers exhibit more negative psychological and physical health than non-caregivers (e.g., Pinquart & Sorensen, 2003; Schulz, O'Brien, Bookwala, & Fleissner, 1995). Therefore, future research should examine the effects written disclosure has for clinical samples exhibiting more psychological distress (e.g., caregivers).

The existence of some empirical support with small to medium effect sizes for clinical samples is encouraging enough to continue research in the area for needy populations. Theoretically, and in clinical practice, the use of narrative therapy is highly supported through verbal or written disclosure (e.g., Hunter, 1996; L'Abate, 1999; Nichols & Schwartz, 2001; Pennebaker, 1999).

Procedural Implications.

The number of sessions and duration of days for the writing intervention in the current study was chosen based on previous research. The most common number of sessions and duration range from fifteen to twenty minutes of writing over the course of three to four consecutive days, yet some days are as high as seven with forty-five minutes of writing each day (e.g., Baikie & Wilhelm, 2005; Meads & Nouwen, 2005; Sloan & Marx, 2004). Most studies instructed participants to write over the course of consecutive days, while some instructions were to write one day each week over the course of three to four weeks. The majority of studies utilizing college student, or non-clinical populations instructed participants to write for twenty minutes for three consecutive days. The “standard laboratory writing technique” involves writing for fifteen to thirty minutes for three to five consecutive days (Smyth & Pennebaker, 2001). In order to retain participants the current study instructed participants to write for three days versus four, as this study utilized a caregiver population that experiences high time demands and psychosocial effects due to caregiver duties. Table 1.1 lists the number of sessions, duration of days, and sample size from a variety of recent studies that utilized clinical populations.

Table 1.1

Examples of Time and Duration Methods

Source	# Sessions	Duration	N
Batten, Follette, Hall, & Palm (2002)	4	20	61
Broderick, Junghaenel, & Schwartz (2005)	3	20*	92
De Moor, Sterner, Hall, Warneke, Gilani, & Amato (2002)	4	15	42
Freyd, Klest, & Allard (2005)	4	20	80
Harris, Thoresen, Humphreys, & Faul (2005)	3	20*	114
Lumley & Provenzano (2003)	4	15-20	74
Norman, Lumley, Dooley, & Diamond (2004)	3	20	48
Owen, Giese-Davis, Cordova, Kronenwettter, Golant, & Speigel (2006)	1	none	71
Rivkin, Gustafson, Weingarten, & Chin (2006)	4	20*	50
Schwartz & Drotar (2004)	3	20	53
Sloan, Marx, & Epstein (2005)	3	20	79
Smyth, Stone, Hurewitz, & Kaell (1999)	3	20	107
Stanton, et al. (2002)	4	20	60
Stroebe, Stroebe, Schut, Zech, & van den Bout (2002)	7	10-30	71
Walker, Nail, & Croyle (1999)	3	20	44
Wetherell, et al. (2005)	4	20	34
Zakowski, Ramati, Morton, Johnson, & Flanigan (2004)	3	20	104

* Indicates one day of writing per week, versus consecutive days of writing.

Research Objectives

Those who feel hopeless and depressed while providing care to a loved one are likely to experience long-term emotional and physical distress; those who find meaning in their experiences are likely to experience positive physical and psychological effects, while growing spiritually and emotionally (Farran, 2000). While the effects of written emotional disclosure have not been overwhelmingly supported for clinical populations, the potential therapeutic implications of this intervention were important to examine for caregivers. Caregivers are shown to experience more psychological and physiological distress than non-caregiving counterparts (e.g., Pinquart & Sorensen, 2003), regardless of how caregivers appraise their situations (Martire & Schulz, 2001). Support services for caregivers provide much needed psychological, social, and respite support. However, as a group, caregivers under-utilize services (e.g., Rivera et al., 1991; Smyth & Pennebaker, 2001; Whittier et al., 2004).

L'Abate (1999) lists five criteria that alternative therapeutic interventions should meet: 1) cost-effectiveness, 2) minimal effort and time from professionals, 3) mass production for administration, 4) reproducibility of approach, and 5) availability to groups of individuals as well as individual conditions. Written disclosure meets these five criteria, overcomes obstacles which prevent caregivers from utilizing services, allows for the disclosure of possibly stigmatizing information, and can be used as a supplement to other therapeutic interventions (e.g., L'Abate, 1999; Lepore, Silver, Wortman, & Wayment, 1996). Thus, written disclosure was a viable option that needed to be examined either as an independent intervention or supplemental support for the caregiver population. It was imperative to assess the effects written emotional disclosure had on caregivers who needed to reflect on and make sense of distressing experiences associated with caregiving.

Previous caregiving research has examined how caregivers are affected physically, socially, and psychologically by their experiences, as well as what supportive services are available and are utilized by caregivers. To date, written emotional disclosure has not been evaluated as a therapeutic tool for lay caregivers of older adults. Lattanzi and Hale (1984) assessed caregivers' use of unstructured writing (e.g., journaling) in order to cope with stressful experiences associated with their caregiving duties. Results indicated that unstructured writing was a common and useful support.

The current research project extended caregiver and written emotional disclosure literature through the evaluation of the therapeutic effectiveness of written emotional disclosure for familial caregivers of older adults. The therapeutic intervention was conducted in a similar fashion to previous written emotional disclosure research interventions, and the assessment batteries were selected based on assessments discussed in caregiver literature. This study: 1) examined an alternative therapeutic intervention for caregivers, 2) evaluated and compared the short-term effectiveness of the written intervention and control task on various psychosocial factors, and 3) considered the generalizability of written emotional disclosure for a sample of family caregivers of older adults.

Research Questions

RQ1: Will engaging in written emotional disclosure for twenty-minutes each day for three consecutive days, result in significant differences in psychosocial outcome variables for lay caregivers of older adults versus their control group counterparts who engage in a neutral writing task? Specifically, will either group exhibit changes in depression levels, overall distress, perceived stress levels, and perceived social support? If significant changes occur, how will the outcome variables change over the course of ten weeks, from the last writing trial to a delayed posttest?

RQ2: Will specific caregiver status (e.g., duration of total caregiving experience, time spent caregiving each week, distance from care-receiver) predict the overall effectiveness of the intervention within the experimental group?

CHAPTER II

Methods

Participant Recruitment

Subjects were recruited for the study through the use of a variety of sources. Participants were recruited through the use of volunteer research participant lists from the Gerontology Center at the University of Kansas. Volunteers also were sought through caregiver support groups and women's groups, service organizations that provide assistance for elderly residents and their caregivers, and word-of-mouth recommendations. Community residents who have volunteered for Gerontology Center research studies were contacted directly by the Principal Investigator, Gillian Woods, as were support or interest group members. When potential participants were contacted directly by the P. I., the P. I. introduced herself as a doctoral student from the Gerontology Center at the University of Kansas. The rationale behind the research was described as an evaluation of potentially therapeutic written interventions for caregivers of older adults that could overcome barriers to service utilization, such as time and cost. The outcome variables, time commitment, and directions were discussed, and questions were answered. All other participants were provided with information about the research project and P. I. contact information through the local service agencies.

Approximately ninety research packets were handed out to potential participants. Potential volunteer participants who were interested in the study and contacted the P.I. for more information were informed about the general research purpose and procedures. Once these caregivers agreed to participate in the study, participants scheduled preferable times at which the P.I. delivered the research task materials and reviewed the instructions.

Participants

Twenty-nine lay caregivers of elderly (age 65 and older) family members volunteered to participate in this study. Three participants dropped out of the study before beginning the writing task, due to the deaths of the care recipients. Two participants inaccurately completed the writing assignments. The first participant wrote one essay in the form of a letter to the Principal Investigator. This participant did not complete essays for Days two and three, nor was the start and stop time recorded on the Day One envelope. The second participant who inaccurately completed the study, did so by only completing the questionnaires and not completing the essays. Thus, twenty-four caregivers completed the study, thirteen participated in the experimental group and eleven participated in the control group. As the typical caregiver is female, age 46 (National Alliance for Caregivers, 1997), providing care for a parent or parent-in-law, it was expected that the research sample would be comprised mostly of middle-aged females providing care for their parents or parents-in-law, who were expected to be between 65 and 90 years of age, frail, and experiencing some cognitive deficits. The majority of the sample was comprised of women (91.7%), and the plurality of them were between the ages of 58 and 60 (41.6%). Complete demographic data are presented in Table 2.1.

Table 2.1

Demographic Characteristics of Caregivers

Variable	Frequency	Percent
Sex		
Female	22	91.7
Male	2	8.3
Age		
35-49	2	8.3
51-59	12	50.0
60-69	6	25.0
70-79	2	8.3
80-89	2	8.3
Race		
Caucasian	23	95.8
N/A	1	4.2
Martial Status		
Single	1	4.2
Married	22	91.7
Divorced	1	4.2
Children in-home		
0	21	87.5
1	2	8.3
2	1	4.2
Occupation		
In-home	2	8.3
Part-time	7	29.2
Full-time	8	33.3
Volunteer	1	4.2
Retired	6	25.0
Education		
High School	2	8.3
Some College	1	4.2
College Degree	4	16.7
Graduate/Professional	17	70.8

Inclusion criteria for participation in the study included caretaking responsibilities for an elderly family member (e.g., assistance with finances or ADL's), absence of cognitive dysfunction, ability to comprehend written and verbal instructions, and ability to write for twenty minutes without stopping. Care-recipient diagnoses were not assessed, as an overall need for support from a family member was most important for this study's purposes. Care-recipients were not required to live in the same household as the care providers. Duration and type of care provided varied, yet 87.5% of the participants had been caregivers for at least one year, and 83.3% of the sample provided a combination of emotional, physical, financial and daily living support. Complete caregiver status data are presented in Table 2.2.

Table 2.2

Caregiver Status Characteristics

Variable	Frequency	Percent
Relation		
Spouse	4	16.7
Child	18	75.0
Child-in-law	1	4.2
Nephew	1	4.2
Years of Care		
< 1 year	2	8.3
1-4	12	50.0
5-9	6	25.0
10-20	4	16.6
Location of Care Receiver		
Same Town	13	54.2
Same State	5	20.8
Different State	6	25.0
Residence of Care Receiver		
P's Home	5	20.8
Own Home	12	50.0
AL/nursing	6	25.0
IL Facility	1	4.2
Contact with Care Receiver		
Daily	13	54.2
Weekly	10	41.7
Bimonthly	1	4.2

Type Contact		
Interpersonal	7	29.2
Phone	1	4.2
Combo	16	66.7
Type Care		
Emotional	3	12.5
Combo	20	83.3
Other	1	4.2
Utilize Past Supports		
Yes	10	41.7
No	14	58.3
Type Support		
In-home/Pt. Care	4	16.7
Respite	1	4.2
Support Group	1	4.2
Biblio	2	8.3
None	14	58.3
Utilize Current Supports		
In-home/Pt. Care	6	25.0
Combo	1	4.2
None	17	70.8
Frequency of Utilizing Support		
Daily	3	12.5
Weekly	2	8.3
Monthly	2	8.3

Participants were randomly assigned to one of two written task conditions, either an emotional disclosure or a neutral, objective condition. Previous written emotional disclosure studies utilized Smyth's (1998) effect size analyses to determine power and sample size. Based on Smyth's meta-analysis, power analyses indicated that approximately 15 participants were necessary for each the experimental and control conditions ($N = 30$), in order to detect a medium effect size at $p = .05$. The current study did not meet this power requirement. Area service providers were contacted by the Principal Investigator and supplied with flyers with information about the study. As the local region appeared to have limited responses by service providers and caregivers, out-of-state service agencies were also contacted, in order to recruit caregivers to the study. Data was collected between November 2005 and August 2006. While ninety complete research packets were distributed to interested caregivers, only 29 of these caregivers became participants. Caregivers are difficult to recruit into research studies, as they provide care for elderly loved ones, often provide care for children or grandchildren, work in some capacity, and engage in social activities. Much interest was shown by caregivers about the research topic, yet time demands were the main reported barrier to participation.

Procedures

Data Collection Procedures

All participants completed the pretest and writing tasks over the course of three consecutive days and one follow-up day ten weeks after the completion of writing tasks. Approximate time spent completing pretest and posttest questionnaires was fifteen to thirty minutes; approximate time spent completing the writing tasks was twenty minutes each of the three days. All relevant contact information (name, phone number, home address, email address) was obtained from participants, and participants were contacted by phone or email, prior to the first meeting.

Due to anecdotal reports from caregivers and written emotional disclosure research with clinical populations (e.g., Klapow et al., 2001; Zakowski et al., 2004), the methodology was altered to meet the caregiver needs and lifestyles. Participants completed the writing tasks in their own homes at their preferred times, each writing trial occurring at approximately the same time of day. In the written form, narrative therapy, or disclosure is a cost-effective tool that can be utilized in the home with minimal directions from professionals (e.g., L'Abate, 1991). This increased the potential for participation, as caregivers reported a preference for the flexibility to complete the research requirements in their own homes versus the Gerontology Center. The altered procedures also allowed for recruitment out of the local area. Participants did not have to arrange for respite support for the care recipients, nor did they have to worry about transportation to and from the University lab.

Materials and procedures utilized for each participant were the same, aside from the experimental manipulation that occurred during the writing tasks and the out-of-town mailings versus the in-town delivery of materials.

Upon volunteering to participate in the study, the Principal Investigator reviewed the informed consent and research directions with each participant individually either at their homes or over the phone. Informed Consent and directions listed in Appendices A and B. The consent form: a) explained the general purposes of the research, b) described the longitudinal nature of the trials, c) explained that they might be writing about an emotionally distressing experience, d) explained that the participants may discontinue the research trials at any time without penalty, e) explained how their experience will remain completely confidential, and f) reminded them that after the study is completed, they would learn about the exact purposes of the study and the results. A written copy of the consent form was given to the participant, along with the P. I.'s contact information.

After answering questions and/or concerns, participants then were provided with a research packet of materials. The packet included directions, two copies of the informed consent, and three manila envelopes labeled Day 1, Day 2, and Day 3. Each envelope contained the necessary materials for each day and a label for indicating the date and start time for each writing task. To control for experimenter bias, approximately one-hundred research packets were created at the beginning of the study, prior to data collection. Packets were alternated by condition and placed in a stack. Participants were provided with the packet in the order in which they volunteered to participate. The participants remained in the same condition throughout the trials. Participants were assigned a random identification number to track each participant's data.

The first writing trial packet included pretest questionnaires (Appendix C), a writing task description (Appendix D), and blank paper. Participants recorded the date, completed the pretest questionnaires, recorded the start time, began the 20-minute timer, and completed the first writing task. Again, participants completed the materials alone, in their own homes. Pretest questionnaires included the Demographic Questionnaire created specifically for the current study, Beck Depression Inventory-II (BDI-II), Social Support Inventory (SSI), Perceived Stress Scale (PSS), and Brief Symptom Inventory-18 (BSI-18) (Beck, Steer, & Brown, 1996; Cohen, Kamarck, & Mermelstein, 1983; Derogatis, 1983; Fiore, Becker, & Coppel, 1983). The second writing trial packet included the same writing task description and blank paper. Participants again completed the same steps of recording the date, start time, and conducting the writing task for twenty minutes.

Participants repeated the same steps for the third writing task. After completing the final writing task, participants completed the Assessment of the Writing Experience (Appendix E). This assessment is a combination of two assessments and was created by Pennebaker, Colder, and Sharp (1990). When participants completed this questionnaire, they were asked to answer the questions according to the experience about which they wrote during each of the trials. After the immediate posttest assessment was completed, the participants either mailed (with prepaid postage) the packets to the P. I. or contacted the P. I. to pick up the materials. Delayed posttest materials were originally delivered eight weeks after the third writing task was completed. However, the first few participants did not complete the posttests within the eight-week time period. Procedures were altered accordingly; thus, the P. I. then delivered delayed posttest measures ten weeks after the completion of the third writing trial. The posttest measures included the BDI-II, SSI, PSS, and BSI-18. Again, when completing the questionnaires, the participants were asked to think about the experience written about during each of the trials. Participants then were debriefed thoroughly and provided with a written statement about the study (Appendix F). No compensation was provided to the participants.

Experimental Manipulations

Instructions for the writing tasks were based on instructions used in prior research studies (e.g., Donnelly & Murray, 1991; Murray, Lamnin, & Carver, 1989;

Murray & Segal, 1994; Pennebaker, 1989; Pennebaker & Beall, 1986; Pennebaker, Kiecolt-Glaser, & Glaser, 1988). While participants in the control conditions were most often directed to objectively describe either the contents of their closets or the daily events leading up to the experiment, the current study used a different objective description task. The control task needed to appear purposeful, in order to retain volunteer caregiver participants throughout the study. Also, description of a caregivers' day is likely to include stressful experiences similar to those described by experimental condition participants in their written essays. Therefore, rather than describing the potentially stressful daily events, control participants were asked to objectively describe what safety measures could be instituted in the care recipient's home. This alternative control task was supported by J. W. Pennebaker (personal communication, August 23, 2005). Instructions for each the experimental and control conditions are described below, and complete instruction materials are included in Appendix D.

Experimental condition.

Participants in the experimental (emotional disclosure) group were asked to spend approximately 20 minutes each day, over three consecutive days at approximately the same time each day, writing about their deepest thoughts and feelings surrounding their caregiving experiences. Their instructions stated:

> Your caregiving experience can include such things as social interactions with your loved one receiving care, other family, friends, and/or health care professionals, finances, future planning, daily caregiving activities, feelings, thoughts, expectations about the caregiving experience or the future, etc. In your writing, I'd like you to really let go and explore your deepest emotions and thoughts about the experience. Please write down

> all thoughts no matter how silly or personal you think they may be; if the same thoughts occur over and over, then simply write them down over and over. Remember, all of your writing will be completely confidential; only the researcher will view the contents of your writing. Don't worry about spelling, sentence structure, or grammar. The only rule is that once you start writing, continue to do so until your time is up.

Control condition.

Participants in the control group similarly were asked to spend 20 minutes each day, over three consecutive days at approximately the same time each day, writing about what they could do to make the home safer for the elderly care recipient. They were told:

> It is important that you simply describe what steps you might take to improve the safety of the home, why these safety steps were chosen, and how these steps will actually improve the safety of the home. Do not mention your own subjective emotions, feelings, or opinions; your safety plans must be as objective as possible. Remember, all of your writing will be completely confidential; only the researcher will view the contents of your writing.

Materials

All assessment procedures were identical for research participants in both groups. L'Abate (1999) stated the importance of gaining an overall view of functionality and areas that could be improved upon through written disclosure tasks. After reviewing the written disclosure and caregiver literature, a battery of similar assessments was created for use in the current study. A brief description of each assessment tool follows. (See Appendices C and E for copies of each assessment.) Correlations between participant scores on each pretest and posttest assessment are presented in Table 2.3.

Table 2.3

Intercorrelations Between Pretest and Delayed Posttest Scales

Scale	1	2	3	4	5	6	7	8
1. Beck Depression Inventory-II	-	.62**	-.28	-.11	.34	.27	.76**	.56**
2. $BDI\text{-}II_2$		-	-.41	-.23	.29	.15	.64**	.87**
3. Social Support Inventory			-	.66**	-.32	-.30	-.46*	-.51*
4. SSI_2				-	-.07	.10	-.06	-.18
5. Perceived Stress Scale					-	.50*	.50*	.39
6. PSS_2						-	.36	.34
7. Brief Symptom Inventory-18							-	.78**
8. BSI_2								-

*$p < .05$, ** $p < .01$.

Demographic Questionnaire.

This questionnaire was devised specifically for the current study. This questionnaire elicited participant information such as sex, age, race, marital status, employment status, number of children, education level, and caregiver status variables. This assessment was completed at pretest.

Beck Depression Inventory-II (BDI-II).

The BDI-II (Beck, Steer, & Brown, 1996) is an assessment tool designed to measure depression in both clinical and non-clinical populations. The BDI-II is an updated version that is in accordance with DSM-IV diagnostic criteria for depression.

This scale is often used in studies utilizing lay caregiving participants (e.g., Esterling, Kiecolt-Glaser, & Glaser, 1995; Gallagher-Thompson & Powers, 1997; Neary, 1993) and is a well-established instrument in the field of psychology. The BDI-II is a twenty-one item multiple choice scale, developed to assess mild, moderate, and severe levels of depression. Scores range from 0 to 63. Cutoff scores: minimal depression 0 to 13, mild 14 to 19, moderate 20 to 28, and severe 29 to 63. Items examine various depressive features, such as sleeping and appetite problems, negative mood, sadness, guilt, suicidal ideation, and anhedonia. The BDI-II is effective in assessing change in depression over time. Strong reliability and validity have been demonstrated. For example, the coefficient alpha for an outpatient psychiatric sample was .93 and was .92 for a college sample. As the BDI-II is utilized to track changes in depression levels, test-retest correlation was significant at .93 ($p < .001$). This assessment was completed at the pretest and delayed posttest.

Social Support Interview (SSI).

The SSI (Fiore, Becker, & Coppel, 1983) was used to assess caregivers' social support networks and levels of perceived social support. It has been used often in research utilizing lay caregivers as participants (e.g., Bodnar & Kiecolt-Glaser, 1994; Esterling, Kiecolt-Glaser, Bodnar, & Glaser, 1994; Kiecolt-Glaser, Dura, Speicher, Trask, & Glaser, 1991). Participants are asked to list up to ten people in their support networks. Subjects then utilize a Likert-scale rating system to identify level of closeness (0 = not at all close, 10 = extremely close) and perceptions of positive versus negative support (0 = not at all, 6 = extremely). Support includes both emotional and instrumental support interpreted as upsetting or helpful. Subjects also list amount of contact with each person (1 = less than monthly, 5 = daily). In the current study, as some participants did not include the ratings of closeness and perceptions of support, only the number of supports was included in analyses. This assessment was completed at the pretest and delayed posttest.

Perceived Stress Scale (PSS).

The PSS (Cohen, Kamarck, & Mermelstein, 1983) is a 10-item scale used to assess the degree to which participants perceive their lives as stressful. Scores can range from 0 to 40, and for people ages 30 to over 65 mean scores are 12 to 13, standard deviations ranging from 6.2 to 6.3. Participants are asked how often in the previous month they have experienced specific feelings and thoughts related to situations where demands exceed abilities to cope. It also has been used in studies utilizing lay caregivers as participants (e.g., Adamiak & Juczynski, 2003; Esterling, Kiecolt-Glaser, & Glaser, 1995; Gallagher-Thompson & Powers, 1997; Killeen, 1990). Items assess perceptions of daily life as unpredictable, uncontrollable, and overloaded. These three factors have been identified as central components of the stress experience. Validity and reliability have been established. Tests of reliability produced coefficients of .84 - .86. Concurrent and predictive validity have been supported with coefficients ranging from .52 - .76. The PSS demonstrated strong predictive validity with regard to health outcomes. Reliability with a caregiver sample was .84 (Killeen, 1990). This assessment was completed at the pretest and delayed posttest.

Brief Symptom Inventory (BSI-18).

The BSI-18 (Derogatis, 1983) is an 18-item scale that assesses various psychological symptomatology occurring throughout the previous week for both clinical and non-clinical populations. This scale has been used in various written emotional disclosure research (e.g., Greenberg, Wortman, & Stone, 1996; Lepore, 1997; Zakowski et al., 2004). Participants indicate levels of discomfort with symptomatology experienced in the past week on a Likert-scale (0 = not at all, 4 = extremely). Scores range from 0 to 72, and higher scores indicate increased symptomatology. Reliability, validity, and age norms have been well-established. Internal consistency reliability estimates ranged from .76 - .89, for a sample of 1,134 community subject. Validation of the BSI-18, a shortened version of the Symptom Checklist 90-Revised, illustrates that BSI-18 and SCL 90-R correlations between subscales range from .91 - .96. This suggests that the shortened version measures the same constructs as does the original, longer version. This assessment was completed at the pretest and delayed posttest.

Assessment of the Writing Experience.

The combination of two scales used by Pennebaker, Colder, and Sharp (1990) was used to assess the participants' feelings about the writing tasks during and after the trials. Items also assess how personal the stressful topics are, how much emotion was revealed in the written essays, and the degree to which participants have previously discussed their stressful experience with others. In the current study, this scale will be used to assess participants' feelings about their writing experience, as well as to identify the possible benefits and pitfalls to written emotional disclosure for this population. This assessment was completed at both the immediate and delayed posttest.

CHAPTER III

Results

This chapter details the findings of the statistical analyses performed to assess the research questions and exploratory results not directly associated with the research questions. Five sections are presented in this chapter: 1) evaluations of group differences at baseline, 2) evaluation of research question one, 3) evaluation of research question two, 4) descriptive statistical information associated with the Assessment of the Writing Experience questionnaire, and 5) exploratory qualitative results of the essay content analyses.

Evaluation of Group Differences at Baseline

While the participants were randomly assigned to either the experimental or control conditions, statistical analyses were conducted in order to evaluate whether group participants differed significantly on demographic variables and pretest scores for each of the four dependent variables. Four participants were excluded from all analyses due to missing data. For purposes of this study, missing data was defined by a failure to complete or to return an entire assessment, for example the *Beck Depression Inventory-II*. Independent samples t-tests were conducted in order to compare the continuous variables of participants' ages, number of children living at home, amount of years spent caregiving, and scores on each of the four pretests. None of the t-tests were significant, thus these variables were not controlled for when evaluating research questions one and two. Baseline outcome measure scores for each group on depression, social support, and psychosomatic stress were low and comparable to average adult populations. Both the experimental and control group overall means for perceived stress are higher than average adult scores. Baseline means and independent t-test results for the continuous variables are presented in Table 3.1.

The categorical variables of occupation, education level, location of care-recipient, amount of contact between caregiver and care-recipient, type of contact, and utilization of past supports were compared between groups with two-way contingency table analyses. These variables were chosen for analysis based on the frequency counts and distributions between the groups. Occupation was divided into two levels (paid and unpaid), representing the at-home, volunteer, and retired categories versus the part-time and full-time categories identified on the initial demographic questionnaire. Education level was divided into two categories (less than college degree or equal to/greater than college degree), as all participants either marked the high school diploma, college degree, or graduate/professional degree categories. Type of contact was either interpersonal or a combination. Location, amount of contact, and utilization of past support were not altered into more straightforward categories for the purpose of conducting analyses. No significant differences between-groups were evident on any of the variables. As the omnibus results were non-significant, only these statistics are represented in Table 3.2.

The participants in each condition were more homogeneous with regard to the remaining categorical variables, thus analyses were not conducted to examine these group differences. Frequencies and percentages for these remaining categorical variables are illustrated in table 3.3. As no group differences were evident at baseline on categorical variables, again no adjustments were made for analyses of research questions one and two.

Table 3.1

Baseline Means and Independent Samples T-Test

	Independent Samples T-tests				
	Experimental	Control			
Variable	*M* (*SD*)	*M* (*SD*)	*t*	*df*	*p*
Age	57.30 (11.39)	59.30 (7.51)	.07	21	.95
Children in-home	.20 (.63)	.20 (.42)	-.07	21	.94
Years of Care	6.73 (7.07)	4.65 (2.85)	.79	21	.44
BDI-II_1	11.30 (8.22)	8.70 (9.86)	.52	21	.61
SSI_1	8.00 (2.36)	7.20 (3.26)	.81	21	.43
PSS_1	17.90 (8.36)	16.40 (7.38)	-.29	21	.77
BSI_1	9.00 (12.42)	9.00 (9.92)	-.05	21	.96

Table 3.2

Crosstabs for Categorical Variables

Comparison Variable	Pearson X^2	p value	Cramér's V
Occupation	3.54	0.47	0.42
Education	0.39	0.53	0.14
Location of Care Receiver	3.01	0.22	0.35
Contact with Care Receiver	3.18	0.20	0.36
Type Contact	1.34	0.25	0.24
Utilization of Past Supports	1.39	0.24	0.24

Table 3.3

Caregiver Status Frequencies

Variable	FreqX	%	FreqC	%
Sex				
Female	10	100	9	90
Male	0	0	1	10
Race				
Caucasian	9	90	10	100
N/A	1	10	0	0
Martial Status				
Single	1	10	0	0
Married	9	90	9	90
Divorced	0	0	1	10
Relation				
Spouse	1	10	1	10
Child	8	80	8	80
Child-in-law	1	10	0	0
Nephew	0	0	1	10

Residence				
P’s Home	2	20	1	10
Own Home	6	60	4	40
AL/nursing	1	10	5	50
IL Facility	1	10	0	0
Type Care				
Emotional	2	20	1	10
Combo	7	70	9	90
Other	1	10	0	0
Utilize Past Supports				
Yes	3	30	5	50
No	7	70	5	50
Type Past Support				
In-home/Pt. Care	2	20	1	10
Respite	0	0	1	10
Support Group	0	0	1	10
Biblio	0	0	2	20
None	7	70	5	50
Combo	1	10	0	0
Utilize Current Supports				
In-home/Pt. Care	2	20	2	20
Combo	0	0	1	10
None	8	80	7	70
Daily	0	0	2	20
Weekly	2	20	0	0
Monthly	0	0	1	10

Evaluation of Research Question 1

Research question 1: Will engaging in written emotional disclosure for twenty-minutes each day for three consecutive days, result in significant differences in psychosocial outcome variables for lay caregivers of older adults versus their control group counterparts who engage in a neutral writing task? Specifically, will either group exhibit changes in depression levels, overall distress, perceived stress levels, and perceived social support? If significant changes occur, how will the outcome variables change over the course of ten weeks, from the last writing trial to a delayed posttest?

As the number of days between pretest and posttest (time) ranged from 43 days to 108 days, time was first treated as a covariate. The MANCOVA failed to detect a significant main effect for the number of days between participants' pretests and posttests [$\Lambda = .97$; $F\,(4, 14) = 0.11$, $p = .98$, $\eta^2 = .03$]. Therefore, it was decided to discontinue the procedure of controlling for time.

The first research question was examined with a 2 X 2 mixed-design MANOVA with repeated measures on the second factor. The between-groups factor was condition (experimental vs. control group) and the within-groups factor was test time (Time 1/pretest vs. Time 2/posttest). The four dependent variables were depression scores (Beck Depression Inventory-II), number of social supports (Social Support Inventory), perception of stress scores (Perceived Stress Scale), and overall psychosomatic distress scores (Brief Symptom Inventory-18).

The MANOVA did not detect overall multivariate main effects for condition [$\Lambda = .95$; $F\,(4, 15) = .18$, $p = .94$, partial $\eta^2 = .05$], test time [$\Lambda = .98$; $F\,(4, 15) = .09$, $p = .98$, partial $\eta^2 = .02$], or the interaction between condition and test time [$\Lambda = .59$; $F\,(4, 15) = 2.61$, $p = .08$, $\eta^2 = .41$]. Experimental participants did not differ from control participants with regard to depression, social support, perception of stress, and psychosomatic distress. No significant changes in psychosomatic scores were evident within either group independently of each other over time. The main effect and interaction effect means and standard deviations are presented numerically in Table 3.4.

Table 3.4

Means and Standard Deviations on the Beck Depression Inventory-II, Social Support Inventory, Perceived Stress Scale, and Brief Symptom Inventory-18.

		Experimental (n = 10)		Control (n = 10)		Overall (N = 20)	
DV	Time	M	SD	M	SD	M	SD
Depression	Time 1	11.30	8.22	8.70	9.86	10.00	8.93
	Time 2	11.00	7.45	8.30	9.06	9 65	8.19
Social Support	Time 1	8.00	2.36	7.20	3.26	7.60	2.80
	Time 2	7.20	2.53	7.50	3.31	7.35	2.87
Perceived Stress	Time 1	17.90	8.36	16.40	7.38	17.15	7.71
	Time 2	18.00	6.88	15 80	5.20	16.90	6.04
Psychosomatic	Time 1	9.00	12.41	9.00	9.92	9.00	10.94
Distress	Time 2	11.60	11.56	6.50	8.53	9.05	10.23

Overall, research question 1 was answered with a complete lack of statistically significant multivariate and univariate results. Specifically, engaging in the experimental task of written emotional disclosure did not significantly impact psychosocial outcome variables for lay caregivers of older adults. In fact, no significant changes in psychosocial variables were evident for either the control or experimental group over the course of approximately ten weeks. However, based on the significance level of the interaction effect, trends were inspected. After further examination, mean trends indicate that the control participants' overall psychosomatic distress scores showed improvement while the experimental participants' scores worsened. Univariate follow-up did not indicate statistical significance between these group trends. Possibly with a larger sample size, the trends that indicated improvement for the control group on the various measures and a worsening for the experimental participants might have reached significance. Again the overall results indicate a lack of difference between groups on the various psychosocial outcome measures due to the written intervention. Even so, the results are of interest and will be interpreted in the discussion chapter.

Evaluation of Research Question 2

Research question 2: How did the variables defining specific caregiver status (e.g., relationship to care-recipient, location of care-recipient, care-recipient residence, amount of contact, type of contact, type of care provided, current and past use of formal caregiver support) affected or predicted the overall effectiveness of the intervention within the experimental group. As the results indicated no effect occurred on the outcome variables as a function of the written intervention (i.e., no change from pretest to posttest levels of functioning), standard predictive analyses utilizing the initial outcome scores were not conducted in order to evaluate this question. Mean difference scores between pretest and posttest scores for each of the four outcome variables were created. Univariate analyses of covariance were conducted for each of the caregiver status variables in relation to each of the four outcome difference variables, depression, social support, stress, and psychosomatic distress. The pretest scores for the corresponding difference variables were the covariates. The contact variable had a significant relationship with the outcome variable depression [$F(1, 7) = 17.72$, $p < .005$]. Specifically, those caregivers who had only face-to-face contact versus a combination of contact (face-to-face, email, phone) had higher depression scores that worsened over time, thus for these ten participants, type of contact was predictive of depression change scores. The utilization of current formal supports was significantly related to stress [$F(1, 7) = 5.87$, $p < .05$]. Utilization of current supports was predictive of higher stress scores over time. Due to the small sample size (a comparison of only eight versus two participants for each of the significant outcomes), these results should be interpreted with caution, and the descriptive data presented in Table 3.3 should be considered as well. For example, 76.9% of participants in the experimental group were children and one daughter-in law, 61.5% of participants lived in the same town as the care recipients, 69.2% had daily contact, 76.9% of participants provided a combination of contact and care, and 69.2% of participants did not utilize supportive services.

Table 3.5

Intercorrelations Between Continuous Demographic Variables and Scales

Scale	1	2	3	BDI-II$_1$	BDI-II$_2$	SSI$_1$	SSI$_2$	PSS$_1$	PSS$_2$	BSI$_1$	BSI$_2$
1. Age	_	-.13	-.12	-.08	.13	-.18	-.24	-.32	-.14	-.19	-.01
2. Education	_	_	.14	.11	-.27	-.17	-.17	.11	-.08	.10	-.10
3. Caretime		_	_	-.22	-.21	.11	.03	-.18	-.32	-.10	-.16

As the dependent measures were continuous, only the three continuous demographic and caregiver status variables (age, education, and care time) were explored with regard to relationship with the outcome variables. No significant correlations were evident amongst the variables. Data are presented in Table 3.5.

Evaluation of Assessment of the Writing Experience

Two assessments of the participants' writing experiences were conducted, one at the immediate posttest and the second at the delayed posttest. (Copies of each assessment are presented in Appendix D.) Items from the delayed assessment are presented in Table 3.6.

Table 3.6

Items from the Delayed Posttest Assessment of the Writing Experience

Item 1	When did you participate in the study?

Questions 2 through 12 were answered on the following scale from 1 to 7, with 1 being "not at all" and 7 being "a great deal".

Item 2	Since your participation in the writing experiment, how much have you thought about what you wrote?
Item 3	Since the writing experiment, how much have you talked to other people about what you wrote?
Item 4	Looking back on the experiment, to what degree do you feel that the experiment had a positive long-lasting effect on you?
Item 5	Looking back on the experiment, to what degree do you feel that the experiment had a negative long-lasting effect on you?
Item 6	Since the experiment, how happy have you felt?
Item 7	Since the experiment, how depressed have you felt?
Item 8	Looking back on the experiment, to what degree has this experiment been valuable or meaningful for you?
Item 9	Before the experiment ever began, to what degree did you think about the topics you wrote about?
Item 10	How important has it been to you that your essays were anonymous?
Item 11	To what degree would you like other people (who you don't know) to read your anonymous essays?
Item 12	To what degree would you like to have your essays thrown away without anyone ever reading them?
Item 13	Now that the experiment is completed, could you tell us how it may have influenced you in the longrun? What have been the positive as well as the negative effects?
Item 14	If you had the chance to do it over again, would you participate in this study? (definitely yes probably yes don't know probably no definitely no)
Item 15	Any other comments you have about the experiment will be greatly appreciated

The most important information from the immediate posttest involved the descriptive reports from participants. Between group differences were examined across time through the use of independent samples t-tests. The only significant differences occurred on immediate posttest item 11 [experimental group $M = 2.90$, $SD = 2.08$, control group $M = 5.00$, $SD = 1.66$; $t\,(17) = -2.42$, $p < .03$] and item 12 [experimental group $M = 4.80$, $SD = 1.93$, control group $M = 1.56$, $SD = .73$; $t\,(17) = 4.73$, $p < .001$]. These results indicate that the experimental group participants overall were more concerned about others reading their anonymous essays (items 11 and 12) than were the control task participants at the immediate posttest time period. However, this difference decreased by the delayed posttest time point. No other obvious trends either between-groups or were evident from the results. Within-group differences across time were not included in the analyses, as the between-group differences and descriptive comments from the immediate posttest assessments were most important to the researcher. Descriptive statistics are presented in Table 3.7.

Item 13 and item 15 allowed participants the opportunity to include comments about their writing experiences, which will be included throughout the discussion section. While, item 14 assessed participants willingness to participate in the study again, if offered the opportunity. Twenty-five percent of participants stated they would “definitely” participate in the study again, 45.8% reported they would “probably” participate again, 12.5% stated “don’t know”, and 12.5% answered “probably no”.

Table 3.7

Descriptive Data from Immediate and Delayed Posttest Assessment of the Writing Experience Questionnaire

	Experimental			Control		
Data	*N*	*M*	*SD*	*N*	*M*	*SD*
W2	10	4.60	2.59	9	4.89	2.32
W3	10	1.40	.97	9	1.89	1.62
W4	10	3.00	2.05	9	3.67	2.50
W5	10	2.50	2.46	9	1.22	.44
W6	9	4.22	2.17	9	5.33	1.41
W7	9	2.78	2.28	9	1.89	1.17
W8	8	3.50	2.00	9	4.11	2.26
W9	10	4.10	2.38	9	4.56	1.67
W10	10	5.40	2.50	9	3.33	2.60
W11	10	2.90	2.08	9	5.00	1.66
W12	10	4.80	1.93	9	1.56	.73
W14	10	2.50	1.08	9	1.89	.93

	Experimental			Control		
Data	*N*	*M*	*SD*	*N*	*M*	*SD*
W2P	10	2.70	2.26	9	3.11	2.09
W3P	10	1.40	.70	9	1.77	1.09
W4P	10	2.8	2.30	9	3.00	1.94
W5P	10	2.30	2.50	9	1.00	.00
W6P	9	4.67	1.22	9	4.67	1.87
W7P	9	2.33	2.00	9	2.44	1.81
W8P	10	3.10	2.33	9	3.44	2.12
W9P	10	3.10	2.28	9	2.67	1.58
W10P	10	5.00	2.62	9	5.78	1.92
W11P	10	3.10	1.91	9	3.89	2.03
W12P	10	3.80	2.44	9	2.00	1.50
W14P	10	2.80	1.23	9	2.00	.33

Essay Content Analyses

Essays for each participant from the three writing tasks were content analyzed using the Linguistic Inquiry Word Count (Pennebaker, Francis, & Booth, 2001). Data from the analyses were separated into ten dimensions: linguistic, affective/emotional processes, cognitive processes, sensory processes, social processes, time, occupation, leisure activity, finances, metaphysical, and physical. Within group (time) trends will be discussed first, followed by interaction effects and between-group effects.

Experimental group trends in means (Table 3.8 through Table 3.18) that are of greatest interest include the word count, affective or emotional processes, cognitive processes, and time. Paired samples t-tests were conducted to evaluate the mean differences within the experimental group on word count and emotional and cognitive processes. While none of the results were significantly different, the trends remain of interest. The word count decreased throughout the writing trials, while words indicating insight increased. General positive emotions were increasingly expressed, while general negative emotions and anger decreased over the three days of writing. These results support previous research findings, which have led to the support of written emotional disclosure as a therapeutic intervention (e.g., Bootzin; Greenberg, Wortman, & Stone, 1996; Harber & Pennebaker, 1992; Pennebaker, 1999). However, anxiety and sadness increased over the three days. This finding could be associated with the initial evocation of negative emotions immediately following the final task, as previous research indicates, as processing and sense-making of the psychosocial caregiver issues that were evoked during the writing intervention has not yet occurred. The current study did not assess the psychosocial functioning immediately following the final day of writing. The delayed posttest assessments indicated no change in depression and a slight worsening of perceived stress (neither of the mean scores were at clinical levels). Also a focus on the present was greater than past and future. The time trend in means was similar in the control group. This could illustrate caregiver role stressors and ensuing difficulty with problem solving of such stressors.

Table 3.8

Linguistic Dimensions

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Word count 1	415.00	172	237.00	175
Word count 2	388.00	131	227.00	202
Word count 3	332.00	135	216.00	189
Words/sentence 1	16.04	3.34	17.21	5.52
Words/sentence 2	16.06	4.15	15.52	3.08
Words/sentence 3	21.99	22.44	14.93	6.10
I 1	7.29	3.00	3.18	2.45
I 2	7.70	3.41	3.10	2.04
I 3	6.81	3.39	3.21	5.04
We 1	1.20	.69	0.70	.83
We 2	0.90	1.15	0.70	.79
We 3	1.06	.92	0.31	.51
You 1	0.27	.68	0.00	.00
You 2	0.22	.66	0.05	.12
You 3	0.77	1.77	0.00	.00
She/He 1	4.64	3.24	3.86	3.13
She/He 2	4.00	3.17	3.73	2.91
She/He 3	4.18	3.17	2.71	3.00
They 1	1.00	1.73	0.99	1.29
They 2	1.02	1.36	1.20	1.24
They 3	1.48	1.96	0.59	.85

Table 3.9

Affective or Emotional Processes

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Affect 1	5.05	1.16	2.33	1.75
Affect 2	5.58	1.29	3.71	2.35
Affect 3	5.22	1.89	2.90	2.59
Positive 1	2.69	1.02	1.64	1.27
Positive 2	3.29	1.00	3.18	2.30
Positive 3	3.69	1.36	2.45	2.48
Negative 1	2.34	1.54	0.69	.55
Negative 2	2.19	1.29	0.52	.61
Negative 3	1.81	.81	0.38	.60
Anxiety 1	0.51	.55	0.18	.35
Anxiety 2	0.69	.58	0.19	.26
Anxiety 3	0.61	.40	0.02	.07
Anger 1	0.44	.39	0.09	.17
Anger 2	0.41	.70	0.04	.12
Anger 3	0.33	.38	0.07	.18
Sadness 1	0.70	.56	0.16	.25
Sadness 2	0.78	.70	0.12	.17
Sadness 3	2.41	6.86	0.12	.22

Table 3.10

Cognitive Processes

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Insight 1	2.75	1.27	1.06	1.13
Insight 2	3.02	1.26	0.70	.91
Insight 3	3.49	1.47	1.52	2.48
Causation 1	1.67	1.02	1.25	1.34
Causation 2	1.38	.91	2.75	1.84
Causation 3	1.33	.90	1.52	1.07
Discrepancy 1	2.15	1.30	1.56	1.83
Discrepancy 2	2.50	1.48	2.47	1.53
Discrepancy 3	2.24	1.23	2.35	2.60
Tentative 1	3.12	1.81	1.50	1.22
Tentative 2	3.28	1.56	2.35	1.91
Tentative 3	2.35	1.09	1.15	1.33
Certainty 1	1.38	.75	0.91	.82
Certainty 2	2.01	1.04	1.71	2.12
Certainty 3	1.52	1.17	1.43	2.40
Inhibition 1	0.61	.63	1.49	1.13
Inhibition 2	0.71	.64	2.42	1.79
Inhibition 3	0.87	1.17	2.53	2.72

Table 3.11

Sensory Processes

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Seeing 1	0.23	.21	0.24	.36
Seeing 2	0.58	.37	0.25	.45
Seeing 3	0.73	.56	0.18	.31
Hearing 1	0.32	.31	0.48	1.50
Hearing 2	0.46	.43	0.06	.12
Hearing 3	0.70	.60	0.02	.54
Feeling 1	1.11	.62	0.28	.34
Feeling 2	0.78	.53	0.91	1.11
Feeling 3	1.09	.42	0.48	.54

Table 3.12

Social Processes

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Social 1	13.64	3.58	10.51	4.26
Social 2	12.37	3.40	9.66	4.22
Social 3	12.04	3.88	7.53	5.14
Family 1	2.21	1.63	1.63	1.76
Family 2	2.19	1.55	1.37	1.70
Family 3	1.69	1.81	1.17	1.50
Friend 1	0.12	.18	0.06	.13
Friend 2	0.12	.17	0.14	.24
Friend 3	0.25	.21	0.07	.12

Table 3.13

Time

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Past 1	4.98	3.13	2.73	2.35
Past 2	3.94	2.82	2.95	2.56
Past 3	5.70	4.87	1.69	2.02
Present 1	10.13	4.00	6.74	4.12
Present 2	10.44	4.13	7.74	3.69
Present 3	10.33	5.27	8.33	4.22
Future 1	1.04	.49	1.43	1.55
Future 2	1.39	.80	1.67	1.45
Future 3	1.58	1.41	1.27	1.45

Table 3.14

Occupation

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Work 1	1.46	.86	1.86	2.73
Work 2	1.28	.79	0.94	2.02
Work 3	1.46	.89	0.73	.96
Achievement 1	1.56	.77	2.85	2.97
Achievement 2	1.84	.89	1.06	1.98
Achievement 3	1.33	.78	1.10	1.74

Table 3.15

Leisure Activity

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Leisure 1	0.79	.25	0.79	.74
Leisure 2	1.05	.69	1.18	1.00
Leisure 3	0.81	.76	0.82	1.09
Home 1	1.17	.99	4.27	2.21
Home 2	1.10	.96	3.63	2.23
Home 3	0.83	.73	3.05	2.78

Table 3.16

Finances

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Money 1	0.64	.51	0.82	1.59
Money 2	0.58	.42	0.67	1.10
Money 3	0.50	.62	0.36	.57

Table 3.17

Metaphysical

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Religion 1	0.13	.21	0.02	.08
Religion 2	0.12	.17	0.19	.52
Religion 3	0.12	.26	0.02	.07
Death 1	0.07	.14	0.00	.00
Death 2	0.16	.27	0.00	.00
Death 3	0.09	.14	0.00	.00

Table 3.18

Physical

	Experimental (n = 13)		Control (n = 11)	
Data	*M*	*SD*	*M*	*SD*
Body 1	0.47	.59	0.36	.49
Body 2	0.29	.35	0.72	1.03
Body 3	0.50	.50	0.24	.46
Health 1	1.40	1.23	1.18	1.93
Health 2	0.79	.59	0.55	.56
Health 3	1.11	1.55	0.86	.87
Sexual 1	0.08	.13	0.00	.00
Sexual 2	0.07	.13	0.25	.55
Sexual 3	0.20	.44	0.05	.18
Eating 1	0.27	.48	0.31	.65
Eating 2	0.32	.77	0.85	.95
Eating 3	0.98	2.12	0.87	1.15

Mixed-design analyses of variance were conducted for exploratory purposes. The between-groups factor was condition (experimental or control group), and the within-groups factor was time (writing trials over the course of three days). The ANOVA's were conducted in categories based on the aforementioned dimensions and dependent variables listed in Table 3.8 through 3.18. Overall, only four interaction effects were significant: causation [F (2, 44) = 4.10, $p < .03$], seeing [F (2, 44) = 3.83, $p < .04$], feeling [F (2, 44) = 3.71, $p < .04$], and achievement [F (2, 44) = 4.16, $p = .043$]. The experimental group participants exhibited a decrease over the course of three writing trials in causation, while the control group participants exhibited an initial increase, followed by a decrease. While the experimental participants exhibited an increase in words indicating visual sensory processes, the control group participants showed a decrease in such words. Experimental participants' use of feeling sensory words initially decreased and then increased by the third writing trial, while control participants had the opposite usage. Finally, achievement-related words initially increased, followed by a decrease by the third writing trial, while the control participants' usage of achievement words continually decreased throughout the three days of writing. The control group word usage followed an expected pattern, based on the objective, descriptive task, even though the participants did follow the task directions completely, by writing about caregiver experiences, rather than simply describing safety measures.

Significant group differences were observed in seventeen of the word usage categories. The experimental group participants had significantly higher word counts

[F (1, 22) = 6.55, $p < .02$], use of ‘I’ [F (1, 22) = 14.68, $p = .001$], ‘me’ [F (1, 22) = 5.10, $p < .04$], overall affective words [F (1, 22) = 17.31, $p < .001$], and words indicating negative emotions [F (1, 22) = 34.39, $p < .001$], anxiety [F (1, 22) = 18.37, $p < .001$], anger [F (1, 22) = 8.26, $p < .01$], insight [F (1, 22) = 27.36, $p < .001$], tentativeness [F (1, 22) = 6.51, $p < .02$], visual processes [F (1, 22) = 7.09, $p < .02$], feeling processes [F (1, 22) = 8.88, $p < .01$], social relations [F (1, 22) = 10.32, $p = .004$], past [F (1, 22) = 5.99, $p < .03$], present [F (1, 22) = 4.20, $p = .05$], and death [F (1, 22) = 10.89, $p < .01$]. As the experimental participants were instructed to write about their emotions, while the control group participants were instructed not to write about emotional experiences, these results were expected. The control group participants had significantly higher usage of words indicating inhibition [F (1, 22) = 15.13, $p < .02$] and home life [F (1, 22) = 21.11, $p < .001$]. As the control group was directed to write about safety in the home and not emotions, the greater use of words indicative of inhibition and home life are expected. Even so, control participants exhibited emotional and cognitive processes that were counter to the control task purpose, which could explain the lack of overall therapeutic effect of the intervention. The content analyses will be examined further throughout the discussion chapter.

CHAPTER IV

Discussion

The current study aimed to explore the effects written disclosure had on caregiver levels of depression, stress, psychosomatic distress, and social support. Specifically, the current study explored changes across time between experimental group participants directed to write subjectively about their caregiving experiences, versus control group participants directed to write objectively about safety measures that could be implemented in order to maintain safety for the care recipients.

The research questions asked, 1) Will engaging in written emotional disclosure for twenty-minutes each day for three consecutive days, result in significant differences in psychosocial outcome variables for lay caregivers of older adults versus their control group counterparts who engage in a neutral writing task? Specifically, will either group exhibit changes in depression levels, overall distress, perceived stress levels, and perceived social support? If significant changes occur, how will the outcome variables change over the course of ten weeks, from the last writing trial to a delayed posttest? 2) Will specific caregiver status (e.g., duration of total caregiving experience, time spent caregiving each week, distance from care-receiver) predict the overall effectiveness of the intervention within the experimental group?

Neither significant main effects nor interaction effects were evident. Overall, the written disclosure intervention did not significantly impact depression, perceived stress, psychosomatic distress, or social support levels. However, an interaction trend approaching significance was observed, specifically in that the control participants overall improved on psychosomatic distress scores, while the experimental participants showed an overall worsening of psychosomatic distress. (Distress scores for each group were low and did not approach clinical levels.) Very small differences in group means across time were evident on the other measures in similar directions, yet these changes were extremely small. While this study did not support the generalization of written emotional disclosure to this caregiver sample and actually showed a potentially negative effect, the further evaluation of descriptive data provide theoretical, methodological, and clinical insights into the caregiver experiences, potential support needs, and directions for future research. Some conclusions are provided as to why a supportive intervention that overcomes barriers to service utilization for a population experiencing negative health consequences did not work, even for individual participants. However, the following conclusions should be interpreted with caution due to the small sample size, other methodological limitations (detailed in the limitations section), and the clear lack of effect regardless of methodological limitations. The discussion of the results is similar to case study literature due to the aforementioned lack of results and small sample size. The content analyses of the participant essays are included throughout the discussion to interpret the findings.

Research Question One

Research question 1 asked whether engaging in written emotional disclosure for twenty-minutes each day for three consecutive days would result in significant differences in psychosocial outcome variables for lay caregivers of older adults versus their control group counterparts who engage in a neutral writing task. Specifically, would either group exhibit changes in depression levels, overall psychosomatic distress, perceived stress levels, and perceived social support? How would the outcome variables change over the course of approximately ten weeks, based on the differences between pretest and posttest scores.

The between-groups factor was condition (experimental or control group) and the within-groups factor was test time (pretest and posttest). The four dependent variables were depression scores (Beck Depression Inventory-II), number of social supports (Social Support Inventory), perception of stress scores (Perceived Stress Scale), and overall psychosomatic distress scores (Brief Symptom Inventory-18). Participants did not adhere to the ten week posttest follow-up, as the number of days between pretest and posttest (time) ranged from 43 days to 108 days. However, the time range did not affect the outcome measures. The range in time between testing periods does indicate the difficulty in applying a strict methodology in order to maintain research integrity when utilizing a clinical or real world sample.

Overall, engaging in the experimental task of written emotional disclosure did not significantly impact psychosocial outcome variables for lay caregivers of older adults when compared to control participants and when evaluated independently. In fact, no significant changes in the psychosocial variables of depression, psychosomatic distress, perceived stress, and social support were evident for either the control or experimental group over the course of approximately ten weeks.

However, an interaction trend was evident. Control participants, in general, improved over time, while psychosocial and psychosomatic scores for the experimental task participants worsened over time, aside from depression. The changes were quite small for each outcome except psychosomatic distress. The distress outcome across time within groups and difference between groups was the clearest trend, impacting the overall interaction trends. Again, distress scores were low and did not approach clinical significance.

Even with the methodological and sample size limitations, based on the current body of caregiver and written emotional disclosure literature, the non-significant results, at first glance, are surprising. Providing care for a loved one can be stressful enough to cause psychological and physical distress, and caregivers do not need to identify their experiences as negative for health declines to persist (Gallagher-Thompson & Powers, 1997; Martire & Schulz, 2001). Caregivers are faced with the daily tasks of supporting and caring for an ill person, as well as dealing with legal, financial, and emotional concerns. These tasks, as well as other moderating variables such as social support, coping, and the under-utilization of supportive services, affect caregiver well-being (e.g., Gallagher-Thompson & Powers).

Written emotional disclosure appeared to be a potential therapeutic support for this population, considering the important role cognitive appraisal plays in caregiver perceptions of stress (McNaughton, Patterson, Smith, & Grant, 1995). Also, written disclosure overcomes reported barriers to service utilization and could act as a therapeutic option independently or in supplement with other therapies (e.g., L'Abate, 1999; Lepore, Silver, Wortman, & Wayment, 1996).

Yet, after further examination of the previous caregiver literature in combination with the outcome of the study and descriptive data gathered from the study, the following sections raises interesting theoretical points of discussion and offers potential explanations for the non-significant outcome that indicates a more positive effect for control participants and a more negative effect for experimental participants. Aside from methodological and sample size limitations and lack of effect of written disclosure for caregivers, other conclusions for lack of therapeutic change due to written emotional disclosure could be due to the control task topic, a "ceiling effect", the duration of the writing trials, and the lack of feedback or need for normalization. While these are not empirically validated based on the current results, the conclusions are based on prior literature and reports from the current sample of caregivers.

Control task.

Instructions for the writing tasks were based on instructions used in prior research studies (e.g., Donnelly & Murray, 1991; Murray, Lamnin, & Carver, 1989; Murray & Segal, 1994; Pennebaker, 1989; Pennebaker & Beall, 1986; Pennebaker, Kiecolt-Glaser, & Glaser, 1988). While participants in the control conditions were most often directed to objectively describe either the contents of their closets or the daily events before the experiment, the current study chose a different objective description task. The current study's control participants were asked to objectively describe what safety measures could be instituted in-home for the care recipients. Adjustments were made to the control task directions to appear more “worthwhile” to participants in order to aid solicitation of participants and to prevent dropout. Also, a description of a caregivers’ day is likely to include stressful experiences similar to those described by experimental condition participants in their written essays. Thus, the goal of the altered control task was to maintain purposeful appearance while limiting the evocation of emotions.

While the altered control task served the purpose of participant retention, it appears to have acted similarly to the experimental subjective task. Control task participants were directed, “Do not mention your own subjective emotions, feelings, or opinions; your safety plans must be as objective as possible.” Even so, the control task appears to have evoked feelings, rather than solely an objective description of safety measures. While no manipulation check was included in the current study, only control task participants commented on the repetition of writing tasks. For example, “It was difficult to think of things to write on Day Three as my assignments were the same each day.” “I felt like there might have been a packaging mistake on the questions but tried to think through it again and write more to make twenty minutes.” “I wasn’t sure with the second and third writing if I was to repeat what was said in the first day.” “Don’t understand why you asked same questions three times.” “Didn’t like same topic everyday.” “I thought I was missing something when all three assignments were the same.” While control task participants appeared to find the task tedious, as control tasks often are perceived, comments from the Assessment of Writing Experience questionnaire indicate that control task participants benefited from thinking about safety measures and that emotions about caregiving experiences were evoked. The content analyses of the essays also indicate that control participants wrote more about issues related to the home while using greater inhibition than experimental participants. And, experimental participants expressed more emotions, sensory processes, and greater focus on social, self, and death issues with greater insight. Even so, control participants wrote about emotional and affective processes and exhibited insight and causation throughout the three writing trials. Thus, the control task was not solely a descriptive writing task.

Cameron and Nicholls (1998) utilized a self-regulation writing task, which instructed participants to actively develop and appraise coping plans for the disclosed problems, resulting in similar outcomes as written emotional disclosure. The present study's control task appears to have worked as a self-regulation task. It was initially theorized that participants would be able to objectively describe safety measures, which was supported by J. W. Pennebaker (personal communication, August 23, 2005). However, by developing and creating coping strategies for safety barriers, participants' feelings about caregiving experiences were elicited. For example, some control task participants reported that they were less anxious about their loved ones falling or living safely in their own homes after evaluating the safety measures, or they felt more confident and comfortable with the decisions they already made about the care recipients' living environments after the writing tasks.

> Positive is that we’ve done a lot but there is still stuff we need to do to make it safer for my mom. Negative is that we better get going on some things. The whole experiment really made me think which was super.
>
> As I get older I am now preparing for changes we will need to make to our home. I’m writing stuff down and hope to look at it now closely when we get in our 70’s & 80’s. The positive factor is that I’m always looking for ways to make life easier for my mom. The only negative effect is that I recall my dad saying “your body seems to go to hell in the 70’s & 80’s. He lived to be 92.
>
> Forced to think about what needs to be done to improve home safety for my elder loved one. Discussions have taken place to bring up issues that needed to be addressed.
>
> Makes me aware of what hazards might befall my spouse.

This task most likely was too connected to caregiving emotions and thoughts, thus it might have been too difficult to avoid subjective writing. Participant comments from the Assessment of the Writing Experience questionnaire exemplify this issue.

> It has helped me understand and listen to my feelings about being a caregiver.
>
> It helped me to bring to the surface things I was feeling unconsciously. I don’t like to complain and rarely do even to those close to me. Even though my thoughts were being read by someone I didn’t know, the writings gave voice to my feelings and somehow helped relieve the guilt I have for feeling the way I sometimes do. I am the caretaker of two people and get little help because of distance and time availability from anyone else. While I am pleased that I can help, sometimes I feel overburdened. Your idea of writing down our thoughts is therapeutic. I think written emotional disclosure would be beneficial for all caregivers.
>
> I wonder if others did not stick to safety issues but instead used the vehicle to vent frustrations like I felt compelled to do. I have realized how valuable writing down my feelings can be. I think I should keep a daily journal and this will help me cope with frustrations.

Thus, overall, while control task appears to have been perceived correctly as such a task, it still evoked emotions and some meaning-making or problem solving processes, similar to those evoked by the experimental task. Even so, no significant changes were evident within the control group or between-groups, and neither group was significantly affected by the intervention.

Ceiling effect.

In prior studies examining the effectiveness of written emotional disclosure for various clinical populations, the clinical samples exhibited positive, or hardy, psychological health at pretest (e.g., Pinquart & Sorensen, 2003; Rosenberg et al., 2002; Walker, Nail, & Croyle, 1999; Zakowski et al., 2004). The experimental participants in the current study illustrate a potential "ceiling effect" for depression, social support, and distress measures, as evidence by non-clinical levels of depression and distress and an adequate number of social supports. (There were no significant differences between the experimental and control groups on the dependent measures at either testing period.) None of the experimental participants were in the severely depressed category based on their BDI-II pretest scores. Seven of the ten experimental participants had scores indicative of non-depressed, while one was mildly depressed, and two were moderately depressed. At posttest, there was no change in the breakdown of depressive categories. Yet, one of the non-depressed participants increased into the mild category, one mild increased into the moderate, while two mildly depressed participants improved into the non-depressed category after the intervention. Similarly, on the BSI psychosomatic distress scores, only one participant in the experimental condition exhibited a clinically significant level of distress. At posttest, this participant remained at a clinical level of distress, and one other experimental participant worsened to meet clinical criteria for distress. The depression and psychosomatic distress outcomes are consistent with findings from prior caregiver studies (e.g., Neary, 1993). In the current study, there was little room for improvement on these three measures for the experimental participants, and the control participants if the control task actually served similarly to the experimental task.

The Perceived Stress Scale appears to have been a more sensitive measure for this sample, as the participants reported higher levels of perceived stress when compared with average adult scores, unlike the low levels of depression and distress. Thus, a "ceiling effect" was not a possible explanation for the lack of significant overall results with regard to this dependent measure. In fact, non-significant changes from pretest to posttest occurred on perceived stress. This lack of change could indicate a targeted and deeper level of permeation due to caregiver role, thus need for an altered therapeutic support or intervention. Even for those who evidenced a "ceiling effect" based on the depression and/or distress scores, while experiencing moderate to severe levels of perceived stress, descriptive information from the Assessment of the Writing Experience indicates that the writing task positively impacted participants. Participant reports validate the cognitive-behavioral theory behind the effectiveness of written emotional disclosure.

> It helped me really see how far I've come from the caregiving experience with my mom to where I'm at now with my dad. It's spanned twenty years so far.

> The experiment made me examine my feelings toward my mother-in-law's situation. The guilt came through, but also the peace that I am handling the situation in a positive manner.

> I think it may be when people have feelings of guilt or helplessness about a caregiver situation, that they experience more stress, negative feelings and depression. I am fortunate that my mother is in good spirits and health currently and is happy where she is living. It makes it so much easier for all of us who care for her.
>
> I think it is a very worthwhile experiment. Putting our feelings down on paper gives us a chance to think about them rather than pushing them to the back of our mind and allowing them to fester. For the past two years I have been journaling daily. At first, I had difficulty putting my thoughts on paper. I think it was out of fear of them being read and judged by someone. I no longer feel that way. I am entitled to my feelings. It wasn't until I began writing that I better understood them and then could deal with them.
>
> I know that a lot of people feel journaling is a positive way to get information, ideas and feelings set down on paper to help one reflect on them. I have used this in the past to recall events and to help release some of my more intense feelings. Once this even took the form of a letter that was never sent, but was therapeutic because of the intense negative feelings I had concerning the issue. Other times the journal was helpful to document happenings and conversations that proved useful later.

Overall, a "ceiling effect" could explain lack of change with regard to depression, distress, and social support levels, but there was room for improvement on caregiver stress levels. The content analysis of the essays indicates an increase in positive emotional expression and decrease in negative emotional expression and anger over the course of the three writing trials. However, there were increases in anxiety and sadness expressed throughout the three writing trials by the experimental participants. These changes do not support the "ceiling effect" and do not mirror the dependent variable outcomes, aside from the content analysis of anxious expression and the Perceived Stress Inventory. The content analysis results are similar to prior research outcomes, exhibiting an increase in immediate posttest results after the final day of writing. The positive reports about the writing task experiences support written emotional disclosure in some form as a potential therapeutic tool for caregivers. Therefore, alterations in measurement or the writing methodology (as discussed in the following section) might be necessary in order to significantly impact negative psychological functioning.

Longer duration.

One methodological alteration as well as a third explanation for lack of effect, involves the depth of support required by caregiver participants who experienced moderate to severe levels of depression, perceived stress, and/or psychosomatic distress, combined with unmet social support needs. Smyth's (1998) analysis indicates that the longer the writing intervention lasts, the greater the improvements. Yet, significant results are evident from shorter time periods, as illustrated by the standard protocol of twenty minutes of writing over the course of three to four consecutive days. However, for caregivers, inadequate social support combined with the chronic stress of caregiving can greatly affect one's health (e.g., Esterling, Antoni, Fletcher, Marguilies, & Schneiderman, 1994). Negative health consequences due to prolonged stressor exposure can persist even after the stressor has ended (e.g., Esterling, Kiecolt-Glaser, Bodnar, & Glaser, 1994).

In the current study, the minority of participants exhibited mild to moderate levels of depression or distress, yet higher levels of perceived stress were evident in the majority of participants. Overall, the stress levels were not significantly affected by the written intervention. The mean length of time participants had acted as caregivers was five years. Again, the majority of participants reported positive personal insights from the writing tasks. Thus, while interpretability of results are limited due to sample size, based on the aforementioned descriptive data and reports on the Assessment of Writing Experience, a written intervention is a preferred support for this sample of caregivers. Thus, it simply may need to be longer in duration at more regular intervals in order to effect positive change for those experiencing higher levels of psychological symptoms.

For the few participants who exhibited a worsening of symptoms, the written intervention either is ineffective based on coping styles and needs, or the intervention was a preferred support option yet needs to be more intensive or longer in duration. Feedback from two participants indicated a negative response to the writing trials.

> The first day was the most helpful. Being able to express feelings I had but hadn't thought about. But, after that, the writing seemed to make me feel worse, the third day being the worst. (immediate posttest)" "I think writing down my thoughts and feelings was beneficial as I wouldn't have probably taken the time to reflect on them otherwise and setting aside the time to do so freed me. It helped me to know what my feelings and thoughts were but for a reason I don't understand and can't explain. The third day was tough and I resented having to do it. Perhaps it was just a bad day for writing and I feel terrible, b/c I feel that somehow I failed you. Unable to give my best effort that day. I wonder if I was the only one who had this experience. I would have thought the opposite would have been true, that each day I would have felt better, expressing my inner thoughts and feelings, getting them out. (delayed posttest for same participant)
>
> No positive effects. I regret putting my feelings in writing.

Thus, individual differences with regard to coping styles need to be taken into account when generalizing to clinical populations in applied settings. Not all interventions successfully enhance health outcomes. Therefore, an array of independent or supplemental support options could be offered based on theory, empirical support, and caregiver preferences.

Peer feedback.

It is common for caregivers to feel depressed, overwhelmed, frustrated, angry, resentful, guilty, and ashamed (e.g., duPre, 2000; Hagestad, 1986; Lawrence, Tennstedt, & Assman, 1998). As normal as these feelings are for a caregiver, it is often difficult for caregivers to express their feelings and concerns to others, or to utilize support or respite services (e.g., Neary, 1993; Smyth & Pennebaker, 2001). Research indicates that supports most often utilized by caregivers are emotional (e.g., Neary). Even if caregivers are able to process their stressful experiences through written disclosure, there may be a need for normalization about, for example, the thoughts and feelings which lead to shame and guilt. Reports from the current study's participants support this need. For example, "I feel normal." "At first, I had difficulty putting my thoughts on paper. I think it was out of fear of them being read and judged by someone." "That I know my feelings are normal." "I am not alarmed by what I perceive as normal symptoms to stress." Social support from family, friends, support group peers, counselors, or bibliotherapy, provides opportunity for normalization to occur. Yet, for those with inadequate support networks, this need is unfulfilled.

Rivera et al. (1991) found that depressed caregivers reported a greater need to confide in supportive others and to receive empathy and positive feedback, even though they reported lower service utilization than non-depressed caregivers. This study suggests the importance of social feedback for caregivers experiencing depressive symptoms. Based on the lower service utilization, these caregivers might benefit from a less stigmatizing support option, such as written disclosure, supplemented by a social feedback condition.

Zakowski et al. (2004) examined the effects of written emotional disclosure on social constraints and psychological distress among patients living with prostate or a form of gynecological cancer. Participants in the control condition reporting high levels of social constraint exhibited the highest levels of distress at follow-up, while the high social constraint experimental group participants exhibited low levels of distress at follow-up. For those who felt unable to confide in others and receive feedback about what they felt or thought, written disclosure acted as a therapeutic tool. Yet, the small effect sizes and maintenance of clinical distress levels indicated a continued need for social feedback.

These findings illustrate the positive effect disclosure has for people who are unable to discuss their thoughts and feelings about particular stressors, while also identifying the importance of social confidants and supports. As support services are under-utilized (e.g., Neary, 1993), and the current study’s sample, for the most part, reported a positive experience with the writing tasks and a desire to incorporate this coping tool into their lives, normalizing feedback might be therapeutic for those who are not receiving it in some social form. Again, this is for those who exhibited higher or more negative levels of psychological functioning and who did not improve after the writing trials alone. Thus, for those who are in need of social feedback, and written disclosure alone may not be enough to create therapeutic change, a social feedback condition could be included.

Research Question 2

Research Question 2 asked if specific caregiver status (e.g., duration of total caregiving experience, time spent caregiving each week, distance from care-receiver) would predict the overall effectiveness of the intervention within the experimental group? As the intervention did not significantly affect the outcome variables and as the sample size within the experimental group was only ten people, a standard predictive relationship was not examined. Rather, predictive analyses were conducted by examining mean difference scores for each outcome variable, and descriptive data and correlational relationships were examined as well.

Caregivers who had only face-to-face contact versus a combination of contact (face-to-face, email, phone) had higher depression scores that worsened over time. Thus, for these ten participants, type of contact was predictive of depression change scores. This result might indicate the relief caregivers might experience when able to interact under less invasive conditions (e.g., decrease time commitment and likelihood of witnessing disturbing events if providing support over email). The utilization of current formal supports was significantly related to stress. This appears to indicate a willingness to seek professional help by those in need of support. This result illustrates that while caregivers under-utilize services, those in need seek out services. Therefore, not only are interventions important to offer for caregivers, but an array of interventions to meet a variety of individual needs and preferences are important, as this sample is limited by size as well as by lack of relationship between caregiver status variables and psychosocial functioning. Again, due to the small sample size, these results should be interpreted with caution.

As the descriptive data indicate, the experimental group was fairly homogeneous with regard to caregiver demographic and status variables, which limits exploratory analyses and conclusions. All ten participants whose data was included in the final analyses were female. Nine were Caucasian, married, and a child or child in-law of the care-recipients. Seven of the participants provided a combination of support (e.g., emotional, financial, and assistance with ADL's), did not utilize supportive services in the past, while eight of the ten experimental group participants currently do not use supportive services. The largest variation was in care-recipient residences. Only two of the caregivers live with the care-recipients, while six of the recipients live independently and two live in levels of long-term care facilities.

Contrary to prior research, correlational relationships were not evident between age, length of time caregiving, or education (Gallant & Connell, 1998; Killeen, 1990; Pinquart & Sorensen, 2003). Overall, based on prior research, exemplified by a meta-analysis conducted by Pinquart and Sorensen (2003), caregiver status and demographic variables are not as important as caregiver role in general when predicting psychological and physical health outcomes.

However, analogous to prior research, few participants in the current study reported past and/or present utilization of support services, including respite services. Based on the hardy functioning and lack of overall effect, combined with the positive comments about the writing experiences, it might be that caregivers underutilize services because they do not need them.

Thus, while the current study's sample size and lack of significant results limited associations between caregiver status variables and dependent variables within the experimental group, prior research indicates that there is much variability within the caregiver group. Individual and relationship differences make it difficult to make general statements about the association between caregiver status variables and health outcomes. Within basic settings, larger sample sizes are important in order to determine the within-group trends and needs, while within applied settings, an attention to individual needs through the offering of a variety of empirically validated support services is necessary.

Limitations

The current study's methodological limits are common throughout research utilizing caregiver samples, as well as written emotional disclosure literature specifically targeting clinical populations. The aforementioned theoretical conclusions and applied recommendations must be interpreted with caution based on the following methodological limitations: small sample size, procedural alterations from standard written disclosure protocol, and measurement choices.

Sample size.

Pinquart and Sorensen (2003) cite small sample sizes as one of the three main reasons for the lack of large effects in a caregiver research meta-analysis. Of the nine empirical investigations of written disclosure with clinical populations, Frisina et al.

(2004) also cite sample size as a methodological problem across studies. With respect to clinical populations versus college populations, meeting power criteria is a difficult task. As mentioned throughout the discussion section, sample size was also an issue for the current study, despite widespread recruitment efforts and caregiver interest in the study.

Small sample size not only limited power to detect potential effects, but also the ability to examine caregiver status variables and individual differences. However, prior research indicates that caregiver role in general appears to be most important predictor of health consequences, regardless of demographic and caregiver status variables (Pinquart & Sorensen, 2003; Schulz et al., 1995). Even so, the level of non-significance from the statistical analyses was so high, that the non-significance was not due solely to lack of power to detect effects.

Procedures.

Clinical adjustments.

The current study altered the standard methodological protocol of written emotional disclosure to allow for writing in participants' homes, in order to accommodate the needs of clinical populations. Adjustments were similar to those made previously in studies utilizing clinical samples (e.g., Klapow et al., 2001; Zakowski et al., 2004). Participants completed questionnaires and writing tasks in their own homes at their leisure, rather than in a laboratory environment at the university. This adjustment addressed barriers of time commitments and transportation, as well as potential cost for and anxiety about respite services for the care recipients. Caregivers who work full-time and/or who live out of the local area were able to consider participation. Yet, while procedures were similar to those in previous studies (e.g., Klapow et al., 2001; Zakowski et al., 2004), the current study did not include telephone start/stop time for each twenty-minute writing task. Participants were directed to record their start times and to use a timer for each session. Thus, the integrity of the study was limited.

Another difficulty due to the clinical sample and lack of methodological stringency was the difference in testing periods. The initial delayed posttest period was eight weeks after the third writing task. After numerous participants failed to return their materials until closer to ten weeks, the testing period was altered to ten weeks for the remainder of the experiment. The time range did not affect the outcome measures. It does, however, indicate the difficulty in applying a strict methodology in order to maintain research integrity when utilizing a clinical or real world sample.

The written emotional disclosure research utilizing clinical samples altered the methodological procedures to meet the lifestyles of these participants. Future research with greater resources could utilize the standard protocol with caregiver samples. The results would provide a more accurate representation of empirical effectiveness for this intervention with caregivers. Yet, again, it would not address the barriers to service utilization, thus the need for generalization from the basic to applied setting. While initial exploratory research with clinical samples should occur under controlled conditions, research indicates the difficulty in generalizing to applied, real world environments.

Control task.

While participants in the control conditions were most often directed to objectively describe either the contents of their closets or the daily events before the experiment, the current study chose a different objective description task. While the control task appeared purposeful enough to participants based on the aforementioned reports, the task acted as a self regulation task, evoking emotions, cognitive processing and problem solving. While comments from the Assessment of the Writing Experience questionnaire indicate that control task participants benefited from thinking about safety measures and that emotions about caregiving experiences were evoked, the participants still did not significantly improve after the intervention or differ from the experimental group. Thus, again, even with this methodological limitation, the overall impact of the writing tasks was non-significant for both groups. The follow-up content analyses indicate that while control participants wrote about the assigned topic, the participants also wrote about emotional and cognitive processes and issues that defeated the control purpose. Future studies should evaluate a variety of writing task directions, including the standard control tasks and manipulation checks for each of the conditions.

Measurement.

The current sample exhibited low depression and distress levels and adequate social supports. Yet, perceived stress scores were indicative of the caregiver population as expected, based on prior literature. While the choice of dependent variables was based on previous research with caregivers and written emotional disclosure tasks, the measurements may not have adequately embodied psychosocial and psycho-physiological consequences due to caregiver status. In fact, as the aforementioned caregiver research and the current study indicate, dependent variables rarely changed significantly as a function of various interventions. Thus, more sensitive measures are necessary for this population. One example is perception of functioning, such as perceived stress. Perceived functioning is an important indicator of actual functioning (e.g., Lazarus & Folkman, 1984). The most commonly utilized outcome variables in caregiver literature may not be appropriate or sensitive to caregiver experiences. This could be due to the within-population variability or the commonly utilized self-report assessments which lead to inaccurate estimates of commonly experienced psychological problems. For example, estimates of depression within the caregiver population, specifically for care-recipients with dementia, range from 40 - 60% (Redinbaugh, McCallum, & Kiecolt-Glaser, 1995). This may or may provide an accurate representation of caregivers experiencing depression. While the BDI-II has been validated and is a reliable measure of depression, participants may not openly report depressive symptoms, or other symptoms that may be perceived negatively. Yet, the experimental participants expressed increasing sadness over the three writing trials. The essays may offer greater insight into the emotional functioning and coping of the participants than self-report assessments. The current sample exemplifies the overarching perceived stress levels, while there is more within-group variability on the depression, distress, and social support measures. Thus, future research should seek out and evaluate effective measurements in order to empirically investigate the effect various supportive interventions have on these population-appropriate measures.

Another measurement limit with the current study was the exclusion of care recipient diagnosis. While the evaluation of the relationship between the diagnosis and outcome measures would not have been possible due to the small sample size, it could have provided descriptive insights into this sample. For example, Wijeratne and Lovestone (1996) found that caregivers for people with dementia experienced greater distress than did caregivers for people with depression, yet Neary (1993) found no differences between caregivers for those with dementia diagnoses versus physical diagnoses. Future studies should further examine this relationship in order to effectively evaluate, thus provide services based on differential needs. However, again, the overall conclusion from prior research is that caregiver role in general is associated with higher health consequences versus those who are non-caregivers, regardless of differential caregiver status or care recipient diagnosis variables (e.g., Pinquart & Sorensen, 2003; Schulz, O'Brien, Bookwala, & Fleissner, 1995).

Additional caregiver information should have been gathered to provide further insight into the relationship between caregiver status data and outcome variables, as well as needs and preferences for services. Variables include perceptions of caregiver role strain, resilience, perceived ability to provide care, unmet needs, knowledge of supportive services and adequacy of such services, time available for personal leisure and healthcare needs. Future research should assess these variables.

Future Directions

Within the field of psychology, previous research has supported written emotional disclosure as a positive, alternative therapeutic method for decreasing negative physical and psychological effects due to stressful experiences (Smyth, 1998). While the effects of written emotional disclosure have not been overwhelmingly supported for clinical populations (Frisina et al., 2004), the potential therapeutic implications of this intervention were important to examine for caregivers. It is thought that the positive benefits of emotional disclosure are due to the active, repeated behavioral exposure to stressful experiences, which allows people to appraise and cognitively process their feelings, thus gaining a greater understanding of their experiences (e.g., Donnelly & Murray, 1991; Paez et al., 1999; Pennebaker, 1997). While the intervention did not effect change in the outcome variables over time, each group provided reports supporting the theory behind written emotional disclosure as a therapeutic support tool. Thus, more questions have stemmed from the results and could be evaluated in future studies.

Based on the content analyses, future research plans and eventually healthcare services will be explored based on indicated needs of the caregiver participants of the current study. With greater resources, additional data analyses could be conducted in order to gain further insight into the relationship between caregiver status variables and health consequences. Also, the current sample was quite homogeneous, while there is much within-population variability. Therefore, future research could examine which subgroups of the caregiver population benefit the most from such an intervention, based on personality and coping styles derived from outcome variables and content analyses.

As participants reported positive experiences with the writing task, in general, but did not exhibit significant changes in psychosocial functioning, future research should evaluate the outcome measures most often utilized within caregiver research studies. It may be that more appropriate measures are necessary, such as perceptions of health, ability to cope and problem solve, comfort with feelings (e.g., shame-based feelings). Also, the future methodology should be adjusted. Adjustments could be made based on the reports from this study's participants. Participants indicated having found comfort and purpose in "journaling". Guided journaling workbooks could be evaluated, similar to those utilized by L'Abate (1992, 1999) for psychological diagnoses, such as depression. Again, as shame-based feelings are commonly experienced by caregivers, and the current study illustrated the desire of experimental participants to maintain anonymity, more so than the control participants, written emotional disclosure in some form could be a supportive tool even if it does not significantly affect psychosocial functioning.

Normalization is important when processing shame-based feelings. Written disclosure could be altered to include a written peer feedback condition (e.g., reading a journal entry of another caregiver or professional descriptions of common caregiver feelings), for those who do not prefer support groups or individual counseling.

Overall while caregivers in this study did not exhibit sub-clinical or clinical levels on outcome variables, the participants reported a desire for a supportive service such as the writing tasks. Caregivers as a population under-utilize support services (e.g., Rivera et al., 1991; Smyth & Pennebaker, 2001), thus it is important to create and validate therapeutic tools that might be utilized by caregivers in need of support.

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Appendix A

Informed Consent

Informed Consent

INTRODUCTION

The Gerontology Center at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You may refuse to sign this form and not participate in this study. You should be aware that even if you agree to participate, you are free to withdraw at ANY time. If you do withdraw from this study, it will not affect your relationship with this unit, the services it may provide you with, or the University of Kansas.

PURPOSE OF THE STUDY

As a group, family caregivers and their loved ones receiving assistance are in need of easily accessible therapeutic outlets which require few resources (e.g., time, money). This research project will evaluate the therapeutic effectiveness of written tasks completed by family caregivers of older adults.

PROCEDURES

Participants will complete a series of assessments, examining demographic, emotional, and social characteristics. Assessments will be completed at various times throughout approximately a ten-week period, including pre and post-tests. The written research task will be conducted over the course of three days, with each task lasting twenty minutes.

At the post-test, participants will be debriefed about the exact nature of the study and the intended goals of researcher. Participants have the option of receiving information about the completed study, once all data has been collected and analyzed.

RISKS

There are no expected risks due to participation in this study. However, if participation evokes any negative psychological or physical effects, participants can choose to discontinue participation.

BENEFITS

Physical, psychological, social, and informational benefits are expected to occur for caregivers participating in the study, as well as those who will eventually learn about the study's effectiveness through academic and clinical dissemination of the information. Based on previous research in this area of gerontology and psychology, physical, psychological, and social benefits were experienced by participants.

INFORMATION TO BE COLLECTED

To perform this study, the principal investigator will collect information about you. This information will be obtained from self-report surveys and the writing tasks described in the Procedures section of this consent form. Your name and any names you mention will not be associated in any way with the information collected or with the research findings from this study. The researcher will use a *random number to identify* documents instead of names. All information will only be viewed by the principle investigator and faculty supervisor, though some of the overall results (after all data has been collected/analyzed) may be presented at a gerontological meeting or in a journal. Again, **no identifying information will be provided to anyone**.

Permission granted on this date to use and disclose your information remains in effect indefinitely. By signing this form you give permission for the use and disclosure of your information for purposes of this study at any time in the future, though no identifying information will be included in future discussions, and any discussions of the data will include group (i.e., every participants' data in a group), rather than any one participant's information.

REFUSAL TO SIGN CONSENT/WITHDRAWAL FROM STUDY

Your are not required to sign this Consent form, and you may refuse to do so without affecting your right to any services you are receiving or may receive from the University of Kansas or to participate in any programs or events at the University of Kansas. However, if you refuse to sign, you cannot participate in this study.

You may withdraw your consent to participate in this study at ANY time. You also have the right to cancel your permission to use and disclose information about you at any time. If you withdraw your consent, your participation will end, though you will still receive the aforementioned resource guide.

PARTICIPANT CERTIFICATION

I have read this Consent form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study and the use and disclosure of information about me for the study. I understand that if I have any additional questions about my rights as a research participant, I may call (785) 864-7429 or write the Human Subjects Committee Lawrence
Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email dhann@ku.edu.

I agree to take part in this study as a research participant. I further agree to the uses and disclosures of my information as described above. By my signature, I affirm that I have received a copy of this Consent form.

Print Participant Name: ________________________________ Date:

Signature:

Principle Investigator: Gillian Woods gwoods@ku.edu, 785-550-9143
Faculty Supervisor: Adrianne Kunkel adkunkel@ku.edu, 785-864-9884

Appendix B

Directions

Directions

Please read the Informed Consent. If you feel comfortable participating in this study, please sign the form (keep one copy). Feel free to contact Gilli with questions and/or concerns (785-550-9143, gwoods@ku.edu).

DO NOT write you name on any papers other than the Informed Consent. Your questionnaire answers and written information will be identified by a random number, and only the primary investigator will view this information. Also, please use aliases or initials for any persons about whom you write.

Choose three consecutive days, approximately the same time each day, to complete the tasks. (E.g., Monday, Tuesday, Wednesday at 6 p.m.) For each day, you have an envelope with directions and paper. Complete tasks in a quiet, private room. The first day you will complete questionnaires and then begin your writing task. Immediately before beginning the writing task, set a timer for 20 minutes and at the end of 20 minutes, stop writing, and seal that day's materials in the appropriate envelope. Follow the same steps for the next two days. Once you finish the final task, please complete the writing assessment questionnaire, and contact me to pick up all materials. *The writing tasks may seem mundane; however, there is a purpose behind the tasks. Different people may have different tasks, so please do not discuss your experience until after the study.*

I will contact you 10 weeks later with follow-up questionnaires. These should only take about 20 minutes to complete. Again, return materials in the addressed, stamped envelope or contact Gillian to pick up the materials.

Thank you so very much for assisting with this research project!

Appendix C

Demographic & Outcome Variable Questionnaires

Demographic Questionnaire

1. Age:
2. Sex: M F
3. Ethnicity:
4. Marital Status:
5. # Children living in your home:
6. Employment status:

   In-home (e.g., stay-at-home parent, retired, etc.), Part-time, Full-time, Volunteer

7. Education level:

   High school, some college, college degree, graduate or professional degree, other

8. Relationship to care-recipient (e.g., child, spouse):
9. Length of time you have been providing care:
10. Location of care-recipient: Same town, Same state, Different state
11. Care-recipient residence:

    your home his/her home assisted-living facility Other:

12. Amount of contact with care-recipient:

    Daily Weekly

13. Usual type of contact with care-recipient (circle all that apply):

    face-to-face, written (mail, email), phone

14. Type of care provided (circle all that apply): emotional, physical, banking/financial, daily living activities (dressing, bathing), errands, Other

15. Have you ever utilized formal caregiver support? Yes No

16. If so, circle all types of support that apply:

In-home respite assistance support group individual counseling

Books websites Other:

17. Are you currently using formal supports? Yes No

18. If so, please list which types & how often you use them (e.g., in-home services daily, support group once a month).

Beck Depression Inventory – II

This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**.

Circle the number beside the statement you have picked.
<u>If several statements in the group seem to apply equally well, circle the highest number for that group</u>. Be sure that you do not choose more than one statement for any group,
including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness
0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

2. Pessimism
0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. Past Failure
0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

4. Loss of Pleasure
0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings
0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings
0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. Self-Dislike
0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self-Criticalness
0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes
0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would like to kill myself if I had the chance.

10. Crying
0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

11. Agitation
0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.
2 I am so restless or agitated that it's hard to stay still.
3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest
0 I have not lost interest in other people or activities.
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people or things.
3 It's hard to get interested in anything.

13. Indecisiveness
0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making decisions than I used to.
3 I have trouble making any decisions.

14. Worthlessness
0 I do not feel I am worthless.
1 I don't consider myself as worthwhile and useful as I used to.
2 I feel more worthless as compared to other people.
3 I feel utterly worthless.

15. Loss of Energy
0 I have as much energy as ever.
1 I have less energy than I used to have.
2 I don't have enough energy to do very much.
3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern
0 I have not experienced any change in my sleeping pattern.
1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual.
2a I sleep a lot more than usual.
2b I sleep a lot less than usual.
3a I sleep most of the day.
3b I wake up 1 – 2 hours early and can't get back to sleep.

17. Irritability
0 I am no more irritable than usual.
1 I am more irritable than usual.
2 I am much more irritable than usual.
3 I am irritable all the time.

18. Changes in Appetite
0 I have not experienced any change in my appetite.
1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.
2a My appetite is much less than before.
2b My appetite is much greater than usual.
3a I have no appetite at all.
3b I crave food all the time.

19. Concentration Difficulty
0 I can concentrate as well as ever.
1 I can’t concentrate as well as usual.
2 It’s hard to keep my mind on anything for very long.
3 I find I can’t concentrate on anything.

20. Tiredness or Fatigue
0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of the things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex
0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

Social Support Interview

Please list up to ten people in your support network. Feel free to use alternate names or initials.

For each person listed, rate your level of closeness from 0 to 10 (0 = “not at all” close, 10 = extremely close).

For each person listed, rate how positive AND how negative the support provided is from 0 to 6 (0 = “not at all”, 6 = extremely).

For each person listed, rate the amount of contact you have with them, from 1 to 5 (1 = less than monthly, 5 = daily).

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

Date _________

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly? **0 1 2 3 4**

2. In the last month, how often have you felt that you were unable to control the important things in your life?............................ **0 1 2 3 4**

3. In the last month, how often have you felt nervous and “stressed”? **0 1 2 3 4**

4. In the last month, how often have you felt confident about your ability to handle your personal problems? **0 1 2 3 4**

5. In the last month, how often have you felt that things were going your way?.. **0 1 2 3 4**

6. In the last month, how often have you found that you could not cope with all the things that you had to do? **0 1 2 3 4**

7. In the last month, how often have you been able to control irritations in your life?.. **0 1 2 3 4**

8. In the last month, how often have you felt that you were on top of things?............. **0 1 2 3 4**

9. In the last month, how often have you been angered because of things that were outside of your control? **0 1 2 3 4**

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?................ **0 1 2 3 4**

Brief Symptom Inventory - 18

Below is a list of problems people sometimes have. Please read each item and then mark the answer in the space next to it that best describes **how much that problem has distressed or bothered you <u>during the past 7 days including today</u>**

0	**1**	**2**	**3**	**4**
not at all	**a little bit**	**moderately**	**quite a bit**	**extremely**

1. Faintness or dizziness _______

2. Pains in heart or chest _______

3. Nausea or upset stomach _______

4. Trouble getting your breath _______

5. Numbness or tingling in parts of your body_______

6. Feeling weak in parts of your body _______

7. Feeling no interest in things _______

8. Feeling lonely _______

9. Feeling blue _______

10. Feelings of worthlessness _______

11. Feeling hopeless about the future _______

12. Thoughts of ending your life _______

13. Nervousness or shakiness inside _______

14. Feeling tense or keyed up _______

15. Suddenly scared for no reason _______

16. Spells of terror or panic _______

17. Feeling so restless you couldn't sit still _______

18. Feeling fearful _______

Appendix D

Writing Task Instructions

Experimental Task

For the next twenty minutes, I would like you to write about your deepest thoughts and feelings about your caregiving experience. Your caregiving experience can include such things as social interactions with your family, friends, and/or health care professionals, finances, future planning, daily caregiving activities, feelings, thoughts, expectations about the caregiving experience or the future, etc. In your writing, I'd like you to really let go and explore your deepest emotions and thoughts about the experience. Please write down all thoughts no matter how silly or personal you think they may be; if the same thoughts occur over and over, then simply write them down over and over. Remember, all of your writing will be completely confidential; only the researcher will view the contents of your writing. Don't worry about spelling, sentence structure, or grammar. The only rule is that once you start writing, continue to do so until your time is up.

Control Task

For the next twenty minutes, I would like you to describe in detail what you have done or what you could do to make the home safer for your elder loved one receiving care. It is important that you simply describe what steps you might take to improve the safety of the home, why these safety steps were chosen, and how these steps will actually improve the safety of the home. Do not mention your own subjective emotions, feelings, or opinions; your safety plans must be as objective as possible. Remember, all of your writing will be completely confidential; only the researcher will view the contents of your writing.

Appendix E

Assessment of the Writing Experience Questionnaire

Assessment of the Writing Experience (Immediate Posttest)

1. When did you participate in the study?

Answer the following questions (2 – 12) on a scale from 1 to 7, with 1 being "not at all" and 7 being "a great deal".

2. How much have you thought about what you wrote?

3. How much have you talked to other people about what you wrote?

4. To what degree do you feel that the experiment had a POSITIVE effect on you?

5. To what degree do you feel that the experiment had a NEGATIVE effect on you?

6. Since the experiment, how happy have you felt?

7. Since the experiment, how depressed have you felt?

8. To what degree has this experiment been valuable or meaningful for you?

9. Before the experiment ever began, to what degree did you think about the topics you wrote about?

10. How important has it been to you that your essays were anonymous?

11. To what degree would you like other people (who you don't know) to read your anonymous essays?

12. To what degree would you like to have your essays thrown away without anyone ever reading them?

13. Now that the experiment is completed, could you explain how it may influence you? What have been the positive as well as the negative effects?

14. If you had the chance to do it over again, would you participate in this study? (circle one) definitely yes probably yes don't know probably no definitely no

15. Any other comments you have about the experiment will be greatly appreciated.

Assessment of the Writing Experience (Delayed Posttest)

1. When did you participate in the study?

Answer the following questions (2 – 12) on a scale from 1 to 7, with 1 being "not at all" and 7 being "a great deal".

2. Since your participation in the writing experiment, how much have you thought about what you wrote?

3. Since the writing experiment, how much have you talked to other people about what you wrote?

4. Looking back on the experiment, to what degree do you feel that the experiment had a POSITIVE long-lasting effect on you?

5. Looking back on the experiment, to what degree do you feel that the experiment had a NEGATIVE long-lasting effect on you?

6. Since the experiment, how happy have you felt?

7. Since the experiment, how depressed have you felt?

8. Looking back on the experiment, to what degree has this experiment been valuable or meaningful for you?

9. Before the experiment ever began, to what degree did you think about the topics you wrote about?

10. How important has it been to you that your essays were anonymous?

11. To what degree would you like other people (who you don't know) to read your anonymous essays?

12. To what degree would you like to have your essays thrown away without anyone ever reading them?

13. Now that the experiment is completed, could you tell us how it may have influenced you in the longrun? What have been the positive as well as the negative effects?

14. If you had the chance to do it over again, would you participate in this study? (circle one) definitely yes
    probably yes don't know probably no definitely no

15. Any other comments you have about the experiment will be greatly appreciated.

Appendix F

Debriefing Statement

Dear Participant,

Thank you for participating in my dissertation study! As I mentioned, I am interested in how people manage the psychosocial effects due to immensely important caregiving duties. I hope the following description of my reasoning behind and purpose of this study will enlighten you about your role in this research.

Nearly 90% of the 21.3 million elders who need long-term care receive at least some assistance from a lay caregiver, while two-thirds depend completely on a lay caregiver (Ferrini & Ferrini, 2000). Lack of support combined with the chronic stress of caregiving can greatly affect one's health (e.g., Esterling, Antoni, Fletcher, Marguilies, & Schneiderman, 1994). Research assessing long-term effects of caregiving has shown that negative effects are significant and often continue even after caregiving duties have ended (e.g., Esterling, Kiecolt-Glaser, Bodnar, & Glaser, 1994). Such effects include decreased social contact, depression, anxiety, and decreased immune functioning. Although fulfilling, providing care for a loved one also taxes one's social, psychological, and physical resources (e.g., Schulz & Salthouse, 1999). While support services exist to address common negative feelings such as depression and anxiety (e.g., Moody, 2000), caregivers report that it is often difficult to express their feelings and concerns to others and to utilize support or respite services (e.g., Smyth & Pennebaker, 2001). Thus, the examination of other less costly, stigmatizing, and time consuming therapeutic interventions should occur.

Within the field of psychology, previous research has supported written emotional disclosure as a positive, alternative therapeutic method for decreasing negative physical and psychological effects due to stressful experiences (Smyth, 1998). It is thought that the positive benefits of emotional disclosure are due to the active confrontation of stressful experiences, which allows people to process their feelings, thus gaining a greater understanding of their experiences (e.g., Donnelly & Murray, 1991; Pennebaker, 1997). Caregiver status is associated with more negative psychological health (e.g., Pinquart & Sorensen, 2003), and inaccurate cognitive appraisals are associated with psychological problems, such as depression. As caregivers could benefit from cognitive reappraisals, and as caregivers often feel conflicted about their feelings (e., g., Lawrence, Tennstedt, & Assman, 1998), written disclosure might be an effective therapeutic support for caregivers.

While Lattanzi and Hale (1984) assessed unstructured writing as a coping tool for bereaved caregivers, to date, structured written emotional disclosure has not been evaluated as a therapeutic tool for lay caregivers of older adults. This research project would extend the current disclosure literature by evaluating the therapeutic effectiveness of written and emotional disclosure for caregivers.

Research questions

RQ1: Will engaging in written emotional disclosure for twenty-minutes each day for three consecutive days, result in significant differences in psychosocial outcome variables for caregivers of older adults versus their control group counterparts who engage in a neutral writing task? Specifically, will either group exhibit positive changes in depression levels, overall distress, perceived stress levels, and perceived social support?

RQ2: If significant changes occur, how will the outcome variables change over the course of eight weeks, from the last writing trial to the delayed posttest?

RQ3: Will specific caregiver status (e.g., duration of total caregiving experience, time spent caregiving each week, distance from care-receiver) predict the overall effectiveness of the intervention within experimental group?

Procedures

Each participant experience will be the same, aside from the experimental manipulation occurring during the writing tasks.

Experimental Manipulations

Instructions for the writing tasks were based on instructions used in prior research studies (e.g., Donnelly & Murray, 1991; Murray, Lamnin, & Carver, 1989; Murray & Segal, 1994; Pennebaker, 1989; Pennebaker & Beall, 1986; Pennebaker, Kiecolt-Glaser, & Glaser, 1988). As this research is experimental, I compared two different interventions (experimental/emotional disclosure task vs. control/neutral task). Instructions for each condition are described below.

Experimental Condition

Participants in the experimental (emotional disclosure) group will be asked to spend approximately 20 minutes each day, over three consecutive days, writing about their deepest thoughts and feelings surrounding their caregiving experiences. Their instructions will state:

> "Your caregiving experience can include such things as social interactions with your loved one receiving care, other family, friends, and/or health care professionals, finances, future planning, daily caregiving activities, feelings, thoughts, expectations about the caregiving experience or the future, etc. In your writing, I'd like you to really let go and explore your deepest emotions

> and thoughts about the experience. Please write down all thoughts no matter how silly or personal you think they may be; if the same thoughts occur over and over, then simply write them down over and over. Remember, all of your writing will be completely confidential; only the researcher will view the contents of your writing. Don't worry about spelling, sentence structure, or grammar. The only rule is that once you start writing, continue to do so until your time is up."

Control Condition

Participants in the control group similarly will be asked to spend 20 minutes each day, over three consecutive days, writing about what they have done or could do to make the home safer for the elderly care recipient. They will also be told:

> "It is important that you simply describe what steps you might take to improve the safety of the home, why these safety steps were chosen, and how these steps will actually improve the safety of the home. Do not mention your own subjective emotions, feelings, or opinions; your safety plans must be as objective as possible. Remember, all of your writing will be completely confidential; only the researcher will view the contents of your writing."

People are participating in the study continually, and I would like them to have the same experience you had. So, please do not discuss the details of the study with other people until after they have completed the study.

As I mentioned at the beginning of the study, all written texts and questionnaires will become part of a database for my research. Again, all materials are identified by a random number, and your name is in no way associated with your data. If you would like to review the written materials, please let me know. Upon review, you may remove your responses from the overall data pool, if you so decide.

If you have any questions about the procedures, how the results will be used, where you can find articles or books about structured written disclosure, or if you would like a copy of the study, please contact me at 785-550-9143 or gwoods@ku.edu.

Thank you again for assisting with this research. I hope you have found value in this experience and I look forward to sharing the research results with you.

Sincerely,

Gilli Woods

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